



POLICY ROUNDTABLES

Economic Evidence in Merger Analysis

2011

Introduction

The OECD Competition Committee debated economic evidence in merger analysis in February 2011. This document includes an executive summary of that debate and the documents from the meeting: a background note by Prof. Mike Walker for the OECD and written submissions: Austria, Brazil, Canada, Chile, China, Denmark, Finland, France, Germany, Greece, Hungary, Indonesia, Israel, Japan, Korea, Mexico, Netherlands, New Zealand, Portugal, Romania, Russian Federation, South Africa, Sweden, Switzerland, Chinese Taipei, Turkey, United Kingdom, United States, the European Union, and BIAC as well as an aide-memoire of the discussion.

Overview

The roundtable indicated that economic evidence plays an important role in the assessment of mergers. To be reliable it should be based on clear economic theory, and should be transparent, replicable and intuitive to allow non-economists to fully understand the analysis. Agencies, however, emphasised that the role of economic evidence should be put into perspective. Many mergers do not require a time consuming, costly and burdensome economic assessment.

Economic tools, such as Upward Pricing Pressure (UPP) indices or mergers simulations can be useful screening measures, but the usefulness of their results is subject to the assumptions made and to the quality of the data available. When economic evidence produces inconsistent results from other evidence, understanding what is driving the divergence can provide insights into the likely effects of a merger.

In order to help companies involved in competition cases to achieve this, a number of competition authorities have issued Best Practice Guidelines on the presentation of economics evidence in merger cases.

Related Topics

- Standard for Merger Review (2009)
- Presenting Complex Economic Theories to Judges (2008)
- Managing Complex Mergers (2007)
- Dynamic Efficiencies in Merger Analysis (2007)
- Vertical mergers (2007)
- Merger Remedies (2004)

Unclassified

DAF/COMP(2011)23

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

27-Jul-2012

English - Or. English

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

ECONOMIC EVIDENCE IN MERGER ANALYSIS

JT03325040

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FOREWORD

This document comprises proceedings in the original languages of a Roundtable on “Economic Evidence in Merger Analysis” held by the Competition Committee (Working Party No. 3 on Co-operation and Enforcement) in February 2011.

It is published under the responsibility of the Secretary General of the OECD to bring information on this topic to the attention of a wider audience.

This compilation is one of a series of publications entitled "Competition Policy Roundtables".

PRÉFACE

Ce document rassemble la documentation dans la langue d'origine dans laquelle elle a été soumise, relative à une table ronde sur « Les Preuves économiques dans l'analyse des fusions » qui s'est tenue en février 2011 dans le cadre du Comité de la concurrence (Groupe de Travail No. 3 sur la coopération et l'application de la loi).

Il est publié sous la responsabilité du Secrétaire général de l'OCDE, afin de porter à la connaissance d'un large public les éléments d'information qui ont été réunis à cette occasion.

Cette compilation fait partie de la série intitulée "Les tables rondes sur la politique de la concurrence".

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EXECUTIVE SUMMARY

By the Secretariat

- (1) *Economic evidence should be based on clear economic theory, and should be transparent, replicable and intuitive to allow non-economists to fully understand the analysis. In order to help companies involved in competition cases to achieve this, a number of competition authorities have issued Best Practice Guidelines on the presentation of economics evidence in merger cases.*

A number of competition authorities have issued “Best Practice Guidelines” for the presentation of economic evidence in merger cases. These guidelines stress a number of important characteristics that economic evidence should exhibit. Economic evidence should be based on clear economic theory; it should make clear what question it is seeking to answer and why this question is relevant; it should be transparent and replicable, so that each side can understand the analysis and reassure themselves that the analysis is sound; and it should ideally be intuitive so that non-economists are able to understand the significance of the analysis. These disciplines apply as much to competition authorities as to the parties to a merger.

In order to ensure that empirical analysis can be replicated it must be submitted along with complete documentation of the methodology employed and the data used. Failure to do so will mean the analysis cannot be properly appraised and decision makers cannot put full weight on it. By ensuring that analysis is replicable parties should not be able to “hide” anomalous results or data. If any such anomalies exist, firms should be upfront and seek to explain them. Another consequence is that the analysis can be checked for either methodological or data mistakes.

- (2) *While economic evidence can play an important role in the assessment of mergers, its role should be put into perspective. Many mergers do not require a time consuming, costly and burdensome economic assessment. When economic evidence produces inconsistent results from other evidence, understanding what is driving the divergence can provide insights into the likely effects of a merger.*

Economic evidence can play a very important role in the assessment of mergers. However, this role needs to be put in to perspective. Sound economic analysis is time consuming, costly, and burdensome, and not all merger assessments require economic evidence. Many can be cleared on the basis of simple thresholds that are not related to economic analysis (e.g. market share thresholds). Even where economic evidence does have a role to play in the assessment of a merger, this evidence should not in general be given a privileged position. Instead, the economic evidence should be considered along with the other evidence in the case (e.g. internal documents from the parties). Where the economic evidence is consistent with other evidence, it strengthens the conclusions that can be drawn. When the economic evidence is not consistent, it should not be assumed that either evidence is wrong, but efforts should be made to understand why different types of evidence are leading to different conclusions. It might be that the economics is pointing out an insight that the other evidence has missed. Equally, it could be that the economics is missing something. Understanding what is driving the divergence can often provide useful insights into the likely effect of the proposed merger.

- (3) *While the economic framework for both unilateral effects and co-ordinated effects are conceptually clear in merger analysis, there are however fewer empirical techniques available to assess co-ordinated effects cases.*

The conceptual economic framework for unilateral effects is clear: it relates to the loss of competition between two firms selling substitute products and is usually applicable to differentiated products markets. There are a wide range of empirical techniques that can be used to test for unilateral effects. On the other hand, economics provide less predictive precision for coordinated effects. The exact conditions under which the loss of a competitor will move the market from a competitive equilibrium to a collusive equilibrium, or from one collusive equilibrium to another, higher priced collusive equilibrium, are difficult to predict. The result is that there are far fewer empirical techniques available for the assessment of coordinated effects cases. However, where it is possible to fully specify the demand and cost curves of the various firms, it is possible to estimate the pay-offs to collusion and this is helpful evidence at least in terms of understanding the incentives of the firms.

- (4) *Upward Pricing Pressure (UPP) indices measure diversion ratios and capture the incentives of merging parties to raise prices post merger. They can be useful screening measures. However, they are sensitive to the values of the inputs and should not be treated as predictions of future price rises.*

UPP measures based on the diversion ratio between two firms and the margins of the firms are simple measures that capture the incentives of the merging parties to raise prices post-merger. They can be useful screening measures, allowing competition authorities to assess whether a more in-depth investigation, to consider factors such as barriers to entry, buyer power etc, is needed. However, the discussion warned against treating UPP measures as predictors of future price rises or “merger simulation lite”. The measures are sensitive to the values of the inputs and so the range of plausible input values can lead to a large range for the UPP. It is therefore important to carry out sensitivity analysis when calculating UPP measures so that investigators have an idea not just of the central estimate, but also of the potential upper and lower bounds.

There have been occasions where competition authorities or parties have derived diversion ratios for UPP-style analysis from market shares. However it was generally agreed that this is not a good approach. UPP indices are used in unilateral effect cases, which are typically cases involving differentiated products. It therefore cannot be assumed that firms “closeness” to each other is in proportion to their market shares. The United States, for example, provided two examples of the relationship between market shares and closeness of competition. In one, the high market shares of the merging parties did reflect the fact that they were close competitors. In the other, the evidence was that despite having high market shares, the merging parties were not close competitors and each firm’s closest competitors did not include the other merging party.

- (5) *Merger simulation attempts to predict directly the effect of a merger rather than using indirect measures such as market definition. It is a sensible economic theory, but merger simulations can be very sensitive to assumptions made. Their role in practice resulted therefore more limited than originally predicted. Bespoke rather than generic models are required to ensure the particular facts of the market are considered.*

The economic theory underlying merger simulation is sensible: it is an attempt to predict directly the effect of the merger rather than use indirect measures such as market definition. However, merger simulation should be treated with care as their results can be very sensitive to the assumptions made, particularly with respect to the nature of demand. It is difficult to estimate elasticities precisely and to model the exact nature of competition within a market. Merger simulation has been carried out both in a

number of countries, but has not been used as much as originally predicted. Economists have found it difficult to carry out robust merger simulations that genuinely aid the assessment of mergers.

Merger simulations are useful when they take account of the particular facts of the market in question. Bespoke rather than generic models are therefore required. For example, merger simulation has been adopted to assess electricity generation mergers, as the institutional arrangements for the market are clear and lead to clear implications for competitive interaction that can be modelled. However, even a well designed merger simulation is only part of the story, and can omit a number of factors usually considered very important in merger analysis including barriers to entry, buyer power, product repositioning and non-price competition. Therefore, while merger simulation can be useful, their current role is more limited than was believed in the past.

- (6) *While the economic tools used in merger review are not perfect, they may provide the best solution for the data available. The use of Indicative Price Rise measurements, for example, has proved a useful approach in mergers in the retail sector which can involve hundreds of potential markets.*

Retail mergers often involve multiple relevant geographic markets (sometimes in the hundreds), but they also involve large amounts of readily available data (i.e. electronic point of sale or epos data). It is sometimes necessary to use a relatively unsophisticated screening approach to reduce the number of markets that need to be analysed in detail. One technique that has been adopted is the Indicative Price Rise (IPR). This approach is similar to the UPP and is based on diversion ratios and margins. Whilst the IPR approach does not allow the prediction of post merger price rises, it does allow markets to be ranked in order of likely competitive concerns based on the incentives of the merging parties. Competition authorities can then focus on those markets that are likely to be the most problematic. The use of IPR measurements also facilitates relatively sophisticated analysis in retail mergers as the availability of detailed data from point of sales allows for precise econometric estimation of demand functions.

- (7) *It is important that competition authorities draw from existing institutional knowledge gained in previous mergers to inform their economic assessment. Natural experiments can be a very useful way to save on resources as they involve relatively little data analysis. Devil's advocate panels should be used to ensure all theories consistent with the facts and evidence have been accounted for.*

The way in which competition authorities use their institutional knowledge is important. Competition authorities learn about specific industries over time as a result of their work on various cases, but this knowledge can sometimes be lost if the competition authority does not seek to maintain it. One way to protect institutional knowledge is for competition authorities to be organised along industry group lines rather than along functional speciality lines.

Empirical analysis based on natural experiments, such as a shock analysis, can be very powerful and informative. A number of case examples were provided in which natural experiments were used as the basis of a merger assessment. Analysis of this type can often require relatively little data, compared to more sophisticated empirical techniques that are available. Since data is usually expensive to collect and analyse, where there is a choice of techniques to use, competition authorities should seek to use the empirical approach that has the lowest data requirements.

The use of 'Devil's advocate' panels is another important aspect of merger analysis, from the perspective of both a competition authority and the parties. A theory can be constructed that is consistent with the majority of the facts but fails to take into account other theories also consistent with those facts, or a slightly different subset of facts. A good way to avoid this danger is to explicitly use 'Devil's advocate'

panels which involve a ‘fresh’ review by experts, who are not part of the case team, of the arguments that have been put forward. This is a discipline that can be particularly important when a competition authority has to present its evidence to an independent body, such as a court or a separate competition tribunal.

- (8) *Survey evidence, when treated with care, can provide useful insights into consumer preferences. Surveys which focus on past behaviour, stated preferences and preferred options will yield effective results.*

Whilst survey evidence needs to be treated with care, it should not be treated as unreliable. Survey evidence can be problematic as consumers may not be able to respond to hypothetical questions and are not incentivised to devote sufficient resources to answering such questions accurately. However, there are at least three forms of survey evidence that are useful. One is to ask questions about past behaviour, such as “which brands have you bought in the past?”, “which is your preferred brand?” etc. These are questions about revealed preference. A second approach is to use stated preference questions, but to keep them very simple. For instance, consumers are generally much better at answering simple questions such as “if your preferred brand was not available, which brand would you buy instead?” than they are at answering more complicated hypothetical questions. A third approach is to use conjoint analysis. This is a survey technique that offers consumers a number of options of different product characteristics and asks them to choose their preferred options. For instance, the options might be different bundles of mobile voice calls and SMS text messages at different prices. Using this approach properly is relatively resource intensive, but it can yield internally consistent and precise demand estimations.

SYNTHÈSE

par le Secrétariat

- (1) *Les preuves économiques doivent reposer sur une théorie économique claire, et être transparentes, reproductibles et intuitives pour permettre aux non-économistes de comprendre pleinement l'analyse connexe. Afin d'aider les entreprises impliquées dans une affaire de concurrence à respecter ce principe, un certain nombre d'autorités de la concurrence ont établi des lignes directrices sur les pratiques optimales en matière de présentation des preuves économiques dans les affaires de fusion.*

Un certain nombre d'autorités de la concurrence ont établi des lignes directrices sur les pratiques optimales en matière de présentation des preuves économiques dans les affaires de fusion. Ces lignes directrices mettent l'accent sur plusieurs caractéristiques importantes que doivent afficher les preuves économiques : celles-ci doivent reposer sur une théorie économique claire ; la question à laquelle elles s'attachent à répondre doit être bien précisée, de même que la raison pour laquelle cette question est pertinente ; les preuves économiques doivent être transparentes et reproductibles, afin que chaque partie puisse comprendre l'analyse et s'assurer de sa fiabilité, et, en principe, être intuitives de sorte que les non-économistes puissent saisir la portée de l'analyse. Ces disciplines s'appliquent autant aux autorités de la concurrence qu'aux parties à une fusion.

Afin de s'assurer de la reproductibilité de l'analyse empirique, celle-ci doit être soumise avec la documentation complète relative à la méthodologie employée et aux données utilisées, faute de quoi l'analyse ne pourra être dûment évaluée et les décideurs ne pourront s'appuyer pleinement sur elle. La reproductibilité de l'analyse permet de s'assurer que les parties ne « dissimulent » pas des données ou résultats anormaux. Au cas où de telles anomalies existeraient, les entreprises doivent être sincères et s'employer à les expliquer ; l'analyse peut aussi faire l'objet d'une vérification au titre d'erreurs de méthode ou de données.

- (2) *Les preuves économiques peuvent jouer un rôle important dans l'appréciation des fusions, mais il convient de nuancer leur rôle. De nombreuses fusions ne requièrent pas d'évaluation économique longue, coûteuse et contraignante. Lorsque les preuves économiques donnent lieu à des résultats incohérents par rapport aux autres preuves, le fait d'éclaircir la cause de cette divergence peut donner des indications sur les effets probables d'une fusion.*

Les preuves économiques peuvent jouer un rôle très important dans l'appréciation des fusions. Il convient toutefois de nuancer ce rôle. La réalisation d'une analyse économique est longue, coûteuse et contraignante, et la présentation de preuves économiques n'est pas nécessaire pour toutes les fusions. Beaucoup peuvent être approuvées sur la base de simples seuils sans rapport avec l'analyse économique (par exemple des seuils de part de marché). Même lorsque les preuves économiques ont un rôle à jouer dans l'appréciation d'une fusion, il convient en général de ne pas leur accorder une place prépondérante, mais plutôt de les examiner en association avec les autres preuves présentées dans le cadre de l'affaire (documents internes émanant des parties, par exemple). La cohérence des preuves économiques avec les autres preuves donne plus de poids aux conclusions susceptibles d'être tirées. Lorsque les preuves économiques ne sont pas cohérentes, il ne faut pas partir du principe que telles ou telles preuves sont fausses, mais s'efforcer de comprendre pourquoi différents types de preuves conduisent à des conclusions

distinctes. Il se pourrait que les preuves économiques fassent ressortir un élément qui a échappé à l'analyse fondée sur les autres preuves, ou inversement. Éclaircir la cause de la divergence peut souvent donner des indications précieuses sur les effets probables de la fusion proposée.

- (3) *Si les cadres économiques utilisés pour analyser les effets unilatéraux et les effets coordonnés des fusions sont tous deux explicites sur le plan conceptuel, les techniques empiriques permettant d'apprécier les effets coordonnés sont en revanche moins nombreuses.*

Le cadre économique conceptuel lié aux effets unilatéraux est explicite : il renvoie au fait que la vente de produits substituables par deux entreprises supprime la concurrence entre ces entreprises, et s'applique généralement aux marchés de produits différenciés. Il existe un large éventail de techniques empiriques pouvant être utilisées pour mettre en évidence d'éventuels effets unilatéraux. Cependant, l'analyse économique fournit des prévisions moins précises en matière d'effets coordonnés. Il est difficile de prévoir les conditions exactes dans lesquelles la disparition d'un concurrent fera basculer le marché d'une situation d'équilibre concurrentiel vers une situation d'équilibre collusoire, ou d'une telle situation vers une autre situation d'équilibre collusoire dans laquelle les prix seraient plus élevés. En conséquence, les techniques empiriques permettant d'apprécier les effets coordonnés sont nettement moins nombreuses. Néanmoins, quand il est possible de définir intégralement, pour les différentes entreprises, les courbes matérialisant la demande et le coût, on peut estimer les retombées de la collusion, ce qui constitue une preuve intéressante, au moins lorsqu'il s'agit de comprendre les motivations des entreprises.

- (4) *Les indicateurs de pressions à la hausse sur les prix rendent compte des ratios de diversion et traduisent les incitations des parties à augmenter les prix à l'issue de leur fusion. Ils peuvent s'avérer utiles à des fins de filtrage. Néanmoins, ils sont sensibles à la valeur des intrants et ne constituent pas des prévisions des hausses de prix futures.*

Les indicateurs de pressions à la hausse sur les prix fondés sur le ratio de diversion entre deux entreprises et les marges de ces entreprises sont des indicateurs simples qui traduisent les incitations des parties à augmenter les prix à l'issue de leur fusion. Ils peuvent s'avérer utiles à des fins de filtrage, permettant aux autorités de la concurrence de juger de la nécessité d'une enquête plus approfondie, de prendre en compte des facteurs tels que les barrières à l'entrée, le pouvoir de l'acheteur, etc. Toutefois, les participants à la table ronde ont mis en garde contre le fait de considérer les indicateurs de pressions à la hausse sur les prix comme des prévisions des hausses de prix futures ou des « simulations de fusion allégées ». Ces indicateurs étant sensibles à la valeur des intrants, la fourchette d'indicateurs de pressions à la hausse sur les prix peut être étendue, selon l'amplitude des valeurs d'intrants plausibles. Il est donc important de procéder à une analyse de sensibilité lors du calcul des indicateurs de pressions à la hausse afin que les enquêteurs aient une idée non seulement de l'estimation médiane, mais aussi des probables limites supérieure et inférieure de la fourchette.

À certaines occasions, les autorités de la concurrence ou les parties ont calculé les ratios de diversion à partir des parts de marché aux fins d'analyses reposant sur les indicateurs de pressions à la hausse sur les prix. Or, de l'avis général, ce n'est pas une bonne méthode. Les indicateurs de pressions à la hausse sur les prix sont utilisés pour apprécier les effets unilatéraux des fusions, que l'on constate habituellement dans le cas de produits différenciés. On ne peut donc pas formuler l'hypothèse selon laquelle l'« étroitesse » des relations entre deux entreprises est proportionnelle à leurs parts de marché. Les États-Unis, par exemple, ont offert deux exemples du lien entre parts de marché et étroitesse des relations de concurrence : dans le premier, l'importance des parts de marché détenues par les parties à la fusion témoignait du fait qu'il s'agissait de proches concurrents ; dans le second, il apparaissait que, malgré des parts de marché élevées, les parties n'entretenaient pas de relations de concurrence étroites et les plus proches concurrents de chaque entreprise n'englobaient pas l'autre partie à la fusion.

- (5) *La simulation de fusion vise à essayer de prévoir directement les effets d'une fusion, plutôt que d'avoir recours à des indicateurs indirects tels que la définition du marché. Il s'agit d'une théorie économique judicieuse, mais la simulation de fusion peut être très sensible aux hypothèses qui ont été faites. Son rôle dans la réalité est donc apparu plus limité qu'initialement prévu. Des modèles sur mesure et non génériques sont nécessaires de sorte que les particularités du marché soient prises en compte.*

La théorie économique qui sous-tend la simulation de fusion est judicieuse : il s'agit d'essayer de prévoir directement les effets de la fusion plutôt que d'avoir recours à des indicateurs indirects tels que la définition du marché. Néanmoins, il convient de se montrer prudent à l'égard de la simulation de fusion car ses résultats peuvent être très sensibles aux hypothèses formulées, notamment sur la nature de la demande. Il est difficile d'estimer précisément les élasticités et de modéliser la nature exacte de la concurrence au sein d'un marché. La simulation de fusion a été utilisée dans plusieurs pays, mais pas autant qu'initialement prévu. Les économistes ont trouvé qu'il était difficile d'effectuer des simulations solides propres à faciliter véritablement l'appréciation des fusions.

La simulation de fusion est utile dans la mesure où elle tient compte des particularités du marché concerné. C'est pourquoi des modèles sur mesure et non génériques sont nécessaires. Par exemple, la simulation a été adoptée pour l'appréciation des fusions dans le secteur de la production d'électricité, étant donné que les mécanismes institutionnels applicables à ce marché sont bien définis et ont sur l'interaction concurrentielle des incidences claires susceptibles d'être modélisées. Cela étant, même correctement conçue, une simulation de fusion n'est qu'un élément d'appréciation parmi d'autres, et des facteurs généralement considérés comme essentiels dans le cadre de l'analyse des fusions, notamment les barrières à l'entrée, le pouvoir de l'acheteur, le repositionnement des produits et la concurrence hors prix, peuvent être négligés. Par conséquent, la simulation de fusion peut s'avérer utile, mais elle occupe actuellement une place plus restreinte qu'on ne l'imaginait précédemment.

- (6) *Les outils économiques utilisés dans le cadre de l'examen des fusions ne sont pas parfaits, mais ils peuvent constituer la solution la plus adaptée aux données accessibles. Le recours à la « hausse indicative des prix », par exemple, s'est révélé opportun pour les fusions dans le commerce de détail susceptibles de toucher des centaines de marchés potentiels.*

Les fusions dans le commerce de détail concernent souvent de multiples marchés géographiques (parfois de l'ordre de plusieurs centaines), mais elles supposent aussi d'importants volumes de données facilement accessibles (c'est-à-dire des données recueillies aux points de vente électroniques). Il faut quelquefois employer une technique de filtrage relativement peu élaborée pour réduire le nombre de marchés exigeant une analyse détaillée. Le calcul de la hausse indicative des prix est l'une des techniques adoptées. Il s'apparente au calcul des indicateurs de pressions à la hausse sur les prix et repose sur les ratios de diversion et les marges. Si la technique faisant appel à la hausse indicative des prix ne permet pas de prévoir les augmentations de prix postérieures à la fusion, elle rend possible toutefois le classement des marchés par ordre des préoccupations probables en matière de concurrence compte tenu des motivations des parties à la fusion. Les autorités de la concurrence peuvent alors concentrer leurs efforts sur les marchés qui devraient poser le plus de problèmes. Par ailleurs, le recours à la hausse indicative des prix facilite l'analyse relativement poussée des fusions dans le commerce de détail, étant donné que l'accès aux données détaillées provenant des points de vente électroniques permet une estimation économétrique précise des fonctions de la demande.

- (7) *Il est important que les autorités de la concurrence s'appuient sur les connaissances institutionnelles tirées des précédentes appréciations de fusion pour étayer leurs évaluations économiques. L'expérience naturelle peut être un moyen précieux d'économiser des ressources dans la mesure où elle suppose une analyse des données relativement limitée. Il conviendrait de*

faire appel à une commission de contradicteurs pour s'assurer que toutes les théories cohérentes avec les faits et les preuves ont été prises en compte.

La façon dont les autorités de la concurrence exploitent leurs connaissances institutionnelles est importante. À force de traiter des affaires, les autorités de la concurrence sont familiarisées avec certains secteurs, mais les connaissances acquises peuvent parfois disparaître si les autorités ne s'efforcent pas de les entretenir. Un moyen de protéger les connaissances institutionnelles réside dans l'organisation des autorités de la concurrence par secteur d'activité plutôt que par spécialité fonctionnelle.

L'analyse empirique reposant sur l'expérience naturelle, telle l'analyse de choc, peut être très efficace et instructive. Plusieurs exemples ont été donnés d'affaires dans lesquelles l'expérience naturelle servait de fondement à l'appréciation d'une fusion. Il n'est pas rare que les analyses de ce type nécessitent relativement peu de données, par rapport aux techniques empiriques plus élaborées qui existent. Comme la collecte et l'analyse de données est généralement coûteuse, les autorités de la concurrence devraient s'efforcer, lorsqu'elles ont la possibilité de choisir entre plusieurs techniques empiriques, de recourir à celle qui demande le moins de données.

Le recours à une commission de contradicteurs est un autre aspect non négligeable de l'analyse des fusions, tant du point de vue de l'autorité de la concurrence que des parties à la fusion. Une théorie cohérente avec la majorité des faits mais délaissant d'autres théories également cohérentes avec ces faits, ou avec un sous-ensemble de faits légèrement différent, peut être échafaudée. Un bon moyen d'éviter ce risque consiste à faire expressément appel à une commission composée de « contradicteurs » : ces experts, qui ne font pas partie de l'équipe en charge de l'affaire, porteront un regard neuf sur les arguments qui ont été avancés. Cette discipline peut s'avérer particulièrement importante lorsqu'une autorité de la concurrence doit présenter les preuves dont elle dispose à un organe indépendant, tel qu'un tribunal ou une juridiction distincte statuant sur les affaires de concurrence.

(8) *Les données d'enquête, lorsqu'elles sont traitées avec prudence, peuvent fournir des indications utiles sur les préférences des consommateurs. Les enquêtes qui se concentrent sur le comportement passé, les préférences déclarées et les options privilégiées donneront de bons résultats.*

Les données d'enquête doivent être traitées avec prudence, mais il ne faut pas les écarter sous prétexte qu'elles seraient peu fiables. Elles peuvent poser problème dans la mesure où les consommateurs risquent de ne pouvoir répondre aux questions reposant sur des hypothèses et ne sont pas incités à consacrer des ressources suffisantes pour répondre avec exactitude à ces questions. Cependant, au moins trois formes de données d'enquête s'avèrent utiles. L'une repose sur l'interrogation au sujet du comportement passé : « De quelles marques avez-vous acheté des produits dans le passé ? », « Quelle est votre marque préférée ? », etc. Ces questions portent sur les préférences révélées. Une deuxième technique consiste à poser des questions sur les préférences déclarées, tout en veillant à ce qu'elles restent très simples. Par exemple, on obtient généralement de bien meilleurs résultats en posant aux consommateurs des questions simples telles que « Si les produits de votre marque préférée n'étaient pas disponibles, sur quelle autre marque reporteriez-vous vos achats ? », qu'en leur posant des questions plus compliquées fondée sur des hypothèses. L'analyse conjointe est une troisième solution. Il s'agit d'une technique d'enquête qui consiste à proposer aux consommateurs un certain nombre d'options concernant les différentes caractéristiques d'un produit et à leur demander d'indiquer les options qu'ils privilégient. Par exemple, les consommateurs peuvent être invités à choisir parmi différents forfaits de téléphonie mobile plus ou moins chers comprenant appels vocaux et SMS. Utilisée correctement, cette technique est relativement gourmande en ressources mais peut produire des estimations de la demande précises et cohérentes sur le plan interne.

BACKGROUND NOTE

By the Secretariat

1. Introduction¹

The analysis of mergers for merger control purposes involves the use of economic concepts and analysis. Merger control generally boils down to the question of whether a merger will give rise to an increase in the market power of a firm or firms and whether this increase in market power will be translated into an increase in prices post-merger. Relevant to this question are issues such as: are the merging parties close substitutes? what is the nature of competition? what is the relevant market? how high are barriers to entry and expansion? do customers have countervailing buyer power?

Since many of the questions raised above are empirical questions, they require empirical answers. This means that good empirical analysis should be central to merger control. The answers to these questions need to be analysed within a coherent economic framework. This means that economics should also inform the conceptual framework for merger control. This paper focuses on the use of economics in merger control.

There have been considerable advances in the application of economics to merger analysis in recent years. However, some expected developments have not taken place, or at least not as quickly as expected. In this paper we discuss a number of issues that have arisen in the economics of merger analysis over the recent past. Some of these should be considered unambiguous advances; others are just changes in emphasis; but others are not unambiguously improvements and require detailed consideration and discussion by those interested in ensuring that merger control is operated in the best interests of consumers.

We cover the following issues.

- The general convergence on what the theories of harm in horizontal mergers might be. Whilst there is convergence on the analytical approach to considering unilateral effects, it is much less clear that this is also true of coordinated effects.
- The analysis of vertical mergers and in particular the value of the approach presented in the EU vertical merger guidelines.²
- Merger simulation: where has it gone? At the time of the last roundtable merger simulation was the coming thing. However, its use has been more limited than expected.

¹ Prepared for the OECD Secretariat by Dr. Mike Walker. Dr. Mike Walker is a Vice President at CRA in London and holds academic positions at Loughborough University and Kings College, London. Walker is grateful for research support provided by Gerhard Dijkstra and Michael Muehlbradt of CRA.

² European Commission, *Guidelines on the Assessment of Non-Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings*, 2008 O.J. (C 265) 6.

- UPP and associated measures. What are they; what is their intuition; what are their limitations; and how they should be used? This section also includes a discussion of the correct role for market definition when direct measures of competitive effects are available.
- Best practice guidelines. The EU and others have recently issued guidelines on best practice when submitting economic evidence to a competition authority. It is important that all parties to a merger investigation (merging parties, complainants, customers, competition authorities or courts) adhere to best practice in the use of economic analysis.
- The improvement in the standard of econometric analysis within DG Comp and what this implies more generally.

This is not a complete list of the economic issues that have arisen in merger policy in recent times. For instance, it omits any discussion of conglomerate and diagonal mergers, efficiency defences, failing firm defences and cases involving two-sided markets. However, it is a list that, in our opinion, raises a significant number of interesting issues.

We have sought to broaden the discussion out beyond just the particular jurisdictions with which we are most familiar (i.e. the UK and the European Commission). Our discussion nonetheless remains significantly biased towards examples from those jurisdictions, because it is in the EU and the US that these techniques are most widely adopted.

2. Convergence of the theories of harm for horizontal mergers

2.1 *Unilateral effects*³

The theory of harm in unilateral effects cases is generally understood and clearly articulated in the literature. The basic intuition is that a merger of two firms that were previously imposing a competitive constraint on each other will lead to a loss of competition between the two firms and hence to a price rise. If products are not homogeneous, then the first round effect of a merger of substitutes is that prices of those products will rise. This is likely to lead to second round effects as other firms respond to the price rise of the merged entity. Whilst the effect is likely to be strongest where the merging parties are each other's closest competitors, the economic logic holds as long as the cross-price elasticity of demand between the firms' products is positive.

This logic is uncontroversial and is included in merger guidelines throughout OECD countries. The US "Horizontal Merger Guidelines" (2010)⁴ state that (para. 6.1):

"A merger between firms selling differentiated products may diminish competition by enabling the merged firm to profit by unilaterally raising the price of one or both products above the pre-merger level. Some of the sales lost due to the price rise will merely be diverted to the product of the merger partner and, depending on relative margins, capturing such sales loss through

³ Good simple expositions of the theory of unilateral effects can be found in Motta, M. 2004. *Competition Policy: theory and practice*, Cambridge University Press and Carlton, D. and Perloff, J. 2004. *Modern Industrial Organization*, Harper Collins. For a more advanced treatment, see Werden, G. and Froeb, L. "Unilateral competitive effects of horizontal mergers" in Buccirosi, P. (ed.) 2008. *Handbook of Antitrust Economics* (MIT Press).

⁴ U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, issued August 19, 2010.

merger may make the price increase profitable even though it would not have been profitable prior to the merger.”

The EU “Guidelines on the assessment of horizontal mergers” (2004)⁵ state that (para. 24):

“The most direct effect of the merger will be the loss of competition between the merging firms. For example, if prior to the merger one of the merging firms had raised its price, it would have lost some sales to the other merging firm. The merger removes this particular constraint. Non-merging firms in the same market can also benefit from the reduction of competitive pressure that results from the merger, since the merging firms' price increase may switch some demand to the rival firms, which, in turn, may find it profitable to increase their prices”

The English translation of the Japanese “Guidelines to application of antimonopoly act concerning review of business combination” (2010):⁶

“When goods are characterized as differentiated by brand, etc. and the price of the goods of one brand is increased, the users of the brand do not necessarily intend to buy goods of other brands indiscriminately as a substitute. On the other hand, users may buy goods of another brand that is next in their order of preference to the first brand; in other words, which has higher substitutability. In this case, even though the company group increases the price of the first brand goods, if the group also sells the second brand goods that have high substitutability, the increase in sales of the second brand compensate for the loss of sales of the first. It is then possible for the company group to increase the price without decreasing total sales.”

The Australian “Merger Guidelines” (2008)⁷ state (para. 5.5) that

“Horizontal mergers may give rise to unilateral effects by eliminating the actual or potential competitive constraint that the merger parties exerted on each other pre-merger. Two competing firms may constrain each other, including via the (actual or potential) transfer of sales from one to the other as customers switch, or threaten to switch, between them. If these two firms merge, the merger ‘internalises’ any such transfers within the merged firm, thereby removing this constraining effect. Where there are limited effective constraints from other sources, this unilateral effect can amount to a substantial lessening of competition.”

Similar sentiments appear in, *inter alia*, the New Zealand guidelines,⁸ the Canadian guidelines⁹ and the UK Competition Commission/Office of Fair Trading “Merger Assessment Guidelines” (2010)¹⁰ at paragraph 5.4.6 – 5.4.8.

⁵ European Commission, *Guidelines on the Assessment of Horizontal Mergers under the Council Regulation on the Control of Concentrations Between Undertakings*, 2004 O.J. (C 031) 3.

⁶ Japanese Fair Trade Commission, *Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination*, last revised January 1 2010.

⁷ Australian Competition & Consumer Commission, *Merger guidelines*, November 2008.

⁸ New Zealand Commerce Commission *Mergers and Acquisitions Guidelines* (2003) at page 32.

⁹ Canadian Competition Bureau *Merger Enforcement Guidelines* (2004) at paragraph 5.14.

¹⁰ Joint Competition Commission and Office of Fair Trading *Merger Assessment Guidelines* (2010) at paragraphs 5.4.6 – 5.4.8.

This approach to the issue suggests that any merger involving substitute products will lead to a post-merger price rise. This is clearly not what is assumed to be true in reality. The analysis above omits: the effects of merger efficiencies that lower the marginal costs of the firms; the potential for new entry; the potential for rival firms to reposition their products; and so on. However, it does provide a clear analytical framework for analysing a particular merger: given that this merger leads to a loss of competition between substitute products, what factors will stop prices from rising?

2.2 *Coordinated effects*¹¹

There is less convergence on the general analytical framework for analysing coordinated effects cases. This is reflected in the fact that there are generally far fewer mergers blocked or remedied on coordinated effects grounds. The economics of coordinated effects are less precisely articulated and the conditions under which post-merger coordination can arise are less well understood than is the case for unilateral effects.

The broad intuition for coordinated effects is reasonably clear. If there is a link between concentration within a market and the degree of competition within that market, then significant increases in concentration in a market should be expected to lead to a reduction in the level of competition in that market. This is a clear conclusion that arises out of a “structure-conduct-performance” (SCP) approach, but its application is anything but settled (reflecting the continued distrust within the economics profession of the SCP paradigm).¹²

The EU approach to coordinated effects is based on three questions:

- Can the firms post-merger tacitly agree on the terms under which competition will be reduced?
- Can they sustain this coordination?
- Are there outside factors, such as entry, a maverick firm or strong buyers that can undermine the coordinated outcome?

These are important questions to ask, although arguably there is a fourth one that is something along the lines of:

- What does the merger change to make coordination more likely or to strengthen existing coordination?

However, these are not questions that seem amenable to precise answers, unlike with unilateral effects. As we discuss below, there are numerous techniques for trying to estimate precisely the extent to which a unilateral effects merger will raise prices or lower competition constraints. There are currently no equivalent methods for answering a question such as “is the coordination sustainable?”. These questions require more qualitative analysis of issues such as transparency, excess capacity within the coordinating group and the identification of a credible “punishment mechanism”.

The US approach is not based on these particular questions but instead asks whether, where there is a significant increase in concentration, the market is “vulnerable” to coordinated conduct and whether there is reason to believe that the merger increases this vulnerability. The US Horizontal Merger Guidelines then discuss various factors that are relevant, such as transparency, the history of the market (i.e. past

¹¹ See footnote 3 for references to relevant literature.

¹² See, for instance, chapter 1 of Tirole, J. 1989. *The theory of Industrial Organization*, MIT Press.

collusion?), the ability of small players to grow, the existence of buyer power and so on. These are all relevant factors, but the point remains that the underlying economic analysis is much less well defined than is the case with unilateral effects models.

This is reflected in the lack of uniformity of approach to coordinated effects in the various guidelines. The Canadian and Australian ones are similar to the EU approach. Thus the Canadian guidelines¹³ state (para. 5.20):

“Coordinated behaviour is only likely to be sustainable when:

- *firms are able to:*
 - *individually recognize mutually beneficial terms of coordination;*
 - *monitor one another's conduct and detect deviations; and*
 - *respond to any deviations from the terms of coordination through credible deterrent mechanisms; and*
- *coordination will not be threatened by external factors, such as the reactions of existing and potential competitors not part of the coordinating group of firms or the reactions of buyers.”*

The Australian guidelines are similar (para 6.5). The UK guidelines are based on a similar underlying framework but express it in a slightly different form. They distinguish between “internal factors”, which are under the control of the firms that will potentially coordinate, and “external factors”, which are not under the control of the potentially coordinating firms. Thus at paragraph 5.59 the guidelines state:

“As well as considering whether or not there is evidence of pre-existing coordination, the Authorities will analyse the characteristics of the market for evidence of the ability to coordinate. All three of the following conditions must be satisfied for coordination to be possible:

(a) Firms need to be able to reach and monitor the terms of coordination.

(b) Coordination needs to be internally sustainable among the coordinating group—ie firms have to find it in their individual interests to adhere to the coordinated outcome.

(c) Coordination needs to be externally sustainable, in that there is little likelihood of coordination being undermined by competition from outside the coordinating group.”

The New Zealand guidelines are based on a checklist approach whereby they mention a number of factors that are relevant to the possibility of coordinated effects, but do not provide a framework for assessing these factors. The (non-exhaustive) list of factors includes high seller concentration, undifferentiated product, static product technology, slow entry, lack of fringe, buying a maverick, inelastic demand, history of collusion and buyer power.

The Korean guidelines¹⁴ use a limited checklist approach (section VII, 1, C) whilst the Japanese guidelines contain a very general discussion of the mechanism for collusion (i.e. why a firm might follow a price rise by a rival rather than undercut it in a transparent market) but do not go into any greater detail.

¹³

Op. Cit.

2.3 *Empirical analysis*

There are a number of relatively standard empirical methods that are often used in merger analysis.¹⁵ Although these are by definition not the main focus of this paper, which concentrates on recent advances in merger analysis, we discuss them briefly in order to provide some context for the later discussion.¹⁶ Among the most commonly used empirical methods are:

- critical loss analysis;
- price tests such as correlation analysis and stationarity tests;
- shock analysis;
- price concentration studies;
- diversion ratios;
- bidding studies; and
- shipment and transport cost studies.

Critical loss analysis is used in market definition and allows one to answer the hypothetical monopolist question directly using data only on price-cost margins and elasticities.¹⁷ On the basis of pre-merger price-cost margins within a potential relevant market, critical loss analysis allows one to calculate by how much sales would have to fall in response to a SSNIP before the SSNIP became unprofitable.¹⁸ This figure can be compared to estimates¹⁹ of how much sales would in fact fall in response to the SSNIP. If the expected reduction in sales is greater than the reduction in sales that would make the SSNIP unprofitable, then it would not be profitable for a hypothetical monopolist to impose the SSNIP and so the market definition needs to be widened. In reality, critical loss analysis is just another way of framing the hypothetical monopolist test, but in a more user-friendly formulation. Business people find the question: “would demand fall by more than, say, 15% in response to a 5% price increase?” much easier to answer than the question “could a hypothetical monopolist profitably raise prices by a small but significant non-transitory amount?”

¹⁴ Korean Fair Trade Commission *Guidelines for M&A Review* (2007).

¹⁵ Although it should be noted that not all jurisdictions use all these techniques. For instance, critical loss analysis and price concentration studies have not been widely used in much of Europe, whilst price correlation and shipment tests are not typically used in the US.

¹⁶ A more detailed discussion of these techniques can be found in Bishop, S. and Walker, M. 2009. *The Economics of EC Competition Law: concepts, application and measurement*, Sweet & Maxwell.

¹⁷ An early paper on critical loss analysis is Barry C. Harris and Joseph J. Simons, 1989 “Focusing Market Definition: How Much Substitution is Necessary?” *Research in Law and Economics*. A good paper providing a critique of critical loss is O’Brien, D. and Wickelgren, A. 2003. “A critical analysis of critical loss analysis” *Antitrust Law Journal*.

¹⁸ Small but Significant and Non-transitory Increase in Price (SSNIP): The SSNIP test is used to identify the smallest relevant market within which a hypothetical monopolist could profitably increase its price.

¹⁹ These estimates might be based on elasticity estimates from econometric analysis, or on survey analysis or on the views of industry participants.

Price tests look at the relationship between different price series in order to try and derive implications for competitive interaction and market definition. Price correlation analysis looks at whether the prices of two products have moved together over time.²⁰ If they have, this is considered an indication that they compete with each other and so are in the same relevant market. Price correlation is very simple and requires relatively little data (only price series) but there are many significant problems associated with it and so it is often an unreliable indicator of market definition when used in a naive way. On the other hand, when used and interpreted carefully, it can provide useful information on competitive interaction. In particular, it can often undermine a claim that two products compete with each other when it can be shown that their prices move entirely independently of each other. A recent good example of correlation analysis being used in practice is the *Ryanair/Aer Lingus* case.²¹ The European Commission used correlation analysis, among other empirical techniques, to investigate when different airports in the same city, or close to each other, were part of the same geographic market.

There are more sophisticated price tests, such as stationarity tests, but these are not much used as they are often of low power and suffer from similar problems as price correlation analysis.²²

Shock analysis is another common technique that is often used in merger analysis. It involves looking at past shocks to an industry, such as input cost shocks, new product entry and so on, and trying to understand if the response of the industry to the shock tells us anything about competitive interactions. For instance, if there is a market definition question about whether widgets and gadgets are in the same relevant market for a merger, then the effect of a significant new widget entrant on existing gadget suppliers is interesting. Did the gadget suppliers respond in terms of price or advertising? Did their sales go down? Or if there was an input cost shock that affected only widgets, was this fully reflected in widget prices or were widget prices constrained by gadget prices? Shock analysis is not so much an empirical technique as the application of common sense to data. It involves thinking intelligently about what we might learn from the behaviour of a market after there has been a shock to that market. Its simplicity is a major advantage. The downside to this form of analysis is that it is not always possible to carry it out. If there have not been any useful shocks in the recent past, then the approach cannot be used. However, it should be noted that shocks such as new product launches, short-term promotions and new advertising campaigns are common. For instance, in *AstraZeneca*,²³ the European Commission used examples of new entry to investigate the competitive constraints imposed on each other by different types of treatment for various acid-related gastro-intestinal diseases.

Price concentration tests investigate the relationship between price²⁴ and concentration, or market share, in a given industry or industry segment. They do this by considering how price and concentration vary over a number of separate “markets”. The question that they seek to answer is: does the price in a “market” increase as concentration increases? This question is relevant to market definition and to coordinated effect type analysis. However, it should be noted that the underlying rationale for the approach is based on the structure-conduct-performance paradigm. Although this paradigm underlies much of merger analysis, it is not uncontroversial. The UK authorities have made extensive use of this approach in

²⁰ The first paper to look at price correlation in this setting was Stigler, G. and Sherwin, R. 1985. “The extent of the market” *Journal of Law and Economics*. A good, if rather sceptical paper, is Werden, G. and Froeb, L. 1993. “Correlation, causality and all that jazz: the inherent shortcomings of price tests for antitrust market definition” *Review of Industrial Organization*.

²¹ See Annex 3 of COMP/M.4439 *Ryanair/Aer Lingus* (27 June 2007).

²² For more details, see Bishop and Walker (2009) and the references included therein.

²³ COMP/A.37.507/F3 *AstraZeneca* (15 June 2005).

²⁴ Or margin or, on occasion, profit.

recent years with respect to supermarket mergers and competition investigations.²⁵ The analysis has been used primarily for market definition.

Diversion ratios measure the proportion of sales lost by one firm when it raises its price that are won by another firm. Thus the diversion ratio between A and B measures the proportion of sales lost by A when it raises its price that are captured by B. So a diversion ratio from A to B of 0.2 implies that 20% of sales lost by A are won by B. They are a useful measure of the relative closeness of competition between a number of products and so are often used in unilateral effect cases. The higher the diversion ratio between two products, the closer competitors they are and the higher the potential unilateral effect in the absence of countervailing factors. This is why they are an important input to the various “upward pricing pressure” tests that we discuss below. Diversion ratios can also be useful when considering which should be the next product added to the putative market in a market definition exercise.

In markets where sales are made through a tender process (i.e. each firm bids a price to win the tender and then is either chosen as the winning bidder or not), win/loss analysis can often be used to understand whether two firms are close competitors. In particular, if one of the firms often comes second when the other firm wins a tender, and vice versa, this suggests that they are close competitors as it suggests that they are each other’s closest competitive constraint when they win tenders. Another useful form of analysis can be to look at the effect on the bid price of the presence or absence of particular competitors.²⁶

Shipment tests consider the extent to which sales within a given region originate from outside that region or the extent to which production in a region is exported.²⁷ These tests are relevant to geographic market definition and are very easy to carry out as they require information only on shipments, domestic consumption and domestic production. They usually focus on movements of the product. Where there are significant shipments of product between two areas, this suggests that the two areas may be part of the same relevant market. However, an absence of shipments does not imply that two areas are in separate markets as a 5-10% price increase in prices in one area may be enough to make it profitable to start shipping into that area. A version of these tests has been used in the US in hospital mergers to investigate the origin of patients. The idea is that if a large proportion of patients using a hospital come from outside the alleged geographic market for that hospital, then this suggests the geographic market has been defined too narrowly. *FTC v Tenet Healthcare* is an example of this.²⁸ Transport cost tests are also useful for geographic market definition as they can be used to show which suppliers that do not currently supply into an area could do so, either at current prices or if prices were to rise after a merger.²⁹

²⁵ For instance, UK Competition Commission (2008) *Market investigation into the supply of groceries in the UK* or UK Competition Commission (2005) *Somerfield plc and Wm Morrison Supermarkets plc: a report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc*.

²⁶ The *GE/Instrumentarium* decision (COMP/M.3083 of 2 September 2003) contains a number of good examples of the use of bid data in a merger decision. The Commission used bid data to answer questions related to how often two firms competed against each other and also questions related to how often the merging parties were the binding competitive constraint on each other.

²⁷ The seminal papers are Elzinga, K. and Hogarty, T. 1973. “The problem of geographic market definition in antitrust suits” *Antitrust Bulletin* and Elzinga, K. and Hogarty, T. 1978. “The problem of geographic market definition revisited: the case of coal” *Antitrust Bulletin*.

²⁸ *FTC v Tenet Healthcare Corp*, 186 F. 3d 1045 (8th Cir. 1999).

²⁹ See, for instance, COMP/M.4533 *SCA/P&G* (5 September 2007), which looked at how far tissue products could profitably be transported at current prices.

3. The analysis of vertical mergers

The discussion above has focused on the standard theories of harm that arise in *horizontal* mergers. It is well understood in economics that vertical mergers are less likely to give rise to competition concerns than are horizontal mergers and that they are likely to give rise to pricing efficiencies where there is market power at both levels of the vertical chain. The use of economics in vertical merger analysis has improved dramatically in recent years. There are now clear theories of harm in unilateral effect cases that the competition authorities need to articulate: input foreclosure and/or customer foreclosure.

3.1 *Input foreclosure*

Input foreclosure occurs where the upstream merging party either stops supplying its input to the downstream competitors of the downstream merging party or supplies the input on less favourable terms, with the result that the downstream competitors face higher input costs, become less competitive and hence relax the competitive constraint on the downstream merging party. For this to lead to consumer harm it must be the case that there are not good substitutes available for the upstream merging party's input (i.e. it has market power upstream) and that an increase in the cost of this input, or a refusal to supply it, leads to a reduction in competition downstream.

3.2 *Customer foreclosure*

Customer foreclosure arises where the downstream merging party stops buying inputs from the competitors of its upstream merging partner. If the downstream merging party is sufficiently large, this may have the effect of reducing the ability of upstream firms to compete with the upstream merging party as a result of a loss of economies of scale. The potential result would then be that input prices would rise, leading to an increase in costs for downstream competitors of the merging parties and hence to a reduction in competition and harm to consumers. This requires that the downstream merging party is large and that the loss of its business is enough to increase the average costs of the upstream firms.³⁰

3.3 *Theoretical underpinnings*

Input foreclosure and customer foreclosure are both examples of strategies to raise rivals' costs and are in the spirit of the economic literature on raising rivals' costs. This literature can be traced back to at least Salop and Scheffman (1983).³¹ It is based on the intuition that a dominant firm may be able to soften price competition by raising the costs of its rivals and that this may be profitable for the dominant firm even though its actions raise its own costs as well as those of its rivals.³² However, as noted in the literature, raising rivals' costs is not always profitable for the dominant firm and it is not always anti-competitive in the sense of raising prices to consumers. These intuitions, and the related caveats, can be applied to vertical mergers.³³

³⁰ Note that this is not a complete description of customer foreclosure and that it leaves many complications unmentioned, such as the relationship between average costs and prices given that economics teaches us that prices are driven by marginal costs.

³¹ Scheffman, D. and Salop, S. 1983. "Raising Rivals' Costs", *American Economic Review*.

³² See also Salop, S. and Scheffman, D. 1987. "Cost-raising strategies" *Journal of Industrial Economics*.

³³ See Ordover, J., Saloner, G. Salop, S. 1990. "Equilibrium Vertical Foreclosure" *American Economic Review* and Riordan, M. and Salop, S. 1995. "Evaluating Vertical Mergers: A Post-Chicago Approach" *Antitrust Law Journal*.

It is often possible to tell a “story” about a vertical merger that implies that there is a danger of competitive harm. Since the direct effect of a vertical merger is typically pro-competitive (price efficiencies from internalising pricing externalities), these stories will be more indirect than in the case of horizontal mergers (where the loss of competition between horizontal competitors gives rise to an incentive to raise prices). These indirect stories will focus on the danger of the merging parties foreclosing competitors and hence harming competition and thus consumers. It is important therefore to have an approach that distinguishes between plausible stories and theories of harm that are empirically robust. A good framework for thinking about this is used by the EC in their Non-Horizontal Merger (NHM) guidelines.³⁴ They argue that for there to be a unilateral effect concern arising from a vertical merger, it must be the case that:

- The merging parties have the *ability* to foreclose competitors
- They have the *incentive* to foreclose competitors
- The foreclosure will lead to harm to *consumers*

There has been a tendency in the past to move from the ability of the merging parties to foreclose competitors straight to the conclusion that therefore the merger is anti-competitive. The three-stage framework focuses attention on the importance of showing that firms have the incentive to foreclose rather than just the ability and that such foreclosure will have consumers rather than just competitors.

Apart from the EU and the US, no other jurisdiction appears to have specific vertical merger guidelines. The US guidelines are very old (1984). However, a number of jurisdictions’ merger guidelines include a discussion of vertical mergers. The UK Merger Assessment Guidelines follow the EC very closely. They state at paragraph 5.6.6:

“Despite differences in detail between cases, the Authorities will typically frame their analysis of non-horizontal mergers by reference to the following three questions:

(a) Ability: Would the merged firm have the ability to harm rivals, for example through raising prices or refusing to supply them?

(b) Incentive: Would it find it profitable to do so?

(c) Effect: Would the effect of any action by the merged firm be sufficient to reduce competition in the affected market to the extent that, in the context of the market in question, it gives rise to an SLC?”

The French merger guidelines refer to the EC Guidelines and note the requirement to examine whether the merger entity has “the ability to foreclose access to inputs or the clientele in a significant manner, secondly, if there are sufficient incentives to do so, and thirdly, if such a foreclosure strategy would have a significant effect on the markets in question.”³⁵ The Australian guidelines state that the

“ACCC will consider the following three issues:

- *the merged firm’s ability to foreclose*

³⁴ Available at: <http://ec.europa.eu/competition/mergers/legislation/nonhorizontalguidelines.pdf>

³⁵ Autorité de la Concurrence “Merger Control Guidelines”, paragraph 396.

- *any incentive the merged firm may have to foreclose*
- *the likely effect of any such foreclosure.”*

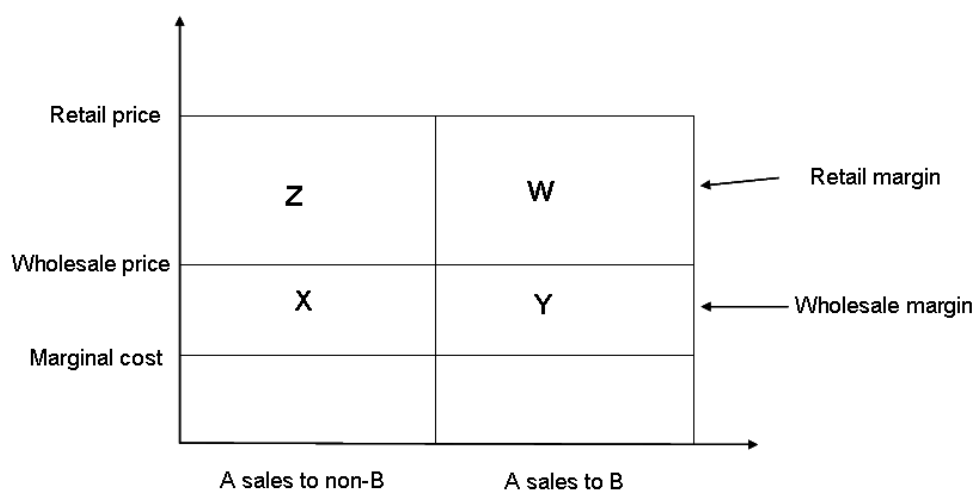
The Canadian, New Zealand, Japanese and Korean guidelines have general discussions of vertical mergers but do not provide a specific methodology such as discussed above.

3.4 Vertical arithmetic

There is now a standard approach to analysing the incentive of the merging parties to foreclose competitors: vertical arithmetic.³⁶ This looks at the costs and benefits to the merging parties of a foreclosure strategy in order to understand whether the benefits outweigh the costs. The two foreclosure strategies discussed above both entail costs to the merging parties as well as benefits. The cost of input foreclosure is the profit that the merged entity loses as a result of not supplying the input, or supplying less of the input, to downstream competitors. The benefit is the resulting increase in profits downstream as a result of the reduction in downstream competition. Customer foreclosure can impose costs on the merged entity if it leads to the merged entity using a less good input or if the increased demand for the input from the upstream merged partner leads that firm to have to forego some sales to downstream competitors (i.e. capacity constraints upstream). Again, the benefits arise from reduced competition downstream.

We can illustrate this graphically. Suppose an upstream firm, Firm A, is merging with a downstream firm, Firm B. Pre-merger Firm A supplies product to Firm B and to the competitors of Firm B. Firm A earns a margin on both types of sales, as illustrated in Figure 1 by area X and Y. Firm B earns a margin on its sales that is represented by area W. Therefore, pre-merger the combined profits (ignoring fixed costs) of the two firms are areas X, Y and W.

Figure 1: Vertical arithmetic – the position pre-merger

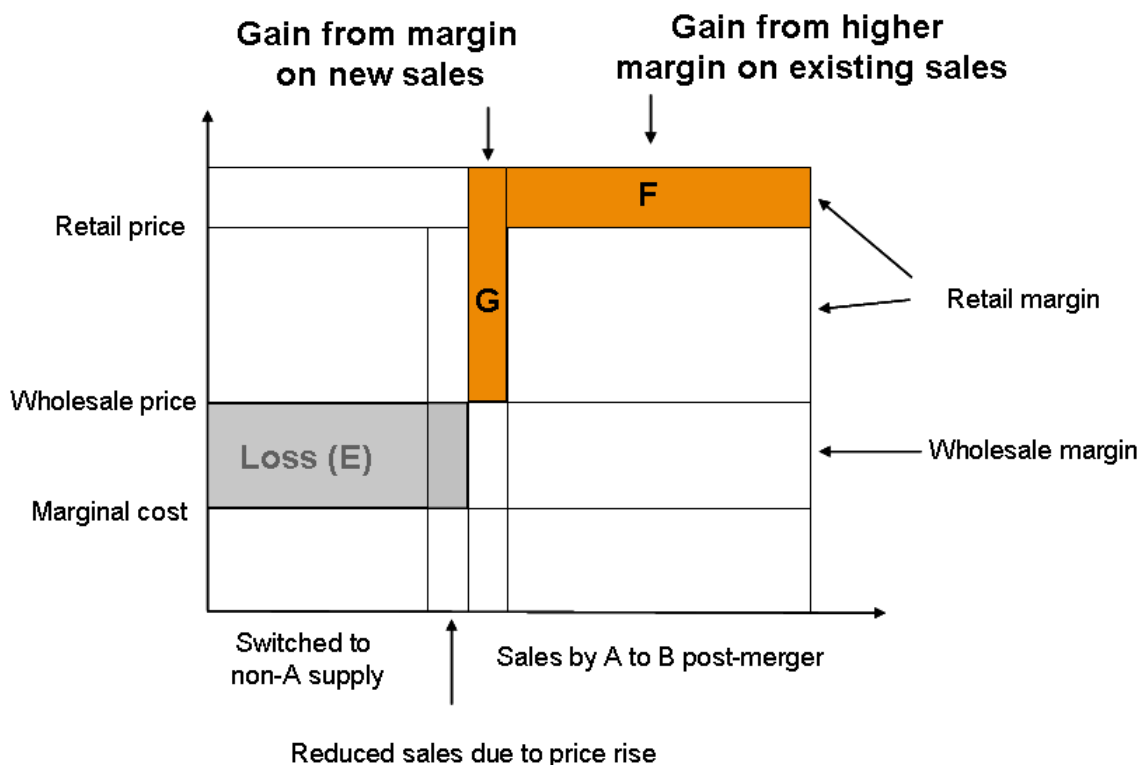


Now consider what input foreclosure would imply. It would mean that Firm A no longer supplied to Firm B's competitors, so the combined entity would lose the margin on those sales. But under a theory of input foreclosure, the idea would be that the combined entity made more sales downstream because the product sold by the combined entity's downstream rivals is now less competitive because its input costs

³⁶ See, for instance, Church, J. 2004. "The impact of vertical and conglomerate mergers on competition" *Report for DG Competition, European Commission*; Hodge, J., Goga, S. and Aproskie, J. 2008. "Vertical arithmetics and its application in vertical mergers" *Genesis*; and CRA. 2008. "TomTom/Tele Atlas: the non-horizontal merger guidelines in practice" *CRA Competition Memo*.

have gone up.³⁷ In addition, downstream prices are likely to rise as a result of less competition downstream. The various effects are shown in Figure 2. We assume that the retail price rises due to less competition. This leads to an increased margin on the sales that Firm B already made. This is area F. The merged entity also earns a margin on the extra downstream sales that it now makes as a result of the input foreclosure. This is area G. But the merged entity loses downstream margin on those sales that Firm A previously made to firms other than Firm B. Some of these sales are captured by the merged entity, but some are not, and this leads to loss. This is area E.

Figure 2: Vertical arithmetic – the position post-merger



The vertical arithmetic is now just a question of whether the gain from input foreclosure is greater than the loss: is $F + G > E$? This is a simple framework within which the underlying factors that are relevant to input foreclosure can be analysed:

- what are the relative margins upstream and downstream? The larger they are upstream, the less likely input foreclosure is profitable.
- how many of the lost upstream sales will be captured by the merged entity?
- what will be the effect of the input foreclosure on retail prices?

³⁷ This might be because it is more expensive to buy inputs from other upstream firms other than Firm A. Or it may be that the other upstream suppliers provide a lower quality input.

3.5 *Examples of improvements in the analysis of vertical mergers*

The improved economic approach to vertical mergers has had a positive effect on merger appraisal. A good example of this is the TomTom/TeleAtlas merger.³⁸ This was a merger that would very likely have been blocked by the competition authorities prior to the application of an economic approach to vertical mergers. The merger involved TomTom, the then largest supplier of portable navigation devices (i.e. satnavs), buying TeleAtlas, one of only two suppliers of “navigable maps” in Europe. TomTom’s European market share was around 40% whilst TeleAtlas market share was around 60%. These basic facts “look bad”: the largest downstream firm buying the “dominant” upstream firm in a duopoly. It is simple to tell “bad stories” about this merger.

The theory of harm relating to input foreclosure came in two forms: complete and partial input foreclosure. Complete input foreclosure would have involved the merged entity no longer supplying maps to TomTom’s downstream rivals. The result would be that the only other supplier of navigable maps, Navteq, would have become the monopoly supplier to TomTom’s rivals and so would have been able to raise its prices. This would have caused TomTom’s downstream rivals to raise their prices and this would have benefited TomTom by reducing the competitive pressure it faced from rivals. It could have taken advantage of this by raising its own prices, or selling more satnavs, or a mixture of both. Partial input foreclosure was a similar theory of harm, but under this theory the merged entity would not have stopped supplying downstream rivals entirely, but would have raised its prices to them (or lowered the map quality), thus allowing Navteq to also raise its prices and thus reducing the downstream competition faced by TomTom.

Applying the “ability, incentive, harm to consumers” methodology, the European Commission first concluded that the merged entity would have the ability to engage in input foreclosure. The merged entity could have stopped supplying TeleAtlas maps to downstream rivals and this would likely have raised the downstream costs of rivals. The Commission then considered whether the merged entity had an incentive to do so. The theory implies that the merged entity sacrifices profits from its upstream arm (i.e. it reduces map sales) in the expectation of earning increased profits downstream (from higher satnav prices and/or sales) that outweigh the lost upstream profits. An important factor was the relative margins upstream and downstream. The downstream margins were considerably higher than upstream margins.³⁹ This suggests that input foreclosure might have been profitable. However, the Commission dismissed the concern because it found that the effect of higher map prices on satnav prices was likely to be very low. First, maps account for only a small proportion of the cost of a satnav (less than 10%)⁴⁰, so even a significant increase in map prices would have little, if any, effect on satnav prices. This implies that there would be little reduction in the competitive pressure on TomTom. Second, the Commission carried out an econometric estimation of the cross-price elasticity between TomTom and its rivals and found that it was low, so even a significant increase in the price of rival satnavs would not have significantly increased the demand for TomTom satnavs.⁴¹ As a result, the Commission concluded that the merged entity would not have an incentive to engage in input foreclosure as it would likely lose more margin from the reduction in upstream sales than it would gain in downstream margin. Given this conclusion, the merger was not likely to harm consumers.

³⁸ Case COMP/M.4854 *TomTom/Tele Atlas* (14 May 2008).

³⁹ Footnote 164 of the decision suggests that downstream margins were between 5 and 10 times higher than upstream margins.

⁴⁰ Paragraph 216, *TomTom/Tele Atlas op. cit.*

⁴¹ Paragraph 221, *TomTom/Tele Atlas op. cit.*

A good example of the use of the vertical arithmetic framework was the 2004 Sasol/Engen joint venture in South Africa that was challenged by the Competition Commission and subsequently prohibited by the Competition Tribunal.⁴² The vertical concern was as follows. Sasol was allegedly dominant in the upstream market for the supply of fuel in the “Inland area” around Johannesburg. Engen was a downstream retailer of fuel that was present in the Inland area. Prior to the merger Sasol supplied Engen and its competitors in the Inland area. The theory of harm was that post-merger, Sasol would cease supplying Engen’s rivals, who instead would have to transport fuel from the coast to the Inland area. Given capacity constraints, they would not have been able to fully replace the volumes lost from Sasol. This would allow the merged entity to increase its market share in the Inland area and, if it chose to restrict supply, to push up price in the Inland area. The question that arose was whether it would have been profitable for Sasol to do this. Since it was possible to transport considerable quantities of fuel from the coast, the strategy involved Sasol giving up considerable upstream sales (a cost to the merged entity) in order to increase its downstream (retail) sales. Both sides to the dispute used the vertical arithmetic approach to frame the discussion. Although there was no agreement between the two sides as to the likely outcome, the use of the vertical arithmetic framework did make clear what the key assumptions made by the various parties were that affected the outcome of their vertical arithmetic discussions.

4. Merger simulation⁴³

A perhaps surprising development in merger appraisal over the last five years has been the *reduction* in the use of merger simulations in some jurisdictions. In order to predict whether this state of affairs is likely to continue, it is important to understand the reasons for this decline in use.

The economic logic behind using merger simulations in merger appraisal is compelling. The standard approach to market appraisal is to define the relevant market, then assess competition within that market and how the merger will change competition, and then come to a decision. The original claim for merger simulation was that it would allow investigators to avoid much of the standard analysis and instead to carry out a direct analysis of the precise effect of the merger. The more extreme claims were that on the basis of data on market shares, current prices and industry elasticity, the effect of a merger could be predicted to a reasonable degree of accuracy, including allowing for any claimed post-merger marginal cost reductions. The result was that the period from about 2000 to 2005 saw a substantial growth in the use of merger simulations. That growth has since stopped and has been largely reversed. For instance, there has been relatively few merger simulations reported in decisions by the European Commission since the 2004 *Oracle/Peoplesoft* case.⁴⁴ The UK Competition Commission has not relied on one since the 2006 *Pan Fish/Marine Harvest* merger. We are not aware of a merger simulation being used in Australia since the *Toll/Patrick* (2006) case, whilst we are aware of only one being used in South Africa (*Masscash Holdings/Finro Enterprises* 2009) and this was thrown out by the Competition Tribunal. The New Zealand Commerce Commission used a simulation model in three cases in the period 2006 to 2008, but these were all in the same industry (forestry).

⁴² South African Competition Tribunal, *Case No: 101/LM/Dec04 – Sasol/Engen/Petrona* ,(available at <http://www.comtrib.co.za/comtrib/comtribdocs/451/101LMDec04.pdf>).

⁴³ We are aware that there is research currently being carried out into using merger simulation models in coordinated effects cases. However, we are not aware of any merger control authority including the results of such a simulation in a decision and accordingly we do not discuss such models in this paper.

⁴⁴ Although we are aware of *Kraft Foods/Cadbury* (2010) and *Unilever/Sara Lee Body Care* (2010) as exceptions.

4.1 *Problems with merger simulations*

The essential problem with merger simulations is that the confidence intervals that they give rise to are often very large. This means that although a simulation provides an answer to the question of what is the potential post-merger price rise, there is usually considerable uncertainty over the precise answer. A simulation may predict that the most likely price rise is x%, but simultaneously show that the plausible range for this figure varies greatly. For instance, it may predict a 10% price rise, but also show the plausible range of price increases actually varies from a slight price fall (say, 3%) to a more substantial price rise of 30%.

There are a number of reasons for this. Perhaps the two most important reasons relate to difficulties with estimating elasticities precisely and to the difficulty of modelling the exact nature of competition within a market. These two factors are briefly discussed below.

Any analysis of the effect of a merger on prices requires data on the own price elasticity and cross-price elasticities of the products involved. There are two aspects to this. First, we need to know what the various elasticities are at current prices. Second, we need to know how these elasticities vary as prices change as the standard assumption is that elasticities rise (in absolute terms) as prices rise. It turns out that the result of a merger simulation is typically very sensitive to both the current estimates of elasticities and to how they vary as price change (i.e. to the shape of the demand curve). Walker (2005)⁴⁵ shows that even 10% inaccuracies in own-price elasticity estimates can have dramatic effects on the estimated post-merger price rises. This means that a robust merger simulation model must be based on very good estimates of elasticities and these are rarely available.

The standard assumption in early merger simulations was that competition could be modelled as Bertrand competition with differentiated products.⁴⁶ This is not an unreasonable assumption, but equally it is not always correct. It implies a particular set of relationships between prices, marginal costs and elasticities. If empirical analysis shows that these do not hold in the market, then it is not the correct assumption. Assumptions about the nature of competition in the market have a substantial effect on the estimates of the merger simulation and so it is important to ensure that the facts of the market are consistent with the form of competition chosen for the model. It is not good practice to assume, as often occurred in the early years of merger simulation, the form of competition and to then use this assumption to derive estimates of market facts such as elasticities from prices and marginal costs. Instead, empirical estimates of elasticities, costs, diversion ratios and so on should be used to inform the modelling of the nature of competition.

4.2 *Merger simulation should be treated as only part of the story*

Even a well designed merger simulation is only part of the story. Merger simulations typically look only at the effect of the merger on prices on the assumption that nothing changes except that two firms that previously competed with each other no longer compete. This means they omit a number of factors that are

⁴⁵ Walker, M, 2005 “The Potential for Significant Inaccuracies in Merger Simulation Models”, *Journal of Competition Law and Economics*.

⁴⁶ This is a common economic model used in competition policy work. It assumes that the market is made up of differentiated products (e.g. different types of cars), rather than homogeneous products (e.g. cement). It further assumes that firms compete by setting their price and then supplying as much of their product as consumers demand. This should be contrasted to a Cournot model, where firms are assumed to decide how much product to supply and then allow prices to vary so that consumers buy this amount of product. For further details on the differences between Bertrand and Cournot competition, see Tirole (1989) *op. cit.* or Carlton and Perloff (2004) *op. cit.*

usually considered to be very important in merger analysis: barriers to entry, buyer power, product repositioning and non-price competition. Where barriers to entry are low, we should expect new entry in response to any post-merger price rise and we would expect this to mitigate that price rise. Where buyers have considerable buyer power, they can use this to undermine any attempt at raising prices post-merger.⁴⁷ If rivals can reposition their products to provide closer competition to the merged entity's products, then this can at least partially replace the competitive constraint removed by the merger. Finally, most merger simulations concentrate only on price effects.⁴⁸ Many markets are characterised by strong non-price competition, such as advertising, competition for shelf-space and so on. This should be taken into account in any complete appraisal of the merger.⁴⁹

The importance of these factors is that the logic of unilateral effects means that prices should always rise when substitutes merge (even weak substitutes) in the absence of marginal cost efficiencies. However, we do not see merger control authorities prohibiting virtually all mergers in differentiated product markets, which implies that merger control authorities believe that these factors are important. How important these factors are in any particular case is an empirical matter, but it cannot be assumed that they are unimportant. Omitting them from the analysis is likely to be a serious mistake.

One response to this is to argue that merger simulations therefore provide an upper bound on the post-merger price rise. This is a reasonable response, although it should be noted that it only provides an upper bound if the nature of competition does not change as a result of the merger. So if the merger means that firms move from competing strongly to tacitly colluding, then the merger simulation will under-estimate the post-merger price rise.

4.3 *What is the correct role for merger simulation?*

The underlying logic for using merger simulation models remains valid: why take an indirect approach to merger control appraisal if it is possible to take a direct approach instead? What we have learnt, however, is that the practicalities of carrying out a merger simulation matter a great deal and that these practicalities raise very significant difficulties. So what should the future hold for merger simulation?

The first point is that generic, off-the-shelf simulations models are of very limited value. The fact that such models were at one point widely available (for instance, on the web) but are now not is testimony to this fact. Instead, simulations should be bespoke models that take account of the specific facts of the industry at hand. We discuss a number of examples of such models below. This is a much more labour intensive approach than just using a generic Bertrand differentiated products model, but it is the only economically defensible approach. We know as a theoretical matter that market outcomes vary depending on whether the market is best described as Bertrand competition or Cournot competition or as an auction market and so on.⁵⁰ It should therefore come as no surprise that these distinctions also matter empirically.

⁴⁷ See, for instance, the analysis in *Enso/Stora* (case IV/M.1225, 1998). The Commission allowed the merger despite the large post-merger market share of the merged entity because the Commission believed that Tetra Pak, a large buyer, would be able to sponsor new entry and/or help existing smaller players to expand in response to any price rise.

⁴⁸ Although not all: see the *Oracle/Peoplesoft* example below.

⁴⁹ For a useful discussion of these issues, see "Whither merger simulation" American Bar Association Section of Antitrust Law "Brown Bag", 29 January, 2004.

⁵⁰ See footnote 46 for a brief discussion of the Bertrand and Cournot models. An auction market is one where suppliers bid a price for each sale (e.g. bidding for a construction project). Whilst Bertrand and Cournot models imply a single price for a particular product, auction models imply different products for each different sale of a product.

The second point is that it remains the case that merger simulations models for coordinated effects cases remain a significant distance away from being usable in actual mergers. Given the lack of clarity in some of the underlying economics of coordinated effects, this should not come as a surprise.

Third, even where a carefully constructed bespoke model is available, it is unlikely to provide an adequate basis for a merger control decision. This is because they leave out much that is competitively relevant. This is not to say that merger simulation models cannot be useful, but only that their current role is more limited than was perhaps believed in the past. This may change if we become better able to estimate elasticities with precision and to understand the nature of competition within particular markets, but for now, and for the immediately foreseeable future, it remains the case.

4.4 *Merger simulation and the courts*

Merger simulations have been given a hard time by the courts. For instance, largely on the basis of a merger simulation model, the Dutch competition authority, the NMa, only allowed the proposed Nuon-Reliant merger on the basis that Nuon divested a significant amount of capacity. Nuon appealed the decision and the Court of Rotterdam upheld the appeal on the grounds that the NMa's economic analysis was not an adequate basis for the decision. Among other issues, the Court highlighted concerns with the NMa's simulation model and in particular pointed out that the model implied that there should have been strategic behaviour (e.g. withholding of capacity) taking place before the merger, but the NMa provided no evidence that this was the case.

In *Masscash Holdings/Finro Enterprises*,⁵¹ the Competition Tribunal dismissed the merger simulation presented by the Competition Commission on the grounds that no evidence was provided to support the assumption of a constant elasticity demand curve.⁵² The assumption of isoelastic demand is a strong one. It implies that elasticities do not change as prices rise and that non-merging parties do not change their prices in response to the merging party changing its price. Both of these implications are counter-intuitive and so it is reasonable for the Tribunal to have wanted to see evidence that demand was isoelastic.

The District Court of the Northern District of California dismissed the DoJ's merger simulation in *Oracle/Peoplesoft*. It argued that since the simulation was based on market share data that was not a good indicator the market position of Oracle, Peoplesoft or SAP (the merged entity likely closest rival), the simulation was not reliable. The Court stated that "because this merger simulation is based upon these unreliable data, the court concludes that the simulation results are likewise unreliable."⁵³

What is striking about these examples is that it is hard to argue with the validity of the reasoning given by the courts for ignoring the simulation model in each case. Our view is that this underlines the fact that merger simulation requires great care and that it is not a "silver bullet" for merger control.

Farrell and Shapiro state that "we are not aware that any judge has accepted merger simulation as primary evidence on whether a merger would harm competition."⁵⁴

⁵¹ *Masscash Holdings (Pty) Ltd v Finro Enterprises (Pty) Ltd t/a Finro Cash and Carry (04/LM/Jan09) [2009] ZACT 66 (30 November 2009).*

⁵² i.e. the assumption that the elasticity of demand does not rise as prices rise. The more standard assumption is that demand becomes more elastic as prices rise.

⁵³ US District Court for the Northern District of California, Final Order, Page 151.

⁵⁴ Farrell, J. and Shapiro, C. 2010. "Antitrust evaluation of horizontal mergers: an economic alternative to market definition" available at ssrn.com/abstract=1313782.

4.5 *Examples of the right and the wrong way to use merger simulation*

In this section we provide two examples of how merger simulations should not be carried out and one example of what we consider to have been a good use of a merger simulation.

4.5.1 *Volvo-Scania*⁵⁵

One of the areas of concern in this merger was in heavy trucks (those over 16 tonnes) in Ireland and the Nordic countries. The post-merger shares would have been considerable in these countries.

Table 1: Pre-merger and post-merger market shares in Volvo/Scania

Country	Volvo	Scania	Post-merger total
Sweden	45	46	91
Finland	34	31	65
Denmark	29	30	59
Ireland	22	27	49
Norway	38	32	70

Source: Para. 65 of the Commission's Decision.

As part of its analysis of the merger, DG Competition commissioned a simulation of the merger. The simulation was based on two different types of trucks: rigid trucks and tractor trucks. Rigid trucks are integrated trucks from which the trailer cannot be detached whilst tractor trucks have detachable trailers. The data was list prices for 16 EEA countries in 1997 and 1998. Using the results of the nested logit model, the authors then simulated the model on the assumption that the post-merger outcome would be a Nash equilibrium (i.e. they assumed no post-merger co-operative behaviour between the remaining players). The results were as follows.

Table 2: Percent price changes after merger⁵⁶

	Volvo/Scania		Competitors	
	Rigid	Tractor	Rigid	Tractor
Denmark	11.55	8.17	0.26	0.19
Finland	10.03	7.83	0.39	0.24
Ireland	10.87	7.36	0.21	0.3
Norway	13.17	8.63	0.32	0.28
Sweden	22.34	12.64	0.47	0.32

Source: Ivaldi and Verboven (2002).⁵⁷

⁵⁵ Comp/M.1672 *Volvo/Scania* (15 March, 2000).

⁵⁶ This table is based on Table 5 of Ivaldi and Verboven (2000). Although the authors report results for all 16 countries, we report those only for the five countries that the Commission was concerned about.

⁵⁷ Ivaldi, M. and Verboven, F. 2002. "Quantifying the effects from horizontal mergers in European competition policy" *mimeo*.

Table 2 shows that in all five countries of concern the authors estimated post-merger price increases by the parties of between 10 per cent and 23 per cent for rigid trucks and between 7 per cent and 13 per cent for tractor trucks. Even when the authors allowed for cost efficiencies of 10 per cent post-merger, they still found that consumer welfare would fall in all five countries (by between 2 per cent and 14 per cent).

There are a number of reasons to be extremely sceptical as to the usefulness of this simulation. First, the use of list prices does not seem to be reasonable in a market where virtually all sales are made at discounts to the list prices. The list prices also related to the price of the trucks without any “add ons”, even though there was evidence that very few sales were in this category. This led to the memorable line at the Oral Hearing on the case that “this is a study based on prices nobody pays for trucks nobody buys”.

Second, there was evidence presented that the underlying model used in the simulation was not an accurate reflection of reality. Specifically, the model implied gross margins between 0.35 and 0.56, whilst industry experts estimated that the gross margin was about 0.3. One response given to this observation was that manufacturers may take into account future profits from after sales service when setting prices. If this is correct, then tells us something very interesting about the nature of competition *that should be incorporated into the simulation model*. If firms price below the competitive price level in the durable good market in the expectation of recouping the lost profits in the secondary market, then it does not make sense to use a model that assumes a simple Nash equilibrium in the durable good market and that does not take account of secondary market competition.

Finally, it seems like poor practice to report expected post-merger price rises to two decimal places given the number of simplifying assumptions made (such as about the underlying nature of competition and that list prices were a reasonable proxy for transaction prices).

4.5.2 Philip Morris/Papastratos⁵⁸

In 2003 Philip Morris acquired the Greek cigarette manufacturer Papastratos. The European Commission allowed the merger through at Phase 1. The case included a merger simulation. What is interesting about this is that it appears to be a good example of a merger simulation not adding any value to the analysis of the case. The Decision states that:

“The parties have provided the results of a merger simulation that shows that on average the market price increase post-merger would be minimal. The simulation model assumes that the merging parties’ products compete in different segments, or in other words, that the degree of substitutability between their products is low. The market investigation has confirmed the market segmentation. The results of the simulation confirm that the present merger would not lead to significant price increase in the Greek cigarette market.” (para. 32)

It is reasonable to ask what the simulation added to the competitive analysis. The simulation was based on the assumption that the degree of substitutability between the parties’ products was low, so it was hardly a surprise that it showed minimal post-merger price rises. It was not necessary to do a simulation to reach this conclusion. The assumption of low substitutability, key to the result of the simulation, had to be confirmed by the Commission’s market investigation. In other words, the competitive effects analysis was first needed, which then fed into a simulation that showed what the competitive effects analysis had already shown.

⁵⁸

Case COMP/M.3191 (2/10/2003).

4.5.3 Oracle/Peoplesoft⁵⁹

In the Oracle/Peoplesoft merger in 2004 the European Commission built a bespoke simulation model of the merger. The model was not a standard Bertrand model but was instead an auction model, reflecting the specifics of the market. It strikes us as an example of well designed simulation model.

The product in question was enterprise application software. In the human resources (HR) and financial management systems (FMS) segments of this industry the merger was characterised, at least initially, as a three-to-two merger with only the merged entity and SAP remaining as significant players post-merger. The Commission chose to model the industry by a sealed bid auction in which suppliers put in a bid and buyers then chose one of the bidders. This approach was preferred over an English auction approach due to the cost structure of the industry. The Commission concluded that the marginal cost of supplying a buyer was effectively zero because the development costs of the software are all sunk at the point at which firms bid. Under an English auction this would be expected to lead to prices very close to zero as firms sequentially bid down to marginal cost. But this is not what is seen in the industry, where prices are positive and significant. In a sealed bid auction firms bid above marginal cost and trade-off the reduced likelihood of winning a bid against the increased profits if they do win a bid. This gives rise to prices above marginal cost and so is consistent with what occurs in this industry.⁶⁰

The model was based on the assumption that the identity of bidders was known, but what was unknown was the buyers' perception of the quality of the various suppliers' products. In effect, the unknown was how well a particular supplier's product matched the needs of the buyer. The assumption was that the Peoplesoft product would disappear post-merger.⁶¹ The Commission looked at two possibilities for what would happen to the quality of the Oracle product. One possibility was that it would remain unchanged. The other was that it would be improved as a result of the acquisition of Peoplesoft know-how. The inclusion of this quality aspect allowed the Commission to simulate both the effect of the merger on prices and on consumer welfare, including the effect on consumer welfare of reductions in choice leading to some buyers not being able to buy products that fitted their needs as well post-merger as pre-merger.

Note that this approach means that buyers can be harmed even if the two merging parties are not close substitutes. If they are close substitutes, then the merger is likely to have a significant effect on prices. If they are not close substitutes, then whilst the merger may not affect prices significantly it may reduce available choice significantly, in a way that a merger of close substitutes would not.

The results from the simulation for HR and FMS are shown below.

⁵⁹ Case COMP/M.3216 *Oracle/Peoplesoft* (26 October 2004). The published decision contains very little detail on the simulation, so this section relies heavily on Bengtsson, C. 2005. "Simulating the effect of Oracle's takeover of PeopleSoft" in P. van Bergeijk and E. Kloosterhuis (eds.) *Modelling European mergers: theory, competition policy and case studies* Cheltenham, Edward Elgar.

⁶⁰ "Since marginal costs were negligible, the English auction model would predict that losers would bid all the way down close to zero, and that rarely appeared to be the case. Rather what appeared to be the case was that sometimes bidders were eliminated because their bids were too high, which would be consistent with a sealed bid model." (Bengtsson, p 136 – 137, *op. cit.*).

⁶¹ This was not a controversial assumption. Oracle publicly stated that it would support existing Peoplesoft customers but would not sell the Peoplesoft product actively after the merger.

Table 3: Results from Oracle-Peoplesoft merger simulation

Segment	Price rise	Consumer surplus decline
HR	7% – 40%	15% - 39%
FMS	14% - 30%	18% - 25%

The ranges presented in Table 3 are driven by a range of different assumptions. For instance, the lower figure for the loss of consumer surplus in the HR segment is based on the assumption that the Oracle product is improved post-merger by the acquisition of Peoplesoft know-how. Equally, the lowest price and consumer welfare effects in the FMS simulation are based on the assumption of a 10% efficiency saving post-merger. However, it is clear that the model consistently predicted significant price increases and consumer surplus reductions.

There are a number of ways in which this simulation exercise was well designed. First, it was not an “off-the-shelf” simulation in which competitive behaviour was assumed to be adequately reflected by a particular theoretical model but a bespoke model designed for the particular market in question. Second, it fitted the observable data well. For instance, SAP was known as having the highest market share and the highest prices. The simulation model was consistent with this observation: higher market share is driven by higher quality and hence higher prices. The model also implied that buyers who valued the products more highly paid a higher price, which was consistent with the empirical observation that pricing in the market appears to be linked to the willingness to pay of buyers as measured by variables such as the intensity of use or number of users of the product within the buying firm. Finally, the model dealt explicitly with the fact that the Peoplesoft product was likely to disappear as a result of the merger.

5. Upward pricing pressure measures

There is currently an active debate on the use of upward pricing pressure (UPP) measures in unilateral effect cases. These are simple measures that can be used to gauge the extent to which a unilateral effects merger may give the merging firms an incentive to raise prices post-merger. There is much to be said for thinking about unilateral effects in terms of upward pricing pressure as this approach focuses on the incentives of the merging firms to change their prices post-merger. However, it is important to be clear as to what the various measures show and when they might make sense. Our view is that there currently appears to be a danger of some authorities using these measures in an indiscriminating manner and that this is unlikely to lead to good merger control decisions.

5.1 *The various measures*

When two firms selling substitute products merge, this will change their pricing incentives. Assuming that the market was in equilibrium, prior to the merger each of the firms would not raise its price because the loss of profits on lost sales would outweigh the increase in profits from sales that were not lost. After the merger, this calculation is changed because sales that are lost to the other merging party no longer represent lost profits.⁶² This will give the firm an incentive to raise its price post-merger that it did not have pre-merger. The argument is symmetric and so both firms would have a post-merger incentive to raise price. Hence, the merger leads to upward pricing pressure.

⁶² This is not precisely correct. If the margin on sales made by the other merging party is lower than the margin that was made on those sales by the first merging party, then there is a net loss of profits to the merged entity.

An approximation to the extent of the upward pricing pressure can be captured by two variables: the diversion ratio between the two firms and the firms' gross margins. The greater is the diversion ratio from Firm 1 to Firm 2, the greater the competitive constraint imposed by Firm 2 on Firm 1 prior to the merger and so the greater the lessening of competitive constraint as a result of the merger. The higher the gross margin pre-merger, the greater the cost of losing sales (as a result of a price rise) pre-merger and so the lesser the cost post-merger if those sales are captured by the other merging party. So for a given gross margin, the greater the diversion ratio, the greater the incentive to raise prices post-merger. Likewise, for a given diversion ratio, the greater the gross margin pre-merger, the greater the incentive to raise prices. This effect will be reduced if the merger leads to marginal cost efficiencies as these will tend to put downward pressure on prices.

So far this should be uncontroversial and highlights that in a unilateral effects case, diversion ratios, gross margins and likely post-merger marginal cost efficiencies are all important variables to look at. Potential controversy only arises when looking at particular implementations of the underlying economic intuition.

Farrell and Shapiro (2010)⁶³ provide a simple test statistic that compares the upward price effect of a merger with the expected post-merger marginal cost efficiencies. In the symmetric case with Bertrand competition they find that there is upward pricing pressure if

- $\frac{D}{1-D} \frac{M}{1-M} > E$

where D is the diversion ratio between the two firms;

M is the gross margin; and

E is the predicted proportionate decline in marginal costs post-merger.

The version of UPP that is used in the new US Horizontal Merger Guidelines is the Gross Upward Pricing Pressure Index or GUPPI.⁶⁴ The GUPPI is defined as follows:

- $$\text{GUPPI for Product 1} = \frac{\text{Value of sales diverted to Product 2}}{\text{Revenues on volume lost by Product 1}}$$

Although the Guidelines are not precise on this, they do state that a merger is unlikely to raise significant unilateral effect concerns if the GUPPI is "proportionately small". The Guidelines do not quantify what this might mean, although some commentators have argued that it may mean 5% or less.⁶⁵

The final version that we discuss in this paper is the Illustrative Price Rise (IPR) that is used by the Office of Fair Trading (OFT) in the UK. This is a measure of how much prices might be expected to rise post-merger if there were no marginal cost efficiencies. The OFT uses two measures of the IPR: one

⁶³ Farrell, J. and Shapiro, C. 2010. "Antitrust evaluation of horizontal mergers: an economic alternative to market definition" available at ssrn.com/abstract=1313782.

⁶⁴ For a discussion of the derivation of this measurement, see pages 722ff of Shapiro, C. 2010. "The 2010 Horizontal Merger Guidelines: from hedgehog to fox in forty years" *Antitrust Law Journal*, vol. 77.

⁶⁵ See Salop, S., Moresi, S. and Woodbury, J. 2010. "Scoring unilateral effects with GUPPI: the approach of the new Horizontal Merger Guidelines" *CRA Competition Memo*.

assumes linear demand whilst the other assumes isoelastic demand. The equations for the symmetric case are given below.

- Linear demand $IPR = \frac{MD}{2(1-D)}$

and

- Isoelastic demand $IPR = \frac{MD}{1-M-D}$

5.2 *Commentary on the various measures*

As noted above, the economic logic underlying the various measures is clearly sensible and focuses on the incentives faced by the merging parties to raise prices. However, it is very important to understand the limitations of particular articulations of the underlying economics. Once we move away from the very general statement of economic logic and start to use particular formulae for quantifying this economic logic, we start to add assumptions to the analysis. This is unavoidable but it is important to be clear as to what those assumptions are in any particular case.

For instance, equations (1), (3) and (4) are all based on the assumption of symmetry. The formulae assume that the diversion ratio from Firm 1 to Firm 2 is the same as from Firm 2 to Firm 1. They also assume that the gross margins of the two firms are the same. Both of these may well be reasonable assumptions to make in a particular case, but they will not be true in general and so should be empirically confirmed before using the formulae. Where the firms are not symmetric, the correct formulae are significantly different to the ones above and can lead to significantly different results.⁶⁶ This is all standard, so it is important that merger control authorities ensure that they take these issues into account when using these measures.

There is a sense in which these approaches can be thought of as “merger simulation light” and they face similar criticisms to the ones we made about merger simulation above. They omit important competitive constraints, such as the threat of entry, repositioning, non-price responses and so on. Note that the UPP and GUPPI do not claim to predict post-merger price increases and so this is not a criticism of these measures, but more a reminder of the relatively limited claim that can be made using them. They provide a useful measure of the incentive for the merging parties to raise prices in a static sense i.e. ignoring the longer term reactions of competitors. But this is a criticism of the IPR approach, which does claim to provide an estimate, albeit an “illustrative” one, of the post-merger price rise.

The IPR was first used in the UK in 2005 by the Competition Commission in the Somerfield/Morrison merger inquiry.⁶⁷ The Competition Commission sought to predict potential post-merger price rises using the IPR. This analysis was applied only to those local markets where post-merger there would be four or fewer competing supermarkets. The CC commissioned a survey of 56 of the stores that were going to be acquired. The CC calculated diversion ratios based on the question “If this store had not been available which store would you have used instead?” and estimates of each consumer’s spend. The CC then estimated post-merger price rises using these diversion ratios, estimates of the pre-merger price cost margin and the IPR formulae. Stores for which the predicted post-merger price rise was above

⁶⁶ See Bishop and Walker (2009) for an exploration of this issue.

⁶⁷ UK Competition Commission (2005) *Somerfield plc and Wm Morrison Supermarkets plc: a report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc*.

5% were identified as providing competition concerns. On the basis of the constant elasticity assumption, the CC identified twelve stores that raised competition concerns. The predicted post-merger price rise was almost 1900% for one of these stores. Since 2005 the Office of Fair Trading has used the methodology in at least ten retail mergers⁶⁸ and has applied a 5% threshold IPR for competition concerns. We understand that the Korean Fair Trade Commission used elements of the IPR test in its assessment of the 2008 merger of the hypermarkets Homeplus and Homever.⁶⁹

Our view is that this approach can lead to significant problems. The formulae are only correct under strong assumptions, such that the two merging firms were symmetric pre-merger and were both single product firms. Both assumptions are usually incorrect. When these assumptions are relaxed, the simple formulae do not hold. The simple formulae include strong assumptions as to the shape of the demand curve, which should be tested, not assumed.⁷⁰ The constant elasticity demand curve IPR can give rise to implausible results, such as the predicted 1900% price increase found in the Somerfield/Morrison inquiry.⁷¹ Note that none of these issues are a criticism of the fundamental approach to thinking about unilateral effects in terms of diversion ratios, gross margins and so on. Instead, they are criticisms of the inappropriate implementation of the approach.

A more general point is that these measures are not applicable to all types of merger. For instance, they are not applicable to any merger where the market is characterised by significant price discrimination, such as in an auction market. This is not a criticism of the measures, but merely a comment on the scope of their applicability.

5.3 *Tightening policy?*

Another issue that has arisen in the discussions of UPP is whether a measure of this type represents a tightening of enforcement policy. If we assume, as Farrell and Shapiro have suggested, that it is reasonable to assume marginal cost savings of 10%, then the equation 1 is satisfied (i.e. there will be upward pricing pressure) for a range of gross margins and diversion ratios that seems significantly wider than we would normally expect to give rise to concerns. The following table comes from Simons and Coate (2010).⁷² It shows post-merger price rises, even with 10% efficiencies, at combinations of gross margins and diversion ratios that would not traditionally concern us.

⁶⁸ In chronological order, CGL/United (supermarkets, 2006), Homebase/Focus (home improvement stores, 2008), Cineworld/Showcase (cinemas, 2008), Lovefilm/Amazon (online DVD rental, 2008), CGL/Somerfield (supermarkets, 2008), Tesco/Brian Ford (supermarkets, 2008), Morrison's/CGL (supermarkets, 2009), Holland & Barrett/Julian Graves (health food stores, 2009), Carpetright/Allied Carpets (carpet stores, 2010) and Asda/Netto (supermarkets, 2010). All OFT cases referred to are available from http://www.oft.gov.uk/OFTwork/mergers/Mergers_Cases/.

⁶⁹ See the Commission's 2009 Annual Report (section IV.2.B) for details (available from http://eng.ftc.go.kr/bbs.do?command=getList&type_cd=53&pageId=0202).

⁷⁰ The OFT argues that it used the linear demand curve assumption as a lower bound estimate for the IPR and the constant elasticity estimate as an upper bound estimate. But they have a 5% threshold for competition concerns. Does this relate to the linear or constant elasticity prediction? If the linear one, what is the purpose of the constant elasticity one? If the constant elasticity one, what is the purpose of the linear one?

⁷¹ *Op. cit.*

⁷² Simons, J. and Coate, M. 2010. "Upward pressure on price (upp) analysis: issues and implications for merger policy" *mimeo*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1558547.

Table 4: UPP with 10% efficiencies (% price increases)

Gross margin	Diversion ratio						
	0.1	0.15	0.2	0.25	0.3	0.35	0.4
0.9	8.10%	12.7	17.2	21.8	26.3	30.9	35.4
0.8	6.20%	10.3	14.4	18.5	22.6	26.7	30.8
0.7	4.30%	8	11.6	15.3	18.9	22.6	26.2
0.6	2.4	5.6	8.8	12	15.2	18.4	21.6
0.5	0.5	3.3	6	8.8	11.5	14.3	17
0.4	-1.4	0.9	3.2	5.5	7.8	10.1	12.4
0.3	-3.3	-1.4	0.4	2.3	4.1	6.1	7.8
0.2	-5.2	-3.8	-2.4	-1	0.4	1.8	3.2
0.1	-7.1	-6.1	-5.2	-4.2	-3.3	-2.3	-1.4

We have marked price reductions in bold. It is clear that for any diversion ratio above 0.1, a gross margin of 50% or more implies a positive UPP. For a gross margin of 30%, which is hardly high, the UPP is positive at a diversion ratio of 0.2 and above. Simons and Coate also present this analysis in terms of the number of competitors. They convert diversion ratios into numbers of firms pre-merger (assuming symmetric firms). They then find positive UPPs, even with the *ad hoc* 10% efficiency assumption, for an 8 to 7 merger for margins above 40% and for a 6 to 5 merger where the margin is 30%. If margins are 50% or more, even a 10 to 9 merger is a problem.

What should we make of these figures? Is it the case that mergers that were previously not thought to be concerning should now be considered as raising potential concerns and so investigated more intensely than before? Perhaps, but it is not clear where the evidence is to support an argument that merger control has generally been too lax. Or does it imply that the UPP threshold is too low? This issue is not strictly speaking an issue to do with UPP measures themselves but rather with how they are treated by the competition authorities. For instance, to the extent that they are used just as an initial screen, this might in theory lead to more in depth investigations, but it should not affect the end result of an investigation.

5.4 UPP measures and market definition

The debate about UPP measures, and their place within the new US merger guidelines, has sparked an often heated discussion about the role of market definition and its interaction with direct effects analysis, such as that suggested by UPP-type measures. Some have argued that such measures mark a radical departure from previous practice as they put significantly less emphasis on market definition than in the past. This seems to us to be a mistaken response.

The purpose of market definition is to aid the competitive analysis. Market definition is not an end in itself.⁷³ We define markets in merger cases in order to help us focus on the competitive constraints that the merged entity will face. This has several implications.

First, if there is an alternative approach to market definition that allows us to assess directly the competitive constraints faced by the merged entity, then this should in general be preferred to an indirect approach based on market definition. However, it should be noted that the distinction between direct

⁷³ As the Australian “Merger Guidelines” state (para. 4.3) “While market definition is a useful tool for merger analysis, by itself it cannot determine or establish a merger’s impact on competition.”

effects analysis and market definition is not always as clear cut as it suggested. For instance, many merger simulations are based on logit models which require estimates of market shares. These clearly require a prior definition of the relevant markets.

Second, direct effects analysis and market definition are often complementary. The results of a direct effects analysis can be informative for market definition. The US Guidelines provide a good example of this.

“Evidence of competitive effects can inform market definition, just as market definition can be informative regarding competitive effects. For example, evidence that a reduction in the number of significant rivals offering a group of products causes prices for those products to rise significantly can itself establish that those products form a relevant market.” (page 7)

Where there is a legal requirement to define the relevant market, a direct effects analysis can be used to do this.

Third, if market definition is controversial and if the likely merger control decision will vary significantly depending on which market is chosen, then direct effects analysis may allow investigators to avoid this difficulty. This difficulty does not arise where the market definition is uncontroversial or where all plausible market definitions have similar implications for the merger control decision.

Fourth, market shares of differentiated products markets can be misleading as they do not take account of the closeness of competition between the merging parties. The competitive implications of a post-merger market share of 40% and an increment of 10% differ dramatically depending on whether the merging parties are close competitors or distant competitors within the market.

So the implication of this discussion is that looking at direct effect measures may well downplay the importance of market definition in a case, but this is consistent with the ultimate aim of trying to identify anti-competitive mergers. Market definition is only an indirect aid in this process and if there are better approaches available in a particular case, then these should be used. This does not change the fact that market definition will remain central to most cases. Although not a very scientific metric, it is worth noting that the US Guidelines devote more than eight pages to market definition compared to just over seven on unilateral and coordinated effects combined.

5.5 Conclusions on UPP measures

It is important to understand that this section is not critical of UPP measures as a concept. The underlying concept is clearly sensible and important: where diversion ratios are high and/or gross margins are high, then *ceteris paribus* we would expect to see the merging parties have an incentive to raise prices significantly post-merger. Our point in this section is just that this fundamental insight can be lost if these measures are used in an unthinking manner.

6. Best practice guidelines

Empirical analysis is important in competition policy because theories of harm need to be tested against the actual facts of the relevant industries. The growth in the use of sophisticated economic analysis in merger investigations has led several competition authorities to issue guidelines on the correct approach to submitting economic evidence in a merger case. Recent examples that we are aware of are the guidelines from the European Commission,⁷⁴ UK Competition Commission,⁷⁵ the Bundeskartellamt (BKA)⁷⁶ and the

⁷⁴ “DG Competition: Best practices for the submission of economic evidence and data collection in cases concerning the application of Articles 101 and 102 TFEU and in merger cases” (January 2000).

Korean Fair Trade Commission.⁷⁷ Although not formal guidelines, the speech entitled “The use of empirical methods in merger investigations” (September 2005) by Commissioner Stephen King of the ACCC is a clear statement of the ACCC’s approach to economic evidence.⁷⁸ Pages 11 and 12 of this speech, in particular, provide an excellent summary of necessary requirements for the submission of economic evidence.

Our view is that these guidelines, if adhered to, should improve the quality of economic evidence submitted in merger inquiries. In particular, they should make the process of presenting and responding to economic evidence much more transparent and should avoid “black box” styles of analysis. It is important that all sides are held to the same standards in merger appraisal and so it is our view that competition authorities, and not just the parties and complainants, should abide by the standards outlined in the various guidelines. Below we discuss briefly what these standards are and why they matter.

Good empirical analysis used in a merger inquiry (or any competition policy inquiry) should be based on clear economic theory which implies testable propositions. The analysis should test these propositions in a transparent and, ideally, intuitive manner. The analysis should be replicable so that it can be properly tested (i.e. the analysis must be falsifiable). These basic principles require a number of conditions to hold.

- The analysis must answer a relevant question and should do so without ambiguity. This means that the null hypothesis should be clearly articulated and the implications of accepting or rejecting the null hypothesis should be clear.
- The assumptions underlying the analysis should be clearly articulated and should be consistent with the facts of the industry in question.
- The data should be fit for purpose. This means that the data should measure the variables of interest (e.g. transaction prices should be used, not list prices). Where this is not possible and so proxies are used, the use of these proxies should be justified and the potential effects on the analysis should be discussed. For instance, where transaction data is not available and so the analysis is based on survey data, it is important to consider how accurate the survey data is likely to be and whether it is stated preference or revealed preference data. The latter is preferable.
- The results of the analysis should be shown to be robust. There are two principal dimensions to this requirement.
 - Robust to small changes in the data. If the results of the model are very sensitive to relatively small changes in the data, then they are not likely to be reliable. This is particularly the case if there are already doubts over the accuracy of the data.
 - Robust to changes in methodology. If an alternative, but on the face of it reasonable, methodology leads to significantly different results, then this fact should be highlighted, the choice of any particular methodology should be justified and the reasons for the different methodologies leading to different results should be understood.

⁷⁵ “Suggested best practice for submissions of technical economic analysis from parties to the Competition Commission” (February 2009).

⁷⁶ “Best practices for expert economic opinions” (October 2010).

⁷⁷ “Guidelines on the Submission of Economic Analysis Evidence” (21 July 2010).

⁷⁸ “The use of empirical methods in merger investigations”, Stephen King, (29-9-2005) at 2005 Industry Economics Conference at La Trobe University.

- The analysis should be provided so that it can be replicated. This means that there must be a clear description of what analysis was carried out and the underlying data should be provided, along with any analysis files used to carry out the work. The European Commission guidelines state that “In particular, the absence of all the necessary elements needed for replication and assessment of an economic submission can constitute grounds for not taking it further into consideration.” (para 44). We agree with this approach.
- The presentation of the analysis should be clear. This means that the analytical steps from theory to testable proposition to results to conclusions should be transparent. The presentation should be accessible to a non-economist. The BKA states that “Results of economic analyses which are not comprehensible cannot be considered as evidence by the Bundeskartellamt.” (page 2) We agree with this approach.
- Finally, the relationship between the results of the empirical analysis and the other evidence in the case should be made clear. If the two sets of results are consistent, this should be highlighted. If they are not, then it is important to explain why they differ. If the results of the empirical analysis are to be preferred over the other evidence, then good arguments need to be presented as to why this should be the case.

It should be noted that these principles should not apply only to parties presenting evidence to competition authorities or the courts. They should also apply to the competition authorities. If competition authorities wish to base decisions on empirical analysis, and we think they should, then they should be held to the same standards as the parties. In particular, this means that the parties should be able to replicate the results of the analysis and critique the methodology. The European Commission’s “data room” procedure is a good example of this.

7. Improved use of econometric analysis

A clear development within the European Commission has been an improved use of econometric analysis. This has been driven by the formation of the Chief Economist’s Team within DG Comp. In the past there was a tendency for econometric analysis to focus only on elasticity estimates for market definition and for the analysis to often be impenetrable to a non-economist. This no longer seems to be the case. We provide below two examples of what we consider to be good uses of econometric analysis in merger control. They illustrate the type of questions that can be answered using econometrics and also how an econometric dialogue between the merger control authority and the parties can improve the quality of decision making.

7.1 *Ryanair/Aer Lingus*

In 2006 Ryanair, a low cost airline, sought to buy Aer Lingus, the Irish flag carrier. Both parties had their main hubs at Dublin airport and competed on a significant number of routes. Both parties submitted extensive econometric evidence and the Commission carried out its own analysis. After extensive investigation, the Commission blocked the merger. Various forms of econometric analysis played an important role in this case. We briefly outline one of these below.

The Commission carried out a multiple regression analysis to test a number of propositions. Among these were the following questions:

- Does the presence of Ryanair on a route reduce the price charged by Aer Lingus on that route and *vice versa*?

- Does Ryanair exert a stronger competitive effect on Aer Lingus than any of the other airlines operating out of Dublin and *vice versa*?
- Does the price effect of Ryanair on Aer Lingus increase as the number of frequencies offered by Ryanair increases and *vice versa*?

The Commission found that Aer Lingus' prices were on average 5-8% lower on those routes where Ryanair competed with Aer Lingus compared to those where Ryanair did not compete with Aer Lingus. This provides the answer to the first question above: the presence of Ryanair on a route does reduce the price charged by Aer Lingus. As regards the price effect of Aer Lingus on Ryanair the Commission did not find a significant effect.

Using the same data, the Commission found that Ryanair had at least double the effect of any other airline on Aer Lingus' pricing. The Commission also found that a 1% increase in Ryanair frequencies had the effect of decreasing Aer Lingus' prices by 0.03%.⁷⁹ Thus the Commission also answered the second and third questions above.

The Commission concluded:

“The Commission’s regression analysis confirms and complements the conclusions derived from qualitative evidence that Ryanair and Aer Lingus are close competitors. Moreover the results from the regression analysis are also in line with the majority of respondents to the Customer Survey that consider the Merging Parties to be the closest competitors when other carriers are present on the route.”

There are a number of interesting points to note from this analysis. First, it was an example of econometrics being used in a direct effects manner, rather than to help define the relevant market. It focused directly on the constraint that Ryanair imposed on Aer Lingus pre-merger and which would be lost post-merger. This was clearly a key question that needed to be answered and the econometric analysis was a more direct approach than a market definition approach.

Second, the Commission's conclusions based on the econometric analysis were consistent with the other available evidence in the case. We argued above that technical empirical was more convincing when it was consistent with the other facts of the case. Where this happens, the two types of evidence are mutually reinforcing.

Third, the Commission did not find a significant price effect of Aer Lingus on Ryanair. However, being unable to find a statistically significant relationship between two variables is not the same as proving that there is no relationship. The European Commission argued that

“However, failure to prove a statistical link is not equivalent to proving that no such link exists. Alternative explanations for an ‘unsuccessful’ regression include, in particular, unsuitable data sets or misspecified regression equations.”⁸⁰

In this case, the Commission argued that it was not possible to find statistically a relationship between Ryanair's prices and Aer Lingus' presence or absence on a route because of a lack of variation of Aer

⁷⁹ In order to gauge the price effect of the frequency model the Commission simulated the effects of the merger by assuming that Ryanair would withdraw completely from overlap routes post merger. Under this assumption prices would increase by up to 13.1% on overlap routes.

⁸⁰ Paragraph 476 of *Ryanair / Aer Lingus* (case COMP/M.4439 (27 June 2007)).

Lingus entry on Ryanair routes in the data. Conversely, there were many instances when Ryanair entered Aer Lingus routes to test whether Ryanair's presence affects Aer Lingus' prices. The General Court agreed with the Commission (Ryanair appealed the decision) that a lack of evidence of a constraint is not the same as evidence of a lack of constraint. This was an example of an econometric result that was not consistent with the other evidence in the case, which was that Aer Lingus did impose a competitive constraint on Ryanair. However, the Commission was able to provide a clear explanation of what was driving the econometric result, which is consistent with our comments about best practice above.

Fourth, the General Court engaged with the econometric analysis in its decision on Ryanair's appeal. It devoted 12 pages of its decision to issues relating to the various econometric models and specifications. This represents a dramatic improvement on past practice and indicates that when complex economic analysis is carefully presented in a transparent way, courts are fully able to appraise it.

7.2 Oracle/Peoplesoft

The investigation into the proposed acquisition of Peoplesoft by Oracle in 2004 included a substantial amount of econometric analysis. As noted above, the product in question was enterprise application software. In the human resources and financial management systems segments of this industry the merger was characterised, at least initially, as a three-to-two merger with only the merged entity and SAP remaining as significant players post-merger. Sales in this industry are made via bidding contests whereby the potential buyers asks potential suppliers to bid for sales.

In the Statement of Objections the European Commission presented econometric analysis showing that Peoplesoft appeared to offer higher discounts (i.e. lower prices) as the number of bidders rose.⁸¹ After the Oral Hearing, Oracle provided the Commission with additional data. The Commission also gained access to some data from the parallel US proceedings. Using these data, the Commission carried out further econometric analysis. This analysis yielded two important results. First, there was a strong positive relationship between the size of the deal and the discount offered. Second, once this size effect was taken into account, the apparent relationship between discounts and the number of bidders that the Commission had previously identified disappeared. The Commission wrote:

“Once the size of the deal was taken into account in the analysis the number of final bidders no longer provided any additional explanatory element over the discount offered and no general pattern emerged regarding the presence of a particular competitor prompting particularly high discounts.”⁸²

This was an important result as it undermined one of the pillars of the argument that the merger would be anti-competitive: it would remove a bidder and reducing the number of bidders would lower discounts/raise prices. The Commission did not pursue this line of argument in the light of the econometric, and other, evidence.

This example shows an increasing willingness from the European Commission, at least, to engage with the parties in improving the quality of econometric evidence in the case. This is greatly facilitated by the increased transparency created by the requirement for the parties, and the Commission, to be transparent and to share their econometric analysis (often within the data room procedure).

⁸¹ See para. 197 of the decision.

⁸² Para. 201 of the decision.

7.3 *Conclusions on the use of econometric analysis*

Our view is that econometrics has got a bad reputation within merger control circles. There has been a tendency to dismiss it as not being useful. A number of reasons have typically been given for dismissing the results of econometric analysis, but these have tended to come down to a mistrust amongst non-economists of the scope for econometric evidence to be “massaged” by the parties or by complainants. The examples above show that when econometric analysis is properly presented, using best practice, it can be an invaluable tool for answering important questions that arise in mergers.

8. Overall conclusions

- There is now general convergence on the theories of harm under unilateral and coordinated effects, although the economics underlying coordinated effects remains under-developed.
- We have seen significant improvement in the application of vertical merger control policy in the EU and elsewhere as a result of an improved economic approach based on the economics of foreclosure and raising rivals’ costs. Our view is that this approach should be adopted generally.
- Merger simulation is a useful technique but its role is more limited and it requires more care than originally claimed.
- The UPP-type measures highlight the important role of diversion ratios, gross margins and efficiencies in unilateral effect cases and so are a potentially very useful tool. However, there should not be used unthinkingly and little weight should be put on general formulas such as the IPR measure.
- Direct effect measures may reduce the emphasis placed on market definition. Where the direct effect measures are reliable, this should be considered a good thing.
- Best practice guidelines should be an important part of the merger control process. These should apply to the merger control authorities as well as to the parties submitting evidence to the authorities.
- We have seen an improvement in the use of econometric analysis in merger control by the European Commission, largely driven by the formation of the Chief Economist’s Team. The implication is that jurisdictions without high quality in-house economic and econometric teams should consider building such teams.

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NOTE DE RÉFÉRENCE

par le Secrétariat

1. Introduction¹

L'analyse des fusions dans le cadre du contrôle de ces opérations passe par l'utilisation d'analyses et de concepts économiques. Le contrôle des fusions se résume généralement à la question de savoir si l'opération de concentration considérée débouchera sur une augmentation du pouvoir de marché d'une entreprise ou de plusieurs, et si cette augmentation se traduira par une hausse des prix à la suite de la fusion. Pour y répondre, il convient notamment de se demander si les produits des parties à la fusion sont de proches substituts, quelle est la nature de la concurrence, quel est le marché en cause, quelle est l'importance des obstacles à l'entrée et à l'expansion des activités sur ce marché, et si les clients disposent d'une puissance d'achat compensatrice.

Dans la mesure où nombre des questions précédemment soulevées sont de nature empirique, elles doivent recevoir des réponses empiriques. Cela signifie qu'une bonne analyse empirique doit être au cœur de toute procédure de contrôle des fusions. Les réponses à ces questions doivent être analysées dans un cadre économique cohérent. Cela signifie que le cadre conceptuel du contrôle des fusions doit également s'appuyer sur la science économique. Nous examinons dans ce document l'utilisation de la science économique dans le cadre du contrôle des fusions.

Des progrès considérables ont été accomplis dans l'application de la science économique à l'analyse des fusions au cours des dernières années. Néanmoins, certaines évolutions attendues n'ont pas eu lieu, ou du moins pas aussi rapidement que prévu. Nous examinons dans ce document diverses questions qui se sont posées dernièrement concernant la dimension économique de l'analyse des fusions. Dans certains cas, des avancées incontestables ont été réalisées, tandis que dans d'autres, de simples changements d'orientation ont eu lieu ; mais dans d'autres encore, les améliorations ayant eu lieu ne sont pas sans ambiguïté, et doivent être étudiées et examinées de manière approfondie par tous ceux qui souhaitent que le contrôle des fusions serve au mieux les intérêts des consommateurs.

Nous traiterons les points suivants :

- La convergence de vues générale sur ce que pourraient être les théories du préjudice dans le cadre des fusions horizontales. S'il existe une convergence concernant l'approche analytique des effets unilatéraux, ce constat est beaucoup moins évident pour les effets coordonnés.
- L'analyse des fusions verticales, et en particulier la pertinence de l'approche présentée dans les lignes directrices de l'Union européenne (UE) sur les fusions verticales².

¹ Ce document a été préparé pour le Secrétariat de l'OCDE par Mike Walker, qui est Vice-Président du cabinet de consultants Charles River Associates (CRA), à Londres, et enseigne à l'Université de Loughborough et au Kings College de Londres. M. Walker remercie ses collègues de CRA Gerhard Dijkstra et Michael Muehlbradt de l'aide qu'ils lui ont apportée pour ses recherches.

- L'évolution des exercices de simulation de fusion. Au moment de la dernière table ronde, les simulations de fusions avaient le vent en poupe. Or, l'utilisation de cet outil a été plus limitée que prévu.
- Les indicateurs de pressions à la hausse sur les prix et les mesures connexes. De quoi s'agit-il ? Quel est leur fondement intuitif ? Quelles sont leurs limites et comment faut-il les utiliser ? Nous examinons également dans cette partie la question de la place à accorder à la définition du marché lorsqu'on dispose de mesures directes des effets induits sur la concurrence.
- Les lignes directrices sur les meilleures pratiques. L'UE et d'autres acteurs ont récemment publié des lignes directrices sur les meilleures pratiques à appliquer lors de la présentation d'éléments d'information économiques à une autorité de la concurrence. Il est important que toutes les parties prenantes à une enquête sur une fusion (les parties à la fusion, les plaignants, les clients, les autorités de la concurrence ou les tribunaux) adhèrent aux meilleures pratiques concernant l'utilisation des analyses économiques.
- L'amélioration de la qualité des analyses économétriques au sein de la Direction générale de la concurrence de la Commission européenne, et ce qu'elle implique de manière plus générale.

Il ne s'agit pas d'une liste exhaustive des questions économiques qui ont été soulevées ces derniers temps dans le cadre du contrôle des fusions. Ainsi, nous n'abordons aucunement les fusions conglomerales et diagonales, l'argument des gains d'efficacité, l'argument de l'entreprise défaillante, ni les affaires de marchés bifaces. Néanmoins, cette liste regroupe, à notre avis, un nombre conséquent de questions intéressantes.

Nous nous sommes efforcés d'élargir le débat en ne le limitant pas aux juridictions que nous connaissons le mieux (telles que le Royaume-Uni et l'Union européenne). Les exemples tirés de ces juridictions n'en occuperont pas moins une place prépondérante dans cette étude, car c'est dans l'UE et aux États-Unis que les techniques considérées sont les plus répandues.

2. Convergence des théories du préjudice en matière de fusions horizontales

2.1 Effets unilatéraux³

La théorie du préjudice dans les cas d'effets unilatéraux est communément admise et clairement énoncée dans les travaux publiés sur la question. Son fondement intuitif est que la fusion de deux entreprises qui représentaient l'une pour l'autre une contrainte concurrentielle va déboucher sur une perte de concurrence entre ces deux entités et, partant, sur une hausse des prix. Si les produits des entreprises considérées ne sont pas homogènes mais constituent des substituts, leur fusion aura pour effet direct une augmentation des prix de ces produits. Cela débouchera sans doute sur des effets indirects, d'autres entreprises réagissant à la hausse des tarifs de l'entité issue de la fusion. Il est probable que cet effet soit d'autant plus fort que les parties à la fusion sont les plus proches concurrents l'un de l'autre, mais cette

² Commission européenne (2008), *Lignes directrices sur l'appréciation des concentrations non horizontales au regard du règlement du Conseil relatif au contrôle des concentrations entre entreprises*, Journal officiel de l'Union européenne, C 265/6.

³ On trouvera de bonnes descriptions simples de la théorie des effets unilatéraux dans Motta, M. (2004), *Competition Policy: theory and practice*, Cambridge University Press, ainsi que dans Carlton, D. et Perloff, J. (2004), *Modern Industrial Organization*, Harper Collins. Pour un examen plus approfondi de cette question, voir Werden, G. et Froeb, L. (2008), « Unilateral competitive effects of horizontal mergers », in Buccrossi, P. (dir. publ.) (2008), *Handbook of Antitrust Economics* (MIT Press).

logique économique ne reste valable que tant que l'élasticité-prix croisée de la demande entre les produits des deux entreprises considérées est positive.

Cette logique est incontestée et figure dans les lignes directrices relatives aux fusions de nombreuses économies de l'OCDE. Ainsi, aux termes du paragraphe 6.1 des Lignes directrices sur les fusions horizontales (2010) des États-Unis⁴ :

« Une fusion entre des entreprises vendant des produits différenciés peut réduire la concurrence en permettant à l'entreprise issue de la fusion d'en profiter pour relever unilatéralement le prix d'un de ces produits, ou des deux, au-dessus de son niveau d'avant la fusion. Certaines des ventes perdues du fait de cette hausse de tarif se reporteront simplement sur le produit de l'autre partie à la fusion et, suivant les marges relatives, la compensation de ce recul des ventes par le biais de la fusion peut faire de cette hausse de prix une initiative rentable, alors qu'elle ne l'aurait pas été avant la fusion. »

Aux termes du paragraphe 24 des Lignes directrices sur l'appréciation des concentrations horizontales (2004) de l'UE⁵ :

« L'effet le plus direct de l'opération sera l'élimination de la concurrence entre les parties à la concentration. Par exemple, si, avant l'opération, l'une des parties avait majoré ses prix, elle aurait enregistré un recul d'une partie de ses ventes au profit de l'autre partie à l'opération. Or, la concentration supprime cette contrainte particulière. Les entreprises présentes sur le même marché qui ne sont pas parties à la concentration peuvent, elles aussi, tirer profit de l'affaiblissement de la pression concurrentielle que provoque l'opération, dès lors que l'augmentation des prix des parties peut orienter une partie de la demande vers les entreprises rivales, lesquelles peuvent, à leur tour, trouver profitable d'augmenter leurs prix. »

Suivant les Lignes directrices sur l'application de la loi contre les monopoles dans le cadre du contrôle des fusions (2010)⁶ du Japon :

« Lorsque des biens sont différenciés par leur marque ou toute autre caractéristique et que le prix des biens d'une de ces marques est relevé, les utilisateurs de cette marque ne sont pas nécessairement disposés à acheter n'importe quel bien d'une autre marque en tant que substitut. Cela dit, ces utilisateurs peuvent acheter les biens d'une autre marque située juste après la première marque dans leur ordre de préférence – c'est-à-dire caractérisée par une forte substituabilité. Dans ce cas, même si le groupe considéré augmente le prix des biens de la première marque, si ce groupe vend également les biens de la seconde marque caractérisés par une forte substituabilité, la progression des ventes de cette deuxième marque compense le recul des ventes de la première. Le groupe peut alors procéder à une hausse de prix sans que ses ventes totales diminuent. »

Aux termes du paragraphe 5.5 des Lignes directrices sur les fusions (2008)⁷ de l'Australie :

⁴ Ministère de la Justice et Commission fédérale du commerce (FTC, *Federal Trade Commission*) des États-Unis (2010), *Horizontal Merger Guidelines*, publiées le 19 août 2010.

⁵ Commission européenne (2004), *Lignes directrices sur l'appréciation des concentrations horizontales au regard du règlement du Conseil relatif au contrôle des concentrations entre entreprises*, Journal officiel de l'Union européenne [C 31/5](#).

⁶ Commission de la concurrence japonaise (JFTC, *Japan Fair Trade Commission*), *Guidelines to Application of the Antimonopoly Act Concerning Review of Business Combination* [traduction en langue anglaise de la version originale japonaise], dernière révision en date du 1^{er} janvier 2010.

« Une fusion horizontale peut déboucher sur des effets unilatéraux en éliminant la contrainte concurrentielle effective ou potentielle qu'exerçaient l'une sur l'autre les parties à la fusion avant celle-ci. Deux entreprises concurrentes peuvent limiter leurs marges de manœuvre respectives, notamment via le transfert (effectif ou potentiel) de ventes de l'une à l'autre si leurs clients passent, ou menacent de passer, de l'une à l'autre. Or, si ces deux entreprises fusionnent, cela "internalise" tout transfert de ce type dans le périmètre de l'entité issue de la fusion, ce qui élimine cet effet de contrainte. Lorsque les contraintes effectives provenant d'autres sources sont limitées, cet effet unilatéral peut équivaloir à une diminution substantielle de la concurrence. »

Des analyses similaires figurent, entre autres, dans les lignes directrices de la Nouvelle-Zélande⁸ et celles du Canada⁹, ainsi que dans les Lignes directrices sur l'appréciation des fusions (2010)¹⁰ publiées conjointement par la Commission de la concurrence (*Competition Commission*) et le Bureau de la concurrence (OFT, *Office of Fair Trading*) du Royaume-Uni.

Cette approche de la question laisse à penser que toute fusion impliquant des produits substituables débouchera sur une hausse de prix. Or, il est clair que cela ne correspond pas à la réalité. L'analyse susmentionnée fait en effet abstraction de divers éléments : les effets des gains d'efficacité découlant des fusions, qui réduisent les coûts marginaux des entreprises ; les possibilités d'entrée de nouveaux acteurs sur le marché considéré ; la possibilité que des entreprises concurrentes repositionnent leurs produits, etc. Néanmoins, elle offre indéniablement un cadre d'analyse clair pour examiner une fusion particulière : étant donné que cette opération entraînera un amoindrissement de la concurrence entre produits substituables, quels facteurs empêcheront une hausse des prix ?

2.2 Effets coordonnés¹¹

On observe une convergence plus limitée concernant le cadre général d'analyse des effets coordonnés. Ce constat est illustré par le fait que l'on dénombre généralement beaucoup moins de fusions faisant l'objet d'interdictions ou de mesures correctives en raison d'effets coordonnés. La logique économique des effets coordonnés est moins précisément décrite, et les conditions dans lesquelles un problème de coordination entre entreprises peut se poser à la suite d'une fusion sont moins bien comprises que pour les effets unilatéraux.

Dans l'ensemble, le fondement intuitif du concept d'effets coordonnés est raisonnablement clair. S'il existe un lien entre la concentration d'un marché et le degré de concurrence sur ce marché, on peut s'attendre à ce que tout renforcement sensible de la concentration dudit marché se traduise par une réduction de l'intensité de la concurrence sur ce marché. Il s'agit là d'une conclusion qui ressort clairement de l'utilisation du paradigme « structure-comportement-performance » (SCP), mais la question de son

⁷ Commission australienne de la concurrence et de la consommation (ACCC, *Australian Competition & Consumer Commission*) (2008), *Merger guidelines*, novembre 2008.

⁸ Commission du commerce de Nouvelle-Zélande (*New Zealand Commerce Commission*) (2003), *Mergers and Acquisitions Guidelines*, page 32.

⁹ Bureau de la concurrence du Canada (2004), *Fusions - Lignes directrices pour l'application de la loi*, paragraphe 5.14.

¹⁰ Commission de la concurrence (*Competition Commission*) et Bureau de la concurrence (OFT, *Office of Fair Trading*) du Royaume-Uni (2010), *Merger Assessment Guidelines*, paragraphes 5.4.6 – 5.4.8.

¹¹ Voir la note de bas de page 3 pour des références bibliographiques sur cette question.

application est loin d'être réglée (reflétant la défiance persistante des économistes à l'égard de ce paradigme)¹².

L'approche adoptée par l'UE à l'égard des effets coordonnés repose sur trois questions :

- Les entreprises peuvent-elles s'accorder tacitement sur les conditions suivant lesquelles la concurrence sera réduite après la fusion ?
- Peuvent-elles inscrire cette coordination dans la durée ?
- Existe-t-il des facteurs externes, tels que l'entrée de nouveaux acteurs, une entreprise se conduisant en franc-tireur ou des acheteurs en position de force, qui peuvent remettre en cause les résultats de cette coordination ?

Ce sont trois questions importantes à se poser, mais il en existe sans doute une quatrième, qu'on pourrait formuler comme suit :

- En quoi les changements découlant de la fusion rendent-ils l'éventualité d'une coordination plus probable ou renforcent-ils la coordination existante ?

Néanmoins, à la différence des effets unilatéraux, les effets coordonnés soulèvent des questions auxquelles il ne semble pas possible d'apporter des réponses précises. Comme nous l'indiquons ci-après, on peut employer de nombreuses techniques en vue d'estimer précisément la mesure dans laquelle une fusion assortie d'effets unilatéraux entraînera une hausse des prix, ou une atténuation des contraintes concurrentielles. Par contre, il n'existe pour l'heure aucune méthode équivalente permettant de répondre à une question telle que : « La coordination considérée pourra-t-elle s'inscrire dans la durée ? » Cela passe par une analyse plus qualitative d'éléments tels que la transparence, les capacités excédentaires au sein du groupe d'entreprises qui coordonnent leurs activités, et l'identification d'un « mécanisme de sanction » crédible.

L'approche des États-Unis ne repose pas sur ces questions spécifiques, mais consiste à se demander si, en cas de renforcement sensible de la concentration d'un marché, celui-ci est « vulnérable » face au risque de comportements coordonnés, et s'il y a des raisons de penser que la fusion considérée accentue cette vulnérabilité. Les Lignes directrices sur les fusions horizontales des États-Unis évoquent ensuite divers facteurs pertinents, tels que la transparence, les antécédents du marché considéré (a-t-il été le théâtre de faits de collusion par le passé ?), la capacité des petits acteurs à se développer, l'existence d'une puissance d'achat, etc. Tous ces facteurs sont pertinents, mais il n'en demeure pas moins que l'analyse économique sous-jacente est beaucoup moins bien circonscrite que dans le cas des modèles relatifs aux effets unilatéraux.

Cela transparait dans l'hétérogénéité des approches adoptées à l'égard des effets coordonnés dans les différentes lignes directrices. Celles du Canada et de l'Australie sont similaires à l'approche de l'UE. Ainsi, aux termes du paragraphe 5.20 des lignes directrices du Bureau de la concurrence du Canada¹³ :

« Un comportement coordonné pourrait être maintenu seulement lorsque :

- *les entreprises sont capables :*

¹² Voir, par exemple, le chapitre 1 de Tirole, J. (1989), *The theory of Industrial Organization*, MIT Press.

¹³ *Op. Cit.*

- *de reconnaître individuellement les avantages d'une ligne de conduite commune ;*
- *de surveiller réciproquement leur comportement et de détecter des dérogations ;*
- *de réagir à toute action qui n'est pas compatible à la ligne de conduite commune en adoptant des mécanismes de dissuasion crédibles ;*
- *cette coordination n'est pas menacée par des facteurs externes tels la réaction des concurrents actuels ou potentiels ne faisant pas partie du groupe d'entreprises ayant des comportements coordonnés, ou la réaction des acheteurs. »*

Les lignes directrices australiennes contiennent des dispositions similaires (par. 6.5). Quant à celles du Royaume-Uni, elles reposent sur un cadre de base similaire, mais celui-ci revêt une forme légèrement différente. Les lignes directrices britanniques établissent une distinction entre des « facteurs internes », qui sont contrôlés par les entreprises susceptibles de coordonner leurs activités, et des « facteurs externes », qui échappent au contrôle de ces mêmes entreprises. Ainsi, aux termes du paragraphe 5.5.9 des Lignes directrices sur l'appréciation des fusions du Royaume-Uni :

« Les autorités se demanderont non seulement si des éléments démontrent l'existence préalable d'une coordination, mais elles analyseront en outre les caractéristiques du marché pour cerner la capacité des entreprises à coordonner leurs activités. Chacune des trois conditions suivantes doit être satisfaite pour qu'une coordination soit possible :

(a) Les entreprises doivent être en mesure de s'entendre sur des modalités de leur coordination et de s'assurer de leur respect.

(b) La coordination doit être viable sur le plan interne, au sein du groupe d'entreprises qui coordonnent leurs activités – autrement dit, ces entreprises doivent considérer individuellement qu'il est dans leur intérêt d'adhérer aux modalités de coordination définies.

(c) La coordination doit être viable sur le plan externe, au sens où il doit être peu probable que cette coordination soit remise en cause par une concurrence provenant de l'extérieur du groupe d'entreprises qui coordonnent leurs activités. »

Les lignes directrices néo-zélandaises reposent sur une liste de vérification qui recense divers facteurs déterminants pour la possibilité d'effets coordonnés, mais elles n'offrent aucun cadre d'évaluation de ces facteurs. Cette liste (non exhaustive) de facteurs comprend une forte concentration du marché du côté de l'offre, des produits non différenciés, une technologie de production statique, la lenteur du processus d'entrée sur le marché, l'absence de concurrents marginaux, l'acquisition d'une entreprise se conduisant en franc-tireur, une demande inélastique, des antécédents de pratiques collusives, et la puissance d'achat des acquéreurs.

Les lignes directrices coréennes¹⁴ contiennent une liste de vérification limitée (partie VII, 1, C), tandis que les lignes directrices japonaises abordent en des termes très généraux le mécanisme de collusion (c'est-à-dire les raisons pour lesquelles une entreprise peut s'aligner sur la hausse de prix d'un concurrent au lieu de pratiquer des tarifs inférieurs sur un marché transparent) mais ne fournissent guère plus de détails.

¹⁴ Commission coréenne de la concurrence (KFTC, *Korea Fair Trade Commission*) (2007), *Guidelines for M&A Review*.

2.3 Analyse empirique

Il existe diverses méthodes empiriques relativement classiques qui sont souvent utilisées pour l'analyse des fusions¹⁵. Bien qu'elles ne soient, par définition, pas le principal objet de ce document, qui est axé sur les récents progrès observés en matière d'analyse des fusions, nous les examinons brièvement afin de présenter le contexte dans lequel s'inscrivent les questions abordées ensuite¹⁶. Parmi les méthodes empiriques les plus courantes, on trouve :

- l'analyse de la perte critique,
- les analyses de prix tels que les tests de corrélation et les tests de stationnarité,
- les analyses de choc,
- les analyses prix-concentration,
- les ratios de diversion,
- les études d'appels d'offres, et
- les analyses de flux de produits et les analyses de coûts de transport.

L'analyse de la perte critique est utilisée pour la définition du marché et permet de répondre directement à la question du monopoleur hypothétique, en utilisant uniquement des données relatives aux marges prix-coût et aux élasticités¹⁷. À partir des marges prix-coût relevées avant la fusion considérée sur un marché en cause potentiel, l'analyse de la perte critique permet de déterminer dans quelle proportion les ventes devraient reculer à la suite d'une augmentation faible mais significative et non transitoire des prix (SSNIP) pour que cette augmentation devienne non rentable¹⁸. Ce chiffre peut être comparé à des estimations¹⁹ de la proportion dans laquelle les ventes reculeraient effectivement à la suite de cette SSNIP. Si la réduction attendue des ventes est supérieure à celle qui rendrait la SSNIP non rentable, un monopoleur hypothétique n'aurait aucun intérêt à appliquer cette SSNIP, ce qui signifie que la définition du marché doit être élargie. En réalité, l'analyse de la perte critique n'est qu'une autre version du test du monopoleur hypothétique, mais présentée sous une forme plus abordable. Il est en effet beaucoup plus

¹⁵ Il convient cependant de noter que les juridictions n'utilisent pas toutes l'ensemble de ces techniques. Ainsi, l'analyse de la perte critique et les analyses prix-concentration ne sont guère utilisées dans une grande partie de l'Europe, tandis que les tests de corrélation de prix et les analyses de flux de produits sont rarement employés aux États-Unis.

¹⁶ On trouvera une présentation plus précise de ces techniques dans Bishop, S. et Walker, M. (2009), *The Economics of EC Competition Law: concepts, application and measurement*, Sweet & Maxwell.

¹⁷ On pourra se référer à l'un des premiers documents consacrés à l'analyse de la perte critique, Barry C. Harris et Joseph J. Simons (1989), « Focusing Market Definition: How Much Substitution is Necessary? », *Research in Law and Economics*. Par ailleurs, on trouvera une bonne analyse critique de cette technique dans O'Brien, D. et Wickelgren, A. (2003), « A critical analysis of critical loss analysis », *Antitrust Law Journal*.

¹⁸ Le test de l'augmentation faible mais significative et non transitoire des prix (SSNIP, *Small but Significant and Non-transitory Increase in Price*) est utilisé pour déterminer le plus petit marché en cause sur lequel un monopoleur hypothétique pourrait relever ses prix en tirant profit de cette hausse.

¹⁹ Ces évaluations peuvent être fondées sur des estimations d'élasticités obtenues à partir d'analyses économétriques, sur des analyses d'enquêtes, ou sur les opinions d'acteurs du secteur considéré.

facile pour un homme d'affaires de répondre à la question : « La demande diminuerait-elle de plus de 15 %, par exemple, à la suite d'une hausse de prix de 5 % ? », qu'à la question : « Un monopoleur hypothétique pourrait-il tirer profit d'une hausse faible mais significative et non transitoire de ses prix ? »

Les analyses de prix consistent à examiner la relation entre différentes séries de prix en vue d'en tirer des conséquences en matière d'interactions concurrentielles et de définition du marché. Les analyses de corrélation de prix visent à déterminer si les prix de deux produits ont évolué parallèlement au fil du temps²⁰. Si tel est le cas, on considère que cela indique que ces produits sont concurrents l'un de l'autre, et qu'ils font donc partie du même marché en cause. L'analyse de corrélation de prix est très simple et n'exige qu'une quantité de données relativement limitée (des séries de prix), mais elle soulève de nombreux problèmes de taille, et constitue donc souvent un moyen peu fiable de définir le marché en cause lorsqu'elle est employée de manière simpliste. Cela dit, lorsqu'elle est utilisée et interprétée avec discernement, elle peut fournir des informations appréciables sur les interactions concurrentielles. L'analyse de corrélation de prix permet en particulier d'infirmer souvent la thèse selon laquelle deux produits se font concurrence, lorsqu'il peut être démontré que leurs prix évoluent tout à fait indépendamment l'un de l'autre. L'affaire *Ryanair/Aer Lingus* offre un bon exemple récent d'utilisation concrète de l'analyse de corrélation²¹. La Commission européenne a eu recours à cette technique, entre autres méthodes empiriques, pour déterminer si différents aéroports desservant la même ville, ou proches les uns des autres, faisaient partie du même marché géographique.

Il existe des méthodes d'analyse des prix plus complexes, tels que les tests de stationnarité, mais ceux-ci ne sont guère employés, car la puissance de ces tests est souvent modeste, et ils posent des problèmes similaires à ceux soulevés par l'analyse de corrélation de prix²².

L'analyse de choc constitue une autre technique couramment utilisée en matière d'analyse des fusions. Elle consiste à examiner des chocs antérieurs subis par un secteur, tels qu'un choc affectant le coût des facteurs ou l'entrée d'un nouveau produit, et à tenter de déterminer si la réaction de ce secteur au choc considéré offre des enseignements sur les interactions concurrentielles. S'il faut déterminer, par exemple, si les bibelots et les babioles font partie du même marché en cause dans l'optique d'une fusion, l'effet induit par l'entrée d'un nouveau fournisseur important de bibelots sur les fournisseurs de babioles en place est intéressant. Les fournisseurs de babioles ont-ils réagi en termes de prix ou de publicité ? Leurs ventes ont-elles diminué ? Ou, s'il s'est produit un choc au niveau des prix des facteurs qui n'a affecté que les bibelots, s'est-il intégralement répercuté sur les prix des bibelots, ou bien les prix des babioles ont-ils constitué une contrainte qui a limité cette répercussion ? L'analyse de choc n'est pas tant une technique empirique que l'application du bon sens à des données. Elle repose sur une réflexion intelligente visant à tirer les enseignements du comportement d'un marché à la suite d'un choc. La simplicité de cette approche constitue un avantage essentiel. L'inconvénient, c'est qu'il n'est pas toujours possible de réaliser une telle analyse. Si aucun choc digne d'intérêt n'a eu lieu récemment, cette approche est inapplicable. Il convient cependant de noter que les chocs tels que les lancements de nouveaux produits, les promotions de court terme et les nouvelles campagnes de publicité sont monnaie courante. Ainsi, dans l'affaire *AstraZeneca*²³,

²⁰ C'est dans Stigler, G. et Sherwin, R. (1985), « The extent of the market », *Journal of Law and Economics* qu'a été examinée pour la première fois la corrélation des prix dans ce contexte. Par ailleurs, on trouvera une étude de qualité, quoique à la tonalité assez sceptique, de la question dans Werden, G. et Froeb, L. (1993), « Correlation, causality and all that jazz: the inherent shortcomings of price tests for antitrust market definition », *Review of Industrial Organization*.

²¹ Voir l'annexe III [non traduite en français] du document « Case No COMP/M.4439 – *Ryanair / Aer Lingus* » (27 juin 2007).

²² Pour en savoir plus, voir Bishop et Walker (2009) et les ouvrages qui y sont référencés.

²³ Affaire COMP/A.37.507/F3 *AstraZeneca* (15 juin 2005).

la Commission européenne a utilisé des exemples de nouvelle entrée pour analyser les contraintes concurrentielles qu'exerçaient les uns sur les autres différents types de traitement relatifs à des affections gastro-intestinales liées à l'hyperacidité.

Les analyses prix-concentration portent sur la relation entre les prix²⁴ et la concentration du marché, ou la part de marché, dans un secteur ou sur un segment donné. Pour cerner cette relation, on examine l'évolution des prix et de la concentration sur un certain nombre de « marchés » distincts. Le but est de déterminer si le prix observé sur un « marché » augmente lorsque sa concentration augmente. Cette question est pertinente pour la définition du marché en cause et pour l'analyse des effets coordonnés. Néanmoins, il convient de noter que la logique sous-jacente à cette approche repose sur le paradigme structure-comportement-performance (SCP). Bien que ce paradigme sous-tende en grande partie l'analyse des fusions, il reste sujet à controverse. Les autorités britanniques ont largement utilisé cette approche au cours des dernières années à propos des fusions de supermarchés et dans le cadre d'enquêtes sur les conditions de concurrence²⁵. Cette analyse a été essentiellement employée aux fins de définition du marché en cause.

Les ratios de diversion mesurent la proportion des ventes perdues par une entreprise lorsqu'elle augmente son prix qui reviennent à une autre entreprise. Ainsi, le ratio de diversion entre A et B mesure la proportion des ventes perdues par A lorsqu'elle relève ses tarifs qui se reportent sur B. Par conséquent, un ratio de diversion de A vers B égal à 0.2 signifie que 20 % des ventes perdues par A reviennent à B. Ce ratio constitue un indicateur utile de l'étroitesse relative des relations de concurrence entre différents produits, de sorte qu'il est souvent utilisé dans les affaires d'effets unilatéraux. Plus un ratio de diversion entre deux produits est élevé, plus ce sont des concurrents proches et plus l'effet unilatéral potentiel sera fort en l'absence de facteurs de contrepoids. C'est pourquoi ils jouent un rôle important dans les diverses analyses des « pressions à la hausse sur les prix » que nous évoquons par la suite. Les ratios de diversion peuvent également être utiles pour déterminer quel devrait être le prochain produit à inclure dans le marché présumé lors d'un exercice de définition du marché en cause.

Sur les marchés où les ventes passent par une procédure d'appel d'offres (suivant laquelle chaque entreprise soumet une offre de prix pour emporter le marché, puis est sélectionnée comme attributaire ou non), une analyse des appels d'offres remportés/perdus peut souvent être utilisée pour déterminer si deux entreprises sont de proches concurrents. Ainsi, si l'une des deux entreprises arrive souvent en deuxième position lorsque l'autre emporte un marché, et inversement, on peut penser que ce sont de proches concurrents, puisque cela tend à indiquer qu'elles constituent l'une pour l'autre la principale contrainte concurrentielle lorsqu'elles emportent un appel d'offres. Une autre forme utile d'analyse peut consister à examiner l'effet exercé sur le prix offert par la présence ou l'absence de certains concurrents²⁶.

Les analyses de flux de produits visent à déterminer dans quelle mesure les ventes réalisées dans une région donnée trouvent leur origine en dehors de cette région, ou la mesure dans laquelle la production

²⁴ Ou les marges ou, parfois, les bénéfices.

²⁵ Voir par exemple Commission de la concurrence (*Competition Commission*) du Royaume-Uni (2008), *Market investigation into the supply of groceries in the UK*, ou Commission de la concurrence (*Competition Commission*) du Royaume-Uni (2005) *Somerfield plc and Wm Morrison Supermarkets plc: a report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc*.

²⁶ La décision rendue dans l'affaire *GE/Instrumentarium* (COMP/M.3083) le 2 septembre 2003 offre plusieurs bons exemples d'utilisation de données relatives à des appels d'offres dans le cadre de l'examen d'une fusion. La Commission s'est appuyée sur ces données pour déterminer avec quelle fréquence deux entreprises entraient en concurrence, et avec quelle fréquence les deux parties à la fusion constituaient l'une pour l'autre la principale contrainte concurrentielle.

d'une région est exportée²⁷. Ces analyses servent à la définition du marché géographique en cause et sont très faciles à réaliser, puisqu'elles ne nécessitent que des informations sur les flux de produits, la consommation intérieure et la production intérieure. Elles sont généralement axées sur les mouvements de produits. Lorsqu'on observe des flux importants de produits entre deux zones, on peut penser que ces deux zones font sans doute partie du même marché en cause. Néanmoins, une absence de flux ne signifie pas pour autant que les deux zones considérées appartiennent à des marchés distincts, étant donné qu'une hausse de prix de 5 % à 10 % dans une zone peut être suffisante pour qu'il devienne rentable de commencer à expédier des produits dans cette zone. Ce type d'analyse a été employé aux États-Unis dans le contexte de fusions hospitalières pour déterminer l'origine des patients. L'idée est que si une forte proportion de patients utilisant un hôpital vient de l'extérieur du marché géographique présumé de cet établissement, on peut penser que ce marché géographique a été défini de manière trop étroite. L'affaire *FTC c. Tenet Healthcare* en offre une bonne illustration²⁸. Les analyses des coûts de transport sont également utiles pour la définition du marché géographique en cause, car elles peuvent servir à déterminer quels fournisseurs qui n'approvisionnent pas pour le moment la zone considérée pourraient le faire, soit aux prix actuels, soit en cas de hausse des prix consécutive à une fusion²⁹.

3. L'analyse des fusions verticales

Nous nous sommes attachés précédemment aux théories du préjudice couramment utilisées dans les cas de fusions *horizontales*. La science économique montre bien que les fusions verticales sont moins susceptibles de soulever des problèmes de concurrence que les fusions horizontales, et qu'elles sont de nature à déboucher sur des baisses de prix découlant de gains d'efficacité, dès lors qu'il existe un pouvoir de marché aux deux extrémités de la chaîne verticale considérée. L'utilisation de la science économique dans l'analyse des fusions verticales s'est améliorée de manière spectaculaire au cours des dernières années. Il existe maintenant des théories du préjudice claires s'appliquant aux affaires d'effets unilatéraux, que les autorités de la concurrence doivent expliciter : le verrouillage du marché des intrants et/ou le verrouillage de la clientèle.

3.1 Verrouillage du marché des intrants

On parle de verrouillage du marché des intrants lorsque la partie à la fusion située en amont soit cesse de fournir ses produits aux concurrents de la partie à la fusion située en aval, soit leur fournit ses produits à des conditions moins favorables ; les concurrents situés en aval subissent alors une hausse des coûts de leurs intrants, perdent en compétitivité et, partant, exercent une contrainte concurrentielle plus faible sur la partie à la fusion située en aval. Pour qu'il en résulte un préjudice pour le consommateur, il ne doit pas exister de bons substituts au produit de la partie à la fusion située en amont (autrement dit, elle doit être puissante sur le marché en amont) et une augmentation du coût de ce produit, ou un refus de le fournir, doit entraîner une réduction de la concurrence en aval.

3.2 Verrouillage de la clientèle

On parle de verrouillage de la clientèle lorsque la partie à la fusion située en aval cesse d'acheter des intrants aux concurrents de la partie à la fusion située en amont. Si la partie à la fusion située en aval est de

²⁷ Les travaux fondateurs publiés dans ce domaine sont Elzinga, K. et Hogarty, T. (1973), « The problem of geographic market definition in antimerger suits », *Antitrust Bulletin* et Elzinga, K. et Hogarty, T. (1978), « The problem of geographic market definition revisited: the case of coal », *Antitrust Bulletin*.

²⁸ *FTC v Tenet Healthcare Corp*, 186 F. 3d 1045 (8th Cir. 1999).

²⁹ Voir par exemple la décision rendue dans l'affaire COMP/M.4533 *SCA/P&G* (5 septembre 2007), dans le cadre de laquelle avait été examinée la question de savoir jusqu'à quelle distance il était rentable de transporter des produits en papier absorbant compte tenu du niveau auquel se situaient les prix à l'époque.

taille suffisante, cela peut avoir pour effet de réduire la capacité des entreprises situées en amont de livrer concurrence à la partie à la fusion située en amont, du fait de pertes d'économies d'échelle. Il peut alors en résulter une hausse des prix des intrants, débouchant sur une augmentation des coûts des concurrents des parties à la fusion situés en aval, et donc sur une réduction de la concurrence portant préjudice aux consommateurs. Cela suppose cependant que la partie à la fusion située en aval soit de grande taille, et que sa perte en tant que débouché soit suffisante pour alourdir les coûts moyens des entreprises situées en amont³⁰.

3.3 *Fondements théoriques*

Le verrouillage du marché des intrants et le verrouillage de la clientèle sont deux exemples de stratégies destinées à faire augmenter les coûts des concurrents, et correspondent à l'esprit des travaux économiques publiés sur l'alourdissement des coûts des concurrents. L'origine de ces travaux remonte au moins à Salop et Scheffman (1983)³¹. Leur fondement intuitif est qu'une entreprise dominante peut être en mesure d'affaiblir la concurrence par les prix en alourdissant les coûts de ses rivales, et qu'elle peut en tirer profit même si ses manœuvres font augmenter ses propres coûts en même temps que ceux de ses concurrentes³². Néanmoins, ainsi que l'indiquent les travaux publiés sur la question, il n'est pas toujours rentable pour l'entreprise dominante d'alourdir les coûts de ses concurrentes, et cela ne débouche pas toujours sur un résultat anticoncurrentiel (au sens d'augmentation des prix subie par les consommateurs). Ces principes intuitifs, et les réserves qui s'y rapportent, peuvent être appliqués aux fusions verticales³³.

Il est souvent possible d'échafauder un « scénario » de fusion verticale montrant qu'elle comporte un risque d'atteinte à la concurrence. Dans la mesure où l'effet direct d'une fusion verticale est généralement favorable à la concurrence (compte tenu des baisses de prix découlant de l'internalisation d'externalités de prix), ces scénarios reposent sur des effets plus indirects que dans le cas des fusions horizontales (pour lesquelles la perte de concurrence entre concurrents horizontaux engendre une incitation à relever les prix). Ces scénarios d'effets indirects sont axés sur le risque que les parties à la fusion évincent leurs concurrents, portant du même coup atteinte à la concurrence, et donc aux intérêts des consommateurs. Il importe par conséquent d'adopter une approche permettant de distinguer les scénarios plausibles et les théories du préjudice solides sur le plan empirique. À cet égard, les Lignes directrices sur l'appréciation des concentrations non horizontales utilisées par la Commission européenne offrent un bon cadre de réflexion³⁴. Selon ces lignes directrices, pour qu'une fusion verticale soit jugée préoccupante en termes d'effets unilatéraux, il faut que les conditions suivantes soient réunies :

- les parties à la fusion doivent avoir la *capacité* d'évincer leurs concurrents,
- elles doivent avoir une *incitation* à le faire, et

³⁰ Il convient de noter que cette description du verrouillage de la clientèle n'est pas complète, et qu'elle fait l'impasse sur de nombreuses complications, telles que la relation entre prix et coûts moyens, puisqu'un des enseignements de la science économique est que les prix sont déterminés par les coûts marginaux.

³¹ Scheffman, D. et Salop, S. (1983), « Raising Rivals' Costs », *American Economic Review*.

³² Voir également Salop, S. et Scheffman, D. (1987), « Cost-raising strategies », *Journal of Industrial Economics*.

³³ Voir Ordoover, J., Saloner, G. Salop, S. (1990), « Equilibrium Vertical Foreclosure », *American Economic Review*, et Riordan, M. et Salop, S. (1995), « Evaluating Vertical Mergers: A Post-Chicago Approach », *Antitrust Law Journal*.

³⁴ Ces lignes directrices sont consultables à l'adresse suivante : <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:265:0006:0025:FR:PDF>

- le verrouillage du marché doit porter préjudice aux *consommateurs*.

Par le passé, après avoir constaté la capacité des parties à une fusion d'évincer leurs concurrents, les autorités avaient tendance à en tirer directement la conclusion que la fusion en question serait anticoncurrentielle. Les trois étapes susmentionnées soulignent au contraire l'importance de démontrer que les entreprises n'ont pas simplement la capacité de verrouiller le marché, mais aussi une incitation à le faire, et qu'un tel verrouillage porterait préjudice aux consommateurs, et non uniquement aux entreprises concurrentes.

En dehors de l'UE et des États-Unis, aucune juridiction ne semble dotée de lignes directrices spécifiques sur les fusions verticales. Les lignes directrices des États-Unis sont très anciennes (elles datent de 1984). Néanmoins, les lignes directrices relatives aux opérations de concentration utilisées dans différentes juridictions abordent la question des fusions verticales. Ainsi, les Lignes directrices sur l'appréciation des fusions (*Merger Assessment Guidelines*) du Royaume-Uni sont très proches de celles de la Commission européenne. Aux termes du paragraphe 5.6.6 :

« Malgré les différences de détails entre les dossiers, les autorités structurent généralement leur analyse des fusions non horizontales en s'appuyant sur les trois questions suivantes :

(a) Capacité : l'entreprise issue de la fusion aurait-elle la capacité de nuire à ses concurrentes, par exemple en augmentant ses prix ou en refusant de les approvisionner ?

(b) Incitation : serait-il rentable pour elle de le faire ?

(c) Effet : les initiatives de l'entreprise issue de la fusion auraient-elle un effet suffisant pour réduire la concurrence sur le marché considéré au point d'entraîner, dans le contexte du marché en question, une diminution substantielle de la concurrence ? »

Dans ses Lignes directrices relatives au contrôle des concentrations, l'Autorité de la concurrence française fait référence à celles de la Commission européenne et relève que selon ces dernières, il convient d'examiner, « premièrement, si l'entité issue de la fusion aurait, après la fusion, la capacité de verrouiller l'accès aux intrants ou à la clientèle de manière significative, deuxièmement, si les incitations à le faire sont suffisantes, et troisièmement, si une stratégie de verrouillage aurait un effet significatif sur les marchés en cause »³⁵. Par ailleurs, aux termes des lignes directrices de la Commission australienne de la concurrence et de la consommation (ACCC, *Australian Competition & Consumer Commission*) :

« L'ACCC examinera les trois éléments suivants :

- *la capacité de l'entreprise issue de la fusion à verrouiller le marché,*
- *les incitations que peut avoir l'entreprise issue de la fusion à verrouiller le marché, et*
- *l'effet probable qu'aurait un tel verrouillage. »*

La question des fusions verticales est abordée de manière générale dans les lignes directrices du Canada, de la Nouvelle-Zélande, du Japon et de la Corée, mais on n'y trouve pas d'indications méthodologiques précises comparables à celles évoquées plus haut.

³⁵ Autorité de la Concurrence (2009), « Lignes directrices de l'Autorité de la concurrence relatives au contrôle des concentrations », paragraphe 396.

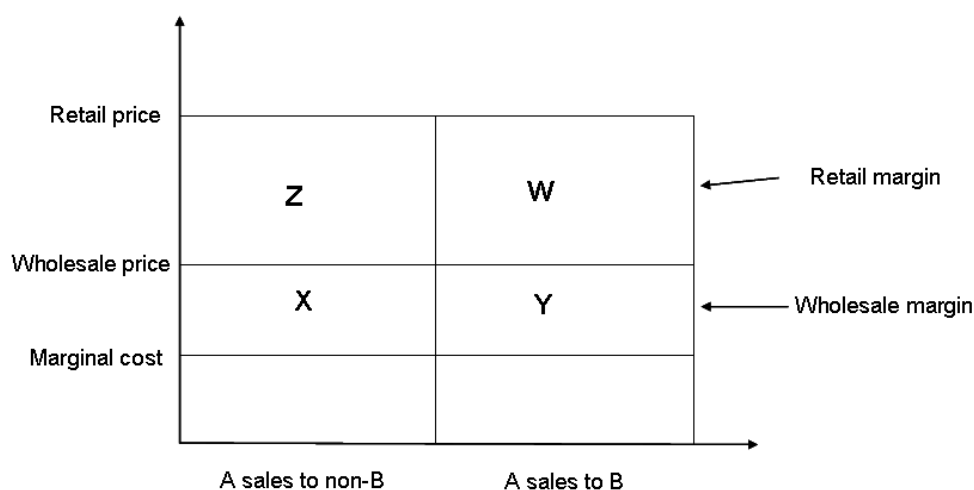
3.4 *Arithmétique verticale*

Il existe maintenant une approche standard pour analyser l'incitation des parties à une fusion à évincer leurs concurrents : l'arithmétique verticale³⁶. Il s'agit d'examiner les coûts et les avantages que présente pour les parties à une fusion une stratégie de verrouillage du marché, afin de déterminer si les premiers l'emportent sur les seconds. Les deux stratégies de verrouillage susmentionnées comportent à la fois des coûts et des avantages pour les parties à la fusion. Le coût de la stratégie de verrouillage du marché des intrants réside dans le manque à gagner que subit l'entité issue de la fusion parce qu'elle ne fournit plus le produit considéré, ou en moindre quantité, à ses concurrents situés en aval. L'avantage retiré de cette stratégie est l'augmentation des bénéfices engrangés en aval découlant de la réduction de la concurrence à ce niveau. Une stratégie de verrouillage de la clientèle peut représenter un coût pour l'entité issue de la fusion, si elle la conduit à utiliser un intrant de moins bonne qualité, ou si l'augmentation de la demande de l'intrant produit par la partie à la fusion située en amont l'amène à renoncer à certaines ventes à des concurrents situés en aval (autrement dit, si elle débouche sur des contraintes de capacités en amont). Quant aux avantages induits par un verrouillage de la clientèle, ils découlent, là encore, de la réduction de la concurrence en aval.

Nous pouvons illustrer ces mécanismes graphiquement. Supposons que l'entreprise A, située en amont, fusionne avec l'entreprise B, située en aval. Avant cette fusion, l'entreprise A fournit un produit à l'entreprise B et aux concurrents de celle-ci. L'entreprise A réalise une marge sur ces deux types de ventes, qui correspond sur le graphique aux zones X et Y. L'entreprise B réalise également une marge sur ses ventes, qui est représentée par la zone W. Par conséquent, avant la fusion, les bénéfices cumulés (hors coûts fixes) des entreprises A et B correspondent à la somme des zones X, Y et W.

³⁶ Voir, par exemple, Church, J. (2004), « The impact of vertical and conglomerate mergers on competition », *Report for DG Competition, European Commission* ; Hodge, J., Goga, S. et Aproskie, J. (2008), « Vertical arithmetics and its application in vertical mergers », *Genesis* ; et CRA (2008), « TomTom/Tele Atlas: the non-horizontal merger guidelines in practice », *CRA Competition Memo*.

Graphique 1. Arithmétique verticale : situation avant la fusion



[Légende du graphique 1]

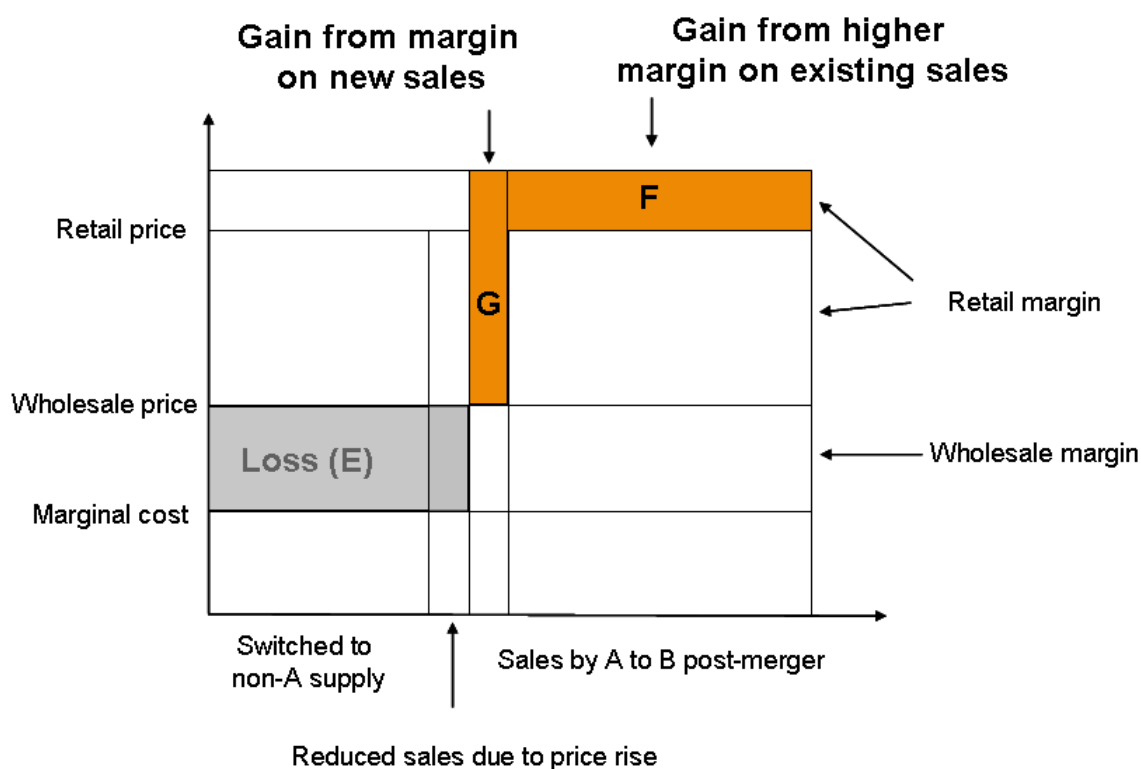
Retail price	->	Prix de détail
Wholesale price	->	Prix de gros
Marginal cost	->	Coût marginal
Retail margin	->	Marge de détail
Wholesale margin	->	Marge de gros
A sales to non-B	->	Ventes de A à d'autres entreprises que B
A sales to B	->	Ventes de A à B

Examinons maintenant les conséquences qu'aurait un verrouillage du marché des intrants. Il impliquerait que l'entreprise A n'approvisionne plus les concurrents de l'entreprise B, de sorte que l'entité issue de la fusion perdrait la marge bénéficiaire réalisée sur ces ventes. Toutefois, suivant le mécanisme théorique de la stratégie de verrouillage du marché des intrants, l'entité issue de la fusion devrait accroître ses ventes en aval, car les produits vendus par les concurrents de l'entité issue de la fusion en aval sont maintenant moins compétitifs, en raison de l'augmentation des coûts de leurs intrants³⁷. En outre, il est probable que les prix vont augmenter en aval du fait de l'affaiblissement de la concurrence à ce niveau. Ces différents effets sont illustrés par le graphique 2. Nous partons de l'hypothèse que le prix de détail augmente en raison de l'amointrissement de la concurrence. Il en résulte un accroissement de la marge réalisée sur les ventes que l'entreprise B effectuait déjà, représenté sur le graphique par la zone F. L'entité issue de la fusion réalise en outre une marge sur les ventes supplémentaires en aval qu'elle effectue maintenant du fait du verrouillage du marché des intrants, qui correspond à la zone G du graphique. Toutefois, l'entité issue de la fusion perd les marges sur les ventes qu'effectuait précédemment en aval l'entreprise A auprès d'autres entreprises que B. Certaines de ces ventes reviennent à l'entreprise issue de la fusion, mais d'autres non, ce qui se traduit par une perte, représentée par la zone E.

³⁷

Cela peut tenir au fait qu'il est plus coûteux d'acquérir ces intrants auprès d'autres entreprises que A en amont, ou bien à la moindre qualité des intrants vendus par ces autres fournisseurs en amont.

Graphique 2. Arithmétique verticale : situation après la fusion



[Légende du graphique 2]

Gain from margin on new sales	->	Gain lié à la marge sur les nouvelles ventes
Gain from higher margin on existing sales	->	Gain lié à l'augmentation de la marge sur les ventes antérieures
Loss (E)	->	Perte (E)
Retail price	->	Prix de détail
Wholesale price	->	Prix de gros
Marginal cost	->	Coût marginal
Retail margin	->	Marge de détail
Wholesale margin	->	Marge de gros
Switched to non-A supply	->	Ventes perdues par A au profit d'autres fournisseurs
Sales by A to B post-merger	->	Ventes de A à B après la fusion
Reduced sales due to price rise	->	Diminution des ventes due à la hausse des prix

La démarche d'arithmétique verticale consiste maintenant simplement à déterminer si le gain résultant du verrouillage du marché des intrants l'emporte sur la perte qui en découle, autrement dit, si $F + G > E$. Il s'agit là d'un cadre simple, dans lequel peuvent être analysés les facteurs sous-jacents au verrouillage du marché des intrants :

- Quelles sont les marges relatives en amont et en aval ? Plus ces marges sont importantes en amont, moins il est probable qu'une stratégie de verrouillage du marché des intrants soit rentable.
- Quelle proportion des ventes perdues en amont reviendra à l'entité issue de la fusion ?
- Quel sera l'effet induit par le verrouillage du marché des intrants sur les prix de détail ?

3.5 Exemples d'améliorations dans l'analyse des fusions verticales

L'amélioration de l'approche économique des fusions verticales a eu un effet positif sur l'appréciation des opérations de concentration. L'affaire TomTom/TeleAtlas en offre un bon exemple³⁸. Cette fusion aurait très probablement été bloquée par les autorités de la concurrence avant l'application d'une approche économique aux fusions verticales. TomTom, qui était alors le principal fabricant d'appareils de navigation portables (c'est-à-dire de systèmes de navigation par satellite), souhaitait acheter TeleAtlas, un des deux seuls fournisseurs européens de cartes numériques destinées à la navigation. La part de marché européenne de TomTom était de l'ordre de 40 %, tandis que celle de TeleAtlas était d'environ 60 %. Le tableau que dessinent ces données de base est peu engageant, puisque la principale entreprise située en aval veut racheter l'entreprise « dominante » en amont dans le cadre d'un duopole. Il est donc aisé d'échafauder des scénarios négatifs sur cette opération de concentration.

Dans cette affaire, la théorie du préjudice liée au verrouillage du marché des intrants se déclinait sous deux formes : verrouillage partiel et verrouillage total. Suivant une logique de verrouillage total du marché des intrants, l'entité issue de la fusion n'aurait plus fourni de cartes numériques destinées à la navigation aux concurrents de TomTom en aval. En conséquence, le seul autre fournisseur de ce type de cartes, Navteq, serait devenu le fournisseur monopolistique des concurrents de TomTom, ce qui lui aurait permis de relever ses prix. Les concurrents de TomTom en aval auraient alors dû réviser leurs propres tarifs à la hausse, ce qui aurait profité à TomTom en réduisant les pressions concurrentielles exercées par ses rivaux. Il aurait pu en tirer parti en relevant à son tour ses prix, ou en vendant davantage de systèmes de navigation par satellite, ou encore en panachant ces deux options. Le verrouillage partiel du marché des intrants reposait sur une théorie du préjudice similaire, mais dans ce scénario, l'entité issue de la fusion n'aurait pas complètement cessé d'approvisionner ses concurrents en aval et leur aurait facturé des prix plus élevés (ou vendu des cartes de moins bonne qualité), ce qui aurait permis à Navteq de réviser également ses tarifs à la hausse et, partant, réduit la concurrence subie en aval par TomTom.

En appliquant la méthode en trois points susmentionnée (capacité d'évincer la concurrence, incitation à le faire, et préjudice porté aux consommateurs), la Commission européenne est d'abord parvenue à la conclusion que l'entité issue de la fusion serait en mesure de procéder au verrouillage du marché des intrants. Elle aurait pu cesser de fournir les cartes de TeleAtlas à ses concurrents en aval, et cela aurait probablement alourdi leurs coûts. La Commission s'est ensuite demandé si l'entité issue de la fusion avait intérêt à le faire. Suivant la théorie du préjudice, l'entité issue de la fusion sacrifie des bénéfices provenant de sa branche amont (en réduisant ses ventes de cartes) en espérant engranger des bénéfices accrus en aval (grâce à l'augmentation des prix et/ou des ventes de systèmes de navigation par satellite) qui soient supérieurs au manque à gagner subi en amont. Un facteur important résidait donc dans les marges relatives en amont et en aval ; or, les marges aval étaient nettement supérieures aux marges amont³⁹. Une stratégie de verrouillage du marché des intrants semblait donc pouvoir être rentable. Néanmoins, la Commission a écarté cet argument, car elle est parvenue à la conclusion qu'une hausse des prix des cartes n'aurait sans doute qu'un effet très modeste sur les prix des systèmes de navigation par satellite. Premièrement, les cartes ne représentent qu'une très faible proportion du coût d'un système de navigation par satellite (inférieure à 10 %) ⁴⁰, si bien que même une hausse sensible des prix des cartes n'aurait guère d'effet, voire aucun, sur les prix de ces systèmes. Cela signifie que les pressions concurrentielles exercées sur TomTom ne seraient guère réduites. Deuxièmement, la Commission a réalisé une estimation économétrique de l'élasticité-prix croisée entre TomTom et ses concurrents, et elle est parvenue à la conclusion que cette élasticité était

³⁸ Affaire COMP/M.4854 *TomTom/Tele Atlas* (14 mai 2008).

³⁹ D'après la note de bas de page 164 de la décision, les marges aval étaient entre 5 et 10 fois plus importantes que les marges amont.

⁴⁰ Paragraphe 216, *TomTom/Tele Atlas op. cit.*

faible, de sorte que même une hausse significative des prix des systèmes de navigation par satellite concurrents n'aurait pas sensiblement accru la demande de produits fabriqués par TomTom⁴¹. En conséquence, la Commission est parvenue à la conclusion que l'entité issue de la fusion n'aurait pas intérêt à mettre en œuvre une stratégie de verrouillage du marché des intrants, étant donné que la réduction de ses marges découlant de la diminution de ses ventes en amont excéderait sans doute l'augmentation de ses marges en aval. Il a donc été jugé peu probable que cette fusion puisse porter préjudice aux consommateurs.

Un bon exemple d'utilisation du cadre d'arithmétique verticale est offert par la fusion entre Sasol et Engen de 2004, en Afrique du Sud, qui avait été remise en cause par la Commission de la concurrence puis interdite par le Tribunal de la concurrence⁴². Le problème de concentration verticale soulevé par cette fusion était le suivant. D'après les informations recueillies, Sasol était en position dominante sur le marché amont de l'approvisionnement en carburant dans la région de Johannesburg, située à l'intérieur des terres. Engen était un détaillant de carburant en aval présent dans cette région. Avant la fusion, Sasol fournissait Engen et ses concurrents dans la zone considérée. Selon la théorie du préjudice, après la fusion, Sasol aurait cessé d'approvisionner les concurrents d'Engen, qui auraient alors dû acheminer du carburant de la côte à la région de Johannesburg. Compte tenu de contraintes de capacité, ils n'auraient pas été en mesure de compenser intégralement la perte des volumes fournis par Sasol. Cela aurait permis à l'entité issue de la fusion d'accroître sa part de marché dans la région de Johannesburg et, si elle choisissait de restreindre l'offre, de faire monter les prix dans cette zone. La question qui se posait était de savoir si une telle stratégie aurait été rentable pour Sasol. Dans la mesure où il était possible de transporter des quantités considérables de carburants depuis la côte, cette stratégie impliquait que Sasol renonce à un volume de ventes considérable en amont (ce qui aurait représenté un coût pour l'entité issue de la fusion) afin d'accroître ses ventes (au détail) en aval. Les deux parties au litige ont eu recours à l'arithmétique verticale pour cerner la question. Malgré l'absence d'accord entre les deux parties quant au résultat probable, l'utilisation de l'arithmétique verticale a permis d'établir clairement quelles étaient les hypothèses clés posées par les différentes parties influant sur les résultats obtenus à partir de ce cadre d'arithmétique verticale.

4. Les simulations de fusions⁴³

Une évolution peut-être surprenante en matière d'appréciation des fusions au cours des cinq dernières années a résidé dans la *réduction* du recours aux simulations de fusions dans certaines juridictions. Pour déterminer si cette tendance est susceptible de se prolonger, il importe de comprendre les raisons de cette désaffection.

Des arguments économiques convaincants militent en faveur du recours aux simulations de fusions pour l'appréciation de ces opérations. L'approche classique en matière d'appréciation des fusions consiste à définir le marché en cause, puis à évaluer la concurrence sur ce marché et la façon dont elle sera modifiée par la fusion considérée, pour finalement rendre une décision. L'argument avancé initialement en faveur de la simulation de fusion était qu'elle permettrait aux enquêteurs de se dispenser en grande partie des analyses classiques, pour réaliser en lieu et place une analyse directe des effets précis de la fusion

⁴¹ Paragraphe 221, *TomTom/Tele Atlas op. cit.*

⁴² Tribunal de la concurrence sud-africain (*South African Competition Tribunal*), *Case No: 101/LM/Dec04 – Sasol/Engen/Petrona*, (jugement consultable à l'adresse suivante : <http://www.comptrib.co.za/assets/Uploads/Case-Documents/101LMDec04.pdf>).

⁴³ Nous savons que des recherches sont en cours sur l'utilisation de modèles de simulation de fusion dans des affaires d'effets coordonnés. Néanmoins, à notre connaissance, aucune autorité de contrôle des fusions n'a inclus les résultats de simulations de ce type dans une décision, et nous n'examinons donc pas ces modèles dans le présent document.

considérée. Les partisans les plus convaincus de cette approche affirmaient qu'à partir de données sur les parts de marché, les prix courants et l'élasticité caractéristique du secteur concerné, il était possible de prévoir avec une précision raisonnable l'effet d'une fusion, y compris en tenant compte des éventuelles réductions de coûts marginaux censées faire suite à la fusion. En conséquence, la période 2000-2005 a été marquée par une augmentation sensible du recours aux simulations de fusions. Ce mouvement s'est interrompu depuis, et s'est dans une large mesure inversé. Ainsi, les simulations de fusions mentionnées dans les décisions de la Commission européenne ont été relativement peu nombreuses depuis l'affaire *Oracle/Peoplesoft*⁴⁴ de 2004. La Commission de la concurrence du Royaume-Uni n'y a pas eu recours depuis la fusion de 2006 *Pan Fish/Marine Harvest*. À notre connaissance, aucune simulation de fusion n'a été utilisée en Australie depuis l'affaire *Toll/Patrick* (2006), et cette approche n'a été employée qu'une seule fois en Afrique du Sud, dans l'affaire *Masscash Holdings/Finro Enterprises* (2009), au cours de laquelle le Tribunal de la concurrence avait rejeté les arguments avancés contre cette fusion qui reposaient sur cette méthode. Quant à la Commission du commerce de Nouvelle-Zélande (*New Zealand Commerce Commission*), elle a eu recours à trois reprises à un modèle de simulation au cours de la période 2006-2008, mais ces trois affaires concernaient le même secteur (la sylviculture).

4.1 *Les problèmes soulevés par les simulations de fusions*

Le principal problème posé par les simulations de fusions est que les intervalles de confiance sur lesquels elles débouchent sont souvent très amples. Autrement dit, bien qu'une simulation permette de déterminer quelle serait la hausse potentielle des prix après la fusion considérée, une incertitude considérable subsiste généralement quant à l'exactitude du résultat obtenu. Une simulation peut indiquer que l'augmentation de prix la plus probable est de x %, tout en montrant que l'intervalle plausible dans lequel s'inscrit ce taux de variation est très large. Ainsi, le modèle peut faire ressortir une hausse des prix de 10 %, tout en indiquant que la fourchette de variations plausibles des prix va en fait d'une légère baisse, disons de 3 %, à une hausse plus substantielle de 30 %.

Cela tient à diverses raisons. Les deux raisons les plus importantes, peut-être, tiennent à la difficulté d'estimer précisément les élasticités, et de modéliser la nature exacte de la concurrence sur un marché. Ces deux facteurs sont brièvement examinés ci-après.

Toute analyse de l'effet d'une fusion sur les prix exige des données sur l'élasticité-prix directe de la demande de chacun des produits considérés ainsi que sur leurs élasticités-prix croisées. Cela soulève deux questions. Premièrement, quelles sont ces différentes élasticités à prix courants ? Deuxièmement, comment ces élasticités varient-elles lorsque les prix évoluent, sachant que l'hypothèse classique est que les élasticités augmentent (en valeur absolue) avec les prix ? Il s'avère que le résultat d'une simulation de fusion est généralement très sensible à la fois aux estimations courantes des élasticités et à la façon dont elles varient avec les prix (c'est-à-dire à la forme de la courbe de demande). Walker (2005)⁴⁵ montre que même des inexactitudes de 10 % dans les estimations de l'élasticité-prix directe de la demande des produits considérés peuvent avoir des effets spectaculaires sur les estimations des hausses des prix consécutives à la fusion. Cela signifie que pour être robuste, un modèle de simulation de fusion doit reposer sur de très bonnes estimations des élasticités ; or, celles-ci sont rarement disponibles.

L'hypothèse classique sur laquelle étaient fondées les premières simulations de fusions était que la concurrence pouvait être modélisée comme une concurrence à la Bertrand, avec des produits différenciés⁴⁶.

⁴⁴ On peut citer à cet égard les affaires *Kraft Foods/Cadbury* (2010) et *Unilever/Sara Lee Body Care* (2010).

⁴⁵ Walker., M. (2005), « The Potential for Significant Inaccuracies in Merger Simulation Models », *Journal of Competition Law and Economics*.

⁴⁶ Il s'agit d'un modèle économique couramment utilisé dans les travaux sur la politique de la concurrence. Il repose sur l'hypothèse que le marché est constitué de produits différenciés (différents types

Cette hypothèse n'est pas déraisonnable, mais elle n'est pas toujours correcte. Elle implique un ensemble de relations particulières entre les prix, les coûts marginaux et les élasticités. Si des analyses empiriques montrent que ces relations n'existent pas sur le marché considéré, cette hypothèse est incorrecte. Or, les hypothèses retenues concernant la nature de la concurrence sur le marché examiné ont un effet sensible sur les estimations des simulations de fusions, de sorte qu'il est important de veiller à ce que les données factuelles sur le marché concordent avec le type de concurrence théorique retenu pour le modèle. De ce point de vue, il faut se garder de poser comme hypothèse, comme c'était souvent le cas les premières années dans le cadre des simulations de fusions, la forme revêtue par la concurrence pour estimer ensuite, sur la base de ce postulat, des caractéristiques du marché telles que les élasticités à partir des prix et des coûts marginaux. Il convient au contraire de procéder à des estimations empiriques des élasticités, des coûts, des ratios de diversion, etc., pour utiliser ensuite ces éléments afin de déterminer la nature du modèle de concurrence retenu.

4.2 *La simulation de fusion ne doit être qu'un élément d'appréciation parmi d'autres*

Même une simulation de fusion bien conçue ne constitue qu'un élément d'appréciation parmi d'autres. En général, ce type d'exercice consiste uniquement à examiner l'effet d'une fusion sur les prix, en partant du principe que rien ne change hormis le fait que deux entreprises qui étaient précédemment concurrentes ne le sont plus. Cela signifie que sont exclus un certain nombre de facteurs qui sont généralement considérés comme très importants dans l'analyse des fusions : les obstacles à l'entrée, la puissance des acheteurs, le repositionnement des produits et la concurrence hors prix. Lorsque les obstacles à l'entrée sont modestes, on peut s'attendre à de nouvelles entrées sur le marché à la suite de toute hausse des prix consécutive à une fusion, lesquelles devraient logiquement atténuer ce phénomène d'augmentation des prix. Lorsque les acheteurs disposent d'un pouvoir de marché considérable, ils peuvent l'utiliser pour s'opposer à toute tentative de relèvement des prix à la suite d'une fusion⁴⁷. Si des concurrents peuvent repositionner leurs produits pour concurrencer plus étroitement ceux de l'entité issue de la fusion, cela peut compenser au moins en partie la réduction des pressions concurrentielles découlant de la fusion. Enfin, la plupart des exercices de simulation de fusion ont pour objet exclusif les effets induits sur les prix⁴⁸. Or, de nombreux marchés sont caractérisés par une vive concurrence hors prix, fondée par exemple sur la publicité, la concurrence pour l'utilisation du linéaire, etc. Cela doit être pris en compte dans toute procédure approfondie d'appréciation d'une fusion⁴⁹.

L'importance de ces facteurs tient au fait que, suivant la logique des effets unilatéraux, les prix devraient toujours augmenter lorsque fusionnent des entreprises dont les produits sont substituables (même si cette substituabilité est faible) en l'absence de réduction des coûts marginaux. Néanmoins, force est de

d'automobiles, par exemple) et non de produits homogènes (comme le ciment). Il est supposé par ailleurs que les entreprises se livrent concurrence en fixant leur prix puis en fournissant la quantité de produits nécessaire pour satisfaire la demande des consommateurs. Ce cadre théorique se définit par opposition au modèle de concurrence de Cournot, dans lequel il est supposé que les entreprises déterminent la quantité de produits qu'elles veulent écouler, puis laissent les prix varier de manière que les consommateurs achètent ce volume de production. Pour obtenir de plus amples informations sur les différences entre les modèles de concurrence de Bertrand et de Cournot, voir Tirole (1989) *op. cit.* ou Carlton and Perloff (2004) *op. cit.*

⁴⁷ Voir, par exemple, l'analyse présentée dans la décision *Enso/Stora* (Affaire IV/M.1225, 1998). La Commission a autorisé cette fusion malgré l'ampleur de la part de marché obtenue par l'entité issue de la fusion, car la Commission avait estimé que Tetra Pak, un gros acheteur, serait à même de favoriser l'arrivée de nouveaux entrants et/ou d'aider les acteurs de taille plus modeste déjà présents sur le marché à se développer en cas de hausse des prix.

⁴⁸ Ce n'est cependant pas systématiquement le cas : voir l'exemple *Oracle/Peoplesoft* ci-après.

⁴⁹ Pour une analyse utile de ces questions, voir « Whither merger simulation », American Bar Association Section of Antitrust Law « Brown Bag », 29 janvier 2004.

constater que les autorités de contrôle des fusions n'interdisent pas la quasi-totalité des fusions intervenant sur des marchés de produits différenciés, ce qui signifie que ces autorités jugent ces facteurs importants. La question du poids à accorder à ces facteurs dans une affaire donnée est de nature empirique, mais on ne peut partir du principe qu'ils sont négligeables. Les omettre de l'analyse effectuée constituerait sans doute une grave erreur.

D'aucuns considèrent donc que les simulations de fusions fournissent une valeur plafond pour la hausse des prix susceptible de faire suite à une fusion. Il s'agit là d'une position raisonnable, même s'il convient de noter que ces simulations ne permettent de mettre évidence un plafond que si la nature de la concurrence n'est pas modifiée par la fusion. Par conséquent, si l'opération de concentration considérée se traduit par le passage des entreprises concernées d'une situation de vive concurrence à une collusion tacite, la simulation de cette fusion débouchera sur une sous-estimation de la hausse des prix consécutive à l'opération.

4.3 *Quel est le bon rôle pour les simulations de fusions ?*

La logique qui sous-tend l'utilisation des modèles de simulation de fusion demeure valable : pourquoi adopter une approche d'évaluation indirecte en matière de contrôle des fusions s'il est possible d'adopter une approche directe ? Ce que nous avons appris, toutefois, c'est que les aspects pratiques de la réalisation d'une simulation de fusion sont très importants, et qu'ils soulèvent des difficultés considérables. Quel sera donc le devenir des simulations de fusions ?

Premièrement, les modèles de simulation standard, à caractère générique, sont d'un intérêt très limité. Le fait que ce type de modèle ait été largement disponible à un moment donné (sur Internet, par exemple) alors que ce n'est plus le cas aujourd'hui le montre bien. Les modèles de simulation devraient au contraire être conçus sur mesure, et prendre en compte les spécificités du secteur d'activité concerné. Nous examinons divers exemples de modèles de ce type ci-après. Il s'agit là d'une approche qui exige beaucoup plus de travail que la simple utilisation d'un modèle générique de concurrence de Bertrand fondé sur des produits différenciés, mais c'est la seule approche qui soit défendable d'un point de vue économique. Nous savons sur le plan théorique que l'évolution d'un marché varie suivant que son mode de fonctionnement correspond davantage au modèle de concurrence de Bertrand ou à celui de Cournot, ou à celui d'un marché d'enchères, etc.⁵⁰ Il n'est donc guère surprenant que ces distinctions comptent également sur le plan empirique.

Deuxièmement, il demeure indéniable que les modèles de simulation de fusion relatifs aux effets coordonnés demeurent très loin d'être applicables aux affaires concrètes de fusion. Compte tenu du manque de clarté qui entoure certains des mécanismes économiques sous-jacents à ces effets coordonnés, il n'y a là rien de très étonnant.

Troisièmement, même lorsqu'un modèle sur mesure élaboré avec soin est disponible, il est peu probable qu'il offre une base adéquate sur laquelle fonder une décision en matière de contrôle de fusion. Cela tient au fait que cet outil fait abstraction de nombreux éléments importants en termes de concurrence. Cela ne veut pas dire que les modèles de simulation de fusion ne peuvent être utiles, mais simplement que leur rôle est aujourd'hui plus limité qu'on ne le pensait peut-être auparavant. Cela pourrait changer si nous

⁵⁰

Voir la note de bas de page 46 pour une brève description des modèles de Bertrand et de Cournot. Un marché d'enchères est un marché sur lequel les fournisseurs font une offre de prix pour chaque vente (par exemple en répondant à un appel d'offres pour un projet de construction). Alors que dans les modèles de Bertrand et de Cournot, chaque produit a un prix unique, les modèles d'enchères reposent sur l'hypothèse que le prix d'un produit donné varie d'une vente à l'autre de ce produit.

parvenions mieux à estimer les élasticités avec précision, et à comprendre la nature de la concurrence sur certains marchés, mais pour l'heure, et à l'horizon immédiatement prévisible, telle est la situation.

4.4 Les simulations de fusions et les tribunaux

Les simulations de fusions ont été malmenées par les tribunaux. Ainsi, en s'appuyant dans une large mesure sur un modèle de simulation de fusion, l'Autorité néerlandaise de la concurrence (NMa, *Nederlands Mededingingsautoriteit*) avait uniquement autorisé le projet de fusion entre Nuon et Reliant à la condition que Nuon cédât une quantité importante de ses capacités. Nuon a fait appel de cette décision et le tribunal de Rotterdam a fait droit à ce recours, en estimant que l'analyse économique de la NMa ne constituait pas une base de décision adéquate. Entre autres points, le tribunal a mis en avant les problèmes posés par le modèle de simulation de la NMa, et souligné en particulier que ce modèle reposait sur l'hypothèse d'un comportement stratégique (la rétention de capacité, par exemple) préalable à la fusion, alors que la NMa n'avait aucunement prouvé l'existence de ce comportement.

Dans l'affaire *Masscash Holdings/Finro Enterprises*⁵¹, le Tribunal de la concurrence sud-africain a jugé irrecevable la simulation de fusion présentée par la Commission de la concurrence, parce qu'aucune preuve n'avait été fournie à l'appui de l'hypothèse d'élasticité constante retenue pour la courbe de la demande⁵². Or, cette hypothèse d'isoélasticité de la demande est hardie. Elle revient en effet à partir du principe que les élasticités ne changent pas lorsque les prix augmentent, et que les concurrents qui subsistent ne modifient pas leurs tarifs lorsque l'entité issue de la fusion révisé les siens. Dans la mesure où ces deux hypothèses vont à l'encontre du sens commun, il était raisonnable que le tribunal exige que cette isoélasticité de la demande soit démontrée preuve à l'appui.

Le tribunal du district nord de Californie a jugé irrecevable la simulation de fusion utilisée par le ministère de la Justice dans l'affaire *Oracle/Peoplesoft*. Il a estimé que, dans la mesure où cette simulation reposait sur des données relatives aux parts de marché qui ne constituaient pas un bon indicateur de la position occupée sur le marché par Oracle, Peoplesoft ou SAP (le concurrent probable le plus proche de l'entité issue de la fusion), cette simulation n'était pas fiable. Aux termes de la décision rendue, « dans la mesure où cette simulation de fusion est fondée sur ces données peu fiables, le tribunal conclut que les résultats de cette simulation sont également peu fiables⁵³ ».

Ce qui est frappant dans ces exemples, c'est que l'on peut difficilement contester la validité des arguments avancés par les tribunaux pour remettre en cause le modèle de simulation utilisé dans chaque cas. De notre point de vue, cela souligne le fait que la simulation de fusion est un outil qui doit être utilisé avec une grande prudence, et qui ne constitue en aucun cas un « remède miracle » en matière de contrôle des fusions.

Farrell et Shapiro indiquent qu'à leur connaissance, « aucun juge n'a admis une simulation de fusion comme preuve de première main pour déterminer si une fusion porterait atteinte à la concurrence⁵⁴ ».

⁵¹ *Masscash Holdings (Pty) Ltd v Finro Enterprises (Pty) Ltd t/a Finro Cash and Carry (04/LM/Jan09) [2009] ZACT 66 (30 novembre 2009).*

⁵² C'est-à-dire l'hypothèse que l'élasticité de la demande n'augmente pas avec les prix. Or, l'hypothèse la plus couramment utilisée est que la demande devient plus élastique à mesure que les prix augmentent.

⁵³ US District Court for the Northern District of California, Final Order, page 151.

⁵⁴ Farrell, J. et Shapiro, C. (2010), « Antitrust evaluation of horizontal mergers: an economic alternative to market definition », consultable à l'adresse suivante : ssrn.com/abstract=1313782.

4.5 Exemples de bon et de mauvais usages de la simulation de fusion

Dans cette partie, nous présentons deux exemples à ne pas suivre en matière de simulation de fusion, et un exemple de ce que nous considérons comme un bon usage de cet exercice de simulation.

4.5.1 Volvo-Scania⁵⁵

Un des problèmes soulevés par cette fusion concernait le marché des poids lourds (véhicules de plus de 16 tonnes) en Irlande et dans les pays nordiques. Les parts de marché de l'entité issue de la fusion auraient été considérables dans ces pays.

Tableau 1: Parts de marché avant et après la fusion dans l'affaire Volvo/Scania

Pays	Volvo	Scania	Total après fusion
Suède	45	46	91
Finlande	34	31	65
Danemark	29	30	59
Irlande	22	27	49
Norvège	38	32	70

Source : paragraphe 65 de la décision de la Commission européenne.

Dans le cadre de son analyse de cette opération de concentration, la Direction générale de la concurrence a fait réaliser une simulation de fusion. Celle-ci était fondée sur la distinction entre deux types de poids lourds : les porteurs et les tracteurs. Les premiers sont des camions intégrés, en ce sens qu'ils possèdent une structure d'un seul tenant de laquelle aucune semi-remorque ne peut être détachée, tandis que les seconds comportent une semi-remorque détachable. Les données utilisées étaient des prix de catalogue correspondant à 16 pays de l'Espace économique européen (EEE) en 1997 et 1998. En se fondant sur les résultats d'un modèle logit imbriqué, les auteurs ont réalisé leur simulation en partant de l'hypothèse que la fusion déboucherait sur un équilibre de Nash (c'est-à-dire en supposant l'absence de toute coopération entre les acteurs encore en place après la fusion). Les résultats obtenus étaient les suivants :

Tableau 2: Variation des prix en pourcentage après la fusion⁵⁶

	Volvo/Scania		Concurrents	
	Porteurs	Tracteurs	Porteurs	Tracteurs
Danemark	11.55	8.17	0.26	0.19
Finlande	10.03	7.83	0.39	0.24
Irlande	10.87	7.36	0.21	0.3
Norvège	13.17	8.63	0.32	0.28
Suède	22.34	12.64	0.47	0.32

Source : Ivaldi et Verboven (2002).⁵⁷

⁵⁵ COMP/M.1672 *Volvo/Scania* (15 mars 2000).

⁵⁶ Ce tableau a été réalisé à partir du tableau 5 qui figure dans Ivaldi et Verboven (2000). Bien que les auteurs y présentent les résultats obtenus pour l'ensemble des 16 pays examinés, nous ne reproduisons que ceux relatifs aux cinq pays dans lesquels la Commission estimait que se posaient des problèmes de concurrence.

Le tableau 2 montre que dans chacun des cinq pays concernés, les auteurs estimaient que les hausses de prix pratiquées par les parties à la fusion après celle-ci seraient comprises entre 10 % et 23 % pour les poids lourds porteurs, et entre 7 % et 13 % pour les poids lourds tracteurs. Même en intégrant dans leurs calculs une réduction des coûts de 10 % découlant de gains d'efficacité à la suite de la fusion, les auteurs parvenaient à la conclusion que le bien-être des consommateurs diminuerait dans chacun des cinq pays examinés (cette baisse étant comprise entre 2 % et 14 %).

Compte tenu d'un certain nombre d'éléments, on ne peut qu'être extrêmement sceptique quant à l'utilité de cette simulation. Premièrement, l'utilisation des prix de catalogue ne semble guère raisonnable sur un marché où la quasi-totalité des ventes sont réalisées avec des rabais par rapport à ces tarifs affichés. En outre, ces prix de catalogue se rapportaient à des poids lourds dépourvus de toute « option », alors même que certains éléments indiquaient que très peu de ventes correspondaient à ce type de véhicule. Cela avait donné lieu à une formule mémorable lors de l'audition des parties : « [C'est] une étude fondée sur des prix que personne ne paie pour des camions que personne n'achète. »

Deuxièmement, au vu de certains éléments présentés, le modèle sur lequel était fondée la simulation n'était pas un reflet exact de la réalité. Plus précisément, ce modèle reposait sur l'hypothèse de marges brutes comprises entre 0.35 et 0.56, tandis que les spécialistes de ce secteur estimaient la marge brute aux alentours de 0.3. Suite à cette observation, il a été souligné que les fabricants pouvaient prendre en compte les futurs bénéfices provenant de leur service après-vente lors de la fixation de leurs tarifs. Si cette information est correcte, elle nous fournit une indication très intéressante sur la nature de la concurrence *qui devrait être intégrée dans le modèle de simulation*. Si les entreprises fixent leur prix à un niveau inférieur au prix concurrentiel sur le marché des biens durables, en escomptant récupérer ce manque à gagner sur le marché des produits secondaires, il n'est pas logique d'employer un modèle fondé sur l'hypothèse qu'il existe un équilibre de Nash simple sur le marché des biens durables, et ne prenant pas en compte la concurrence sur le marché des produits secondaires.

Enfin, il semble douteux d'avancer des prévisions de hausses de prix consécutives à la fusion comportant deux décimales, étant donné le nombre d'hypothèses simplificatrices qui ont été posées (notamment concernant la nature intrinsèque de la concurrence et le fait que les prix de catalogue constituaient des variables de substitution acceptables pour les prix de transaction).

4.5.2 Philip Morris/Papastratos⁵⁸

En 2003, Philip Morris a racheté le cigarettier grec Papastratos. La Commission a autorisé la fusion au terme de la phase 1 de sa procédure d'examen. Une simulation de fusion a été réalisée aux fins de cette évaluation. Ce qui est intéressant dans cette affaire, c'est qu'elle semble offrir un bon exemple de simulation de fusion n'ayant apporté aucune valeur ajoutée à l'analyse du dossier. Selon la décision rendue :

« Les parties ont présenté les résultats d'une simulation de fusion qui montre qu'en moyenne, l'augmentation du prix de marché consécutive à la fusion serait minimale. Le modèle de simulation utilisé repose sur l'hypothèse que les produits des parties à la concentration se trouvent sur des segments distincts, autrement dit, que la substituabilité entre leurs produits est faible. L'analyse du marché a confirmé sa segmentation. Les résultats de la simulation confirment que la présente fusion n'entraînerait pas d'augmentation significative des prix sur le marché des cigarettes grec. » (par. 32)

⁵⁷ Ivaldi, M. et Verboven, F. (2002), « Quantifying the effects from horizontal mergers in European competition policy », document non publié.

⁵⁸ Affaire COMP/M.3191 (2/10/2003).

On peut raisonnablement s'interroger sur l'apport de cette simulation à l'analyse concurrentielle. Dans la mesure où cette simulation reposait sur l'hypothèse que la substituabilité entre les produits des parties était faible, il n'était guère surprenant qu'elle mît en évidence des hausses minimales de prix à la suite de la fusion. Il n'était pas nécessaire de réaliser une simulation pour parvenir à une telle conclusion. Cette hypothèse de faible substituabilité, d'une importance cruciale pour les résultats de la simulation, a dû être confirmée par l'analyse de marché de la Commission. En d'autres termes, il a d'abord fallu réaliser une analyse des effets que produirait sur la concurrence la fusion examinée, puis les résultats de cette analyse ont été exploités dans une simulation qui a montré ce que l'analyse des effets induits sur la concurrence avait déjà mis en évidence.

4.5.3 Oracle/Peoplesoft⁵⁹

Dans l'affaire de la fusion entre Oracle et Peoplesoft, en 2004, la Commission européenne a élaboré un modèle sur mesure de simulation de cette opération de concentration. Il ne s'agissait pas d'un modèle classique de Bertrand, mais d'un modèle d'enchères reflétant les spécificités du marché. Nous considérons qu'il constitue un parfait exemple de modèle de simulation judicieusement conçu.

Le marché en question était celui des logiciels d'applications d'entreprise. Sur les segments des systèmes de gestion financière (SGF) et de gestion des ressources humaines (RH) de ce secteur, la fusion se caractérisait, au moins initialement, par le passage de trois à deux acteurs, l'entité issue de la concentration et SAP demeurant les seuls acteurs importants à la suite de la fusion. La Commission a choisi de modéliser le secteur en utilisant un système d'enchères sous pli scellé, dans le cadre duquel les fournisseurs présentent une offre puis les acheteurs choisissent un des soumissionnaires. Cette approche a été préférée à une méthode d'enchères « à l'anglaise » en raison de la structure de coûts du secteur. La Commission est en effet parvenue à la conclusion que le coût marginal de fourniture du produit considéré à un acheteur était de fait égal à zéro, car les coûts de développement du logiciel étaient intégralement irrécupérables au stade où les entreprises soumissionnaient. Or, dans un système d'enchères « à l'anglaise », cela devrait logiquement déboucher sur des prix très proches de zéro, les entreprises abaissant progressivement leur prix pour le ramener au niveau du coût marginal. Ce n'est pourtant pas ce que l'on observe dans ce secteur, où les prix sont nettement positifs. En revanche, dans un système d'enchères sous pli scellé, les entreprises présentent des offres supérieures à leur coût marginal et font un arbitrage entre la probabilité de remporter un marché et la marge bénéficiaire qu'elles engrangeront si elles sont retenues. Cela se traduit par des prix supérieurs au coût marginal, ce qui concorde avec le fonctionnement concret de ce secteur⁶⁰.

Le modèle était fondé sur l'hypothèse que l'identité des offreurs était connue, mais ce que l'on ignorait était la perception par les acheteurs de la qualité des produits des divers fournisseurs. En fait, l'inconnue résidait dans l'adéquation entre le produit d'un fournisseur donné et les besoins de l'acheteur. L'hypothèse

⁵⁹ Affaire COMP/M.3216 *Oracle/PeopleSoft* (26 octobre 2004). La décision publiée ne contient guère de détails sur la simulation, de sorte que cette partie du document repose dans une large mesure sur Bengtsson, C. (2005), « Simulating the effect of Oracle's takeover of PeopleSoft », in P. van Bergeijk et E. Kloosterhuis (dir. publ.) *Modelling European mergers: theory, competition policy and case studies*, Cheltenham, Edward Elgar.

⁶⁰ « Dans la mesure où les coûts marginaux étaient négligeables, suivant le modèle d'enchères à l'anglaise, les perdants auraient dû réviser leurs offres à la baisse jusqu'à un niveau proche de zéro, or cela semblait être rarement le cas. Ce qui apparaissait en revanche, c'est que les soumissionnaires étaient parfois écartés parce que leurs offres étaient trop élevées, ce qui concordait avec un modèle d'enchères sous pli scellé. » (Bengtsson, p. 136 – 137, *op. cit.*).

retenue était que le produit de Peoplesoft disparaîtrait à la suite de la fusion⁶¹. La Commission a examiné deux scénarios d'évolution de la qualité du produit d'Oracle. Suivant le premier scénario, elle demeurait inchangée. Suivant le second, l'acquisition du savoir-faire de Peoplesoft permettait de l'améliorer. L'intégration de cette dimension qualitative a permis à la Commission de simuler les effets exercés par la fusion à la fois sur les prix et sur le bien-être des consommateurs, notamment l'effet induit sur le bien-être des consommateurs par des réductions de l'éventail de choix ne permettant pas à certains acheteurs d'acquiescer des produits qui satisfassent aussi bien leurs besoins après la fusion qu'avant.

Il convient de noter que suivant cette approche, l'opération de concentration peut être préjudiciable pour certains acheteurs même si les produits des deux parties à la fusion ne sont pas des substituts proches. S'il s'agit de substituts proches, la fusion aura probablement un effet sensible sur les prix. Dans le cas contraire, la fusion n'aura peut-être pas d'incidence sensible sur les prix, mais elle est susceptible de réduire nettement l'éventail de choix offert aux acheteurs, ce qui ne serait pas le cas si les produits des parties à la fusion étaient de proches substituts.

Les résultats de la simulation réalisée pour les systèmes de gestion des RH et les SGF sont présentés ci-après.

Tableau 3: Résultats de la simulation de la fusion entre Oracle et Peoplesoft

Segment	Hausse de prix	Diminution du surplus des consommateurs
Systèmes de gestion des ressources humaines (RH)	7 % – 40 %	15 % - 39 %
Systèmes de gestion financière (SGF)	14 % - 30 %	18% - 25 %

Les fourchettes indiquées dans le tableau 3 reposent sur différentes hypothèses. Ainsi, l'extrémité basse de la fourchette correspondant à la diminution du surplus des consommateurs dans le segment RH est fondée sur l'hypothèse que le produit d'Oracle est amélioré après la fusion par l'acquisition du savoir-faire de Peoplesoft. De même, les extrémités basses des fourchettes mesurant les effets induits sur les prix et sur le bien-être des consommateurs dans la simulation relative aux SGF reposent sur l'hypothèse d'un gain d'efficacité de 10 % consécutif à la fusion. Il apparaît cependant clairement que le modèle mettait systématiquement en évidence des hausses de prix sensibles et de nettes baisses du surplus des consommateurs.

Cet exercice de simulation a été judicieusement conçu à plusieurs égards. Premièrement, il ne s'agissait pas d'une simulation « prête à l'emploi », dans le cadre de laquelle le jeu de la concurrence était supposé correspondre à un modèle théorique particulier, mais d'un modèle sur mesure élaboré pour le marché considéré. Deuxièmement, il correspondait bien aux données observables. Ainsi, on savait que SAP possédait la part de marché la plus importante et pratiquait les prix les plus élevés. Le modèle de simulation concordait avec cette observation : une part de marché plus importante s'explique par une meilleure qualité, et donc des prix plus élevés. Le modèle reposait également sur l'hypothèse que les acheteurs qui attachaient davantage de valeur aux produits acquittaient un prix plus élevé, ce qui concordait avec l'observation empirique selon laquelle la détermination des prix sur le marché considéré semble liée au consentement à payer des acheteurs, évalué à l'aide de variables telles que l'intensité d'utilisation ou le nombre d'utilisateurs du produit au sein de l'entreprise acheteuse. Enfin, le modèle

⁶¹ Cette hypothèse n'avait rien de contestable. Oracle avait en effet publiquement indiqué qu'elle continuerait d'assurer le support du produit de Peoplesoft pour les clients existants, mais qu'elle ne le vendrait pas activement après la fusion.

intégrait explicitement le fait que le produit de Peoplesoft disparaîtrait probablement en conséquence de la fusion.

5. Mesures des pressions à la hausse sur les prix

L'utilisation de mesures des pressions à la hausse sur les prix dans les affaires d'effets unilatéraux fait actuellement l'objet d'un vif débat. Il s'agit d'indicateurs simples pouvant être utilisés pour évaluer la mesure dans laquelle une fusion produisant des effets unilatéraux peut inciter les entreprises parties à la fusion à augmenter leurs prix à la suite de cette opération de concentration. De nombreux arguments militent en faveur d'une analyse des effets unilatéraux sous l'angle des pressions à la hausse sur les prix, car cette approche est axée sur les incitations des parties à la fusion à modifier leurs tarifs une fois regroupées. Il importe cependant de comprendre clairement ce que montrent les différentes mesures, et dans quelles circonstances leur utilisation pourrait se justifier. À notre avis, il semble exister aujourd'hui un risque que certaines autorités recourent à ces mesures sans discernement, ce qui n'est guère susceptible de déboucher sur de bonnes décisions en matière de contrôle des fusions.

5.1 Les différentes mesures

Lorsque deux entreprises vendant des produits substituables fusionnent, cela modifie leurs incitations en matière de prix. Si l'on suppose que le marché était à l'équilibre, avant la fusion, aucune des entreprises ne relevait ses tarifs parce que le manque à gagner découlant du recul des ventes l'aurait emporté sur la hausse des bénéfices enregistrée sur les produits écoulés. Après la fusion, ce calcul est modifié par le fait que les ventes perdues au profit de l'autre partie ne représentent plus un manque à gagner⁶². Cela crée pour l'entreprise une incitation à relever ses tarifs à la suite de la fusion qui n'existait pas précédemment. Ce mécanisme est symétrique, de sorte que les deux entreprises seraient incitées à augmenter leurs prix après leur fusion. Par conséquent, la fusion se traduit par des pressions à la hausse sur les prix.

Il est possible d'obtenir une approximation de ces pressions à la hausse sur les prix à l'aide de deux variables : le ratio de diversion entre les deux entreprises et leurs marges brutes. Plus le ratio de diversion de l'entreprise 1 vers l'entreprise 2 est élevé, plus les contraintes concurrentielles exercées par l'entreprise 2 sur l'entreprise 1 avant la fusion sont fortes, et plus l'atténuation des contraintes concurrentielles consécutive à cette concentration sera marquée. Plus la marge brute est importante avant la fusion, plus le coût d'une diminution des ventes (résultant d'une hausse de prix) avant la fusion est élevé, et plus ce coût sera faible après la fusion si ces ventes reviennent à l'autre partie à la fusion. Par conséquent, pour un niveau donné de marge brute, plus le ratio de diversion est élevé, plus l'incitation à augmenter les prix est forte après la fusion. De même, pour un ratio de diversion donné, plus la marge brute est importante avant la fusion, plus l'incitation à relever les prix est forte. Cet effet sera réduit si la fusion débouche sur une réduction des coûts marginaux, puisque celle-ci tendra à exercer des pressions à la baisse sur les prix.

Jusqu'ici, la démonstration ne devrait pas faire débat et souligne que dans les affaires d'effets unilatéraux, les ratios de diversion, les marges brutes et la réduction probable des coûts marginaux à la suite de la fusion sont autant de variables importantes à examiner. Ce qui peut être sujet à controverse, en revanche, ce sont les modalités concrètes d'application de cette intuition économique fondamentale.

⁶²

Il faut toutefois nuancer cette affirmation. Si la marge sur les ventes réalisée par l'autre partie à la fusion est inférieure à la marge qui était réalisée sur ces ventes par la première partie à la fusion, l'entité issue de la concentration enregistre une diminution de ces bénéfices en termes nets.

Farrell et Shapiro (2010)⁶³ présentent un test statistique simple à réaliser, consistant à comparer la hausse des prix induite par une fusion et la réduction attendue des coûts marginaux à la suite de la fusion. Dans le cas symétrique d'une concurrence à la Bertrand, ils établissent que des pressions à la hausse s'exercent sur les prix si

- $$\frac{D}{1-D} \frac{M}{1-M} > E$$

où D désigne le ratio de diversion entre les deux entreprises considérées,

M est la marge brute, et

E est la baisse proportionnelle des coûts marginaux anticipée à la suite de la fusion.

La mesure des pressions à la hausse sur les prix utilisée dans les nouvelles Lignes directrices sur les fusions horizontales des États-Unis est l'indice brut de pressions à la hausse sur les prix (GUPPI, *Gross Upward Pricing Pressure Index*)⁶⁴. Le GUPPI est défini comme suit :

- $$\text{GUPPI du produit 1} = \frac{\text{Valeur des ventes détournées vers le produit 2}}{\text{Manque à gagner dû à la réduction du volume de ventes du produit 1}}$$

Bien que les Lignes directrices manquent de précision sur ce point, elles indiquent qu'il est peu probable qu'une fusion soulève des problèmes significatifs d'effets unilatéraux si le GUPPI est « relativement faible ». Les Lignes directrices ne quantifient pas cet élément, mais certains commentateurs considèrent que cela pourrait correspondre à une valeur inférieure ou égale à 5 %⁶⁵.

La dernière mesure que nous examinons dans ce document est la hausse indicative des prix (IPR, *Illustrative Price Rise*) qui est utilisée par le Bureau de la concurrence (OFT, *Office of Fair Trading*) du Royaume-Uni. C'est une mesure de l'ampleur de la hausse des prix que l'on pourrait escompter à la suite d'une fusion en l'absence de diminution des coûts marginaux. L'OFT utilise deux mesures de l'IPR : elles reposent sur l'hypothèse que la demande est linéaire, pour la première, et isoélastique, pour la seconde. Les équations correspondant au cas symétrique figurent ci-après :

- IPR pour une demande linéaire =
$$\frac{MD}{2(1-D)}$$

et

- IPR pour une demande isoélastique =
$$\frac{MD}{1-M-D}$$

⁶³ Farrell, J. et Shapiro, C. (2010), « Antitrust evaluation of horizontal mergers: an economic alternative to market definition », consultable à l'adresse suivante : ssrn.com/abstract=1313782.

⁶⁴ Pour un examen des origines de cette mesure, voir les pages 722 et suivantes de Shapiro, C. (2010), « The 2010 Horizontal Merger Guidelines: from hedgehog to fox in forty years », *Antitrust Law Journal*, vol. 77.

⁶⁵ Voir Salop, S., Moresi, S. et Woodbury, J. (2010), « Scoring unilateral effects with GUPPI: the approach of the new Horizontal Merger Guidelines », *CRA Competition Memo*.

5.2 *Commentaire sur ces différentes mesures*

Comme indiqué plus haut, la logique économique qui sous-tend ces différentes mesures est clairement rationnelle et axée sur les incitations à relever les prix qui s'exercent sur les parties à la fusion. Néanmoins, il est très important de comprendre les limites inhérentes à toute déclinaison précise du mécanisme économique de base. Une fois que l'on s'écarte de la formulation très générale de cette logique économique, et que l'on commence à employer des formules précises pour quantifier le processus à l'œuvre, on commence à intégrer des hypothèses dans l'analyse. C'est inévitable, mais il est important de cerner clairement ces hypothèses dans chaque cas de figure.

Ainsi, la première, la troisième et la quatrième équations reposent toutes sur une hypothèse de symétrie. Les formules retenues sont fondées sur l'hypothèse que le ratio de diversion de l'entreprise 1 vers l'entreprise 2 est le même que le ratio de diversion de l'entreprise 2 vers l'entreprise 1. Elles reposent également sur l'hypothèse que les marges brutes des deux entreprises sont identiques. Il peut s'agir dans les deux cas d'hypothèses raisonnables pour telle ou telle affaire, mais elles ne sont pas vérifiées de manière générale, et il faudrait donc les confirmer empiriquement avant d'appliquer ces formules. Si les entreprises considérées ne sont pas symétriques, les formules correctes sont sensiblement différentes de celles indiquées plus haut, et peuvent déboucher sur des résultats nettement différents⁶⁶. Toutes ces approches sont standard, de sorte qu'il est important que les autorités de contrôle des fusions veillent à prendre en compte ces éléments lorsqu'elles utilisent ces mesures.

Dans un sens, ces approches peuvent être considérées comme des formes de « simulation de fusion allégée », et elles font l'objet de critiques similaires à celles que nous avons formulées plus haut concernant les exercices de simulation de fusion. Elles font abstraction de contraintes concurrentielles importantes, telles que la menace d'entrée sur le marché, la possibilité de repositionnement de produits concurrents, les réactions hors prix, etc. Il convient également de noter que les mesures de pressions à la hausse sur les prix en général, et le GUPPI en particulier, n'ont pas vocation à fournir une prévision des hausses de prix consécutives aux fusions, de sorte qu'il ne s'agit pas ici de critiquer ces mesures en tant que telles, mais de rappeler que les indications tirées de l'emploi de ces indicateurs restent relativement limitées. Ils offrent une mesure utile de l'incitation des parties à la fusion à relever leurs prix dans un sens statique, c'est-à-dire en ignorant les réactions à plus long terme des concurrents. Par contre, cette critique vise directement l'IPR, qui est bel et bien destinée à fournir une estimation, quoique « indicative », de l'augmentation des prix faisant suite à une fusion.

L'IPR a été utilisé pour la première fois au Royaume-Uni en 2005 par la Commission de la concurrence dans le cadre de l'enquête sur la fusion Somerfield/Morrison⁶⁷. La Commission de la concurrence s'était alors efforcée de prévoir les hausses de prix qui pourraient faire suite à la fusion à l'aide de l'IPR. Cette analyse avait été uniquement appliquée aux marchés locaux où n'auraient subsisté que quatre supermarchés concurrents au maximum après la fusion. La Commission de la concurrence a commandé une étude sur 56 des magasins qui allaient être rachetés. Elle a calculé des ratios de diversion en s'appuyant sur les réponses données à la question : « Si ce magasin n'avait pas existé, dans quel établissement seriez-vous allé en lieu et place ? », et sur des estimations des dépenses de chaque consommateur. La Commission de la concurrence a ensuite évalué les hausses de prix consécutives à la fusion à l'aide de ces ratios de diversion, d'estimations de la marge prix-coût avant la fusion et de la formule de l'IPR. Les magasins pour lesquels la prévision de hausse de prix consécutive à la fusion était supérieure à 5 % étaient considérés comme problématiques d'un point de vue concurrentiel. En posant une

⁶⁶ Voir Bishop et Walker (2009) pour un examen de cette question.

⁶⁷ Commission de la concurrence (*Competition Commission*) du Royaume-Uni (2005), *Somerfield plc and Wm Morrison Supermarkets plc: a report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc*.

hypothèse d'élasticité constante, la Commission de la concurrence a déterminé que douze magasins soulevaient des problèmes de concurrence. La hausse de prix anticipée à la suite de la fusion était de presque 1900 % pour un de ces magasins. Depuis 2005, l'OFT a employé cette méthode pour au moins dix fusions dans le commerce de détail⁶⁸ et utilisé l'IPR en appliquant un seuil de 5 % pour déterminer l'existence de problèmes de concurrence. Il semble que la Commission coréenne de la concurrence (KFTC, *Korea Fair Trade Commission*) ait utilisé des éléments du test de l'IPR dans son évaluation de la fusion de 2008 entre les hypermarchés Homeplus et Homever⁶⁹.

Nous estimons que cette approche peut déboucher sur des problèmes considérables. Les formules employées reposent sur des postulats hardis, comme l'hypothèse que les deux parties à la fusion étaient symétriques avant leur concentration et que toutes deux étaient des entreprises mono-produit. Or, ces deux hypothèses sont généralement fausses, et dès lors que ces hypothèses ne sont plus aussi strictes, les formules simples utilisées ne sont plus valables. Ces formules simples intègrent également des hypothèses hardies concernant la forme de la courbe de la demande, qui devraient être testées, et non considérées comme acquises⁷⁰. L'IPR fondé sur la courbe de demande isoélastique peut déboucher sur des résultats peu plausibles, tels que la prévision d'augmentation des prix de 1900 % obtenue dans le cadre de l'enquête sur la fusion de Somerfield/Morrison⁷¹. Nous tenons à souligner que notre propos n'est aucunement de critiquer l'approche fondamentale consistant à analyser les effets unilatéraux en termes de ratios de diversion, de marges brutes, etc. Il s'agit ici de remettre en cause l'application inadaptée de cette approche.

De manière plus générale, il convient de souligner que ces mesures ne peuvent être utilisées pour tous les types de fusions. Ainsi, elles ne sont applicables à aucune fusion intervenant sur un marché où il existe une discrimination significative par les prix, tel qu'un marché d'enchères. Il ne s'agit pas d'une critique de ces mesures en tant que telles, mais d'une simple observation concernant leur champ d'application.

5.3 *Un durcissement de la politique de la concurrence ?*

Une autre question soulevée dans le cadre des débats relatifs aux indicateurs de pressions à la hausse sur les prix est de savoir si une mesure de ce type représente un durcissement du dispositif d'application du droit de la concurrence. Si l'on suppose, suivant les indications de Farrell et Shapiro, que l'on peut raisonnablement poser comme hypothèse une réduction des coûts marginaux de 10 %, l'équation 1 est vérifiée (ce qui signifie que des pressions à la hausse vont s'exercer sur les prix) pour un éventail de marges

⁶⁸ Par ordre chronologique, CGL/United (supermarchés, 2006), Homebase/Focus (magasins de bricolage, 2008), Cineworld/Showcase (cinémas, 2008), Lovefilm/Amazon (location de DVD en ligne, 2008), CGL/Somerfield (supermarchés, 2008), Tesco/Brian Ford (supermarchés, 2008), Morrison's/CGL (supermarchés, 2009), Holland & Barrett/Julian Graves (magasins d'alimentation diététique, 2009), Carpetright/Allied Carpets (magasins de moquette, 2010) et Asda/Netto (supermarchés, 2010). Tous les dossiers de l'OFT évoqués ici sont consultables en ligne à l'adresse suivante : http://www.oft.gov.uk/OFTwork/mergers/Mergers_Cases/.

⁶⁹ Pour obtenir de plus amples informations, voir le rapport annuel 2009 de la Commission (partie IV.2.B) (consultable en ligne à l'adresse suivante : http://eng.ftc.go.kr/bbs.do?command=getList&type_cd=53&pageId=0202).

⁷⁰ L'OFT fait valoir qu'il a utilisé l'hypothèse de courbe de demande linéaire et l'hypothèse d'élasticité constante de la demande pour obtenir, respectivement, une estimation basse et une estimation haute de l'IPR. Néanmoins, pour déterminer si une fusion soulève des problèmes de concurrence, l'OFT utilise un seuil de 5 %. S'applique-t-il à la prévision fondée sur la courbe de demande linéaire ou à celle qui repose sur la courbe de demande isoélastique ? Si ce seuil s'applique à la première prévision, quel est l'objet de la seconde ? Et inversement, si ce seuil s'applique à la seconde prévision, quelle est la raison d'être de la première ?

⁷¹ *Op. cit.*

brutes et de ratios de diversion qui semble nettement plus large que la fourchette de valeurs pour laquelle on pourrait normalement anticiper des problèmes de concurrence. Le tableau suivant est tiré de Simons et Coate (2010)⁷². Il montre les hausses de prix postérieures aux fusions, même avec des gains d'efficacité de 10 %, pour des combinaisons de marge brute et de ratio de diversion qui ne seraient normalement pas source de préoccupation.

**Tableau 4: Pressions à la hausse sur les prix avec des gains d'efficacité de 10 %
(variation des prix en pourcentage)**

Marge brute	Ratio de diversion						
	0.1	0.15	0.2	0.25	0.3	0.35	0.4
0.9	8.10%	12.7	17.2	21.8	26.3	30.9	35.4
0.8	6.20%	10.3	14.4	18.5	22.6	26.7	30.8
0.7	4.30%	8	11.6	15.3	18.9	22.6	26.2
0.6	2.4	5.6	8.8	12	15.2	18.4	21.6
0.5	0.5	3.3	6	8.8	11.5	14.3	17
0.4	-1.4	0.9	3.2	5.5	7.8	10.1	12.4
0.3	-3.3	-1.4	0.4	2.3	4.1	6.1	7.8
0.2	-5.2	-3.8	-2.4	-1	0.4	1.8	3.2
0.1	-7.1	-6.1	-5.2	-4.2	-3.3	-2.3	-1.4

Les baisses de prix sont indiquées en gras. Il est clair que pour tout ratio de diversion supérieur à 0.1, une marge brute de 50 % ou plus se traduit par une mesure positive des pressions à la hausse sur les prix. Pour une marge brute de 30 %, qui est loin d'être élevée, la mesure des pressions à la hausse sur les prix est positive à partir d'un ratio de diversion de 0.2. Simons et Coate présentent également cette analyse en termes de nombre de concurrents. Ils convertissent les ratios de diversion en nombre d'entreprises après la fusion (en partant de l'hypothèse que les entreprises sont symétriques). Ils obtiennent alors des mesures positives des pressions à la hausse sur les prix, même avec l'hypothèse *ad hoc* de gains d'efficacité de 10 %, pour une fusion se traduisant par une réduction de 8 à 7 du nombre d'entreprises lorsque les marges sont supérieures à 40 %, et pour une fusion débouchant sur une diminution de 6 à 5 du nombre d'entreprises lorsque la marge est de 30 %. Si les marges sont supérieures ou égales à 50 %, même une fusion se traduisant par une réduction de 10 à 9 du nombre d'entreprises est problématique en termes de concurrence.

Comment faut-il interpréter ces chiffres ? Faut-il en conclure que des fusions qui n'étaient auparavant pas jugées préoccupantes devraient maintenant être considérées comme des sources potentielles de problème de concurrence, et donner lieu en conséquence à des examens plus poussés que précédemment ? Peut-être, mais on voit mal quels éléments étayaient la thèse selon laquelle les autorités de contrôle des fusions auraient péché de manière générale par laxisme. Ou bien cela signifie-t-il que le seuil retenu pour la mesure des pressions à la hausse sur les prix est trop bas ? Ce problème ne réside pas à proprement parler dans les mesures elles-mêmes, mais dans l'utilisation qui en est faite par les autorités de la concurrence. Ainsi, pour autant que ces indicateurs soient simplement employés pour effectuer un premier examen, leur utilisation peut déboucher en théorie sur des investigations plus approfondies, mais elle ne doit pas influencer sur le résultat final de ces enquêtes.

⁷² Simons, J. et Coate, M. (2010), « Upward pressure on price (UPP) analysis: issues and implications for merger policy », document non publié, consultable à l'adresse suivante : http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1558547.

5.4 Les mesures des pressions à la hausse sur les prix et la définition du marché

Le débat concernant les mesures de pressions à la hausse sur les prix, et leur place dans les nouvelles lignes directrices sur les fusions des États-Unis, a donné lieu à des échanges souvent passionnés sur le rôle de la définition du marché et son interaction avec l'analyse des effets directs, tels que ceux qui ressortent de mesures de ce type. Certains ont fait valoir que ces indicateurs marquaient une rupture radicale avec les pratiques antérieures, dans la mesure où ils mettent nettement moins l'accent sur la définition du marché que par le passé. Il nous semble qu'ils font erreur.

La définition du marché a pour objet de faciliter l'analyse de la concurrence, mais elle n'est pas une fin en soi⁷³. Nous définissons le marché en cause dans les affaires de fusion afin de cerner les contraintes concurrentielles auxquelles sera confrontée l'entité issue de la fusion, ce qui a plusieurs conséquences.

Premièrement, s'il existe une autre approche que la définition du marché nous permettant d'évaluer directement les contraintes subies par l'entité issue de la fusion, il faut en général la préférer à une approche indirecte fondée sur la définition du marché. Il convient cependant de noter que la distinction entre l'analyse des effets directs et la définition du marché n'est pas toujours aussi évidente qu'on pourrait le penser. Ainsi, de nombreuses simulations de fusions reposent sur des modèles logit, qui exigent des estimations des parts de marché. Or, il est clair que ces estimations nécessitent une définition préalable des marchés en cause.

Deuxièmement, l'analyse des effets directs et la définition du marché sont souvent complémentaires. Les résultats d'une analyse des effets directs peuvent fournir des indications pour la définition du marché. Les lignes directrices sur les fusions des États-Unis en offrent un bon exemple.

« Les éléments attestant l'existence d'effets induits sur la concurrence peuvent contribuer à la définition du marché, de même que la définition du marché peut être riche d'enseignements concernant les effets induits sur la concurrence. Ainsi, des éléments indiquant qu'une réduction du nombre de concurrents importants qui offrent un groupe de produits entraîne une hausse sensible des prix de ces produits peuvent eux-mêmes permettre d'établir que ces produits constituent le marché en cause. » (page 7)

Lorsque la définition du marché en cause est une obligation prévue par la loi, elle peut être établie à l'aide d'une analyse des effets directs.

Troisièmement, si la définition du marché est sujette à controverse et s'il est probable que la décision prise par l'autorité de contrôle des fusions variera fortement en fonction du marché choisi, une analyse des effets directs peut permettre aux enquêteurs de contourner ce problème. Celui-ci ne se pose pas si la définition du marché est incontestable, ou si toutes les définitions plausibles du marché ont des conséquences similaires pour la décision de l'autorité de contrôle des fusions.

Quatrièmement, les parts de marché relatives à des produits différenciés peuvent être source de confusion, car elles ne tiennent pas compte de l'étroitesse plus ou moins forte des liens de concurrence qui unissent les parties à la fusion. Ainsi, une part de marché de 40 % après la fusion en augmentation de 10 % a des conséquences sur la concurrence qui diffèrent de manière spectaculaire suivant que les parties à la fusion sont des concurrents proches ou éloignés sur le marché considéré.

⁷³

Comme l'indiquent les Lignes directrices sur les fusions de l'Australie (par. 4.3) : « Si la définition du marché constitue un instrument utile pour l'analyse des fusions, elle ne peut permettre à elle seule de déterminer ou d'établir l'impact d'une fusion sur la concurrence. »

Autrement dit, l'examen de mesures des effets directs induits sur la concurrence peut tout à fait conduire à minimiser l'importance de la définition du marché dans une affaire, mais cela va dans le sens de l'objectif poursuivi *in fine*, qui est de tenter de déterminer si une fusion serait préjudiciable à la concurrence. La définition du marché n'offre en effet qu'une aide indirecte dans ce processus, et si une meilleure approche peut être adoptée dans une affaire donnée, il faut l'utiliser. Cela ne change rien au fait que la définition du marché conservera un rôle crucial dans la plupart des affaires. Bien qu'il ne s'agisse pas d'une unité de mesure très scientifique, on pourra noter que les lignes directrices sur les fusions des États-Unis contiennent plus de huit pages consacrées à la définition du marché, contre un peu plus de sept pages en tout sur les effets unilatéraux et les effets coordonnés.

5.5 *Conclusions concernant les mesures des pressions à la hausse sur les prix*

Il importe de bien comprendre que l'objet de cette partie n'est pas de critiquer les mesures des pressions à la hausse sur les prix en tant que telles. Il est clair que l'argument sous-jacent est rationnel et important : dès lors que les ratios de diversion et/ou les marges brutes sont élevés, les parties à la fusion devraient logiquement, toutes choses égales par ailleurs, être incitées à relever sensiblement leurs prix à la suite de leur regroupement. Nous avons simplement voulu montrer dans cette partie que ce point de repère essentiel pouvait être perdu si ces mesures étaient utilisées sans discernement.

6. **Lignes directrices sur les meilleures pratiques**

L'analyse empirique constitue une composante importante de la politique de la concurrence, car les théories du préjudice doivent être évaluées au regard des réalités des secteurs d'activité considérés. L'utilisation croissante d'analyses économiques complexes dans les enquêtes sur les fusions a conduit plusieurs autorités de la concurrence à publier des lignes directrices sur l'approche à adopter pour présenter des éléments d'information économiques dans une affaire de fusion. Les exemples récents dont nous avons connaissance sont les lignes directrices de la Commission européenne⁷⁴, de la Commission de la concurrence du Royaume-Uni⁷⁵, de l'Office fédéral des ententes (BKA, *Bundeskartellamt*) allemand⁷⁶ et de la Commission coréenne de la concurrence (KFTC, *Korea Fair Trade Commission*)⁷⁷. Bien qu'il ne s'agisse pas de lignes directrices en bonne et due forme, le discours sur l'utilisation de méthodes empiriques dans le cadre de l'examen des fusions (« The use of empirical methods in merger investigations ») prononcé en septembre 2005 par Stephen King, membre de la Commission australienne de la concurrence et de la consommation (ACCC, *Australian Competition & Consumer Commission*), expose clairement l'approche de l'ACCC à l'égard des éléments d'information économiques⁷⁸. Les pages 11 et 12 de ce discours, en particulier, offrent un excellent résumé des conditions requises pour la présentation d'éléments d'information économiques.

De notre point de vue, ces lignes directrices, si elles sont appliquées, devraient permettre une amélioration de la qualité des éléments d'information économiques présentés dans le cadre des enquêtes sur les fusions. Elles devraient notamment rendre beaucoup plus transparent le processus suivant lequel les

⁷⁴ « DG Competition: Best practices for the submission of economic evidence and data collection in cases concerning the application of Articles 101 and 102 TFEU and in merger cases » (janvier 2010).

⁷⁵ « Suggested best practice for submissions of technical economic analysis from parties to the Competition Commission » (février 2009).

⁷⁶ « Best practices for expert economic opinions » (octobre 2010).

⁷⁷ « Guidelines on the Submission of Economic Analysis Evidence » (21 juillet 2010).

⁷⁸ Stephen King (2005), « The use of empirical methods in merger investigations », discours prononcé le 29 septembre 2005, dans le cadre de la conférence sur l'économie industrielle (*Industry Economics Conference*) organisée à l'Université de La Trobe.

éléments d'information économiques sont présentés et remis en cause par les différentes parties, et permettre d'éviter les analyses de type « boîte noire ». Il est important que toutes les parties soient soumises aux mêmes règles dans le cadre de l'évaluation des fusions, et nous estimons par conséquent que les autorités de la concurrence, et non uniquement les parties à la fusion considérée et les plaignants, devraient respecter les normes énoncées dans les différentes lignes directrices. Nous indiquons brièvement ci-après ce que sont ces règles et pourquoi elles sont importantes.

Toute bonne analyse empirique utilisée dans le cadre d'une enquête sur une fusion (ou de toute autre investigation menée par les autorités de la concurrence) doit être fondée sur une théorie économique claire, ce qui passe par des propositions vérifiables. L'analyse doit permettre de vérifier ces propositions d'une manière transparente et, dans l'idéal, intuitive. Il faut que l'analyse soit reproductible, afin qu'elle puisse être correctement vérifiée (autrement dit, l'analyse doit être réfutable). Un certain nombre de conditions doivent être réunies pour que ces principes de base soient respectés.

- L'analyse doit permettre de répondre à une question pertinente, et ce sans ambiguïté. Cela signifie que l'hypothèse nulle doit être clairement énoncée et que les conséquences de l'acceptation ou du rejet de l'hypothèse nulle doivent être claires.
- Les hypothèses qui sous-tendent l'analyse doivent être clairement énoncées, et doivent concorder avec la réalité du secteur d'activité considéré.
- Les données doivent être adaptées à leur destination. Cela signifie qu'elles doivent permettre de mesurer les variables pertinentes (il convient par exemple d'utiliser les prix de transaction, et non les prix de catalogue). Lorsque c'est impossible et que des variables de substitution sont employées, leur utilisation doit être justifiée et ses effets potentiels sur l'analyse doivent être examinés. Ainsi, si l'on ne dispose pas de données sur les transactions et si l'analyse est fondée sur des données d'enquête, il importe de se demander quelle est l'exactitude probable de ces données d'enquête et si ces données reposent sur des préférences déclarées ou des préférences révélées. La seconde option est préférable.
- La robustesse des résultats de l'analyse doit être démontrée. Cette condition comporte deux principaux volets.
 - Les résultats doivent être robustes indépendamment de petites variations des données. Si les résultats du modèle sont très sensibles à des variations relativement modestes des données, il est peu probable qu'ils soient fiables. C'est tout particulièrement le cas s'il existe déjà des doutes sur l'exactitude des données.
 - Les résultats doivent être robustes indépendamment des changements de méthodologie. Si une autre méthodologie, raisonnable a priori, débouche sur des résultats sensiblement différents, il convient de le souligner, le choix d'une méthodologie spécifique doit être justifié, et les raisons pour lesquelles des méthodologies distinctes débouchent sur des résultats différents doivent être comprises.
- L'analyse doit être présentée de manière à être reproductible. Cela signifie qu'il faut décrire clairement le type d'analyse qui a été réalisé et fournir les données sous-jacentes, ainsi que les éventuels fichiers d'analyse utilisés pour réaliser ces travaux. La Commission européenne indique dans ses lignes directrices : « En particulier, l'absence de tous les éléments nécessaires à la reproduction et à l'évaluation d'une analyse économique présentée peut constituer un motif de non-prise en compte de cette analyse. » (par. 44). Nous souscrivons à cette approche.

- L'analyse doit être présentée clairement. Cela signifie que les étapes de l'analyse permettant de passer de la théorie aux propositions vérifiables, puis aux résultats et enfin aux conclusions doivent être transparentes. Les informations présentées doivent être accessibles aux non-économistes. Selon les lignes directrices du BKA : « Les résultats d'analyses économiques qui ne sont pas compréhensibles ne peuvent être considérés comme des éléments de preuve par le Bundeskartellamt. » (page 2). Nous souscrivons à cette approche.
- Enfin, la relation entre les résultats de l'analyse empirique effectuée et les autres éléments d'information utilisés dans l'affaire considérée doit être clairement exposée. Si les deux ensembles de résultats concordent, il convient de le souligner. Si tel n'est pas le cas, il importe d'expliquer cette divergence. Si les résultats de l'analyse empirique sont préférés aux autres éléments d'information, de solides arguments doivent être présentés pour étayer ce choix.

Il convient de noter que ces principes ne doivent pas seulement s'appliquer aux parties qui présentent des éléments d'information aux autorités de la concurrence ou aux tribunaux. Ils doivent également valoir pour les autorités de la concurrence. Si ces dernières souhaitent fonder leur décision sur une analyse empirique, et nous pensons que tel devrait être le cas, elles doivent être tenues de se conformer aux mêmes règles que les parties. Cela implique en particulier que les parties doivent pouvoir reproduire les résultats de l'analyse effectuée et critiquer la méthodologie retenue. La procédure de « salle des données » de la Commission européenne en offre un bon exemple.

7. Une meilleure utilisation de l'analyse économétrique

L'utilisation de l'analyse économétrique s'est clairement améliorée à la Commission européenne. Cette évolution a trouvé son origine dans la mise en place d'une Équipe de l'Économiste en chef au sein de la Direction générale de la concurrence. Par le passé, l'analyse économétrique tendait à être axée uniquement sur les estimations d'élasticités aux fins de la définition du marché, et à être souvent incompréhensible pour les non-économistes. Tel ne semble plus être le cas. Nous présentons ci-après deux exemples de ce que nous considérons comme un bon usage de l'analyse économétrique dans le cadre du contrôle des fusions. Ils illustrent le type de questions auxquelles l'économétrie peut apporter des réponses, tout en montrant comment un dialogue économétrique entre l'autorité de contrôle des fusions et les parties concernées peut améliorer la qualité du processus de prise de décisions.

7.1 *Ryanair/Aer Lingus*

En 2006, Ryanair, une compagnie aérienne à bas coûts, a tenté de racheter Aer Lingus, la compagnie nationale irlandaise. La plate-forme principale de chacune des deux parties se trouvait à l'aéroport de Dublin, et elles étaient concurrentes sur un nombre important de liaisons. Les deux parties ont présenté des analyses économétriques approfondies, et la Commission a effectué ses propres travaux d'analyse. Au terme d'une enquête approfondie, la Commission s'est opposée à cette fusion. Différentes formes d'analyse économétrique ont joué un rôle important dans cette affaire. Nous décrivons brièvement l'une d'entre elles ci-après.

La Commission a procédé à une analyse de régression multiple pour tester un certain nombre de propositions. Il s'agissait notamment de répondre aux questions suivantes :

- La présence de Ryanair sur une liaison donnée réduit-elle le prix facturé par Aer Lingus sur cette liaison, et inversement ?
- Ryanair exerce-t-elle sur Aer Lingus un effet concurrentiel plus fort que toute autre compagnie aérienne opérant à partir de Dublin, et inversement ?

- L'effet exercé par Ryanair sur Aer Lingus en termes de prix s'intensifie-t-il lorsque le nombre de fréquences offertes par Ryanair augmente, et inversement ?

La Commission est parvenue à la conclusion qu'en moyenne, les prix d'Aer Lingus étaient inférieurs de 5 % à 8 % sur les liaisons où Ryanair était en concurrence avec Aer Lingus aux tarifs pratiqués sur les celles où ces deux compagnies n'étaient pas concurrentes. Cela permet de répondre à la première des trois questions précédentes : la présence de Ryanair sur une liaison donnée réduit effectivement le prix facturé par Aer Lingus. S'agissant de l'effet exercé par Aer Lingus sur les tarifs de Ryanair, la Commission n'a décelé aucun effet significatif.

À partir des mêmes données, la Commission a établi que l'effet exercé par Ryanair sur les prix d'Aer Lingus était au moins deux fois plus fort que celui de toute autre compagnie aérienne. Par ailleurs, selon les analyses de la Commission, une hausse de 1 % des fréquences de Ryanair entraînait une baisse des tarifs d'Aer Lingus de 0.03 %⁷⁹. Ces analyses ont donc permis également à la Commission de répondre à la deuxième et à la troisième des questions précédentes.

La Commission en a conclu ce qui suit :

« L'analyse de régression de la Commission confirme et complète les conclusions tirées des preuves qualitatives selon lesquelles Ryanair et Aer Lingus sont de proches concurrents. En outre, les résultats de l'analyse de régression sont également conformes à l'opinion de la majorité des personnes interrogées lors de l'enquête auprès de la clientèle qui considère que les parties à la concentration sont les plus proches concurrents lorsque d'autres compagnies sont actives sur la liaison. »

Cette analyse comporte un certain nombre de points intéressants qui méritent d'être notés. Premièrement, il s'agit d'un exemple d'affaire dans laquelle l'analyse économétrique a été utilisée pour cerner des effets directs, et non pour définir le marché en cause. Elle portait directement sur la contrainte exercée par Ryanair sur Aer Lingus avant la fusion, et qui disparaîtrait après. Il s'agissait clairement d'une question essentielle à laquelle une réponse devait être apportée, et l'analyse économétrique constituait de ce point de vue une méthode plus directe qu'une approche fondée sur la définition du marché.

Deuxièmement, les conclusions de la Commission fondées sur cette analyse économétrique concordaient avec les autres éléments d'information réunis dans le cadre de cette affaire. Nous avons fait valoir plus haut que les résultats d'analyses empiriques étaient plus convaincants lorsqu'ils concordaient avec les autres faits de l'affaire. Lorsque tel est le cas, ces deux types d'éléments d'information se renforcent mutuellement.

Troisièmement, la Commission n'a pas décelé d'effet significatif exercé par Aer Lingus sur les prix de Ryanair. Néanmoins, l'impossibilité de mettre en évidence une relation statistiquement significative entre deux variables ne prouve pas l'inexistence d'une telle relation. Pour reprendre les termes de la Commission européenne :

⁷⁹

Afin d'évaluer l'effet induit sur les prix par le nombre de fréquences, la Commission a simulé les répercussions de la fusion en partant de l'hypothèse que Ryanair se retirerait complètement des liaisons caractérisées par des chevauchements de services, après la fusion. Les calculs effectués sur cette base faisaient apparaître une hausse des prix pouvant aller jusqu'à 13.1 % sur les liaisons qui se chevauchaient.

« Cependant, l'incapacité à prouver l'existence d'un lien statistique ne signifie pas que ce lien n'existe pas. D'autres explications de régression « infructueuse » sont possibles, notamment, des ensembles de données inappropriés ou des équations de régression mal définies⁸⁰. »

Dans cette affaire, la Commission a estimé qu'il n'était pas possible de mettre en évidence statistiquement une relation entre les prix de Ryanair et la présence ou l'absence d'Aer Lingus sur une liaison donnée, en raison de la variation insuffisante des données concernant l'entrée d'Aer Lingus sur les liaisons de Ryanair. Par contre, il existait de nombreux cas d'entrée de Ryanair sur les liaisons d'Aer Lingus, qui permettaient d'évaluer l'effet exercé par la présence de Ryanair sur les tarifs d'Aer Lingus. Le Tribunal de l'UE s'est rangé à l'avis de la Commission (après que Ryanair eut formé un recours contre sa décision) selon lequel l'absence d'éléments prouvant l'existence d'une contrainte concurrentielle ne constituait pas la preuve de l'absence de cette contrainte. Il s'agissait d'un exemple de résultats d'analyse économétrique ne concordant pas avec les autres éléments d'information relatifs au dossier, qui indiquaient qu'Aer Lingus exerçait effectivement une contrainte concurrentielle sur Ryanair. La Commission a néanmoins pu expliquer clairement pourquoi l'analyse économétrique avait débouché sur de tels résultats, ce qui va dans le sens des observations que nous avons formulées plus haut à propos des meilleures pratiques.

Quatrièmement, le Tribunal de l'UE a examiné l'analyse économétrique dans son arrêt relatif au recours de Ryanair. Il a consacré 12 pages de cet arrêt à des questions liées aux différents modèles économétriques et à leurs spécifications. Cela représente un progrès spectaculaire par rapport aux pratiques antérieures, et indique que lorsque des analyses économiques complexes sont présentées avec soin et de manière transparente, les tribunaux sont tout à fait en mesure de les évaluer.

7.2 Oracle/Peoplesoft

L'enquête menée sur le projet d'acquisition de Peoplesoft par Oracle en 2004 s'est grandement appuyée sur des analyses économétriques. Comme indiqué plus haut, le marché considéré était celui des logiciels d'applications d'entreprise. Sur les segments des systèmes de gestion financière (SGF) et de gestion des ressources humaines (RH) de ce secteur, la fusion se caractérisait, au moins initialement, par le passage de trois à deux acteurs, l'entité issue de la concentration et SAP étant les seuls acteurs importants à la suite de la fusion. Dans cette branche d'activité, les ventes prennent la forme d'enchères inversées, dans le cadre desquelles les acheteurs potentiels demandent aux fournisseurs potentiels de leur soumettre des offres de vente.

Dans sa communication des griefs, la Commission européenne a présenté une analyse économétrique montrant que Peoplesoft semblait proposer des remises d'autant plus élevées (c'est-à-dire des prix d'autant plus bas) que le nombre de soumissionnaires augmentait⁸¹. Après l'audition, Oracle a fourni des données complémentaires à la Commission. Celle-ci a également pu avoir accès à certaines données utilisées dans le cadre de la procédure qui se déroulait en parallèle aux États-Unis. À l'aide de ces données, la Commission a réalisé de nouvelles analyses économétriques, qui ont débouché sur deux résultats importants. Premièrement, il existait une forte corrélation positive entre l'importance du marché et la remise offerte. Deuxièmement, une fois l'effet induit par l'importance du marché pris en considération, la corrélation apparente entre les remises et le nombre des soumissionnaires qui avait été précédemment mise en évidence par la Commission disparaissait. Pour reprendre les termes de la Commission :

« Dès lors que l'importance du marché était prise en considération dans l'analyse, le nombre des soumissionnaires en présence lors de la sélection finale ne constituait plus un élément explicatif

⁸⁰ Par. 476 de la décision rendue dans l'affaire *Ryanair / Aer Lingus* (COMP/M.4439 – 27 juin 2007).

⁸¹ Par. 197 de la décision.

supplémentaire du niveau de remise proposé et il n'était plus possible de dire que, de façon générale, la présence d'un concurrent donné entraînait des remises particulièrement élevées⁸². »

Il s'agissait là d'un résultat important, dans la mesure où il sapait l'un des fondements de la thèse suivant laquelle cette fusion aurait des effets anticoncurrentiels, à savoir l'argument selon lequel en éliminant un des soumissionnaires, donc en réduisant leur nombre, cette opération de concentration entraînerait une diminution des remises (c'est-à-dire une hausse des prix). La Commission a en effet écarté ce raisonnement au vu des résultats des analyses économétriques effectuées, ainsi que d'autres éléments d'information.

Cet exemple montre que la Commission européenne est de plus en plus disposée, à tout le moins, à collaborer avec les parties pour améliorer la qualité des éléments d'analyse économétrique utilisés dans les affaires. Cette évolution est grandement facilitée par la transparence accrue découlant de l'obligation qui est faite aux parties, et à la Commission, d'être transparents et de communiquer leurs analyses économétriques (souvent dans le cadre de la procédure de « salle des données »).

7.3 Conclusions sur le recours à l'analyse économétrique

De notre point de vue, l'économétrie a mauvaise réputation chez les spécialistes du contrôle des fusions, qui ont tendance à juger inutile ce type d'analyse. Diverses raisons sont généralement avancées pour motiver le rejet des résultats des analyses économétriques, mais elles tendent à se résumer à une défiance de la part des non-économistes vis-à-vis des possibilités de « manipulation » des éléments d'analyse économétrique par les parties ou les plaignants. Les exemples précédents montrent que lorsqu'une analyse économétrique est convenablement présentée, suivant les meilleures pratiques, elle peut constituer un outil inappréciable pour répondre à des questions importantes soulevées par les affaires de fusions.

8. Conclusions générales

- Il existe maintenant une convergence de vues générale sur les théories du préjudice à appliquer dans les cas d'effets unilatéraux et d'effets coordonnés, même si les mécanismes économiques sous-jacents aux effets coordonnés restent mal connus.
- L'application de la politique de la concurrence en matière de contrôle des fusions verticales s'est nettement améliorée dans l'Union européenne (UE) et ailleurs, grâce à l'utilisation d'une approche économique plus adaptée, fondée sur la logique économique des pratiques de verrouillage et d'alourdissement des coûts des concurrents. Nous sommes d'avis que cette approche devrait être généralisée.
- La simulation de fusion est une technique utile, mais son rôle est plus limité et elle exige davantage de prudence qu'on ne l'avait affirmé au départ.
- Les mesures de pressions à la hausse sur les prix soulignent l'importance des ratios de diversion, des marges brutes et des gains d'efficacité dans les affaires d'effets unilatéraux, et peuvent donc constituer un outil très utile. Néanmoins, ces mesures doivent être utilisées avec discernement, et il ne faut guère accorder de poids à des formules génériques telles que la hausse indicative des prix (IPR, *Illustrative Price Rise*).

⁸²

Par. 201 de la décision.

- L'examen de mesures des effets directs induits sur la concurrence peut conduire à minimiser l'importance accordée à la définition du marché. Lorsque ces mesures des effets directs sont fiables, il y a lieu de s'en féliciter.
- Les lignes directrices sur les meilleures pratiques devraient constituer un élément important des procédures de contrôle des fusions. Elles devraient s'appliquer aussi bien aux autorités de contrôle des fusions qu'aux parties qui soumettent des éléments d'information à ces autorités.
- Des progrès ont été accomplis en matière d'utilisation des analyses économétriques dans le cadre des activités de contrôle des fusions de la Commission européenne, en grande partie grâce à la mise en place de l'Équipe de l'Économiste en chef. Cela implique que les juridictions dépourvues d'équipe interne constituée d'excellents économistes et économètres devraient envisager d'en créer.

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AUSTRIA

This paper briefly explains the role of economists at the Federal Competition Authority (Bundeswettbewerbsbehörde, BWB) and the Cartel Court as well as recent developments in the use of economic evidence in Austria.

1. Integration and role of economists at the federal competition authority and the cartel court

1.1 Federal Competition Authority

The Federal Competition Authority (Bundeswettbewerbsbehörde, BWB) is still a very young and small authority. Currently there are 21 case handlers at the BWB, of which fourteen are lawyers and seven are economists. Thus, the number of economists in relation to lawyers increased substantially in the last years. All case handlers are responsible for specific sectors (Telecom, transport etc.) however, all deal with central competition issues such as mergers, abuse of dominant position, cartels, etc.

Hence, in principle economists have the same responsibilities as lawyers. However, in important and complex cases economists and lawyers work closely together on one case. Due to limited human resources it was decided to not yet create a separate economic unit.

The BWB is responsible for the investigation of merger cases in phase I which lasts 4 weeks. In problematic cases it files an application for in-depth review with the Cartel Court. In phase II the BWB is official party to the proceedings at the Cartel Court, the latter being the decision body.

Due to the short duration of phase I in merger cases, usually the use of complex quantitative analysis by the BWB is very limited and can only be carried out in case of pre-merger notification. The role of the BWB's economists in merger cases is therefore limited to rather simple economic analysis in phase I and mainly focused on discussions with external economists used as experts by the Cartel Court in phase II on the design of their studies as well as on checking the validity and reasonability of economic arguments brought forward by them.

The situation in merger cases differs considerably from antitrust cases. Especially in recent times the BWB has carried out more complex economic analysis in antitrust cases (see below point 4).

1.2 Cartel court

In nearly all cases and especially in merger cases, the Cartel Court as the decision-making body relies on advisory opinions of independent economic experts of its own choice.

Especially after the creation of a new system of competition authorities in Austria in 2002, it was rather difficult to find the required expertise as competition issues were still relatively new in Austria. The extent to which these expert opinions relied on economic methods and models varied considerably.

Nowadays, the situation has improved, also due to increased competition between economic experts from Austria and from abroad. Another factor increasing the quality of the economic expert opinions is considered to be the improved economic expertise in the BWB (see below point 4).

2. Use of outside economists

The BWB has a small budget to commission in-depth analyses to *external* experts, so as to overcome the staff shortage and lack of economic expertise in certain areas. Up to now it has mainly been used for antitrust cases and market studies.

As explained above, the Cartel Court nearly always uses outside expert opinions.

3. Improvement of expertise

The BWB's economic expertise increased considerably over time: more economists are employed and internal training is organised, also by inviting expert speakers. Moreover, the staff is motivated to attend specialised courses at University to build up further knowledge.

A probably rather unique Austrian feature of the small Austrian network of competition economists is the creation of a specialised group: the economists of the different Austrian regulatory authorities as well as of the BWB and the Federal Cartel Prosecutor meet regularly to exchange views and experience by discussing latest economic analyses carried out. Recently also competition economists from University are invited to these meetings.

4. Type of quantitative evidence used: development over time

As described above, the quantitative methods used both by the BWB and the external experts employed by the Cartel Court became more elaborate over time. Although still not highly sophisticated due to staff and time constraints, an important improvement can be noticed.

Albeit nearly only in antitrust cases, the BWB carried out more profound economic analysis (e.g. shock analysis, analysis of comparable markets, analysis of switching costs, SSNIP-test and the like) before filing an application with the Cartel Court. This has led to a higher standard of economic analysis during the proceedings and to better reasoned opinions by independent economic experts employed by the Cartel Court. Another reason for the improvement seems to be the increased competition between independent economic experts from Austria and abroad.

Multiple kinds and sources of evidence are used to investigate a merger or antitrust case. Several different economic analysis methods are employed in parallel to verify if they lead to the same overall picture. While no trend to use one specific economic method instead of another one could be observed, it might nevertheless be noted that the importance of market shares and concentration ratios has somewhat diminished although they remain an important part of the analysis.

CANADA

1. Introduction

Economic analysis has been an important element of the merger review process at the Canadian Competition Bureau (“Bureau”) for many years. Historically, the principal tool relied upon by the Bureau has been the definition of markets, applying the hypothetical monopolist test and the measurement of market shares.¹ Other quantitative economic tools have also been used in a number of cases; however, prior to relatively recent changes to our legislation, data limitations and timing considerations posed a significant constraint on the Bureau’s ability to undertake detailed quantitative analysis.

The increasing emphasis placed on economics at the Bureau in recent years is attributable in part to advancements in the economic tools available in merger analysis. In addition, and perhaps most significantly as a practical matter, amendments made to the *Competition Act* (the “Act”) in 2009 have improved the Bureau’s ability to obtain, on a timely basis, the data it requires to conduct econometric analysis in the more complex cases that raise potentially serious competition concerns.

This submission is organized as follows: Part I describes the recent amendments to the Act impacting upon the Bureau’s ability to collect data, including data relevant to the Bureau’s economic analysis. Part II addresses the specific questions related to economic evidence posed by Working Party No. 3, and includes a number of case examples where the Bureau has undertaken quantitative analysis. Part III very briefly outlines a number of issues for discussion and future consideration based on the Bureau’s experience to date.

2. 2009 amendments to the Competition Act

In 2009, amendments to the merger provisions of the Act were implemented to improve the predictability, effectiveness and efficiency of the merger review process by, among other things, establishing a two-stage review procedure, and a more direct and effective mechanism for the Bureau to obtain the information that it requires to fulfill its merger review mandate (referred to herein as a “supplementary information request” or “SIR”). Where a SIR has been issued, parties may not close their transaction until 30 days *after* the information requested has been received by the Commissioner of Competition (the “Commissioner”).

The Bureau has issued 10 SIRs since the introduction of the two-stage merger review process, all of which requested both quantitative and qualitative information from the merging parties.

By formally enabling the Bureau to obtain transaction-level and other financial data prior to completion of a transaction, the SIR process has provided the Bureau with a consistent ability to access the data necessary to conduct quantitative economic analysis. Prior to the amendments, such data was sometimes provided on a voluntary basis, and in other cases was obtained via a court-ordered production

¹ Subsection 92(2) of the *Competition Act* directs that the Competition Tribunal cannot find that a merger lessens or prevents competition substantially based solely on evidence of market shares or concentration.

process; however, such processes did not reliably lead to disclosure of sufficient information early enough in the merger review process to give the Bureau the ability to undertake meaningful quantitative analysis.

3. Responses to questions posed in the call for contributions

3.1 *How are economists integrated into the decision-making process (e.g., part of the case team, separate unit)? Do they participate in every merger case?*

The Bureau is comprised of seven branches, including the Mergers Branch and the Economic Policy and Enforcement Branch. The Mergers Branch is responsible for reviewing all transactions notified to the Bureau under Canada's mandatory pre-merger notification regime, as well as non-notifiable merger transactions that come to the Bureau's attention. The Mergers Branch is comprised of approximately 40 competition law officers, virtually all of whom possess either a Masters degree in economics or a law degree. One or more competition law officers will be assigned to review any particular merger transaction.

The Economic Policy and Enforcement Branch is comprised of 8 Ph.D. economists who, among other things, are responsible for supporting the Mergers Branch. In particular, an internal economist is assigned to every merger case team where there is a concern that the proposed transaction may substantially lessen or prevent competition. This assignment occurs as early in the process as possible.

Where the Bureau seeks information from merging parties through a SIR, internal economist(s) work closely with the Mergers Branch case team to draft the SIR, in particular the request for data. Internal economists also participate in pre-issuance dialogue with the parties (as discussed further below), following which decisions may be made to revise the draft SIR.

Typically the internal economists will prepare a written report separate from the report(s) prepared by the Mergers Branch case team. In particular, an initial report is drafted by the internal economists describing the key issues, as well as the information that may be needed to resolve these issues. As information is gathered or received from the merging parties or third parties, further reports may be drafted that include qualitative and quantitative analysis detailing market definition and competitive effects.

Typically, the case team, including the competition law officers from the Mergers Branch, and the internal economists from the Economic Policy and Enforcement Branch, will make a single recommendation regarding whether or not to challenge a proposed merger. This recommendation may include advice received from an external economist, as discussed further below.

3.2 *What steps have been taken over the years to improve the agency's economic expertise in merger control? Are outside economists used, and if so, in what circumstances?*

Among other learning tools, the Economic Policy and Enforcement Branch sponsors a seminar series where external and internal economic experts and competition law officers present current merger topics to maintain and foster internal economic expertise. In the past year, participating external economic experts have included former Directors of the U.S. Federal Trade Commission's ("FTC") Bureau of Economics, and current FTC economists, academics from Canada, the U.S. and the E.C., as well as consulting economists.

Internal economists also regularly teach courses in basic economics and advanced topics in industrial organization to competition law officers across the Bureau. These courses are mandatory for junior officers seeking to advance beyond entry-level (CO-1) status, and are intended to introduce economics to non-economists, as well as to ensure general economic knowledge across the Bureau. In addition, a recent course in quantitative methods for merger review has been developed by the Economic Policy and Enforcement Branch to expand internal economic expertise by educating internal economists and

competition law officers, including lawyers, about recent developments in economics and law in various jurisdictions. The primary objective of the course is to expose participants to various methods for assessing whether a merger is likely to result in a substantial lessening or prevention of competition, including: basic concepts (economic models, game theory, types of evidence), data construction, price tests, market definition (critical loss, residual demand), and competitive effects (diversion ratio, upward pricing pressure, natural experiments, and merger simulations). In addition, the course offers technical examples and programming techniques for those who have completed advanced graduate courses in microeconomics and econometrics.

External economists are often retained by the Bureau to assist with the analysis of mergers raising significant and/or complex competitive concerns. These economists are retained because they possess expertise in a particular area relevant to the issues raised by a proposed transaction, and because they are able to analyze relatively large volumes of data under time constraints. The Bureau may also retain an external economist for the purpose of giving expert evidence where it is anticipated that a matter may proceed to litigation. Since April 1, 2008, the Bureau has retained external economists with respect to twenty-two of a total of 629 merger investigations commenced, or 3.5% of investigations commenced. During the first three quarters of the current fiscal year (which ends March 31, 2011), the total number of mergers reviewed by the Bureau was lower in comparison to previous years;² however, the percentage of merger investigations where the Bureau retained an external economist was greater than the average over the past three years at 5.7%.

3.3 *What type of quantitative evidence do you typically use in merger cases? What is the role of econometric analysis in your merger practice? Can you describe examples where your agency has relied on data analysis and quantitative evidence to support a theory of harm?*

Using data from the parties, the Bureau will utilize regression analysis to produce quantitative evidence. Competition law officers from the Mergers Branch with advanced graduate courses in microeconomics and econometrics may assist with data construction and information for modeling, while internal economists review economic literature, develop models and perform regression analyses. At the same time, where an external economist has been retained, the internal economist will, among other tasks, undertake analyses to be used as a check against the external results.

We offer several examples: In the first example, the Bureau reviewed a proposed transaction in which the merging parties were differentiated based on their locations relative to the locations of their customers. Customer billing information allowed for data construction on prices and margins as well as the number of competitors, including the merging parties, within chosen geographic areas. These areas were varied in size to test for sensitivity. Cross-sectional analyses were applied to determine how the parties might affect one another's prices or margins, as well as how the number of customers or concentration might affect the merging parties' prices.

In the second example, the Bureau reviewed a proposed transaction involving firms that used various distribution channels, including the Internet. Information on prices and competitors was collected, and similar cross-sectional analyses were applied as in the previous example. However, following recent developments in the economic literature, additional regressions were run in order to correct a possible endogeneity problem. The results suggested that endogeneity was not a problem.

In the third example, the Bureau reviewed a proposed transaction where one of the firms was a relatively new entrant, and had been expanding into various local markets on an incremental basis over the

² The 2009 amendments to the Act increased the transaction size threshold for pre-merger notification from \$50 million to \$70 million, which is at least partially responsible for the decrease in the number of filings.

previous five years. A key matter that the Bureau needed to determine was whether the entrant firm was an effective competitor, such that it operated to constrain the incumbent firm's pricing. The Bureau obtained transaction-level pricing data from the incumbent firm, and analyzed how the incumbent's pricing was affected by the other firm's entry in the various locations. This form of natural experiment allowed the Bureau ultimately to determine that the incumbent's prices were not affected by the competitor's entry; relevant to our assessment of the entrant as an effective competitor.

3.4 *What type of quantitative evidence do you rely on when evaluating potential unilateral effects in horizontal merger cases involving differentiated products? Have you quantified diversion between the products sold by the merging parties, e.g. using the merging parties' win/loss reports? Have you employed a range of economic tools building on diversion ratios, such as Gross Upward Pricing Pressure Index (GUPPI), the Illustrative Price Rise (IPR), or more sophisticated forms of merger simulation? Have you applied any of these methodologies in investigations?*

The Bureau has explored cross-sectional analysis, fixed effects regressions (which may be considered as "natural experiments" along with cross-sectional analysis), and merger simulation as quantitative evidence for evaluating unilateral effects. In the past year, each of these methods has been applied by the Bureau in merger investigations; however, statistically significant results have predominantly been attained using cross-sectional analyses.

3.5 *What is your experience in obtaining data to carry out quantitative analysis, from the parties or from third parties? How do you determine what data to request to conduct your analysis? What difficulties have you faced in obtaining data from the merging parties or third parties?*

The issuance of SIRs to the merging parties where the transactions are notifiable has significantly improved the Bureau's ability to obtain information, including data from merging parties in a timely manner, as parties are now statutorily prohibited from closing their transaction prior to 30 days after the Commissioner has received all information requested by the SIR.

Prior to issuing a SIR, the Bureau will generally provide a draft to the recipient party and engage in dialogue with that party's counsel (and, in association with counsel, such party's business representatives and technical staff) regarding the information requests set out therein. The purpose of this pre-issuance dialogue is, among other things, to discuss whether the party maintains data in the form requested by the Bureau, and with whom, or how, such data are held. Where parties have provided the Bureau with data dictionaries and/or data samples early in the Bureau's SIR drafting process, and/or have included technical staff familiar with how the party's data is kept in the pre-issuance dialogue, the Bureau has had considerable success in targeting its data requests. In particular, the Bureau has been able to tailor its data requests to align with how a party's data is maintained in the ordinary course, thereby avoiding the production of entire databases or the construction of databases by parties. Although the form in which parties typically keep their data is generally not suitable for regression analyses, further discussion among internal economists and parties' technical staff is generally able to resolve this difficulty. This pre-issuance dialogue has also largely avoided arguments from parties that the data requests are overly intrusive, costly to construct, or not available.

However, where data is required from a third party (e.g., to conduct a merger simulation) or the merging parties are engaged in a non-notifiable transaction, the Bureau is not able to issue a SIR and must either obtain the data voluntarily or through a production order. Where it is necessary to apply to the courts, obtaining data for quantitative analyses can be a cumbersome process. To date, the Bureau has had relatively good experience in terms of obtaining the cooperation of third parties in this regard. Frequently, the information sought by the Bureau is that which is readily available to the parties, and the Bureau's

commitment to keep the information confidential pursuant to section 29 of the Act has avoided in many instances the need for the Bureau to resort to obtaining production orders.

3.6 *Is your experience using quantitative methods in merger cases reflected in documents describing your best practices or in other guideline documents? If not, are you planning on issuing guidance in the near future?*

The Merger Enforcement Guidelines (the “MEGs”) describe in detail the methodology used to define markets, and to measure market shares and concentration. The MEGs contain relatively less detail on methodologies that are not premised on market definition. Note 23 of the MEGs provides that market definition and the assessment of competitive effects may be undertaken concurrently, particularly where empirical methods are used. While the MEGs do not attempt to catalogue the types of empirical methods that may be used, they reference as examples diversion ratios and elasticity measures in the discussion of differentiated products (unilateral effects).

The Bureau announced in September 2010 that it intended to review the MEGs to determine whether they needed to be updated to reflect current Bureau practices, and legal and economic developments. The Bureau has since held a series of public roundtables and is in the process of engaging in internal consultations. In addition, the Bureau has had the benefit of meeting with several other competition law agencies that have recently revised or are also considering revising their merger review guidelines. A final determination as to whether the Bureau intends to revise the MEGs is expected to be announced during the first quarter of 2011.

3.7 *What is the degree of interaction with the parties’ economists and at what stage in the process does it take place, e.g., regarding potential theories of harm or the type of economic analysis to conduct, and to ensure the efficient gathering of evidence?*

The Bureau has experienced a range of interaction with parties’ economists, but it can be quite significant. In a recent merger investigation, there was considerable productive interaction between the parties’ economists and the Bureau’s internal and external economists. The parties’ economists made detailed presentations on the results of their analysis and potential remaining issues. For example, the parties’ economists provided a price dispersion analysis to help delineate the relevant antitrust markets, which was ultimately given weight by the Bureau. In addition to testing the parties’ analysis, Bureau economists conducted a regression analysis on margins to illustrate how potential competitors act to discipline prices.

3.8 *Have courts assessed the agencies’ use of quantitative evidence when parties appealed merger review decisions by an agency?*

The Competition Tribunal (the “Tribunal”) is a specialized tribunal that, according to its constating statute, combines legal expertise with expertise in economics and business. The Bureau has no unilateral ability to block a merger or to require divestitures or other remedies in contested cases.³ Rather, the Commissioner must apply to the Tribunal for an order to enjoin the merger or to require divestitures or other remedies. To date, the Tribunal has ruled on four fully contested merger cases, and has issued a variety of consent orders and agreements.

³ The Commissioner and the parties may enter into a consent agreement in which the parties consent to divestitures or other remedies. A consent agreement must be registered with the Tribunal, at which point the agreement has the same force and effect as an order of the Tribunal.

3.8.1 *Canada (Commissioner of Competition) v. Superior Propane Inc.*⁴

The Commissioner's economic expert conducted a merger simulation with the standard differentiated product model. First, a structural estimation of demand was made in order to estimate the own and cross-price elasticities. The data included price, quantity, and customer types. Estimates from Almost Ideal Demand System were used, as results from other specifications were insignificant. Subsequently, relatively significant price effects were then calculated using these estimates while assuming no change in marginal costs (no efficiencies). In addition, sensitivity analysis was applied using alternative elasticities estimates. Superior Propane argued that the simulation results did not account for efficiencies, entry or supply side substitution.

The economic experts retained by Superior Propane employed regression analysis similar to natural experiments. Using panel data, the expert tested the effect of the presence of one of the merging parties against the gross profit margins of the other merging party. Various measures of presence were applied. Significant results indicated that the margins of one of the merging parties were relatively higher when there was substantial presence of the other merging party, and relatively lower when there was substantial presence of all other firms. Controlling for simultaneity, the empirically tested relationship between the parties was found not to be significant.

The Tribunal accepted the Commissioner's results in this regard.

3.8.2 *Canada (Commissioner of Competition) v. Canadian Waste Services Holdings Inc.*⁵

The Commissioner's economic expert empirically tested the impact of distance, location, and other variables on prices charged by market participants. The results indicated that prices were relatively higher depending on the location of the market participants, which indicated market power and price discrimination. These indicators suggested that relevant geographic markets were relatively narrower than the claim made by Canadian Waste Services. Given the relatively narrower relevant geographic markets, competitive effects were presumed from the market structure.

Canadian Waste Services did not offer any regression analysis, but produced evidence of shipping patterns as indicators of the relevant geographic market.

The Tribunal accepted the Commissioner's results in this regard.

4. Conclusions and issues for future consideration

While economics have long been a part of the Bureau's tool kit for merger review, the SIR process, which gives the Bureau more reliable and consistent access to data in complex cases, is new. The Bureau's internal economic expertise is developing as its access to data improves and new economic tools are developed. While the Tribunal has fully endorsed the market definition paradigm and the hypothetical monopolist test, there has been limited (albeit positive) Tribunal consideration of the Bureau's use of other quantitative economic tools. Issues that will need to be resolved as the Bureau's practice develops include the degree to which economic analysis can and should be coordinated with that being undertaken by other agencies in international cases; establishing parameters for dialogue with the parties and their economic experts about quantitative methods and assumptions; and Tribunal/judicial testing of different methodologies. In addition, absent cooperation from the parties, data challenges remain in cases where the

⁴ (August 30, 2000), CT-1998/002 (Comp. Trib.).

⁵ (2001), 11 C.P.R. (4th) 425 (Comp. Trib.).

SIR process is not available to the Bureau; for example, in the case of non-notifiable mergers. In such cases, the Bureau must rely on voluntary information requests and/or court-ordered production processes.

We look forward to working and exchanging ideas with other jurisdictions, and encourage any comments that could better position the Bureau to expand and develop the use of economic evidence in its merger practice.

CHILE

1. Introduction

The use of quantitative economic evidence in merger analysis has become increasingly important in Chilean merger review. This can be appreciated in both the content of Fiscalía Nacional Económica's (hereinafter "FNE") non-binding decisions (so-called reports) and guidelines, and the Competition Tribunal's (hereinafter "TDLC") judgments.¹

However, the FNE has faced important obstacles to carry out quantitative analysis. First and foremost, relevant public information in Chile is scarce – information is mostly private. The FNE has faced difficulties in obtaining data from the merging parties and other third parties. In a number of occasions they have opposed to the FNE's information requests² and or delayed the submission of the requested data. When information has been actually received, it is usually unclear. Considering the number of case handlers within the agency, the informational asymmetry problem is difficult to overcome.

The difficulties have been partially surpassed by the adoption of different measures, such as the commission of external market studies to build data bases, the training of FNE's economists and the hiring of external economists when needed.

2. Legal framework

Chilean competition act³ (hereinafter "the Act") aims to promote and defend "free competition",⁴ ordering its application to the TDLC and the FNE. The Act does not contain any particular provision governing merger control. However, several sections provide the substantive basis for merger control by both the FNE and the TDLC.

¹ The *Auto Acordado* N° 12/2009 lists the information that must be included when parties submit a merger for review before the TDLC.

² Art. 39 h) of the Competition Act regulates a proceeding for opposition against information request: "(...) *Individuals and representatives of legal entities from which the National Economic Prosecutor needs information whose delivery may injury their interests or those of third parties may request the TDLC to dismiss the request totally or partially. This request must be justified and shall be submitted to the FNE within five days following the request this authority made, whose effects will be suspended from the moment the relevant presentation is carried out. The TDLC shall hear and resolve said request at its next meeting, with an oral or written report from the National Economic Prosecutor, and its ruling shall not be subject to appeal.*"

³ Decree Law N° 211/1973 and its amendments, notably: Act N° 19.911/2004 which introduced institutional changes setting up the *Tribunal de Defensa de la Libre Competencia*, a specialized competition court and Act N° 20.361/2009 which increased the FNE's investigative powers when dealing with cartels and collusive agreements.

⁴ "Free competition" is the wording used by Chilean law when referring to competition law.

Merger control in Chile comprises two alternative procedures.⁵ First, there is the voluntary procedure. Merging parties can voluntarily submit their transactions to *ex ante* or *ex post* review before the TDLC.⁶ There are incentives to submit transactions to the TDLC's review prior to its implementation.⁷ The FNE or any party with the right to make presentations in the proceedings may also request the TDLC's review. The TDLC may clear the merger, block it, or set conditions that the parties must comply with before the approval.

Secondly, there is an adversarial procedure. The FNE may file a complaint and request the TDLC the termination of *any* act or agreement that prevent, restrict or impede free competition, or have the potential of producing such effects. Mergers are certainly included.

3. Guidelines, procedures and tests applied

3.1 Guidelines

The FNE adopted Horizontal Merger Guidelines (hereinafter "Merger Guidelines")⁸ in 2006. In 2009, the agency began to assess possible amendments to the Merger Guidelines, with the aim to better reflect current procedural practices, increase transparency, and incorporate changes that had taken place after 2006 – including developments in economic methods of analysis. During the course of this year the FNE plans to launch a consultation of the new draft of the Merger Guidelines.

The Merger Guidelines describe the proceedings, substantive assessment and the tests the FNE uses in merger cases.

The Hypothetical Monopolist Test is the method used to define the relevant market. However, whilst the FNE uses the reasoning of Hypothetical Monopolist Test, in most cases cross-elasticities are not calculated because of the lack of relevant data. Despite this shortcoming, there are some cases where econometric analysis has been actually used to define the relevant market. In addition (or alternatively), the FNE relies on the case-law.

The Merger Guidelines mention the use of Herfindhal Hirschman Index (HHI) for the calculation of pre- and post- merger degree of market concentration. The FNE presumes a merger is not likely to affect competition if the HHI does not vary within certain thresholds:

- If the HHI post merger is lower than 1.000
- If $1000 < \text{HHI} < 1.800$ y $\Delta \text{HHI} < 100$
- If $\text{HHI} > 1.800$ y $\Delta \text{HHI} < 50$

⁵ Arts. 3, 18 N°2 and 31 of the Act. The TDLC has issued instructions aimed at regulating the procedure in case of conflicting proceedings (adversarial and non-adversarial) regarding the same issue (*Auto Acordado N° 5/2004*) and about the information that parties must provide in these proceedings (*Auto Acordado N° 12/2009*), in order to provide guidance on its merger analysis.

⁶ There is no mandatory pre-notification system in Chile.

⁷ Parties obtain several advantages from the preliminary review procedure, which do not consider submission fees. If the transaction is approved and the parties comply with the conditions that the TDLC sets, there will be no further liability. Also, after a non-adversarial proceeding begins, the FNE or a competitor or customer cannot initiate an adversarial procedure.

⁸ "Guía Interna para el análisis de Operaciones de Concentración Horizontales", October, 2006.

These thresholds are now under review. The FNE is analysing whether different thresholds would be more appropriate for a small economy like Chile.

The FNE has carried out and commissioned cross-sectional and time-series studies which relate concentration to price or price/cost margins and show the effects on prices of entry, exit or horizontal merger. The FNE has used these studies both to substantiate its arguments and challenge counterparties' arguments and economic studies.⁹ In *Alvi/D&S*, the FNE used a model with panel data to estimate the effect that the presence of Alvi supermarkets had on prices of D&S (another supermarket chain). That is, the effect of entry and concentration on prices in the supermarket industry was measured. In *FNE vs. D&S and Cencosud*,¹⁰ the FNE commissioned an external economic study. The study developed a dynamic model with panel data in order to estimate how concentration affected prices.

Private parties also use economic analysis widely. In *D&S/Falabella*,¹¹ parties presented cross-sectional studies relating concentration to margins. Finally, in *Compañía Pisquera/Cooperativa Capel*¹² one of the parties presented a panel data analysis for market definition.

In *FNE vs. D&S and Cencosud* the FNE dealt with "creeping acquisitions", whereby big companies seek to expand their market power by buying up smaller operations.¹³ The FNE's accusation was motivated by the aggressive growth strategy of both companies and not by a single acquisition.

The analysis of efficiencies has been performed under a qualitative perspective rather than a quantitative one. It is common practice to ask parties to quantify their efficiencies. However, the FNE considers that it is on the parties' burden to provide the agency with enough quantitative evidence to calculate efficiencies, so that they can be assessed in relation to the anticompetitive merger's effects. Unfortunately, in most cases parties do not submit the necessary data. Finally, the FNE's efforts are focused on the analysis of whether the argued efficiencies are feasible in practice and can be effectively passed on to consumers.

The FNE has not yet run coordinated effects tests based on models of repeated oligopolistic interaction. The FNE takes into consideration a number of elements which are based on economic theory, but they are mostly analysed from a qualitative, not a quantitative approach.¹⁴

⁹ The cases mentioned in the next paragraph are further explained in section V below.

¹⁰ "*Requerimiento de la FNE contra D&S S.A. y Cencosud S.A.*" Case N° C 101-06 Ruled on May 8th 2008 by *Sentencia* N° 65/2008, latter appealed by Cencosud to the Supreme Court and terminated by a settlement approved by the Supreme Court on July 24th 2008. In this case the FNE carried out a quantitative analysis to demonstrate how the entry of a national chain of supermarkets affects prices in a certain location, versus the effects on prices by entry of a national chain via acquisition of a local chain.

¹¹ "*Consulta sobre Fusión de D&S y Falabella*" Case N° NC 199-07. Ruled on January 31 2008 by *Resolución* N° 24 /2008.

¹² "*Consulta de Compañía Pisquera sobre toma de control de activos de Cooperativa Capel*" Case N° NC 96-05, terminated on January 19th 2006 by *Resolución de término* N° 27/2006.

¹³ "*Requerimiento de la FNE contra D&S S.A. y Cencosud S.A.*": *Sentencia* N° 65/2008, appealed by Cencosud to the Supreme Court and resolved by settlement approved by the Supreme Court on July 24th, 2008.

¹⁴ Listed in the 2006 Merger Guidelines in point 5.2: "*a) The characteristics of the product, for example, the level of obsolescence, technology refresh, degree of differentiation, structure and changes in costs, which may facilitate or hinder the sustainability of coordination. For example, very homogeneous products facilitate coordination, while the opposite is true subject to frequent product innovation; b) The behavior of the parties, evidence of past coordination; c) The profitability of the parties, which may indicate that*

The FNE is considering whether the application of the *Upward Pricing Pressure* (“UPP”) test in horizontal mergers is appropriated. Up to date, the test has not been used in any merger investigation in Chile.

3.2 Relationship with parties’ economists and the court economic assessment

Given the design of the Chilean merger system, information exchanges between the FNE’s economists and the parties’ economists are quite low. However, a tighter relationship has been built when parties have approached the FNE – either because the FNE has opened an investigation *ex officio* or because they have requested the FNE to review the merger before submitting it for TDLC’s approval.

Parties have a chance to replicate the economic analysis carried out by the FNE before the TDLC. With this purpose, the FNE makes available to the TDLC and parties the files that contain data and the economic models applied.

By law the TDLC is composed of three lawyers and two economists, and have a supporting staff that also includes economists. Being a specialised tribunal, the TDLC is well-prepared to perform economic analysis, considering the evidence, reports and records the FNE and the parties submit. The TDLC has been very careful in its assessment of quantitative evidence. In some cases it has even commissioned external economists to audit the databases and econometric reports that either the FNE or parties have presented.

The TDLC’s final decision on a merger may be appealed to the Supreme Court. Although the Court has specialised chambers, none of them deals exclusively with economic matters. The constitutional and administrative chamber reviews competition law cases. Judges are “generalists”, having no specific economic training. Thus, when a merger case reaches this stage, there may be difficulties in transmitting economic reasoning to the Court and hence less value or importance is given to empirical economic evidence. However, up to date the number of merger cases reviewed by the Court has been relatively low.

3.3 Access to and processing of data

The FNE determines the data it needs depending on the specific case, the markets affected and the theory of harm applied to the case. Coordinated and non-coordinated effects are the risks more often considered in the analysis of a merger. If the FNE has more concerns regarding unilateral effects, it requests more information on prices and costs from the merging parties. If more there is more concern regarding coordinated risks, similar data is required, but additional and more specific information (such as daily prices during a long period, precise location of premises and others) may also be requested. Other particularities of the industry may need additional information.¹⁵ As mentioned, parties’ information may not be enough or timely delivered.

they have exercised or are exercising market power; d) The characteristics of the merged entity such as its economic and financial strength; e) The performance, profitability and competitive features, of the eliminated competitor. For example, the elimination of a strong, non-aligned or innovative, competitor; f) The performance, profitability and characteristics of the remaining competitors, which may indicate that market power has been exercised, that previous coordination has occurred and or that coordination would be convenient or sustainable. For example undertakings with exposition in multiple markets can be more easily disciplined; it is easier for the cartel participants to sanction the cartel member that deviates. g) Evolution of market shares, and h) The flow of information between competitors, market transparency”.

¹⁵ For instance, if there have been periods of entry or exit of competitors, the FNE requests specific information of those periods in order to assess the likelihood of future entry or exit.

In occasions third parties have been reluctant to collaborate with the FNE's investigations. An example was *D&S/ Fallabella*,¹⁶ where the FNE sent information requests to several banks and some of them presented an opposition to the TDLC.¹⁷

A further difficulty is the obtaining of data from market research companies. For instance, in the same *D&S/ Fallabella* merger, the firm A.C.Nielsen denied the provision or even the selling of information to the FNE, arguing that the companies that provided the information would refuse to work with A.C.Nielsen if they knew that the information could be later sold to the competition authority. The TDLC upheld the opposition based on the argument that selling or giving this information to the FNE could prejudice A.C. Nielsen's business.¹⁸

In some cases, the FNE has tried to overcome the lack of access to data by carrying out or commissioning market studies and surveys in order to generate data.¹⁹

4. Efforts towards better quantitative analysis

The FNE has adopted important steps to improve economic analysis in merger cases.

First, every case team is composed of at least one economist and one lawyer. This means that economists are always responsible for the cases. A senior economist and a senior lawyer support and review the work of the case team. The head of the Investigation Division (who is also the Chief Economist) also revises all merger cases. In addition, some economists integrate the litigation team, supporting the work of the litigator.

Second, the FNE has focused on recruiting economists specialized in industrial organization, with extensive experience in econometrics, or with knowledge in specific sectors such as energy, telecommunications, and others.

Third, the FNE encourages its economists to participate in training programs for specific sectors and advanced econometric techniques.²⁰ The FNE also encourages economists (and the staff generally) to participate in academic activities.

Fourth, the FNE participates actively in the ICN Merger Working Group and, as far as possible, uses ICN work products as guidelines for procedure and analysis in current merger cases.

¹⁶ *"Consulta sobre Fusión de D&S y Falabella"* Case N° NC 199-07, Ruled on January 31st 2008 by *Resolución N° 24/2008*.

¹⁷ *Banco del Estado's* opposition was ruled by the TDLC on June 27th, 2007 by *Art. 39 h) Resolución N° 13/2007*, the ruling confirmed the Banks obligation to provide information to the FNE and that Banco del Estado did not require excessive efforts to produce the information in the format required by the FNE; but specified that the bank cannot be compelled to produce information that it does not already have, and deemed the time given by the FNE to answer the information request too short. The TDLC ruled in the same way regarding Banco Bice's previous opposition on June 20 2007 by *Art. 39 h) Resolución N°12/2007*.

¹⁸ Upheld by the TDLC on April 18th, 2007 by *Art. 39 h) Resolución N° 11/2007*.

¹⁹ In *"Consulta de Compañía Pisquera sobre toma de control de activos de Cooperativa Capel"* Case N° NC 96-05, terminated on January 19 2006 by *Resolución de término N° 27/2006* the FNE has commissioned a survey to the Consumer Protection Agency (SERNAC).

²⁰ For example, economists participate every year in specific conferences on industrial organization (e.g. the "TOI" or "Taller de Organización Industrial").

Finally, in most complex and/or relevant cases, external economists may be hired to elaborate models and studies or act as counterpart of FNE's economic studies. For example, in *FNE vs. D&S and Cencosud*²¹ (a merger concerning the supermarket industry), the FNE hired external economists to measure the impact of concentration on prices.

Also in the supermarket industry, in *Alvi/D&S*²² (a case pending of resolution by the TDLC) the FNE hired external economists to arbitrate the FNE's economic studies and results.

5. Case law

5.1 *Alvi/D&S(Walmart) (2010)*²³

5.1.1 *Facts*

The FNE submitted to the TDLC the takeover by D&S (Walmart in Chile) – the leading supermarkets chain in the country – of Alvi, the largest wholesale distributor for supermarkets in Chile. There are significant overlaps in some segments of the industry. In particular, the wholesale format is frequently used by lower-income consumers who buy products in bulk for family supply. Wholesale distributors have therefore adapted part of their offer to the needs of these consumers. In this particular segment Alvi exerts competitive pressure on D&S. Without that pressure D&S would be able to significantly raise its prices. The FNE is arguing that for this reason and the concentrated market structure, the merger would have anticompetitive effects.

5.1.2 *Economic analysis*

The FNE carry out a study to estimate the rise in prices of a basket of products assuming that Alvi will not be market player after the merger.²⁴

Alvi' ability to discipline D&S' prices was estimated with data of the city of Santiago. The econometric model related an index of D&S's selling prices with three dummy variables indicating: the presence of Alvi in the vicinity – i.e. within different radius or "isochrones" fixed by journey time by car (considering 5, 10 and 15 minutes) from each of the premises used as dependent variables; concentration levels for each local area (with a pre-defined geographic market and 10 min. isochrones) and format of store (convenience store, hypermarket, etc.); and district (borough, town), etc.

In the analysis, the FNE used an unbalanced panel with monthly D&S sales data from January 2006 to June 2010. There was a negative effect on the pricing policy applied by each local D&S supermarket, caused by the presence of a near Alvi supermarket. The estimations were done using OLS, Random and Fixed effects. The effect was significant and robust to different specifications used in the study. The

²¹ *Requerimiento de la FNE contra D&S S.A. y Cencosud S.A.* Case N° C 101-06 Ruled on May 8th 2008 by *Sentencia* N° 65/2008, latter appealed by Cencosud to the Supreme Court and resolved by settlement approved by the Supreme Court on July 24th, 2008.

²² *"Consulta de FNE sobre toma de control de Alvi Supermercados Mayoristas S.A. por Distribución y Servicio D&S S.A."* case N° NC 383-10, Pending.

²³ *"Consulta de FNE sobre toma de control de Alvi Supermercados Mayoristas S.A. por Distribución y Servicio D&S S.A."* case N° NC 383-10, Pending.

²⁴ The economic analysis developed by the FNE in this case used as primary reference the paper developed by Orley Ashenfelter, David Ashmore, Jonathan Baker, Suzanne Gleason and Daniel Hosken (2004) *"Econometric Methods in Staples"* to examine the possible effects the acquisition of Alvi will have on sales prices of supermarket chain D&S.

presence of an Alvi supermarket 5 minutes away from D&S made D&S's selling price index fall a 1.5%. The presence of an Alvi supermarket 10 minutes away from D&S made the selling price index fall a 1%. The effect on the same price was even lower in a 15 minute isochrones.

Based on the coefficients obtained, the FNE estimated the effect of the merger. The conclusion was that the new entity would have the ability to increase prices of certain stores between 2% and 3.4%.

An index of selling prices in Walmart supermarkets was required for the analysis. The index considered 48 categories of products, including more than 6,000 products sold. As a first step for the construction of the mentioned price index, a representative basket of goods was assembled for each local D&S's supermarket. In order to assess the robustness of the econometric model, three ways to build the basket were tested.²⁵ The results of the model using price indexes derived from the three baskets were consistent

5.1.3 *Ruling*

The case is pending of resolution.

5.2 *FNE vs. D&S and Cencosud (2008)*²⁶

5.2.1 *Facts*

The FNE filed a complaint against the two major supermarkets chains in Chile, D&S and Cencosud. Both chains had initiated a growing strategy consisting in the acquisition of rather small, regional supermarket chains. The complaint requested the TDLC to impose both firms the duty to consult any further supermarket acquisition in which they directly or indirectly participate. It also aimed to agree on a "code of good practices" that ruled the relation with suppliers. The FNE based its request on the firms' position in the market, the market structure, and the effect of entry caused by their growing strategy. Additionally, the FNE requested the establishment of a convention on general contractual terms with small and medium-sized suppliers.

The FNE questioned the aggressive and publicized growth strategy of both D&S and Cencosud, which was based on the (hostile) takeover of competitors and acquisition of suitable land for location of supermarkets. The strategy had resulted both in the elimination of competition and the creation of artificial barriers to entry.

Moreover, the FNE argued that both chains had abused their market power in their relationships with suppliers, imposing subjective, arbitrary and unpredictable buying conditions, altering conditions previously agreed upon and frustrating contract expectations.

²⁵ i) the first basket was constructed by weighting the different categories of products, from the weights used by the National Statistics Institute (INE) to construct the basket used to calculate the Consumer Price Index (CPI), ii) the second basket, used as weights the relative weight of each product lines in total sales for D&S; iii) the third basket was constructed using as weights the relative weights of each of the product lines in the sales of the supermarket format aimed at low socioeconomic segments (this, since Alvi is a supermarket frequented mainly by people belonging to this segment socioeconomic status).

²⁶ "Requerimiento de la FNE contra D&S S.A. y Cencosud S.A." Case N° C 101-06 Ruled on May 8th, 2008 by *Sentencia* N° 65/2008, latter appealed by Cencosud to the Supreme Court and resolved by settlement approved by the Supreme Court on July 24th, 2008.

5.2.2 *Economic analysis*

During the trial, the economic discussion centred on whether greater concentration in the supermarket industry resulted from actual price increases. The FNE hired external consultants to determine to what extent market concentration was linked to increase in prices.²⁷

The study considered a dynamic panel model to explain how market concentration affects a basket of food prices (for a sample of 24 cities in Chile). Market concentration was measured by the HHI and controlling factors, such as local costs and market size, among others, were used. The results indicated that market concentration has a significant positive effect on food prices. The model took into account constant effects for all cities and a lag in the price of the food basket. Monthly data from January 1998 to March 2006 was used for 52 food products in 24 cities. In the model, each city was considered as the relevant geographical market.

A second model estimated the influence that high market prices might have on entry. A panel model with fixed effects was estimated, using the HHI as the dependent variable, and as independent variables the same lagged index and 24 lags of the price index of the food basket. The results obtained indicated that prices do not affect future market concentration, which is an indication of the existence of barriers to market entry.

5.2.3 *Ruling*

Before the ruling, one of the defendants, D&S, settled with the FNE and committed to pre-notify future acquisitions and implement general contractual terms agreed with small and medium-sized suppliers. Due to the settlement, the trial continued only with Cencosud as defendant.

In its judgement, the TDLC only partially upheld the FNE's position. The TDLC ordered the undertaking to pre-notify any future merger in the supermarket industry in which Cencosud wishes to participate, either directly or indirectly. However, it did not accept the creation of a "code of good practices" that ruled the relations between Cencosud and its suppliers.

The ruling considered the increase in market concentration, the perceived entry barriers, Cencosud's position in the analyzed relevant markets, and the negative effects on competition due to Cencosud's acquisition of competitors. The TDLC concluded that growth strategies by the defendant based on takeovers of rival companies may in some cases restrict or hinder competition significantly.

The FNE appealed the TDLC's decision. However, the parties reached a settlement before Supreme Court's final hearing. In the settlement, Cencosud committed itself to consult with the FNE any future acquisition in the supermarket market.

As a result, the case resulted in *de facto* mandatory notification system applicable to both Cencosud and D&S.

²⁷ The empirical work of the case is contained in two reports: "*The relationship between food prices and the concentration of supermarkets in Chile: evidence from a dynamic panel model and analysis of the impacts of proposed mergers Industry*", (commissioned by the FNE and available at [http://www.tdlc.cl/DocumentosMultiples/Informe%20Aldo%20González%20y%20Andrés%20Gómez%20Lobo%20\(final\).pdf](http://www.tdlc.cl/DocumentosMultiples/Informe%20Aldo%20González%20y%20Andrés%20Gómez%20Lobo%20(final).pdf)); and "*The concentration-price relationship when an industry changes supermarkets in Chile 1998-2006*" (commissioned by Cencosud and available at: <http://www.tdlc.cl/DocumentosMultiples/Informe%20Diaz%20Galetovic%20y%20Sanhueza.pdf>). The main text only refers to the former.

5.3 *D&S-/Falabella (2008)*²⁸

5.3.1 *Facts*

The procedure was initiated by a voluntary consultation by D&S and Falabella. Both companies participated in several types of retail businesses. The main business of Falabella was sales through department stores and the main business of D&S was sales through supermarkets. Both parties participated in the supermarket industry, where D&S was the dominant player.

5.3.2 *Economic analysis*

FNE's economic analysis centred on identifying the risks the merger would produce in the supermarket industry, considering that Falabella participated in a set of businesses that gave rise to economies of scope significant enough to defy D&S in that industry. On the other hand, the player with more possibilities of expansion in the supermarket industry was Falabella, which would have the ability of bringing to an end the follow-the-leader structure prevailing in the market due to D&S's expansion (D&S had a market share of 33.5%. Its post-merger market share would increase up to around 38.5%).

The merger between Falabella and the biggest player in the supermarket industry was found to eliminate important competitive pressure in the relevant market. There were both unilateral and coordinated competitive risks.

The merging parties commissioned a study to external economists which included an econometric model that tested the effect on D&S's margins in the areas where Falabella's supermarkets were present. The study built a cross section data base for all the national territory, using monthly data of sales, quantity sold, and costs for D&S from November 2006 to February 2007, and total sales from the other supermarkets (distinguishing each establishment). For each of the 99 relevant markets²⁹ the data base reflected D&S's margins, HHI, number of establishments, number of supermarket chains and market shares of each of the supermarket chains.

Estimating a simple model through the OLS method, the study found that the presence of a single Falabella store in the relevant market had the effect of reducing D&S's margins. This conclusion supported the FNE's view of the industry. Thus the FNE argued that the supermarket business should be excluded from the merger and, for that purpose, Falabella should sell to a third party its supermarket business prior to the merger.

The TDLC gave a different definition of the relevant market. It considered that both companies were relevant in a number of businesses such as real estate, home centers, supermarkets, travel agencies, shopping centers, business banking and credit. Their presence in these industries allowed them to benefit from important economies of scope. Competition in some of niches depended on the simultaneous presence of strong and integrated players in several of these businesses.

Consequently, the merger concerned a wider relevant market than the mere sum of relevant markets where an overlap was found. The TDLC called this market "integrated retail". In the TDLC's opinion, the merger would have meant the creation of a dominant player in the integrated retail and in virtually all its

²⁸ *"Consulta sobre Fusión de D&S y Falabella"* Case N° NC 199-07 Ruled on January 31 2008 by *Resolución N° 24 /2008*.

²⁹ The relevant market was defined as all the supermarkets that where within a 5 KM around each D&S supermarket.

segments. Also, the merged entity would have had the ability to leverage its market power to other areas of retail business in which it decides to participate in the future.

5.3.3 *Ruling*

The TDLC blocked the merger. First, the TDLC sustained that the merger would allow the creation of a dominant undertaking in the integrated retail market (dominant in virtually all segments of the market). The dominant firm would also have the ability to use its market power in other business areas in which it may participate in the future.

Given the size of Chilean economy and the existent entry barriers in the integrated retail market, the TDLC found that enough entry by a new defiant competitor was unlikely.

The TDLC also held that the merger would substantially reduce competition in the relevant market (which, in addition, is of significant importance to final consumers).

The efficiencies the merging parties suggested were not sufficiently proven. When they were proved, the TDLC deemed the efficiencies did not have the ability to compensate the anticompetitive risks produced by the merger.

Finally, the TDLC considered that no remedies were sufficient or adequate to compensate or minimize the competitive risks that the merger entailed.

5.4 *Compañía Pisquera/Cooperativa Capel (2006)*³⁰

5.4.1 *Facts*

Cooperativa Capel, the biggest Chilean producer of “pisco”,³¹ was looking for a strategic partner. With that aim, it carried out an international tender in which only Compañía Pisquera (“Control”) participated. Control was the only competitor that elaborates pisco in Chile. Control requested the TDLC to decide whether the merger would hinder competition in the Chilean market.

5.4.2 *Economic analysis*

The FNE carried out a market study in order to obtain the necessary data to run the hypothetical monopolist test. External economists also estimated cross-elasticities to gauge the degree of substitution between pisco and other “spirits”.

In order to estimate the effects the merger would have on competition, the analysis focused on the possibilities of substitution amongst different alcoholic beverages (i.e. this was the relevant market).

The FNE analyzed the relevant market based on a survey commissioned to the Consumer Protection Agency, which related the demand for pisco and potential increases in prices, and the substitution levels

³⁰ “*Consulta de Compañía Pisquera sobre toma de control de activos de Cooperativa Capel*” Case N° NC 96-05, terminated on January 19 2006 by *Resolución de término* N° 27/2006, the consultant *Compañía Pisquera*, withdrew its consultation on January 16 2006 (because *Cooperativa Capel* did not want to go forth with the merger).

³¹ Alcoholic drink based on a distillate of grapes.

with other alcoholic beverages.³² The survey consisted of an internet survey to be answered voluntarily by e-mail.³³

Taking the survey as starting point, it was determined that a hypothetical monopoly controlling the total of pisco production could raise prices near a 20% without taking into account other alcoholic beverages. Thus, substitution levels with other alcoholic beverages would be insufficient to consider them in the same relevant market.

In addition, parties elaborated a report with a model that also estimated crossed elasticity between pisco and other alcoholic beverages. To make the simultaneous estimation and taking into account that the errors of the demand functions were most likely correlated, a Seemingly Unrelated Regressions (SUR) model was estimated. According to the study, in this case the SUR was more efficient because there were unobserved shocks that simultaneously affect the demand for the considered five drinks.

Demand studies carried out by the merging parties reaffirmed this conclusion. They produced results consistent with SERNAC's study. In the same way, the organizational structure of CCU (the parent company of Control), which has separate business units for alcoholic beverages such as beer, wine, liquors and pisco, served as confirmation to what was already detected by consumer surveys. Likewise, it was argued that the information used by the industry to compete was disaggregated by type of alcoholic beverage, which wouldn't make sense if the levels of substitution were such that they belonged to the same relevant market.

Finally, one last element supported the FNE's market definition: foreign case-law defined markets very narrowly, mainly including one specific type of alcoholic drink.

The narrow market definition, along with the existence of entry barriers (such as the need to incur in sunk costs for the production and commercialization of pisco, strong investments in publicity and difficulties in acquiring appropriate land)³⁴, supported the FNE's view that the merger should be blocked because it would create a hardly contestable monopoly.

5.4.3 *Ruling*

The case was concluded without a ruling on substance, since the consultant withdrew its consultation.

6. **Final remarks**

In Chile, quantitative economic evidence in merger cases has significantly improved. This can be observed both in recent merger judgments by the TDLC and decisions and reports issued by the FNE.

³² Additionally, the FNE analyzed: i) foreign case law on market definition for alcoholic beverages; ii) statistic and economic studies on the national pisco market provided by third parties in the trial; iii) the behavior of undertakings producing alcoholic and non alcoholic beverages; and finally iv) the opinion of supermarkets and wholesale distributors of those products.

³³ 570 answers were received, and they can be classified in the following way:

- Sex: 55.9% masculine and 44.1% feminine
- Socio economic income: 57.4% was classified with a monthly income over us\$1,400; 35% was classified with a monthly income between us\$500 and \$1,400
- Age: 39.7% adult (41 to 60 years), 37.9% young adults (30 to 40 years) and the 20.9% young (19-29 years).

³⁴ Appropriate land for the production of grape distillates that can be called "pisco" must have water rights and municipal permits and should be produced within a specific geographical zone delimited for it.

The FNE is currently deepening its efforts to carry out better quantitative analysis by hiring economists specialized in specific industries or that have econometric skills; working with external economists; and standardizing and updating procedures and guidelines.

DENMARK

1. Introduction

This paper reflects the views of the Danish Competition and Consumer Authority (hereinafter: the DCCA)¹ on the topic of “Economic evidence in merger analysis”.

The DCCA uses economic evidence in the majority of merger cases. However, the extent to which economic evidence is used depends on the specific case and the use of such evidence has on some occasions been restricted by the relatively short period of time allowed for handling a merger case in Denmark. Until last year, the Danish Competition Act stipulated that a decision should be made by the Danish Competition Council within 3 months of receiving the final merger notification. This left little room for applying sophisticated economic and econometric techniques.

A number of amendments of the Danish merger regulation entered into force on October 1st, 2010. The amendments include a lowering of previously very high turnover thresholds regarding mandatory notification of mergers to the DCCA. In addition, a simplified procedure for uncomplicated mergers has been introduced. Furthermore merger notifications which require in-depth analysis and where a Phase II investigation is initiated, will also require the DCCA to issue a preliminary statement of concerns. Finally, the legal deadlines with respect to the handling of merger cases have been extended. This grants the DCCA more time to conduct a thorough competitive assessment in merger cases, and, in particular, to include economic evidence in the assessment. The introduction of these changes brings the Danish merger regulation further in line with the merger regulation in comparable EU-countries.

When assessing a merger, the DCCA applies the same economic reasoning and types of economic tests as the European Commission. The DCCA’s merger decisions are based, in part, on case law from the Commission and the European Courts as well as on the Commission’s merger guidelines. The substantive merger test used by the DCCA attempts to determine whether the merger is likely to pose a Significant Impediment of Effective Competition, i.e. the SIEC-test. This effects-based approach is well-suited for economic evidence.

As a preliminary step in any merger case the DCCA will typically conduct a rough market definition and estimate the market shares held by the undertakings concerned, and calculate preliminary HHI figures and the change in HHI. The DCCA will also take into account the competitive strengths of actual and potential competitors as well as barriers to entry. This information will be the first indication of whether a proposed merger is likely to impede effective competition.

In many cases the preliminary step is sufficient to conclude that the merger will not impede effective competition. In such cases the merger is approved in phase I and no further investigation is needed. Typically, more involved economic analyses are carried out only in cases which enter into a phase II investigation.

¹ On August 19th, 2010 the Danish Competition Authority and the Danish Consumer Agency were merged to form the new Danish Competition and Consumer Authority. In this paper the DCCA refers to the former Danish Competition Authority when citing activities before August 19, 2010.

2. How are economists integrated into the decision making process (e.g., part of a case team, separate unit)? Do they participate in every merger case?

In the DCCA economists are, as a general rule, involved in all non-trivial merger cases. In such cases the initial assessment is typically conducted by a case team containing both economists and lawyers. The economists often play an important part in market definition and, also, in constructing the counterfactual scenario and assessing effect of the merger.

Economists are employed in all offices of the DCCA which handle competition cases. The office of the Danish Chief Economist will typically be involved in merger cases if the office responsible for the merger is short on resources and in complicated cases where it is relevant to use e.g. econometric evidence in the assessment of the merger.

Finally, in complex mergers cases decisions are made not by the DCCA, but by the Danish Competition Council. Representatives from the academic world, e.g. economics, hold a number of seats in the Council.

3. What steps have been undertaken over the years to improve an agency's economic expertise in merger control? Are outside economists used, and if so, in what circumstances?

Over the past years the DCCA has focused on improving the quality of market definition in merger cases and other competition cases. Additionally, the DCCA has made some efforts to apply more sophisticated economic analyses and, consequently, introduce more economic evidence in merger cases. Part of the DCCA's efforts has been the formation and strengthening of the Chief Economist's office over the past four years. The Chief Economist's office plays an important part in complex merger cases.

Furthermore, the DCCA has recently finished an internal project with the primary aim of improving the DCCA's market surveys. One of the main outcomes of the project is a more uniform approach to market surveys across the DCCA. The common working method is to start with formulating a set of central hypotheses to be tested through a number of questions. The explicit use of hypotheses in market surveys can increase the quality of the questions asked, and at the same time reduce the number of questions asked. The specific wording of questions and the way surveys are presented are other important issues addressed in the report.

External economists are only used in rare instances. In some cases the DCCA consults with academics specialized in the field of competition economics. However, such consults are often of an informal nature. Only very rarely does the DCCA purchase services from an economic consultancy.

4. What type of quantitative evidence do you typically use in merger cases? What is the role of econometric analysis in your merger practice? Can you describe examples where your agency has relied on data analysis and quantitative evidence to support a theory of harm?

The DCCA has used quantitative evidence in market definition, and as the foundation of the subsequent competitive assessment of a merger. The quantitative evidence typically used is data regarding turnover, quantities and prices. The DCCA, however, has limited experience with using econometric analysis directly in the assessment of mergers.

The limited experience with econometric analysis in merger cases may, in part, be due to the former Danish merger regime. This was characterized by narrow deadlines within which the DCCA had to complete the merger assessment. With the changes to the Danish merger regulation mentioned above the legal deadlines have been extended significantly. This increases the possibilities to use more thorough economic evidence in merger analysis in the DCCA in the future.

In a merger case from 2008 the DCCA gathered a considerable amount of economic evidence. The proposed merger was between two wholesale dealers, Brdr. A&O Johansen A/S and J.F. Lemvig-Müller Holding A/S (hereinafter: AO&LM). Both companies are active on the wholesale markets for plumbing and heating materials and on the wholesale market for electricity materials to professional customers, i.e. to plumbers and electricians.

The merger would have reduced the number of wholesalers with nation-wide coverage in plumbing and heating materials from 4 to 3 with a combined market share above 80 per cent. And the 3 wholesalers in electricity materials with a nation-wide network of outlets would have been reduced to 2 with a combined market share that would have been even higher.

The Competition Council found that the merger would impede effective competition significantly on both markets due to increased risk of coordinated effects. Consequently, the merger was blocked.

The decision to block the merger was based on extensive analyses of the competitive environment and of the market structures on the relevant markets. With respect to coordinated effects the degree of transparency, the presence of credible deterrent mechanisms and reactions from outsiders to the coordinating firms were particularly important. In addition to the analysis of coordinated effects the DCCA also investigated a secondary theory of harm into possible unilateral effects of the merger. This investigation relied heavily on econometric evidence. This will be described in section 5.

Another recent merger case relying to some extent on economic evidence was the acquisition by the capital fund CVC in 2007 of the Danish retail chain Matas. The DCCA found that the transformation of Matas from a voluntary chain of independent retailers to a centralized capital chain would impede effective competition significantly in the market for high-end cosmetics. To meet the DCCA's concerns, the parties offered a series of remedies that eliminated the competitive concerns, and finally the merger was cleared by the Competition Council.

The concerns of the DCCA related to two issues. The first issue concerned the post-merger power of CVC/Matas to influence market prices. The second issue concerned the ability of the merged entity to reinforce the barriers for competitors to enter and establish a foothold in the market for high-end cosmetics.

With respect to the first problem, the DCCA conducted a study regarding the degree of competition already existing internally within the Matas chain. In the study average prices of the individual shops were compared to recommended sales prices, i.e. list prices. The result showed that some Matas shops had been selling campaign products at reduced campaign prices beyond the fixed campaign sale period set by Matas. It was assessed that this form of competition would cease to exist within the capital chain.

The internal competition among existing Matas shops was further analyzed by dividing the Matas shops into two categories. The first category consisted of Matas shops characterized by having at least one other Matas shop in its zip code. The analysis was limited to 5 high end products. Price levels in the two different categories were compared with respect to the average price level and deviations from recommended sales prices. The results of the study showed with some certainty that there was price competition between Matas shops for some products and that the competitive pressure depended on the distance to the closest competing Matas shop. However, it was not possible to draw unambiguous conclusions regarding the internal competition between Matas shops based on the analysis.

In some less recent merger cases simulations have been used in the market definition and in the competitive assessment. Examples are large mergers in the electricity market and in the mortgage market.

5. What type of quantitative evidence do you rely upon when evaluating potential unilateral effects in horizontal merger cases involving differentiated products? Have you quantified diversion between the products sold by the merging firms, e.g., using the merging parties win/loss reports? Have you employed a range of economic tools building on diversion ratios, such as the Gross Upward Pricing Pressure Index (GUPPI), the Illustrative Price Rise (IPR), or more sophisticated forms of merger simulations? Have you applied any of these methodologies in investigations?

In the above mentioned AO&LM merger case unilateral effects were analyzed in an econometric model. The model explained prices in local wholesale outlets for professional plumbers and electricians with a measure of the distance to the closest competitors along with a set of other variables. The distance measure was meant to approximate the competitive environment facing the local wholesalers.

The analysis was conducted with a panel of monthly data from July 2005 to December 2007 covering more than 100 local branches of the merging parties and 10 key products from each of the two relevant markets, i.e. for plumbers and electricians. The local price level was regressed on the distance measure and other explanatory, e.g. order size, shop size, a trend variable and dummy variables for geographic location and exogenous shocks. The distance measure was calculated for each local branch as the sum of distances to the three nearest competitors. The distance measure was calculated separately for the two markets. The distance measures did not vary over time and as a consequence a random effects model was used.

The analysis showed that the distance measure had significant explanatory power with respect to the local price level on the market for plumbing and heating materials. The relationship was found to be positive meaning that a greater distance to competitors meant a higher local price level. On the electricity materials market no significant relationship was found.

On the market for plumbing and heating materials the regression coefficients with respect to the distance measure were positive for all 10 key products, and the coefficients for 8 out of the 10 key products were significant at a 10 per cent level. This indicates that the closer the local branches are located to branches of competitors, the more intensely they compete.

The estimation model was also used to simulate the unilateral effects of the merger on the market for plumbing and heating materials. The calculations were conducted in two steps. First a new distance measure was calculated taking into account the structure after the merger. Then the effects on prices of the change in the distance measure were calculated for each of the 10 key products. The analysis showed that the merger would lead to price increases of between 0.2 and 1.6 percent.

The merger would result in a higher distance measure in 44 out of 75 local branches. For these 44 branches prices would increase with between 0.4 and 2.8 percent. The study of the unilateral effects was used as a supplement to the above mentioned investigation into the coordinated effects of the merger.

6. What is your experience in obtaining data required to carry out quantitative analysis, from the parties or from third parties? How do you determine what data to request to conduct your analysis? What difficulties have you faced obtaining data from the merging parties or third parties?

The DCCA may, on behalf of the Competition Council, demand all relevant information, including internal accounting data, transcripts of meetings, other internal documents and electronic data, that the DCCA believes necessary in order to assess a merger.

The DCCA collects data in almost all merger cases, and the merging parties are in general interested in co-operating regarding the requested information. When conducting larger surveys regarding final

consumers the DCCA has in some merger cases used external consultant firms. The DCCA's experience with using consultant firms in merger cases is in general positive.

In the AO&LM merger a substantial amount of data was collected. After meetings with the merging parties it was agreed that the data was to be collected through the lawyers of the merging parties, as to avoid exchange of confidential information between the merging parties.

7. Is your experience using quantitative methods in merger cases reflected in documents describing your best practice or in other guideline documents? If not, are you planning to issue guidance in the near future?

In April 2010 the Danish Parliament passed an amendment of the Competition Act, with the primary aim of strengthening merger control in Denmark. When the amendment entered into force on October 1st, 2010 new merger guidelines were also published. In the guidelines the general ideas behind the DCCA's merger assessment are described. The guidelines do not in detail describe the DCCA's experience with economic evidence in merger analysis. The DCCA is not planning to issue new guidelines in the near future.

8. What is the degree of interaction with the parties' economists and at what stage in the process does it take place, e.g. regarding potential theories of harm or the type of economic analysis to conduct, and to ensure the efficient gathering of evidence?

The merging parties do not involve economists in simple merger cases. In complex merger cases the DCCA will interact as much as possible with the parties' economists regarding collection of data used in merger cases. This interaction will take place at a very early stage of the merger case. With respect to theories of harm there is also some interaction with the parties economists. Theories of harm are expressed in the statement of concerns sent to the parties if the merger goes into phase II.

9. How have courts assessed the agencies use of quantitative evidence when parties appealed merger review decision by an agency?

Merging parties have never appealed a merger decision made by the Danish Competition Council, and it is not possible for third parties to appeal merger decisions.

In a merger on the mortgage market a decision by the Danish Competition Council regarding the interpretation of a remedy has recently been appealed by the merged firm. The Appeals Tribunal upheld the decision by the Danish Competition Council.

FINLAND

1. General

The Finnish Competition Authority (FCA) welcomes the opportunity to contribute to the Roundtable on “Economic evidence in merger analysis”, organized by the Competition Committee / Working Party 3 on 15 February 2011. Economic evidence in merger analysis is a current and increasingly more important topic in Finland. This is largely due to a reason that the long prepared new Competition Act is expected to enter into force in 2011, which will e.g. result in the change of the substantive test applied to mergers. I.e., the currently used dominance test will be replaced by the SIEC test. The introduction of the new test together with the general development of economic understanding will bring new possibilities¹ but also challenges to the FCA. One of the challenges is inevitably an increasing need to apply more sophisticated economic methods in analyzing mergers.

2. Role of quantitative analysis in Finnish merger control in general

The FCA is not in the habit of applying extensive, systematic quantitative economic analysis in assessing mergers. The FCA is rather used to a more traditional assessment of mergers.

The FCA normally delineates the relevant markets and analyzes the potentially harmful effects of dominant position for effective competition in its merger assessment. Market delineation has traditionally had a rather established role in the assessment, practically being a necessary part of the analysis.

The FCA often relies upon qualitative analysis in delineating the relevant markets. To get some indication of demand and supply substitutability, the FCA typically sends questionnaires to customers, suppliers and competitors asking their foreseeable reactions to the price increases and other potentially harmful effects. The FCA also often uses research materials - typically qualitative - from market observers, such as market research companies. In individual cases, the FCA may also commission market research from independent market research houses.

The FCA typically uses the hypothetical monopolist’s test as one tool to delineate the relevant markets. To the FCA, the test mainly represents a good framework to check the results of the market testing, which typically results in qualitative evidence. The FCA has no experience in implementing the test by means of quantitative methods, such as a critical loss analysis.

As with the market delineation, quantitative tools have typically had a rather limited role in the assessment of competitive effects. Market shares are the most commonly used quantitative tool. The FCA also often measures HHI’s. Market shares are used to screen cases that may require further scrutiny, and to draw conclusions on potential competition harm. Market shares are used to provide one indication of the competitive effects; they are never decisive by themselves.

¹ For example, it shall close the potential gap as to mergers which create unilateral effects but do not result in the creation or strengthening of single dominance and may not thus be caught by the current substantive test. See "The Standard for Merger Review, with a Particular Emphasis on Country Experience with the Change of Merger Review Standard from the Dominance Test to the SLC/SIEC Test". OECD DAF/COMP(2009)21, pp.71-77.

The FCA typically pays particular attention to the market delineation in horizontal mergers involving differentiated products. In other respects, these mergers are not normally approached much differently compared to the assessment of horizontal mergers, in general. The FCA has no previous experience in using GUPPI or IPR in assessing differentiated products mergers.

The FCA has some experience in assessing mergers by means of economic analysis (see e.g. Fortum/EON merger, Section 3 below). The FCA has, however, no history of using more sophisticated quantitative analysis methods – such as merger simulation or its more simplified applications – on a regular basis in assessing mergers.

This partly results from the fact that the FCA is rather small agency with less than 50 officials involved in the case analysis, has no separate economist unit and has only few Ph.D.'s who specialize in IO. The agency's merger team is also rather small consisting of five regular case handlers and a Head of Research. Another reason is that the agency yearly deals with only few major merger cases which may even potentially cause harm to effective competition.² The assessed mergers are very often cleared without conditions. The FCA's decisions have typically not been appealed against on the basis of insufficient use of economic analysis.

3. The *Fortum/E.ON*³ case

The assessment of the effects of a proposed merger for effective competition always requires a case-by-case analysis of the special characteristics of the case and markets at stake. This may also affect the assessment of a case and result in the need for certain specific information. Fortum/E.ON offers an example.

In Fortum/E.ON, a merger between Fortum Power and Heat Oy (“FPH”) and E.ON Finland Oyj, the FCA applied economic analysis in assessing whether the proposed merger with E.ON would result in competition concerns in Finland. FPH was a leading energy company in Finland, active, among others, in generation, distribution and sale of electricity. FPH operated in Nordic markets. E.ON, in turn, was a relatively small but active player, among others, in the production, acquiring and distribution of power. E.ON operated mostly in Finland’s capital city area. The FCA found that the proposed merger would result in the strengthening of Fortum’s dominant position in the Finnish electricity production and wholesale market, but approved the merger with conditions in June 2006. FPH appealed against the conditions imposed in the FCA’s decision to the Finnish Market Court (“MC”). In its decision in 2008, the MC annulled the FCA’s decision, and approved the merger without conditions. The FCA appealed the MC’s decision to the Supreme Administrative Court, which retained the MC’s decision. The Supreme Administrative Court’s (“SAC”) decision was given in 2010.

In Fortum/E.ON, the parties argued that the relevant geographic market comprised the Nordic area (Finland, Sweden, Norway and Denmark). The FCA contested the parties’ view by arguing that the geographical market of production and wholesale of electricity was at least part of the time national (Finland). This had a major affect on the FCA’s finding that the proposed merger with E.ON would lead to the strengthening of Fortum’s dominant position in Finland.

In Fortum/E.ON, the FCA's findings were partly based on an economic analysis made on the basis of the bidding data received from the Nordic electricity exchange (“Nord Pool”). The data comprised all bids (company/bid/hour) made by the electricity producers in Finland and Sweden between 2002-2005. As a

² In 2010, for instance, the FCA had only 2 cases which required further investigations out of 23 notified mergers.

³ The FCA's decision Fortum Power and Heat Oy / E.ON Finland Oyj, Dnro 52/81/2006, 2.6.2006.

part of its overall case analysis, the FCA took several individual still-shots from the data with the aim of being able to appreciate the spot market price and the role of different electricity producers in the determination of the price.

The FCA found that Nordic electricity markets were, as such, largely integrated. The electricity price was determined in the Nord Pool. The electricity transmission capacity was, however, considerably restrained. In practice, most of the electricity sales in the Finnish wholesale market was produced in Finland.⁴ The restrictions in the electricity transmission capacity resulted in several congestion times during the winter season's peak demand situations, during which the price in Finland was determined by the bids of the Finnish electricity producers. Congestion hours amounted to approximately 14 per cent of all electricity consumption in Finland, during which price elasticity of demand was also low.

During the peak demand situations, Finland's electricity system depended heavily on the big national producers. Fortum's national market share (excl. captive production) was not considerably high, amounting to approximately 32-40 per cent of the Finnish market. The economic analysis, however, indicated that the competitive role of different electricity producers holding different types of production capacity diverged considerably.⁵ In practice, the majority of the available free production capacity which could also be easily pressed into service during the peak hours was occupied by Fortum.⁶ The clearing price settled 70-90 per cent on Fortum's bids during the congestion hours. The FCA also held that the restrictions in electricity transmission capacity could be at least partially foreseen, and that there were considerable barriers to entry into the Finnish markets.

The FCA's economic analysis, by definition, was not ultimately included in its decision due to the fact that the Nord Pool data was largely confidential in relation to Fortum, which eventually restricted its usability in the FCA's decision, and later also at court. Consequently, the MC did not directly commit on the FCA's economic analysis.

Nevertheless, the applied economic analysis gave the FCA good insight into the potential competitive harm resulting from the merger. The analysis indicated that the demand and competing (passive) supply of electricity was not able to effectively reduce Fortum's ability to affect – indeed partly determine – the wholesale price of electricity in Finland. The FCA found that Fortum's adjustable capacity, in particular, enabled Fortum to adapt its bids to the demand conditions, and provided it with the possibility to influence the market price. In practice, Fortum was the only company in the Finnish area which had a significant possibility to adjust its production during the peak demand situations, in particular. The FCA eventually considered that this gave Fortum a considerable pricing power, despite of its seemingly small share of electricity production in Finland.

The MC annulled the FCA's decision on the basis of Fortum's appeal in 2008. This largely resulted from the divergent view of the relevant geographical market, which according to the MC, comprised at least Finland and Sweden. In contrast to the FCA's argumentation, the MC ended up stating, among others, that the number of congestion hours between Finland and Sweden was not significant, and that there was a considerable price correlation between Finland and Sweden. The MC also referred to a Nordic electricity

⁴ For example, in 2004 94 per cent and in 2005 80 per cent of the electricity in the wholesale market was produced in Finland.

⁵ The economic analysis indicated, among others, that the bidding curves of the different types of production capacity diverged strongly.

⁶ Fortum had a very strong position in hydro power, in particular, amounting to 50-70 per cent of the installed production capacity in Finland. In practice, hydro power was the only form of production that could be easily adjusted to price changes.

transmission grid and the trading mechanism provided by the Nord Pool. The SAC finally retained the MC's decision with its definition of the relevant geographic market.⁷

4. Data issues

The special characteristics of a case and the markets at stake may strongly affect the type of data required to accomplish a meaningful merger analysis by means of quantitative measures. Fortum (discussed above) offers a good example.

The use of the Nord Pool bidding data was obvious for many reasons. The data was very accurate and reliable. It was also rather easily available. The data also proved meaningful as regards the special characteristics of the case. The economic analysis on the Nord Pool bidding data revealed the difference between Fortum's rather small market share, in general, and its true pricing power during the numerous congestion hours very well.

The use of the applied bidding data proved problematic in some respects. The case resulted in a huge amount of raw data from Nord Pool, comprising information on all bids (company/bid/hour) made in Finland and Sweden in 2002-2005. The FCA had no software to analyze the data, and it had to be developed first. Moreover, the data attained from Nord Pool was confidential, also in relation to Fortum, which caused considerable problems in its use at court. To a large extent, the FCA was not able to use the data at the final court proceedings.

5. Role of economists

The FCA has no separate economist unit. The FCA has a chief economist who is typically involved in the cases requiring a more sophisticated economic analysis. His duty is to provide economic expertise to the whole agency, and he may also be integrated into the merger analysis. The FCA has also several trained economists working either as Senior Research Officers or Heads of Research, although only few of them hold Ph.D.'s.

The FCA's economists are seldom separately integrated into the merger analysis. *Fortum* (discussed above in section 3) offers an exception. The FCA has no history of resorting to the services of outside economists in the merger analysis.

The merging parties are normally represented by lawyers at the agency level. The FCA only rarely confronts the parties' economists in person before the court sessions. This is not to say that the parties' representatives would not use economists in formulating their papers. The FCA is aware that law firms representing the merging parties sometimes resort to using economists, although it is not always directly brought out in their papers.

6. FCA's guidelines

To rise to the challenge posed by the forthcoming new substantive test - together with the general development of economic understanding - the FCA has taken distinct steps to improve its ability to use increasingly more sophisticated economic methods to analyze mergers. For example, the FCA is organising extensive internal training on the use of economic evidence in merger analysis. The training responsibility will mostly lie on the staff specializing in economic analysis. In addition, the FCA will use

⁷ This was so despite the fact that the SAC ended up disagreeing with the MC that the number of congestion hours between Finland and Sweden could not be actually considered significant.

some outside specialists in the training. The training will take place during the spring of 2011, i.e. prior to the entering into force of the new Competition Act.

The FCA has not published a best practices document regarding its experience in using quantitative analysis in merger assessment. The FCA is, however, currently preparing new Merger Guidelines, which will be published along with the new Competition Act. The new Guidelines will also include the FCA's experiences and views on the use of quantitative analysis. Thus, it will also increase the transparency of the FCA's approach to the economic analysis. The new Guidelines will replace the Merger Guidelines published in 1998, which have in many ways become obsolete. Most importantly, they are based on the dominance test, which has been applied since the becoming into force of the merger rules in 1998.

Although the FCA is not expecting any major change into its assessment system in the short-term, the new effects-based merger test and e.g. the other competition authorities' experiences in applying even more sophisticated methods of analysis will most probably also result in the adoption of a more economics-based approach into the Finnish system. Any changes to the assessment system are, however, expected to happen gradually.

FRANCE

A titre préliminaire, il convient de rappeler que l'Autorité de la concurrence n'est en charge du contrôle des concentrations que depuis le 2 mars 2009 et la mise en œuvre de la réforme mise en place par la loi de modernisation de l'économie (LME) du 4 août 2008.

Avant cette date, le Conseil de la concurrence n'avait qu'un rôle consultatif. Il était en effet simplement saisi pour avis par le Ministre de l'Économie, alors en charge du contrôle des concentrations, pour les dossiers nécessitant un examen approfondi (phase II). Aussi, le Conseil de la concurrence n'intervenait que dans un nombre très limité de dossiers de concentrations, de l'ordre de deux à trois affaires par an en moyenne.

Depuis la réforme mise en place par la LME, l'Autorité de la concurrence (qui a succédé à cette date au Conseil de la concurrence) est en charge de l'ensemble de la procédure, de la phase de notification (les entreprises notifiant désormais à l'Autorité de la concurrence et non plus au Ministre de l'Économie) à la décision finale. Elle est aussi responsable du suivi de l'exécution de ses décisions. Un service dédié au contrôle des concentrations a ainsi été créé au sein des services d'instruction de l'Autorité. Ce service qui compte aujourd'hui treize personnes (une rapporteure générale adjointe chef du service, deux adjoints et dix rapporteurs) peut par ailleurs recevoir le soutien des rapporteurs du service économique.

Depuis la mise en œuvre de la réforme (i.e., depuis le 2 mars 2009) et jusqu'au 31 décembre 2010, l'Autorité a rendu 292 décisions de contrôle des concentrations. Seules deux d'entre elles concernaient des affaires ayant fait l'objet d'un examen approfondi.¹

Cette contribution présente tour à tour (1) la place de l'analyse économique dans les lignes directrices de l'Autorité relatives au contrôle des concentrations, (2) l'implication des économistes dans le contrôle des concentrations, (3) l'analyse quantitative dans les affaires de concentrations à l'Autorité et (4) l'usage fait par l'Autorité des tests quantitatifs.

1. Les lignes directrices relatives au contrôle des concentrations

La prise en charge de l'ensemble de la procédure par l'Autorité de la concurrence imposait une actualisation rapide des lignes directrices précédemment publiées par le ministère de l'économie (DGCCRF). Suite à une consultation publique menée pendant l'été 2009, l'Autorité a publié ses nouvelles lignes directrices (ci-après, LD) sur son site le 16 décembre 2009.

Ces LD ont été conçues comme un guide pédagogique et pratique à l'intention des entreprises. Elles détaillent notamment les critères mis en œuvre dans l'analyse des opérations sur la concurrence et la recherche de mesures correctives appropriées en cas de difficultés concurrentielles. L'importance de l'analyse économique, au cœur du contrôle des concentrations, y est affirmée de façon explicite.

L'analyse économique (prospective) des opérations de concentration est spécialement mise en avant dans les LD en ce qui concerne l'analyse du pouvoir de marché ou des effets potentiels des fusions.

¹ Deux autres opérations notifiées avaient conduit l'Autorité à ouvrir une phase d'examen approfondi, mais les parties ont par la suite retiré leur notification.

Parallèlement, la publication des LD sur le contrôle des concentrations a été l'occasion pour l'Autorité de proposer un cadre de travail pour la soumission des études économiques afin que celles-ci puissent utilement contribuer à l'instruction du dossier. Ainsi, une annexe des LD présente les bonnes pratiques à mettre en œuvre pour la soumission d'études économiques à l'Autorité de la concurrence.

Il est ainsi prévu que les études quantitatives soumises par les parties soient présentées de telle sorte qu'elles puissent être évaluées, et éventuellement répliquées, par le service économique de l'Autorité. Elles doivent non seulement présenter très clairement la méthodologie utilisée mais aussi discuter les raisons de ce choix méthodologique ainsi que ses limitations. Par exemple, il est essentiel que les études économiques montrent en quoi les données et les méthodes utilisées sont de nature à éclairer l'Autorité sur les enjeux de concurrence et exposent clairement la démarche suivie pour aborder les préoccupations économiques spécifiques au cas d'espèce.

Afin que le service économique soit en mesure de les évaluer sans biais, les données utilisées (avant retraitement éventuel) ainsi que les programmes informatiques mis en œuvre doivent être fournis. Par ailleurs, les études doivent être précédées par des synthèses en langage non technique.

2. L'implication des économistes

L'implication des économistes dans le contrôle des concentrations revêt des degrés divers. Tout d'abord, le service des concentrations compte parmi ses rapporteurs quarante % d'économistes, pour la plupart titulaires d'un doctorat en économie industrielle.

Il peut en outre être fait appel aux économistes du service économique. Ces derniers n'interviennent pas systématiquement dans les dossiers de concentrations mais uniquement en fonction des besoins et de la complexité du dossier. C'est notamment, mais pas uniquement, le cas de l'ensemble des affaires faisant l'objet d'un examen approfondi. Les économistes dédiés du service économique interviennent alors en appui de l'équipe de rapporteurs en charge du dossier ou en tant que co-rapporteurs (cela a d'ailleurs été le cas dans l'une des deux décisions de phase II rendues par l'Autorité depuis mars 2009). En revanche, l'Autorité ayant créé en 2007 un service économique spécialisé (qui comptera prochainement sept personnes dont cinq titulaires d'un doctorat en économie industrielle), il n'est pas fait appel à des économistes extérieurs à l'Autorité.

Dans tous les cas, les économistes du service économique sont impliqués le plus tôt possible dans le dossier et interviennent dans l'élaboration de la théorie du cas mais aussi afin d'aider à la collecte efficace d'informations (quantitatives ou qualitatives).

Ils peuvent aussi échanger avec les cabinets d'économistes utilisés par les parties. Les LD précisent à cet égard qu'il est recommandé aux parties d'échanger le plus tôt possible, y compris lors de la phase de pré-notification, avec le service économique. Ceci permet de définir une méthodologie commune pour les études que les parties pourront mener et soumettre. Ces contacts sont maintenant pendant toute la durée de la procédure (à la demande des parties ou de l'équipe en charge du dossier) afin de discuter des données et/ou des hypothèses utilisées, etc. Ceci permet de s'assurer que les études économiques soumises par les parties ou réalisées en interne par l'Autorité (par exemple à partir de données fournies par les parties) contribuent le plus efficacement possible à l'instruction du dossier.

3. L'analyse quantitative dans les affaires de concentrations à l'Autorité

Bien que l'Autorité n'ait jusqu'à présent traité que peu de dossiers ayant fait l'objet d'un examen approfondi, l'analyse quantitative a été utilisée à plusieurs reprises. Nous présentons brièvement ci-dessous quelques-unes de ces affaires dans lesquelles l'analyse économique a joué un rôle, même si celui-ci ne transparaît pas toujours intégralement dans les décisions publiées par l'Autorité à l'issue de la procédure.

L'opération *TF1 / AB*² consistait en la prise de contrôle par TF1, première chaîne de la télévision gratuite en France, de deux chaînes de la TNT (télévision numérique terrestre) gratuite, NT1 et TMC. Les éléments quantitatifs fournis par les parties à la concentration, plusieurs études économiques ainsi que les bases de données sur lesquelles elles se fondaient, ont permis à l'Autorité d'aborder le fonctionnement des marchés concernés, en particulier celui de la publicité télévisuelle, de façon très détaillée, grâce à la possibilité de réaliser des statistiques descriptives fines. C'est en se basant sur les informations relatives aux caractéristiques des spots publicitaires vendus et diffusés par les parties à la concentration ainsi que par les chaînes concurrentes (heure de diffusion, cible, audience, ...), et sur la structure des prix et des quantités de ces spots que l'Autorité a pu conclure à la position dominante de TF1 sur le marché concerné.

L'analyse des effets unilatéraux de l'opération a été abordée en tenant compte du risque d'augmentation unilatérale des prix des spots publicitaires de la nouvelle entité, sur le segment des spots de faible audience, seul segment sur lequel se chevauchaient les activités des parties à l'opération. L'Autorité s'est appuyée, entre autres sources d'information, sur les études fournies par les parties soutenant qu'un tel risque était faible. Basées sur des données très désagrégées, ces études tendaient à montrer que, sur le segment de marché constitué des spots publicitaires de faible puissance, une augmentation des prix de la nouvelle entité aurait conduit les annonceurs à se détourner de l'entreprise dominante vers les chaînes concurrentes, ces dernières ayant d'importantes capacités d'absorption de ces reports de demande.

L'Autorité a cependant relevé d'autres risques d'effets unilatéraux sur le marché de la publicité télévisuelle, notamment des effets de levier résultant de pratiques éventuelles de couplage, ainsi que des effets dynamiques liés à l'interdépendance des différents marchés concernés grâce auxquels le groupe TF1 aurait pu renforcer sa position dominante. Le groupe TF1 a pris un ensemble d'engagements afin de remédier aux risques d'atteinte à la concurrence qui préoccupaient l'Autorité. A la suite d'un recours formé contre la décision de l'Autorité autorisant l'opération sous réserve de la mise en œuvre de ces engagements, le Conseil d'Etat³ a jugé que l'Autorité avait justement apprécié le risque d'atteinte à la concurrence et que les engagements conditionnant l'autorisation étaient proportionnés à ces risques.

L'analyse économique a aussi été très présente lors de l'instruction de la concentration *Veolia / Transdev*⁴ qui a fait l'objet d'une autorisation soumise à engagements en décembre 2010. L'analyse quantitative (menée par les parties mais aussi par le service économique de l'Autorité à partir des données fournies par les parties) a ainsi été utilisée pour évaluer les effets de la concentration sur le marché des transports urbains. Deux questions ont ainsi été abordées sur ce marché particulier puisque faisant l'objet d'appel d'offres de la part des autorités organisatrices de transport (*délégation de service public, DSP*) : l'une visait à analyser l'impact du nombre d'offres soumises lors des appels d'offres sur le taux de marge de l'opérateur attributaire de la DSP, l'autre s'intéressait au lien possible entre la forte présence d'un opérateur dans une zone géographique donnée (sur les marchés des transports urbain et interurbain) et la probabilité de succès de cet opérateur lors des appels d'offres conduits dans cette même zone (pour les DSP de réseaux de transport urbain). De nombreux échanges ont eu lieu au cours de l'instruction entre les économistes employés par les parties et le service économique afin de discuter les études économétriques réalisées par chacun d'entre eux et d'améliorer les méthodes utilisées.

² Décision 10-DCC-11 du 26 janvier 2010 relative à la prise de contrôle exclusif par le groupe TF1 de la société NT1 et Monte-Carlo Participations (groupe AB).

³ Le Conseil d'Etat, la plus haute juridiction de l'ordre administratif, est compétent pour connaître des recours formés contre les décisions de l'Autorité en matière de concentration. Il exerce un contrôle entier sur les questions de fait et de droit.

⁴ Décision 10-DCC-198 du 30 décembre 2010 concernant la création d'une entreprise commune entre *Veolia Environnement* et la *Caisse de Dépôts et Consignations* réunissant les activités de leurs filiales respectives de transport respectives, *Veolia Transport* et *Transdev*.

L'analyse quantitative a aussi été utilisée lors de la phase préliminaire de contrôle de l'opération *Univar / Eurochem* afin d'en évaluer les effets potentiels. Plusieurs types de méthodes avaient alors été adoptées par les parties et le service économique : étude économétrique visant à démontrer / infirmer le rôle de « maverick » de la cible, estimation de la proportion des clients pour qui la réduction de l'offre « raisonnable » était sensible. Le projet de concentration ayant été retiré par les parties suite à la décision de l'Autorité d'ouvrir une phase d'examen approfondi, l'analyse quantitative a de fait été réduite.

4. Les tests quantitatifs (monopoleur hypothétique, UPP, ...) en pratique

A ce jour, l'Autorité n'a pas eu l'occasion de mettre en œuvre des méthodes quantitatives telles que le test du monopoleur hypothétique dans les décisions de contrôle des concentrations. Celui-ci pourrait toutefois être mis en œuvre s'il cela s'avérait justifié et s'il était possible de le faire dans des conditions satisfaisantes (i.e., en particulier, possibilité d'obtenir des données fiables permettant la mise en œuvre robuste d'un tel test). Les LD précisent que la mise en œuvre de ce test quantitatif pourrait dans certains cas (en particulier en présence de produits différenciés) appuyer la définition du marché pertinent et discutent des limitations de ce test lorsque les prix observés ne sont pas forcément concurrentiels.

Il faut toutefois rappeler que, indépendamment de l'utilité qu'ils peuvent présenter ou non dans une affaire donnée, il n'est pas toujours aisé de mettre de tels tests en pratique dans des conditions satisfaisantes et dans les délais impartis par le contrôle des concentrations (25 jours ouvrés lors de l'examen préliminaire). En fait, conduire un test du monopoleur hypothétique nécessite d'obtenir des données fiables sur un grand nombre de variables. Ainsi pour savoir si le produit C est sur le même marché que les produits A et B, il est nécessaire de disposer des marges sur l'ensemble de ces produits ainsi des informations sur l'élasticité des demandes des trois produits et les élasticités de substitution entre chaque paire de produit. On pourrait éventuellement se servir des ratios de diversion entre chaque paire de produits. Dès lors que la question est de savoir s'il faut aussi ajouter le produit D à ce marché composé des produits A, B et C, il faut une marge supplémentaire mais aussi six ratios de diversion.

Or, on sait combien il peut être difficile de mesurer précisément ces ratios ou ces marges. En effet, sauf à disposer de données précises sur la demande pour un produit donné, ces ratios seront le plus souvent estimés sur la base de sondages auprès des consommateurs. Or pour obtenir des informations, ce qui intéresse l'économiste pour mesurer ces ratios est le comportement des consommateurs marginaux et non de l'ensemble des acheteurs d'un produit. Ceci nécessite donc d'interroger un très grand nombre de consommateurs pour disposer au final d'un nombre de consommateurs marginaux suffisamment grand pour mesurer les ratios de diversion avec précision. Ceci est d'autant plus difficile que le nombre de produits considérés est important (car cela multiplie le nombre de ratios de diversion à calculer). De tels sondages peuvent donc s'avérer extrêmement coûteux et chronophages. Mesurer les marges n'est pas chose aisée non plus, en particulier puisqu'il faut des estimations précises des coûts marginaux et non pas des coûts moyens qui sont en général plus facile à calculer.

Indépendamment des difficultés méthodologiques éventuelles (un test du monopoleur hypothétique peut conduire à des résultats différents selon l'ordre dans lequel on ajoute les produits, la mise en œuvre est très complexe dans les marchés bifaces, le test peut apparaître peu pertinent, en particulier lorsque le rythme de l'innovation sur un marché est élevé, « *cellophane fallacy* », ...), l'obtention de données suffisamment fiables est souvent un obstacle à la mise en œuvre du test du monopoleur hypothétique. Enfin, le test du monopoleur hypothétique qui prend en compte le degré de substituabilité des produits conduit ensuite à calculer des parts de marché qui elles n'en tiennent plus compte : ainsi, le test ne permet finalement que d'identifier si un produit est dans le même marché que le produit de référence ou non, et non pas s'il est un substitut très proche ou seulement proche de ce produit. Une telle perte d'information est malheureuse dans le cas de produits différenciés.

Les débats autour de la révision des lignes directrices aux États-Unis ont beaucoup tourné autour de nouveaux tests quantitatifs permettant d'éviter ce problème « *in or out* » dans le cas de produits différenciés en mesurant directement les effets unilatéraux des concentrations. Ainsi le test « *upward pricing pressure* » proposé par les professeurs Farrell et Shapiro, ou sa variante proposée par le professeur Schmalensee sont supposés indiquer à partir d'indices dérivés d'un calcul basé sur les marges et ratios de diversion entre les produits des entreprises parties à la fusion, indiquer si les parties auraient intérêt ou non à augmenter leurs prix post-concentration (même en présence de gains d'efficacité). De tels tests sont potentiellement intéressants puisqu'ils demandent moins d'information qu'un test du monopoleur hypothétique. En effet, si les entreprises A et B fusionnent, il suffit de connaître leurs marges et les ratios de diversion entre produits A et B (ou les produits de A et de B). Il n'est nullement besoin de connaître les marges des produits C ou D ainsi que les ratios de diversion entre le produit A ou B et le produit C ou D. Alors qu'il ne paraît pas naturel que les entreprises A ou B connaissent la marge de leurs concurrents, on peut raisonnablement espérer qu'elles connaissent assez précisément leurs propres marges.

Toutefois, si ces tests pourraient s'avérer être des outils complémentaires intéressants, ils ne peuvent pas constituer le seul mécanisme de sélection des concentrations devant faire l'objet d'un examen approfondi pour plusieurs raisons : tout d'abord, en raison des difficultés de mesure déjà présentées, rien ne permet de garantir que les indices calculés le sont précisément. D'autre part, ces tests « *UPP* » ne mesurent pas l'augmentation des prix mais indiquent simplement qu'ils sont susceptibles (ou non) d'augmenter. Par ailleurs, il ne s'agit là que d'un test d'effets unilatéraux qui ne dit rien sur les effets coordonnés possibles. Or, pour se poser la question d'un risque de collusion il faut bien identifier les concurrents (les plus proches) des parties à la concentration. Il paraît donc difficile de ne pas identifier le marché pertinent, même lors d'une analyse préliminaire qui permettrait simplement de « filtrer » les affaires.

D'autres tests, tels que les « *indicative price rises* » utilisées entre autres par les autorités britanniques permettent d'évaluer les hausses potentielles de prix. Leur portée est toutefois limitée car de tels tests nécessitent de faire de fortes hypothèses sur la manière dont l'élasticité-prix de la demande varie (i.e., hypothèses sur la forme fonctionnelle des fonctions de demande). Or, les résultats peuvent varier de manière assez importante selon la forme fonctionnelle retenue (pour des raisons pratiques seules deux formes sont habituellement utilisées : la demande iso-élastique et la demande linéaire).

Si les lignes directrices ne discutent pas ces nouveaux tests, ils pourraient être pris en compte au cas par cas, quand cela paraît utile à l'analyse du dossier par l'Autorité, et pourraient alors compléter d'autres éléments plus qualitatifs. Malgré les difficultés pratiques liées en particulier à la collecte des données, l'Autorité sera à même d'évaluer les analyses proposées par les parties lorsque celles-ci disposent de données permettant de mettre en œuvre ces approches novatrices dans les délais impartis.

De même, des approches plus sophistiquées telles que les simulations ou les études économétriques (essentiellement structurelles) visant à évaluer directement les effets des concentrations n'ont pas non plus été mises en œuvre. Ceci s'explique aisément par le faible nombre de dossiers ayant fait l'objet d'un examen approfondi (deux depuis mars 2009) : ces méthodes exigeant de grandes quantités de données et étant très chronophages, elles ne peuvent pas être mises en œuvre durant la phase préliminaire d'analyse du dossier. L'Autorité doit en outre faire face à des contraintes pratiques importantes car le législateur a prescrit la notification obligatoire d'un nombre important de concentrations et a fixé des délais d'examen très stricts (25 jours ouvrés en phase I, 65 jours ouvrés après l'ouverture de la phase II). Le contrôle des concentrations est de surcroît effectué à titre gratuit, ce qui rendrait délicat l'organisation régulière de sondages à grande échelle ou l'accès à des bases de données détaillées, dont le coût est très important. Mais, ceci ne doit pas empêcher les parties de soumettre des études économétriques, qui seraient le cas échéant évaluées par le service économique de l'Autorité.

GERMANY

1. Introduction

The enforcement of antitrust law requires profound expertise not only in law but also in economics. Dealing with more and more economic evidence either of its own or submitted by the parties, the *Bundeskartellamt* has significantly strengthened its capacities in recent years to adequately handle economic evidence.

This paper explains the position and integration of economists within the structure of the *Bundeskartellamt* and its work (2.). It gives an overview of recent cases (3.), the *Bundeskartellamt*'s economic toolbox (4.) as well as of how data is obtained (5.) It finally discusses how courts have assessed the agency's use of economic evidence in merger proceedings (6.).

2. Integration of economists into the structure and the work of the *Bundeskartellamt*

Since the early days of merger control in Germany, the *Bundeskartellamt* has strived to integrate economists and lawyers as closely as possible in the case review process. The authority places great emphasis on maintaining the considerable expertise of both lawyers and economists in its case work.

The *Bundeskartellamt* has twelve Decision Divisions as its operative case-handling and decision bodies, of which ten deal with merger cases as well as other antitrust law enforcement issues, while two Decision Divisions are concerned exclusively with hard-core cartels. Typically, a merger case team will consist of both economists and lawyers. Due to this institutional framework, the economists' close participation in merger analysis is safeguarded.

Even though the *Bundeskartellamt* began integrating economic expertise into its merger control analysis at a very early stage, the need was seen to enhance advanced economic expertise. Consequently, the *Bundeskartellamt* established a General Policy Unit for "Economic Issues in Competition Policy" in the mid-2000s. Its main task is to support the Decision Divisions in their work and advise them on economic issues, without having any formal veto rights in the decision-making process. The support given to the Decision Divisions is multifaceted and consists *inter alia* of evaluating expert economic opinions submitted by the parties and carrying out forensic economic analyses in specific cases.

Due to the close integration of economic analysis into the review process, the *Bundeskartellamt* is in a position to deal with most economic questions by itself. The use of external expertise is rather an exception. However, the *Bundeskartellamt* maintains continuous relationships with academic economists in workshops or informal discussions.

3. Recent cases

In a number of recent cases of the *Bundeskartellamt* economic evidence has been of key importance. Although many of these cases concerned cartel prosecution, the importance of economic evidence has also been emphasized in merger control practice.

In 2009 the *Bundeskartellamt* prohibited a merger between the two largest producers of *curdled milk cheese*.¹ The core question of this case was the market definition for curdled milk cheese. In a first step, the *Bundeskartellamt* used qualitative investigatory tools to define the market. Based on questionnaire responses from competitors (other producers) and customers (esp. supermarkets), the relevant market definition was found to be a narrow one. Furthermore, precedents from other cases and other jurisdictions were considered and analysed. The parties to the merger project submitted a “customer survey”, which was supposed to show the “stated preferences” of the customers. The *Bundeskartellamt* examined the survey and found it to be biased. This assessment concerned not only the technique and the types of questions, but also the parties’ interpretation of the results.

The *Bundeskartellamt* used a quantitative tool to assess the merger and conducted an analysis of cross-price elasticity between the different types of (soft) cheese, which were relevant to this examination. Using a regression analysis the assessment showed, according to the *Bundeskartellamt*, that there was no evidence for systematic positive cross-price elasticity. This contradicted the parties’ perception of a wider market for soft cheese and indicated the existence of separate markets. Furthermore, the parties’ analysis of the customer survey was not confirmed by the analysis of other economic evidence (factual price quantity developments). The merger was prohibited.² This decision was confirmed by the relevant court of appeal, with explicit reference to the economic analysis conducted by the *Bundeskartellamt*.³

In another case the *Bundeskartellamt* had to assess the acquisition of the industrial sugar business of the Danish company *Danisco* by *Nordzucker*.⁴ Investigations showed that the market for industrial sugar in Germany is characterized by an uncompetitive duopoly between *Nordzucker* and the largest German sugar producer, *Südzucker AG*. Ultimately, the merger was cleared under the condition that *Danisco*’s production plant in Northern Germany was sold to a suitable purchaser before the acquisition was realized.

The economic analysis showed that the oligopolists had the possibility and the incentive to coordinate their behaviour. The switching analysis of the actual competitive activities showed that although industrial sugar could be supplied and distributed throughout Germany, in the majority of cases there were “sealed off” regional distribution areas. According to the *Bundeskartellamt*’s findings, *Nordzucker* and *Südzucker* in particular coordinated their behaviour and mutually respected their individual distribution areas. This assessment was based on a switching analysis that found that there was hardly any competition for these distribution areas or customers.

The unrestricted acquisition of *Danisco Sugar A/S* by *Nordzucker* would have further enhanced the joint dominant position held by *Nordzucker* and *Südzucker*. Not only the addition of the production capacities at the production plant in Northern Germany, but also the elimination of a capable maverick in

¹ See B2- 359/07 Müller/ Poelmeyer (Sauermilchkäse), decision of July 2, 2008, available only in German at <http://www.bundeskartellamt.de/wDeutsch/download/pdf/Fusion/Fusion08/B2-359-07.pdf>.

² The parties appealed against this decision to the Higher Regional Court in Düsseldorf. The Higher Regional Court confirmed the decision of the *Bundeskartellamt* on May 27, 2009, VI-Kart10/08(V).

³ OLG Düsseldorf, decision of May 27, 2009 - VI-Kart 10/08 (V) available only in German at http://www.justiz.nrw.de/nrwe/olgs/duesseldorf/j2009/VI_Kart_10_08__V_beschluss20090527.html. The Federal Court of Justice rejected the appeal against denial of leave to appeal, BGH, decision of April 20, 2010 - KVZ 35/09 available only in German at <http://juris.bundesgerichtshof.de/cgi-bin/rechtsprechung/document.py?Gericht=bgh&Art=en&nr=52375&pos=0&anz=1>.

⁴ See B2-46/08 *Nordzucker/Danisco*, decision of February 17, 2009, available in German at <http://www.bundeskartellamt.de/wDeutsch/download/pdf/Fusion/Fusion09/B2-46-08.pdf>. A case summary in English is available at <http://www.bundeskartellamt.de/wEnglisch/download/pdf/Fallberichte/B2-46-08-E.pdf>.

the market would have strengthened the existing oligopoly. These effects were prevented by the obligation to sell the production plant to a suitable third party before the acquisition project was put into effect.

The *Bundeskartellamt* also dealt with two cases in the market for convertible roof systems.⁵ In the first case, *Webasto/ Edscha*, the *Bundeskartellamt* cleared the merger. This decision was backed up by a bidding analysis. At the time of the proceedings there was a total of four suppliers active in the European market for convertible roof systems. The *Bundeskartellamt* analysed the tendering procedures and concluded that the competitive situation did not give any indication of collusive practices between the parties, which were members of an oligopoly. In the second case, *Magna/ Karmann*, the *Bundeskartellamt* prohibited the merger. In this case the *Bundeskartellamt* concluded on the basis of its bidding analysis that the proposed merger, which would have reduced the number of competitors to two, would have resulted in a market with two similarly strong competitors, with similar market shares and comparable company size (symmetric duopoly). Due to the existing market transparency, competition between the two remaining competitors would have been unlikely; in addition the *Bundeskartellamt* saw a danger of the creation of a joint dominant market position through the merger.

4. The *Bundeskartellamt*'s economic toolbox

Economic evidence used in merger cases is manifold and differs from case to case. Economic analysis may be used for determining the potential for and the extent of anticompetitive effects, for example by examining the risk of price increases after a merger. Economic evidence may come into play for the assessment of the market definition, market shares, financial strength and entry barriers. Also, the issues of access to suppliers and customers (foreclosure effects) and countervailing market power can be assessed with the help of economic evidence.

A standard merger investigation will usually begin with the analysis of the qualitative evidence. This qualitative analysis is based on publicly available industry analysis, internal documents of the undertakings in question submitted by the parties, questionnaires and interviews with competitors and customers.

With regard to quantitative analysis the *Bundeskartellamt* decides on a case by case basis on the type of analysis which it considers appropriate. Given the general scarcity of resources, more in-depth economic analysis has to be focused on cases where the tools are relevant for reaching a reliable assessment. Experience has shown that in standard cases there is normally no need for advanced econometric analysis (e.g. merger simulation) to assess the effect of a merger on market positions. The *Bundeskartellamt* is aware of the fact that econometric analysis on its own cannot provide a definitive answer in assessing a case. It is one of several complementary tools used in case assessment, and econometric analysis may well turn out to be non-conclusive in some cases.

When determining the relevant product market the *Bundeskartellamt* assesses the substitutability of products or services from a customer's perspective. The flexibility of producers to switch production is also taken into account. For both market sides the relative extent of switching costs is of great importance. Another area of application of economic analysis is the assessment of the geographic market. Here the analysis of transport costs may be a considerable part of the assessment.

The *Bundeskartellamt* may also estimate elasticities. It may thus be necessary to identify which goods, if any, are sufficiently close substitutes for the goods under consideration to warrant their inclusion

⁵ See B9-84/09 *Webasto/ Edscha*, (clearance) decision of December 22, 2009, available only in German at <http://www.bundeskartellamt.de/wDeutsch/download/pdf/Fusion/Fusion10/B9-84-09.pdf> and B9-13/10 *Magna/ Karmann*, (prohibition) decision of May 21, 2010, available only in German at <http://www.bundeskartellamt.de/wDeutsch/download/pdf/Fusion/Fusion10/B9-13-10-OeFneu.pdf>.

in the relevant market. The *Bundeskartellamt* may also consider price correlation. The *Bundeskartellamt* is generally open-minded with regard to which method should be used in a specific case. It weighs the factors of the case (e.g. complexity and availability of data) and the available resources to determine the right *modus operandi*.

5. Obtaining data

The *Bundeskartellamt* so far has not faced any significant problems in obtaining data to carry out its economic analyses as described above. The data is provided by and collected from the parties to the merger, competitors, customers and suppliers. The *Bundeskartellamt* is statutorily entitled to make informal and formal information requests to obtain a comprehensive picture of the market conditions. In addition to the information requests the *Bundeskartellamt* also has the investigatory powers to inspect business documents.⁶ In the past the merging parties and the competitors have generally been forthcoming in submitting requested data. Furthermore, the *Bundeskartellamt* may make use of data introduced into the proceedings by way of a party's economic expert opinion, to test their robustness or conduct its own quantitative analysis.⁷

6. Interaction with parties' economists and assessment of the courts of the use of economic evidence

Generally the parties have the possibility to submit expert economic opinions throughout the entire merger control procedure. These expert opinions are closely studied and analysed by the case team and, where deemed necessary, also by the General Policy Unit for Economic Issues. Subsequently, the case team discusses the results with the merging parties as part of the review process.

Recently the number of expert economic opinions submitted by the parties in merger cases has increased significantly. The *Bundeskartellamt* expects that common and transparent procedures for evaluating expert economic opinions will allow for a fair and efficient application of this type of evidence to specific competition law proceedings. Therefore in 2010 the *Bundeskartellamt* published a notice on binding quality standards for expert economic opinions.⁸ The aim of these standards is to ensure that expert economic opinions which are submitted to the authority for assessing the facts of a case under competition law satisfy minimum quality requirements. First experiences with the notice indicate that even though there may be further need for improvement, the notice has already served as a useful reference for efficient discussions with the parties and the economic experts.

Upon appeal, decisions of the *Bundeskartellamt* are reviewed by the Düsseldorf Higher Regional Court as the court of first instance. The Higher Regional Court has jurisdiction to decide on a case both with regard to the facts and points of law. Decisions by the Düsseldorf Higher Regional Court can be appealed to the Federal Court of Justice on points of law.

The courts assessing the cases and consequently the *Bundeskartellamt's* use of quantitative evidence deal with a wide range of cases (be it appeals against the agency's decisions or claims by private parties).

⁶ Section 57-59 Act against Restraints of Competition (ARC). An English version of the ARC is available at http://www.bundeskartellamt.de/wEnglisch/download/pdf/GWB/110120_GWB_7_Novelle_E.pdf.

⁷ In the case B2- 71/10 Van Drie/ Alpuro, decision of December 27, 2010, available only in German at http://www.bundeskartellamt.de/wDeutsch/download/pdf/Fusion/Fusion10/B2_10130_Fa_71-10.pdf the *Bundeskartellamt* conducted a price-correlation analysis by using the data submitted by the parties.

⁸ The *Bundeskartellamt's* notice is available in English at http://www.bundeskartellamt.de/wEnglisch/download/pdf/Merkblaetter/Bekanntmachung_Standards_Englisch_final.pdf.

This gives them a broad knowledge of competition matters as well as the underlying economic issues. Relevant economic evidence is incorporated in the written submissions which allows the court to become thoroughly acquainted with the economic reasoning in the specific case.

However, presenting complex economic evidence and reasoning in court proceedings in a comprehensible manner for the non-expert is an ongoing challenge for a competition authority and its economists.

GREECE

1. Introduction

The importance of economic analysis in the application of competition rules, especially in mergers, has been increasing over the last years. Quantitative techniques may help competition agencies to assess competition cases quickly and guide them towards better decision-making when faced with the increasing complexity of markets. Agencies employ a variety of techniques, from basic to sophisticated ones.

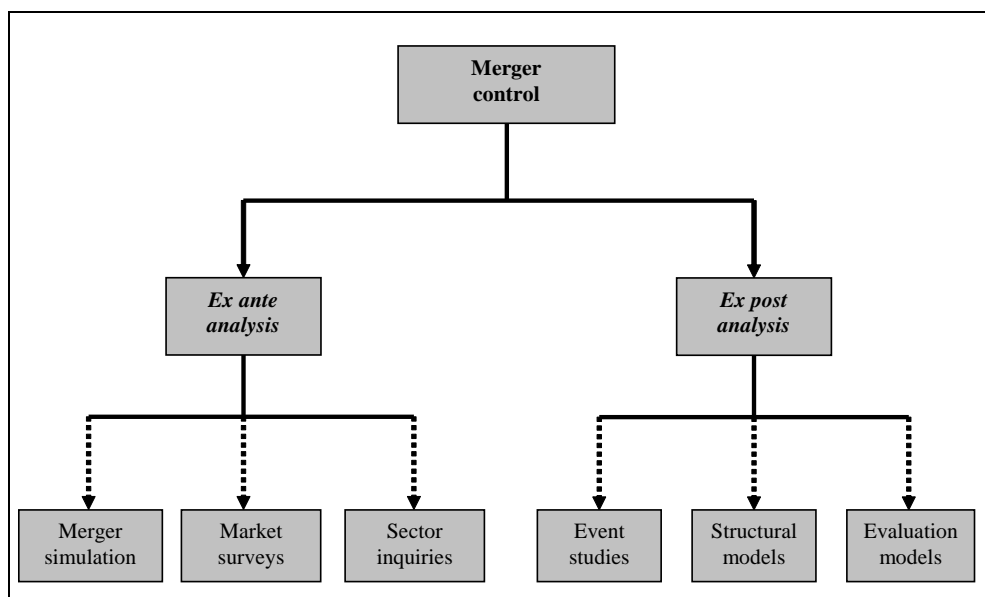
This report aims at casting light on the role of economic analysis in merger decisions. For this reason, we focus on the main quantitative techniques (merger simulation models and event studies) used in merger analysis in the US and in EU jurisdictions. Moreover, we present the experience of the Hellenic Competition Commission (HCC) in assessing selected merger cases and we place particular emphasis on the role of event studies.

2. Economic instruments in assessing a merger case

Merger analysis can broadly be either *ex post* or *ex ante* (Figure 1). In *ex ante* analysis, economic researchers try to evaluate possible anti-competitive effects of a proposed merger in a relevant market, acting prudentially. On the other hand, *ex post* assessment of merger decisions usually has two fundamental aims: a) to establish whether the market structure arising from the decision can achieve the economic goal of the applicable merger control rules better than the market structures that could have arisen as a result of alternative decisions from within the set of decisions that a competition authority can legally take and b) to assess whether the analysis adopted to reach the relevant decision was correct (absence of Type I or II errors).¹ It is worth mentioning that there is no difference between the *ex ante* and the *ex post* approach, as far as the employed empirical and econometric techniques are concerned. However, the crucial difference between the two categories lies in the amount of information available.

Quantitative analysis of proposed mergers provides crucial information about structural demand characteristics (i.e. substitutability or complementarity of products, elasticity of demand, etc.). Assessing whether the products of the merging firms are close demand substitutes can be critical to the application of the localised competition theory of unilateral competitive effects of mergers among sellers of differentiated products. Accordingly, econometric estimates of demand elasticities, are typically much more informative than descriptive economic facts (i.e. market shares, barriers to entry, cost structure, etc.) in helping make inferences about whether such mergers will likely enhance significant market power (SMP). However, in modern econometric techniques, a large set of assumptions has to be made, in order to estimate the appropriate model. Hence, it is important to perform serious and robust checks, since these models can be quite sensitive to changes in the main assumptions. It is also worth mentioning that these models are usually data-demanding.

¹ See generally Paolo Bussirossi *et al.* (Eds.), *Ex-post Review of Merger Control Decisions - A study for the European Commission* prepared by Lear – Laboratorio di economia, antitrust, regolamentazione (2006), in: http://ec.europa.eu/competition/mergers/studies_reports/lear.pdf.

Figure 1: Classification of economic models in merger analysis

Source: HCC's elaboration

2.1 Merger simulation models

Simulation techniques can be used to predict price movements resulting from a transaction, depending on the availability of inputs used to calibrate the relevant model and the assumptions as to the specification of the relevant econometric technique (i.e. ideal demand system (AIDS), log-linear model, multi-level demand analysis, etc.).²

By performing this kind of economic analysis a researcher can assess whether a merger may lead to a substantive lessening of competition in one or more relevant markets. In order to predict the post-merger price evolution, simulation models are based on market data (e.g. prices, quantities, cost evolution, etc.) extracted before the event (the notified merger), in tandem with assumptions made for the firms and their rivals. Merger simulation models have been employed both by antitrust authorities and merging companies and by courts to assess the pro- or anti-competitive effects of proposed mergers.³

This kind of analysis is particularly appealing to competition agencies for four main reasons. First, during the last decade, economic analysis combined with sophisticated econometric techniques allow researchers to apply even more complex simulation models based on real market data. Second, this technique is quite flexible and is able to integrate the traditional merger guidelines' focus on factors such as market definition, efficiencies, and potential competition. Third, merger simulation models can evaluate the impact of a divestiture, which constitutes a significant structural remedy. Moreover, simulation models allow researchers to consider the simplest counterfactuals.

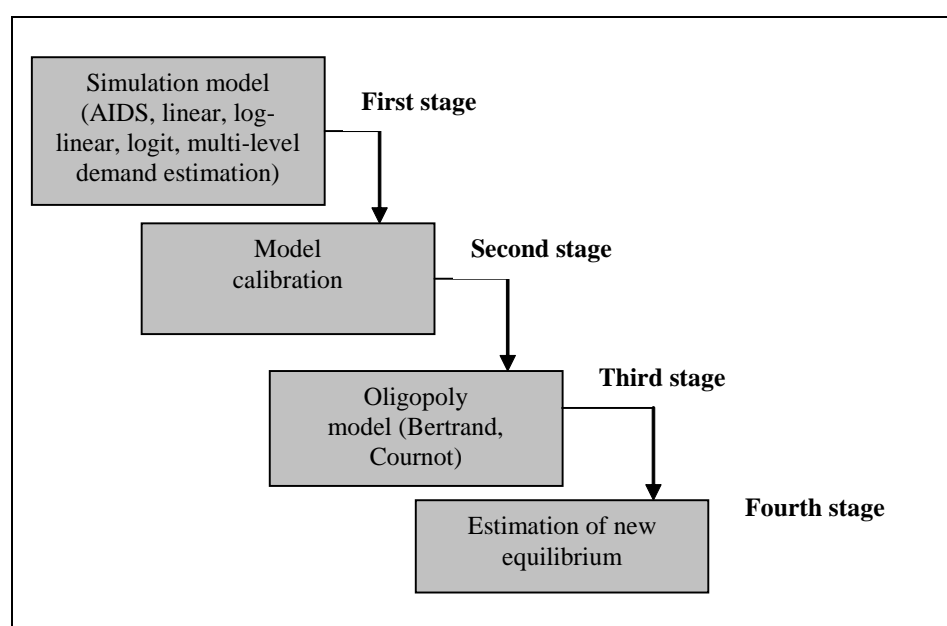
Technically speaking, merger simulation models for diversified products involve a four-stage dynamic process (Figure 2).

² For the use of the AIDS model, see e.g. Case No COMP/M.5046-*Friesland Foods/Campina*.

³ See generally Oliver Budzinski and Isabel Ruhmer, "Merger Simulation in Competition Policy: A Survey", 6 *JComp.L & Econ.* 277 (2010); Jonathan B. Baker and Daniel L. Rubinfeld, "Empirical Methods in Antitrust Litigation: Review and Critique", 1 *American Law and Economics Review* 386 (1999).

More specifically, in the first stage, a consumer demand function can be estimated through econometric methods applied to data on actual transactions, if such data is available. The usual econometric models are the ideal demand system (AIDS), the linear model, the log-linear model, the probability models such as logit or probit, and the multi-level demand estimation. Depending on the specifications of the demand equation, one estimates own and cross price elasticities. According to the economic theory, large shares for the merging firms or relatively large cross price elasticities between them tend to result in large (unilateral) price effects. On the other hand, small shares, small cross price elasticities, and/or large efficiencies tend to produce small or even negative (unilateral) price effects.⁴

Figure 2: Merger simulation process



Source: HCC's elaboration

In the second stage comes calibration of the model (i.e. price selection of the model parameters), in order to check if the results are in conformity with the statistical data of the scrutinised relevant market. The calibrated parameters are set in a way that the estimated elasticities can produce the prices and the market shares before the proposed merger. In order to ensure the validity of the merger simulation models, the estimated own-price demand elasticities must have a negative sign, while the cross-price elasticities must be either positive (substitutes) or negative (complements).

In the third stage, economists describe the supply side by applying an oligopoly model, which best describes rivals' competition. In the majority of cases, the oligopoly model used is Bertrand. The classic Bertrand model, on the other hand, assumes firms compete purely on price, ignoring non-price competition. Each firm decides independently and simultaneously what price to charge for their product. Both firms stand ready to deliver any quantity of the product. Therefore, even with only two firms Bertrand Oligopoly tends to be the competitive equilibrium price, unlike in Cournot Oligopoly, where there is a gradually lower price for any increase in output, and firms get extra-competitive profits. The Bertrand model can be extended to include product or location differentiation but then the main result, that price is driven down to marginal cost, no longer holds.

⁴ See Orley C. Ashenfelter, Daniel Hosken and Matthew Weinberg, "Generating Evidence to Guide Merger Enforcement", CEPS Working Paper No. 183, March 2009.

Finally, in the fourth stage, a researcher simulates the new (post-merger) equilibrium by applying the model, which is calibrated with the pre-merger empirical data, and by calculating the market shares after the merger.

This methodology has high data requirements. Clearly the amount of data needed depends on the complexity of the economic model adopted, but equally the availability and quality of the data determines which model can be used.⁵ The usual data that are needed in order to perform a merger simulation model includes:

- prices and quantities
- input factor prices
- demand and consumer characteristics (i.e. income, education, age, sex, employment, etc.)
- information about the main observable product characteristics (i.e. brand recognition, customer loyalty, etc.).

2.2 *Event studies*

Event studies are among the most successful tools of econometrics in policy analysis. By providing a methodology for measuring the impact of events on investor wealth, the analysis offers a fruitful way for evaluating the welfare implications of private and public actions.⁶ This methodology consists in assessing the stock markets' reactions to an event (i.e. announcement of the merger, decision to initiate phase II proceedings or derogation from the suspension of the concentration), so as to form a view about the effect of the latter on the market. Event studies rely on the assumption that financial markets are efficient and that the expectations of the agents are rational.

One branch of event studies investigates the effects of the announcement of mergers and of the derogation from the suspension of concentrations on shareholder value both in the target firm and in the bidder. The main result of such studies is that the announcement of the event may increase or decrease or may not affect the value of the acquired and acquiring firms correspondingly.⁷

Even though event studies are well developed, there is some concern about the effectiveness of the methodology for small stock exchanges with thinly traded stocks (infrequent trading). In the literature, alternative methodologies have been proposed to deal with the infrequent trading phenomenon. The most frequently used method is the "lumped returns method", which calculates daily returns from the stock price time series and produces zero returns for non-trading days. Other methods are the "simple returns method", which calculates daily returns only for days for which stock prices are available,⁸ the "uniform returns method", which calculates the daily returns between trading days and allocates the average daily return to each non-trading day and the "trade to trade approach", which uses all available information about total

⁵ See ICN Investigative Techniques Handbook for Merger Review, June 2005.

⁶ See J. Fred Weston, Kwang S. Chung and Juan A. Siu, *Takeovers, Restructuring and Corporate Governance* (Prentice Hall: Englewood Cliffs, 1998).

⁷ See Panagiotis N. Fotis, Michael L. Polemis and Nikolaos E. Zevgolis, "Stock Price Performance as an Argument for Derogation from Suspension of Concentrations: Reality or Myth?", 30 ECLR 216 (2009).

⁸ For the use of the simple return method see Jan Bartholdy, Dennis Olson and Paula Peare, "Conducting Event Studies on a Small Stock Exchange", 13 *European Journal of Finance* 227 (2007).

stock and market returns over time, and no bias is introduced by attempting to estimate unobserved daily stock returns, as is the case with the lumped or uniform techniques.

Another branch of event study methodology analyses the competitive effects of merger announcement. By analysing the share price of both merging and non-merging firms around the announcement of the event, the researcher may make inferences about the competitive effects of the merger on the relative market.⁹ Finally, event study methodology may also be used to analyse the effect of antitrust enforcement agencies on the stock value of merging parties.¹⁰

All in all, the data required to apply this methodology is quite limited and easy to acquire. However, since the necessary data are the stock prices of the firms affected by the merger around the key event dates, if some of the key firms are not listed on the stock market, the data does not exist and an event study cannot take place.

3. The Greek experience

Proceedings in Greek merger control are not very different from the equivalent EU proceedings. The initial Phase I investigation period lasts one month from the date of the notification. Then, if the notified concentration raises serious doubts as to its effects on competition, the HCC Chairman must, within this period, issue a decision opening an in-depth investigation. The HCC considers that the “serious doubts” test is fulfilled where one or more “affected markets” are identified. Phase II normally lasts a maximum of 60 days. Following the opening of the investigation, a hearing before the HCC will be held within a period of 45 days from the date of the original notification (which can be extended by an additional period of 14 days). The HCC may prohibit a concentration by means of a decision issued within 90 days from the date of the original notification, where the concentration leads to a significant restriction of competition.

The HCC has on many occasions used quantitative techniques depending on the difficulty of the notified concentration and on the potential effects on competition: use of econometrics increases when the restriction of effective competition in the relative product market has become a serious issue.

We identify below some examples from the HCC decisional practice with emphasis on the role of event studies.

3.1 *Acquisition of British Petroleum Hellas S.A. by Hellenic Petroleum S.A.*

In 2009, Hellenic Petroleum S.A (ELPE) notified its proposed share purchase of British Petroleum Hellas SA (BP). Under the agreement, ELPE would acquire direct and sole control of BP. The HCC decided to initiate Phase II proceedings, because the concentration raised serious doubts as to its compatibility with effective competition in certain affected markets. In particular, the investigation focussed on the retail markets for petrol and diesel in certain parts of Greece, where the new entity would obtain considerably high market shares, as well as on issues of access of third parties to ELPE’s storage facilities. The potential impact of the concentration on the wholesale trade markets for petrol and diesel was also examined.

⁹ See Tomaso Duso, Damien J. Neven, Lars-Hendrik Röller, “The Political Economy of European Merger Control: Evidence Using Stock Market Data”, Discussion Paper FS IV 02-34, Wissenschaftszentrum Berlin, 2002.

¹⁰ See Gregor Langus and Massimo Motta, “The Effect of EU Antitrust Investigations and Fines on a Firm’s Valuation”, Centre for Economic Policy Research, Discussion paper 6176, March 2007.

ELPE, which is a vertically integrated company holding a 75% market share in oil-refining, subsequently submitted commitments and the HCC approved the notified concentration with conditions and obligations. In particular, as to the above retail markets for petrol and diesel, ELPE committed to free from its network a number of service stations, equivalent to a reduction of market share below 55% (based on volume sales). The process was to be completed within a few months, prior to the upcoming summer season. ELPE also committed not to re-acquire the released service stations for a period of 6 years thereafter. ELPE further committed to grant access to third parties to its storage facilities/depots in Crete, under fair, reasonable and non-discriminatory terms.

The event study analysis of the specific merger showed a statistically significant negative reaction of Abnormal Return (AR) of the merged entity of 0.44% on the day after the announcement of the merger. In addition, the Cumulative Abnormal Return (CAR) decreased by 0.22 points during the merger announcement. The same holds true during the period around the decision of the HCC Chairman to initiate Phase II proceedings. The AR decreased by 0.07% on the day after the merger announcement and the CAR remained the same one day prior and after the announcement of the latter decision. If we expand the event period to a larger time span (-5 +5, -10 +10, -15 +15, -20 +20) around the announcement of the merger, the outcome is the same. More specifically, the relevant sign of the Cumulative Average Abnormal Return (CAAR) and CAR of both merged firms is on average negative, but this is not statistically significant.

3.2 *Joint venture between PPC S.A and Halyvourgiki S.A*

Public Power Corporation S.A (PPC), the historical incumbent in electricity production, transmission and distribution in Greece, and Halyvourgiki S.A., a major Greek steel producer, notified to the HCC the formation of a joint venture, which would undertake the construction and operation of two power plants with a total capacity of 880 MW, within the facilities of Halyvourgiki. Halyvourgiki would own 51% and PPC 49% of the capital of the joint venture.

The HCC delineated four relevant markets (i.e. generation of electricity, supply of electricity from wholesalers or importers to final consumers, transmission of electricity through high-voltage grid and distribution of electricity through medium or low-voltage grid). Phase II proceedings were initiated because the concentration raised serious doubts as to its compatibility with effective competition in certain affected markets. In particular, the investigation focused on the wholesale market for electricity, where the new entity would obtain considerably high market shares, as well as on issues of access by third parties. Eventually, the HCC approved the notified concentration with conditions and obligations. In particular: a) PPC and its subsidiaries could not own more than 49% of the joint venture's capital; b) the board of directors of the new company would consist of seven members, with four members appointed by Halyvourgiki and three by PPC; c) the Chief Executive Officer (CEO) would be appointed by the members of the Board who represent Halyvourgiki; and d) the joint venture should inform the HCC of any relevant change in its capital.

The event study analysis showed a statistically significant positive reaction of the AR of the merged entity (3.43%) on the day after the announcement of the merger. In addition, the CAR increased by 6.50% during the merger announcement. Conversely, the AR decreased by 2.26% on the day after the merger announcement and the CAR decreased by 3.78% between the days prior and after the announcement of the initiation of Phase II proceedings. If we expand the event period to a larger time span around the announcement day of the merger (-5 +5, -10 +10, -15 +15, -20 +20), the outcome is the same. More specifically, the relevant sign of the CAAR and CAR of both firms was on average positive and statistically significant for five and ten days prior and after the announcement of the merger.

3.3 *Acquisition of Aluminium of Greece S.A. by the Mitilineos Group of Companies*

The notified transaction involved the acquisition of 53% of the capital of the Greek company Aluminium of Greece S.A. by the Mitilineos Group of Companies. The relevant market for the production of aluminium in Greece is strongly oligopolistic with only six companies active in the field. This transaction involved the acquisition of the smallest by the largest firm on the market. The HCC initiated Phase II proceedings, in order to assess the possible anticompetitive effects of the transaction, but the economic analysis did not raise serious doubts concerning the completion of the merger since the relevant market was characterised by: a) significant pressures from foreign companies, b) the absence of non-symmetrical firms, c) easy and efficient entry of new firms in the market and d) low degree of concentration of customers.

Furthermore, the acquiring firm could not exercise market power and thus increase the price of aluminium. The change (Δ) of the HHI index was due to the high market share of the acquired firm and the high degree of concentration that already characterised the market before the completion of the concentration.

3.4 *Acquisition of Veterin S.A. by L. Lavrediadis*

The notified transaction involved the acquisition of 50.11% of the capital of the Greek company Veterin S.A. by Mr. L. Lavrediadis. The HCC investigated two distinct relevant markets (i.e. production and distribution of veterinary medicinal products and trading of veterinary foods, parts and accessories). The analysis of the merger showed that only the acquired firm participated in the above relevant product markets. The firms in the concentration were in a relationship, which was neither purely horizontal (as competitors in the same relevant market) nor vertical (as suppliers or customers). The main focus of the analysis was to identify whether the concentration was characterised as a “pure” conglomerate merger or the firms were active in closely related markets (i.e. the firms were suppliers of complementary products or services).

The complementarity theory seemed to be important since the firms in the concentration might exercise their ability to foreclosure, that is, to leverage a strong market position from one market to another by means of tying or bundling or other exclusionary practices. The analysis was also focussed on investigating if the merged entity would exercise market power in each of the relevant markets.

The Phase II investigation showed that prior to the completion of the concentration, the merged firms were active in six markets. In each of those markets the merged firms did not hold a market share above 30%. The HHI index in each of those markets was below 2000 units. For a 5 year period prior to the concentration the analysis showed that each of the merged entities was active in different markets. In addition, there was no likelihood that the specific firms might be potential competitors in the future. The HCC concluded that the complementarity theory did not stand. Therefore, foreclosure (leverage) was not a likely scenario and the HCC did not oppose the notified merger.

3.5 *Proposed acquisition of MEVGAL by VIVARTIA*

This case, which is still pending, concerns the acquisition of MEVGAL’s dairy business by VIVARTIA. The HCC in its Statement of Objections considered that the merger may lead to a significant impediment to effective competition in the relevant markets for the procurement of raw milk (as the merger would bring together the two main purchasers of raw milk in Northern Greece), the production and distribution of fresh milk, as well as the production and distribution of chocolate milk. Structural and/or behavioural remedies were thus considered to be necessary with a view to rendering the concentration compatible with merger control rules.

During the period from the notification to the issuing of the Statement of Objections, the case team of the Directorate General for Competition focussed especially on the vertical business relationship between the merged entity and the producers of raw milk in specific geographic markets in Greece.

The relevant product market of fresh milk was defined by regressing the natural logarithms of the quantity variables on the natural logarithms of the price and demand-shifting variables (a log-log demand system).¹¹ The results show that the elasticities of different types of fresh milk were lower than 1.0 indicating a price inelastic demand. In addition, the cross price elasticities of demand were close to 0.0 and for some types of fresh milk were negative, showing that some combinations of types of fresh milk are characterised by demand complementarity rather than demand substitutability.

The case is currently pending before the Board of the HCC.

¹¹ Specifically, under the log-log demand system, the demand equation for type *i* raw milk is

$$\log q_i = \alpha + \beta \log \Pi + \sum_{j=1}^n \gamma_{i,j} p_j$$

Where q_i is quantity of the product *i* and Π is category expenditure, p_j is the price of product *j* and α , β and $\gamma_{i,j}$ are the parameters to be estimated. The log-log demand system approximates any demand system at a given set of prices.

HUNGARY

1. Institutional questions

At the Hungarian Competition Authority (GVH), all mergers are investigated by a case team. The members of the case team are case handlers from the Section responsible for the merger, are selected by the Section Head, and can be lawyers or economists.

There is a separate Chief Economist Team (CET), whose members are only economists. Depending on the importance and difficulty of the merger, the CET gives advice to the case team at various points of the case or writes individual assessments on the whole merger or selected aspects (for example giving a detailed market definition or competitive assessment on one of the affected markets). The general practice is that the CET participates in all Phase II mergers, and in Phase I mergers where economic questions play a decisive role.

There has been a conscious effort to improve the GVH's internal economic expertise in dealing with antitrust cases and in particular mergers for the past five years. The CET was established exactly with this aim in 2006.

The GVH does not use outside economists in merger investigation to assess market definition or competitive interactions in the antitrust sense. The only experts the GVH uses in merger investigations are market research companies when there is a need for conducting large consumer surveys, in which these companies have especial expertise, and employ staff for conducting surveys all around the country. In those cases, the market research company typically submits a (separate) report on the results of the survey, this report however does not deal explicitly with antitrust issues. It is then the GVH that prepares the report answering the antitrust questions by analyzing the database compiled by the market research company.¹

The merging parties usually rely on their internal team of economists / business analysts, and rarely use outside economic experts. There has been only one merger case in the past five years where the parties submitted a separate analysis provided by an economic consulting firm. If outside economic input was used in the other cases, it was incorporated into the submissions prepared by the legal counsel of the parties (and therefore it was not apparent whether it was prepared internally or not).

The interaction between the GVH's economists and the parties during the investigation phase is typically connected to the requests for data issued by the GVH, i.e. discussing what data are available, how different measures of market size may be estimated, etc. Discussions on theories of harm and competitive assessment mostly take place only after issuing a Statement of Objections, but in that case the dialogue takes place between the Competition Council of the GVH and the legal counsel of the parties.

In 2010, the GVH issued a document on "Frequently Asked Questions on the Competitive Assessment of Mergers", which was finalized after a public discussion with outside commentators. These

¹ In one case, for example (Ringier/Hid Radio, Vj-155-2008), the question was whether tabloids can be substituted by other daily newspapers, TV programs or Internet sources, and a large survey was conducted. The market research company's report analyzed the substitution patterns among various dimensions, in the style of a business study, but only the investigation report defined antitrust markets by using a SSNIP logic.

documents summarize the GVH's best practice in the last years by giving detailed guidance on the following topics:

- General methodology of evaluating mergers
- Detailedness and quality of data needed for competitive assessment in merger cases
- Market definition in merger cases
- Assessment of non-coordinated horizontal merger effects

Further FAQs are planned on the assessment of coordinated horizontal and vertical merger effects.

In the last five years, the GVH blocked only one transaction (Magyar Telekom/Vidanet, Vj-158/2008), which was appealed at the court. In that specific case, the Municipal Court (court of first instance) evaluated the economic evidence on market definition questions (analysis of questionnaire data and economic trends) and approved the GVH's decision. It also concluded, however, that the GVH failed to completely uncover the question of entry in order to safely establish the creation of a dominant position by the merger, and therefore obliged to GVH to reopen the merger case for further investigation. The GVH appealed the decision of the Municipal Court and now awaits the decision of the Appeal Court (court of second instance).

2. Gathering data for economic analysis

The GVH can request data from merging parties and third parties as well. If they fail to comply with the request, administrative fines can be charged to any parties.

When preparing data requests, the first priority is to get aggregated data reflecting market developments for the last two-three years: revenues, quantities and prices. It is also very important to get information on firm- and industry-specific shocks (to demand and costs) as soon as possible. Further data needs depend on the specific characteristics of the industry and the theory of harm.

The GVH also tries to request some of the same data from various sources and check the responses against each other in order to avoid potential errors or misrepresentations. From time to time, parties are asked to estimate each other's sales, market shares etc., in order to get a balanced picture of the market and correct for potentially missing answers.

If parties rely on any economic analysis in their submissions, the database they used is also requested, verified and is usually used for further analysis.

3. Use of economic evidence

The GVH typically uses the evolution of pre-merger market shares as a screening device and to provide additional information on the nature of the competitive process. In order to do so, the GVH collects data in order to estimate various market shares (sales volume / revenue, subscribers, capacities if applicable, etc.). The GVH does not explicitly estimate post-merger market shares.

Market definition has always played a large role in the GVH's in-depth merger investigations, especially in mergers investigated under the Dominance test (that is, before 2009). Most of these analyses used methodologies more or less consistent with the SSNIP question (analysis of price and quantity data, transport cost tests, etc.), but never implemented a full-fledged SSNIP test, estimating demand and

combining it with cost data. In some cases, the GVH used the merging parties' cost and elasticity estimates to do back-of-the-envelope SSNIP tests, but these results were complemented by stronger evidence.

In those mergers where the GVH used detailed questionnaires to explore substitution patterns (Ringier/Hid Radio, Vj-155-2008; Magyar Telekom/Vidanet, Vj-158/2008), various versions of the hypothetical SSNIP question were asked. However, these answers were mostly used to compute diversion ratios and measure the closeness of competition between competing products, and were not directly used to estimate demand elasticities or critical losses.

As a result, the GVH did not estimate price or output effects of the merger based on demand estimates such as merger simulation or UPP. In one case (Magyar Telekom/Vidanet, Vj-158/2008), the GVH illustrated the price effects of the merger by decomposing how the acquiring telecom firm prices the different elements of its various internet subscription packages (length of contract, bandwidth, quotas, etc.) and then using this pricing policy to estimate the price increases for the packages offered by the acquired firm.

In mergers involving differentiated products, the GVH first analyzes price and quantity trends on the brand level to pinpoint possible substitution patterns. In the recent merger of two food companies producing certain types of sausages (Bonafarm/Herz, Vj-155/2009), the acquired firm had already been inactive for a couple of months before the transaction, so it offered a simple shock analysis to examine how the sales of the acquiring firm (and also of competitors and private labels) reacted to this change. The GVH did not use parties' internal reports to compute diversion ratios, because of their unavailability. As mentioned before, the GVH also used questionnaires in some industries involving differentiated products (newspapers, telecommunications) to compute diversion ratios.

The GVH would prefer to use more cross-sectional and time-series studies, but data usually lack enough variation that could be exploited. Such a study was successfully conducted in the merger of two retail gasoline brands (Shell/Tesco, Vj-19/2009), where cross-sectional price-concentration regressions were run with various measures for concentration, and the effect of entry/exit was also studied in the same panel database of weekly station-based prices. None of these estimations showed economically significant price effects.

There are very few mergers with coordinated effects in the GVH's history. However, in the recent merger of two cement producers (Holcim/VSH, Vj-153/2009), the GVH identified serious coordinated horizontal effects based on tacit collusion on market sharing, and therefore the merger was cleared only with structural and behavioral remedies. Among a lot of qualitative evidence, the GVH's analysis also included an analysis of transaction prices (showing that the location of the acquired "maverick" firm significantly mattered for the prices offered by the main competitors) and the analysis of market shares in various Hungarian regions.

In the case of vertical effects, there was no merger in which customer foreclosure issues were quantitatively analyzed. Concerning the aforementioned cement merger (Holcim/VSH, Vj-153/2009), input foreclosure concerns arose on some local markets where the acquiring firm had ready-mix concrete plants and the acquired firm was a main supplier to that region. In this case, the GVH used a simple analysis combining upstream and downstream margins and market shares to show that the acquiring firm might have an incentive to engage in input foreclosure.

Merging parties never submitted an efficiency argument supported by quantitative evidence to the GVH in a merger case. Therefore, the GVH was never required to seriously weight how efficiencies could potentially offset anticompetitive concerns.

ISREAL

This submission summarizes some of the Israel Antitrust Authority (hereinafter: IAA) experience with respect to economic evidence, particularly in the context of merger analysis.

The first section outlines the main features of the Israeli merger review regime with reference to the review and analysis process carried out by the IAA economic department.

The second section offers examples for economic evidence used by the IAA in merger cases, namely in the context of a merger in the construction sector (Ackerstein - Netivey Noy) and a merger in the petrol station sector (Dor Alon – Sonol).

The third section offers examples for economic evidence used in other type of cases, namely, review process of code share agreements between airlines as well as in monopoly in the tea sector.

We conclude with some notes on the possible benefits and limitations of using economic evidence in merger analysis on both conceptual and practical levels.

1. Brief overview of Israel's merger regime and review procedure

Merger control constitutes an important part of the IAA's mission to prevent the creation, enhancement, entrenchment or use of market power to the detriment of competition. Transactions above certain notification thresholds must obtain the approval of the Director General before consummation.

Israel has instituted a modern merger review regime which draws on contemporary economic principles. The IAA has adopted the "more economic approach" that underlies merger review in many OECD countries as well as in the EU, and increasingly applies an effects-based approach in its evaluation of mergers.

Merging parties must submit a merger notification in the event that one of the following conditions exists:

- (a) As a result of the merger, the share of the merging companies in the overall manufacture, sales, marketing or acquisition of a particular asset and a similar asset or provision of a particular service or a similar service is in excess of fifty percent;*
- (b) The joint sales volume of the merging companies according to their balance sheets for the year preceding the merger, is in excess of 150 million NIS; the sales volume of at least two of the merging companies is in excess of 10 million NIS each and the combined sales volume of all the merging parties is in excess of 150 million NIS.*
- (c) One of the companies is a monopoly.*

The substantive test implemented by the Law in order to determine whether or not to intervene in a proposed merger is whether the proposed transaction presents reasonable likelihood of significant harm to competition. This test conforms to similar standards applied by other antitrust agencies and adequately

covers all situations in which it is appropriate to block or condition a merger. The specified harm to competition required under the Law need not be certain, but its likelihood must be established by a preponderance of the evidence – the standard of proof commonly applied in civil proceedings — thus requiring a probability of harm that exceeds fifty percent.

The Law sets a review period of thirty days, during which the Director General is required to reach a decision. The period can be extended by the Antitrust Tribunal or when the consent of the merging parties is granted. If the Director General does not decide within the prescribed time period, the merger is deemed to be compatible with the Law. The Director General has the power to block a merger if the merger raises a reasonable concern of harm to competition or the public. The Director General may clear the transaction or approve it subject to conditions. The Director General's decision is subject to an appeal to the Antitrust Tribunal. Upon notification, each merger is classified by the Chief Economist according to the degree of *prima-facie* concerns that it may raise (classification tags are "green", "yellow" and "red" corresponding to little, moderate and severe *prima-facie* concerns). The evaluation of a proposed merger is a methodological yet flexible process designed to portray the prospective impact of a proposed merger, taking into account the economic reality of the relevant market, including its history, dynamics and expected future developments.

The IAA's merger review normally involves the following stages: (1) relevant market definition; (2) identification of the competitors participating in the relevant market and an assignment to each of them of their respective market shares; (3) measurement of the market's level of concentration both pre- and post-merger; (4) evaluation of the competitive effects created by the merger, including analysis of excess capacity; (5) assessment of the prospects of entry by new players into the market and expansion by incumbents; (6) evaluation of the efficiencies created by the merger; and (7) consideration of the failing firm doctrine, if relevant.

The IAA's economic department is in charge of handling merger filings and conducting economic assessments in relation to monopoly declarations and unilateral conduct¹. It should be noted that economists are entrusted with the task of gathering all information and data pertinent to the merger review, evaluating the relevance of the facts and processing the information in order to facilitate a decision. Economists at the IAA are also required to offer their expertise and testify in various court cases, even if those are not related to specific mergers.

During 2010, the IAA issued a total of 149 merger decisions. The IAA puts great emphasis on shortening the review period for all merger notifications. To this end, the average review period of "green" mergers (which are about 86% of all merger applications) has dropped significantly to 13.7 days, down from 20 days in 2007. While efficiency is a priority, the IAA does not compromise on the thoroughness and quality of the merger review process in order to make sure that all competitive concerns are adequately addressed.

In light of the above, the extensiveness of economic evidence used in merger analysis is affected by the specific circumstances of the merger in question, the characteristics of the relevant market and clearly also by time and resources limitations. The short statutory timeframe for merger review and limited resources of the economic department are taken into account in the priority setting process of the economic department. The type and extent of evidence is a determined on a case by case basis.

¹ The department is comprised of 13 economists.

2. Examples of economic evidence used by the IAA in merger cases

2.1 *Economic evidence used to support the decision to block a merger between Ackerstein Industries and Netivei Noy*

In December 2009 the IAA blocked a merger between Ackerstein Ind. and Netivei Noy Ltd., two competitors in the manufacture of surface-infrastructure products including interlocking street paving stones. Ackerstein sought to merge with its competitor Netivey Noy by buying off all of its manufacturing equipment.

An examination by the IAA's economic department indicated that prior to the merger, the market displayed little competition, and that the merger raised grave concerns for increased coordination in the marketplace, especially in view of the existing entry barriers to the market. In particular, certain aspects in the interlocking paving-stone market signaled the existence of coordinated interaction premerger. It was found that the majority demand for interlocking paving stones comes from local authorities that commission landscaping projects. The evidence shows demand for stones increased perceptibly in the period preceding municipal elections and remained high until a year or so afterward. When demand turned upward, the price of the product rose commensurably, although there was considerable excess capacity in its production. When demand abated, however, there was no corresponding decrease in price.

Given the characteristics of the interlocking paving-stone market, this points to lack of competitiveness in this market and makes the existence of parallel behavior highly probable. In a competitive market, a market that is free of coordinated effects and is characterized by considerable excess production capacity, it is less likely that prices would rise in tandem with an upturn in demand. It is also less likely that prices would not go down at a time of an appreciable decrease in demand. Moreover, according to the economic evidence, in late 2007 and early 2008, the price of interlocking paving stones surged by a hefty 20–40 percent, outpacing the increase in the prices of the inputs at the time.

Figure 1 shows that the four competitors' prices moved in tandem, including the surge in late 2007 and early 2008. Figure 2 demonstrates that those price increases were unrelated to changes in production costs.

Figure 1—Index of Interlocking-Stone Prices, Four Market Competitors

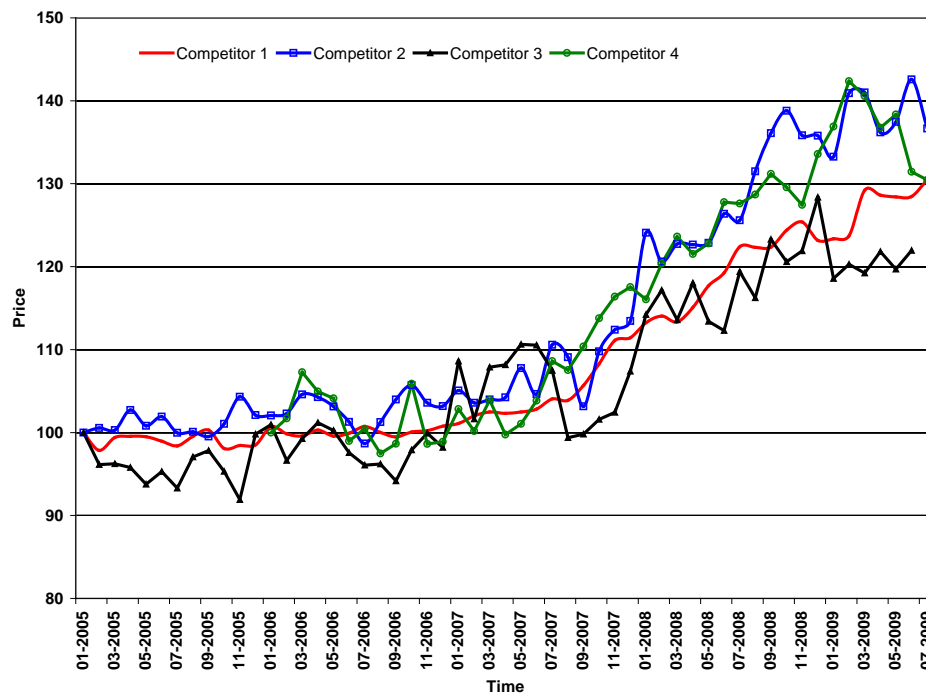
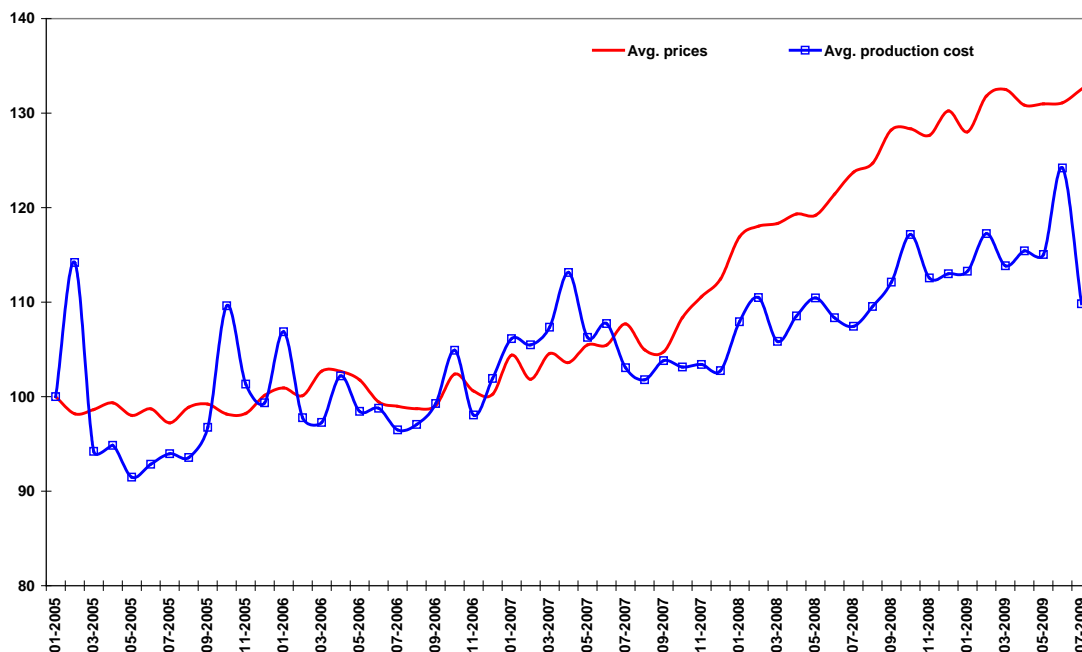


Figure 2—Price Indices and Average Production Cost



The indications of coordinated effects in this market are amplified by the fact that the buyers in this market are price-sensitive and willing to switch suppliers in response to very small price differences. In a market without switching costs, one would expect the players to compete vigorously for customers’

demand by cutting prices. The competitive picture in the market at issue, however, is altogether different: prices rise with demand but do not fall when it declines, competitors do not use all their production capacity even when demand is growing, and they argue that price-cutting is not worth their while because the other competitors will immediately follow suit, thereby lowering prices across the market instead of bringing in additional customers.

This economic evidence supported the conclusion that Ackerstein's acquisition of Netivei Noy's production capacity would reinforce and solidify the parallel behavior of the firms competing in the market. The merger was thus blocked after the IAA concluded that it would significantly harm competition by making coordination even easier after it is consummated.

2.2 *Economic evidence used to support the decision to block a merger between Dor Alon and Sonol*

In November 2005, the IAA blocked a merger between two major competitors in the import, marketing and distribution of oil distillates. The parties, Sonol Israel Ltd. (hereinafter – Sonol) and Dor-Alon Energy in Israel (1988) Ltd. (hereinafter – Dor-Alon) are two of the four major competitors in the sale of gasoline and diesel fuel at gasoline stations. The Israeli gasoline market is characterized by an oligopolistic structure, high entry barriers, substantial governmental involvement and cross ownerships among competitors.

Until recently, three fuel companies have dominated the market and, at a certain point, the government decided to take the steps necessary to inject competition to the market. During this process, a number of small companies entered the market, the largest of which is one of the parties to the requested merger. The most prominent "new" entrant is Dor-Alon which controls about 17% of the petrol stations. The growth of Dor-Alon was important especially in light of the fact that one of the highest entry barriers to petrol retail market is land use restrictions for the establishment of new stations. On average, a period of seven years is needed to establish a new petrol station in Israel.

In an attempt to predict the effect of the merger on competition, a reduced form econometric analysis was conducted to estimate the effect of changes in concentration (using HHI proxy) in each geographic market on the prices charged by each station for each distillate (at the pump). The analysis was based on detailed data regarding 954 gas stations in Israel. The data included: the exact geographic location of each station (by coordinates); prices of distillates; whether the station has a convenient store; whether it is located on a main road; whether it is located in a dense urban area; and under which commercial brand it operates.

Results enabled to simulate the effects of changes in HHI due to the merger, would have on prices in each geographic market. It is noteworthy that being a reduced form analysis, results should not be taken to represent post-merger equilibrium prices but rather portray the short run change in incentives of the merged firm. With significant entry barriers, and the extent of vertical control in the Israeli petrol market, long term results may not differ substantially from those obtained by the reduced form analysis.

Figure 3 — The distribution of HHI over geographic markets defined by 5 KM radius

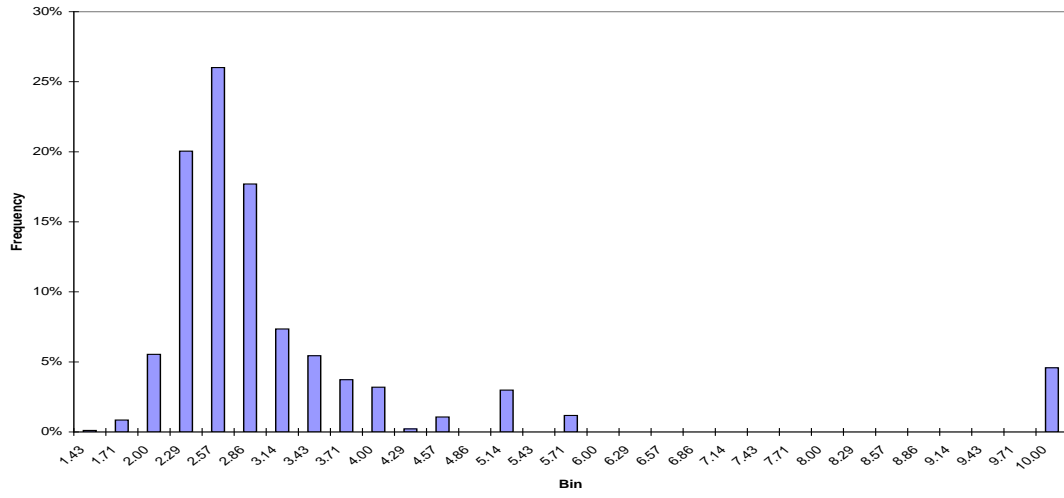


Figure 4 — The joint distribution of HHIs and diesel fuel prices at the pump

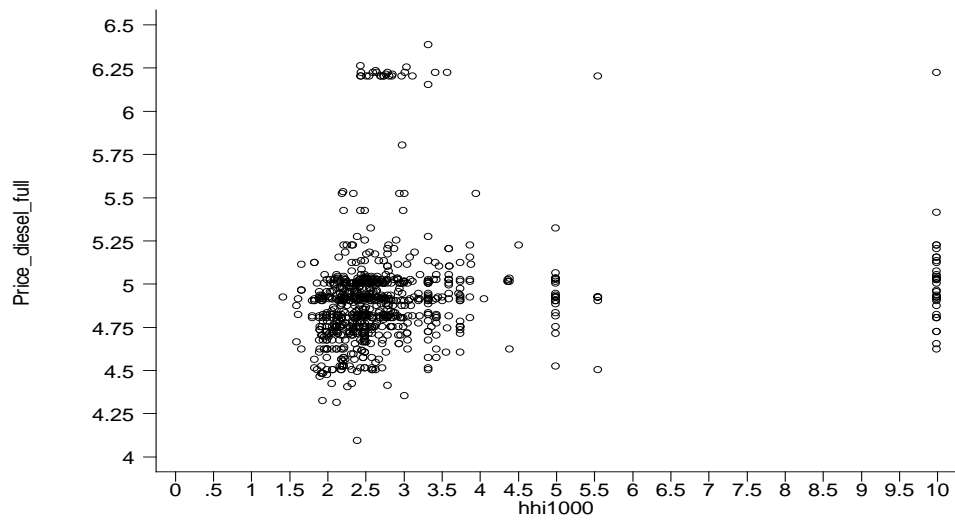
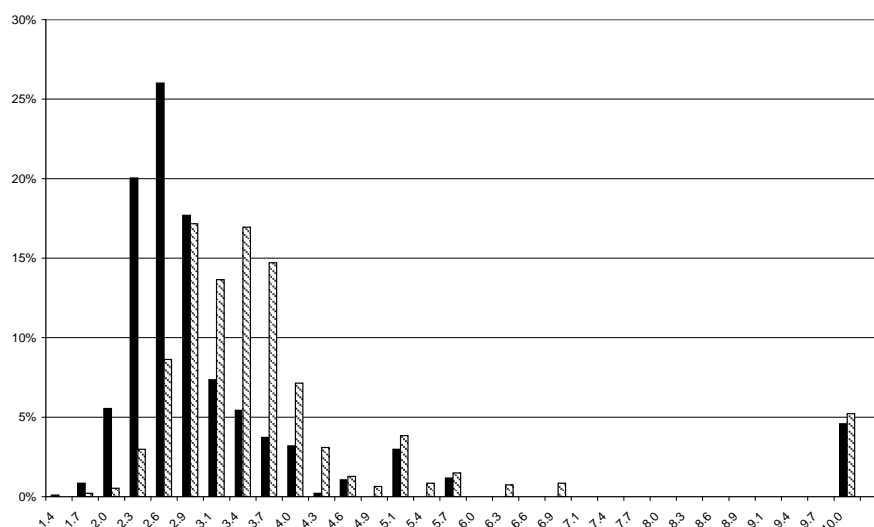


Figure 5 — Pre and post merger distribution of HHI (In solid black – pre-merger HHIs)



The merger raised concerns in many geographic markets and the parties did not present any efficiency gains that could justify the transaction.² In light of the above, the merger was blocked. The merging parties have filed an appeal, which was accepted by the Antitrust Tribunal on 9 April 2006. The IAA appealed the decision and ruling was reversed by the Supreme Court on 15 June 2006. The Supreme Court's ruling issued by Chief Justice Barak, Justice Procaccia and Justice Arbel upheld the IAA decision to block the merger. The detailed decision is based on reasoning that the merger in question should not be approved because of its adverse effect on competition, particularly in a small island economy such as Israel.

3. Examples of economic evidence used by the IAA in other cases

3.1 *Economic evidence used to review commercial "code share" agreements between EL AL and foreign airlines*

In the course of 2009, the IAA reviewed eighteen commercial 'code-share' agreements between EL AL and foreign airlines. The review followed a legislative reform that abolished the statutory immunity that applied to the air-transport sector and the enactment of a statutory block exemption for restrictive arrangements between air carriers. The airline industry has traditionally been characterized by extensive agreements between competitors. These agreements may lead to either positive or negative welfare and competitive effects, depending on the circumstances of the market (such as effective regulatory restrictions) and the character of the agreement. The goal of the review was to distinguish the 'code share' agreements that are likely to have anti-competitive effects from those who likely offer benefits to consumers.

The methodology of the examination combined analysis of the capacity; number of passengers; ticket prices; entry and expansion barriers as well as detailed cost data. Data were gathered on each point-to-point route separately. "Benchmark routes" were used to approximate the performance of certain routes "but for" the code share agreement. In order to create such benchmarks, EL AL routes were divided to three categories (short haul and long haul flights separately). The categories created were as follows: competitive routes with no 'code share' agreements; competitive routes with 'code share' agreements; and routes with

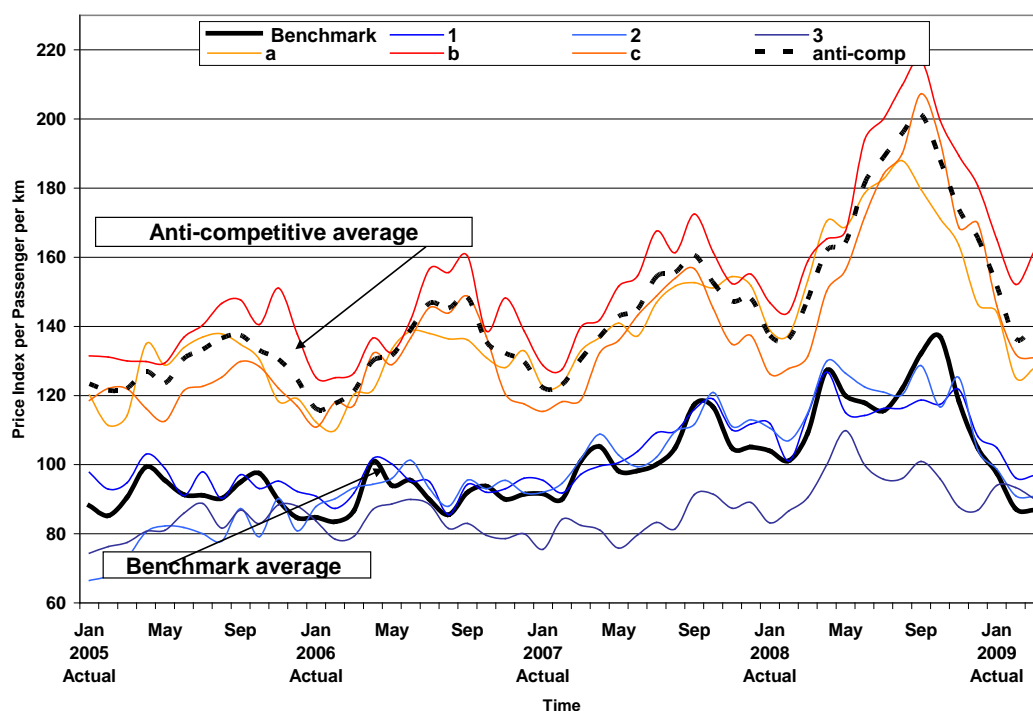
² The merger also affected other aspects of gasoline sale in Israel, which are not discussed herein.

'code share' agreements that were believed to be less competitive due to agreement and other market characteristics.

Figure 6 shows the clear difference between prices charged on anti-competitive routes and the competitive benchmark lines over the period of four years. Accounting for route specific costs does not change the results. The evidence showed that the flights in the third category were indeed characterized by supra-competitive profits.

Based on the results of the IAA's analysis, six agreements were not exempted, of which a few served no other purpose than the lessening of competition³. Seven agreements were exempted for three years and five agreements were withdrawn by EL AL before the IAA issued a decision.

Figure 6 – Competitive benchmark and pricing of EL AL airline traffic



3.2 Economic evidence used to determine a relevant market in the tea sector

In 2009 the IAA examined whether there are grounds to issue a declaration that the largest tea producer in Israel (Wissotzky) was a monopoly in the tea sector according to Article 26 of the Law.

Generally, a firm may be declared a monopoly in a well defined antitrust market. The primary function of the market definition process is to capture in a systematic way the group of products and regions in which a hypothetical monopolistic firm can restrict output or increase prices above the prevailing price level, reaping supra-competitive profits. The IAA, however, does not view the market definition process as an end in itself, but rather as an intermediary tool designed to detect market power when such power cannot be measured directly.

³ It is noteworthy that the above depicts only a part of the analysis carried out, as it highlights the use of economic data.

The IAA finds it is methodologically preferable to focus on demand substitution alone, which measures the willingness of consumers to switch to alternative products or regions in response to a price increase, at the market definition stage. Supply substitution, on the other hand, i.e., the firms' production responses to a price increase, is examined at the stage of identification of competitors. The IAA's demand substitution analysis ultimately depends on a delineation of two types of relevant markets: (1) the product market; and (2) the geographic market.

The review process by the economic department showed that there were various types of tea products available in the market (tea bags, infusions, loose leaf tea, etc.), in various prices, and that the field was highly heterogeneous. Wissotzky argued that there were different alternatives to tea bags - other types of tea, and hot beverages in general, like coffee and hot chocolate.

Given the heterogeneous nature of the market, a consumers' survey was conducted in order to study substitution patterns in the market and examine which products were direct and significant substitutes to plain black tea bags, in the eyes of consumers. To this end, respondents were asked about their consumption habits of hot beverages, including frequency of consumption of hot beverages, price perception of tea in general and Wissotzky tea in particular as well as questions regarding their response to price fluctuations. The survey was conducted in three languages (Hebrew, Arabic and Russian).

In order to estimate diversion ratios, several questions regarding consumers' response to price changes were asked. The results were analyzed in terms of affected tea bags per day. In other words, answers were segmented by the quantity of teacups consumers drink on average a day.

Together with detailed cost data, the survey estimates allowed estimation of expected profits from price increases by a hypothetical "tea bags" monopolist. The result was that given price-cost margins, a hypothetical monopoly was likely to profit from increasing prices 5%-10% percents and hence tea bags constituted a relevant market.

4. Conclusion

The IAA has the motivation, the professional capacity and know-how to use economic evidence in merger analysis and other types of cases.

However, such methods are mainly used in instances whereby the specific circumstances of the case are found suitable. It should be taken into consideration that from a regulatory perspective, the use of economic evidence entails disseminating significantly extensive requests for information from the merging companies and other parties.

In general, the quality of regulation and the quality of the service offered by the IAA depends inter alia on the level of regulatory costs. In order to avoid imposition of excessive burden on merging parties, in terms of transaction costs, the costs and benefits of economic evidence should be weighed accordingly. Clearly, it would make little sense to use economic evidence in cases where there are hardly any doubts regarding the competitive outcome of the merger. Likewise, it would be inefficient and perhaps even counter productive to impose a burden on third parties.

Economic evidence entails collection and analysis of extensive data and information regarding prices, quantities and costs from a variety of market players operating in a variety of market segments. The data must go back a reasonable period of time. Likewise, a decision to use surveys must incorporate the various limitations of such tools and the time inputs which they entail.

As illustrated in previous sections, the use of economic evidence has been instrumental in a number of cases reviewed by the IAA. The IAA economic department will follow the development of quantitative economic methodologies so that such tools could be implemented also in the future.

JAPAN

1. Use of economic analysis in merger review in Japan

The Japan Fair Trade Commission (hereinafter, “the JFTC”) publishes the underlying principles as to whether the effect of a business combination may be substantially to restrain competition in any particular field of trade or not in its “Guidelines to application of the antimonopoly act concerning review of business combination” (hereinafter, the “Merger Guidelines”).

The Merger Guidelines describe, based on economic viewpoints, the underlying principles in determining when the effect of a business combination may be substantially to restrain competition in a particular field of trade through unilateral or coordinated conduct. In defining a particular field of trade and determining substantial restraint of competition based on the Merger Guidelines, the JFTC sometimes makes use of economic analyses.

2. Organization of the JFTC for making use of economic viewpoints

2.1 *Involvement of economists in the review of business combinations*

The JFTC recruits and trains new university/college graduates who have passed the examination for national public service personnel (government officials) in the field of law or economics. Such personnel make up the majority of staff members currently working for the JFTC.

In addition to such standard systems for recruiting and training staff members, the JFTC recruits mid-career employees, such as economists (economists of postgraduate level including economists having degrees of Ph.D.in economics) and specialists in other fields (lawyers, CPAs, and IPR specialists) from universities or the private sector.

Seven such staff members recruited from outside, including economists, worked for the Mergers and Acquisitions (M&A) Division, which is in charge of the review of business combinations, in FY 2009. They are engaged in reviewing business combination cases as members of case teams depending on the cases.

2.2 *Measures taken by the JFTC for strengthening expertise in economic analysis*

The JFTC newly established in June 2003 the Competition Policy Research Center (hereinafter, “CPRC”), which is an internal organization of the JFTC. Now, the CPRC is headed by Hiroyuki Odagiri (Director of the CPRC, Professor at the Faculty of Social Innovation, Seijo University). The CPRC appointed 10 economists and 7 jurists (all of them external experts) as its researchers (Chief Researchers and Visiting Researchers). These researchers are engaged in research on competition policies and economic/legal studies. In addition, JFTC staff economists at the Economic Research Office are engaged in joint research with them as CPRC researchers on topics including mergers. However, it should be noted that these researchers are not involved in reviewing individual business combination cases.

3. Cases where economic analyses were employed

3.1 *Use of Hypothetical Monopolist Test/Test of Small but Significant and Non-transitory Increase in Price (hereinafter, the “SSNIP Test”) in determining a particular field of trade*

The Merger Guidelines stipulate that a “particular field of trade” shall be determined based on the concept of the Hypothetical Monopolist Test/SSNIP Test. This means that the concept of the Hypothetical Monopolist Test/SSNIP Test shall be applied in determining a “particular field of trade” although the number of cases in which the Critical Loss Analysis (hereinafter, the “CLA”) was actually exercised by using data is limited.

While there is no published business combination case where the CLA was performed, the CLA was attempted for a hypothetical business combination case in the following study.

In a report titled “Differentiated Products and Economic Analysis of Mergers” published in 2006 as the result of joint studies by a Visiting Researcher of the CPRC and economists at the M&A Division, several demand function models (the AIDS model and the double-*log*-form demand function model) were estimated using scanner data of butter and margarine to perform the CLA. The report drew the following conclusions: when the CLA was performed by using the estimated demand function under the assumption of the AIDS model, it was implied that butter and margarine respectively were not defined as separate fields of trade, but were both included in a larger field of trade. On the other hand, under the assumption of the double-*log*-form demand function, butter and margarine each constitutes a different field of trade. Therefore, it was suggested that depending on the demand function used therein, the CLA would lead to different market definitions. Designing sophisticated models and methods under a limitation of data remains a major challenge.

3.2 *Measurement of market concentration*

The Merger Guidelines stipulate the range (safe harbor) prescribed as “the effect of a business combination may not be substantially to restrain competition in a particular field of trade” by means of HHI after the business combination and the increment of HHI in the following manner:

Horizontal Business Combinations	(1) HHI after the business combination is not more than 1,500 (2) HHI after the business combination is more than 1,500 and not more than 2,500 while the increment of HHI is not more than 250. (3) HHI after the business combination is more than 2,500 while the increment of HHI is not more than 150.
Vertical and Conglomerate Business Combinations	(1) Market share after the business combination is not more than 10% (2) HHI after the business combination is not more than 2,500 and the market share after the business combination is not more than 25%.

Hence, whenever the JFTC reviews business combinations, whether a case falls under the safe harbor or not is scrutinized by measuring shares of market participants including the concerned parties, and thereby calculating the degree of market concentration (HHI) before and after the business combination in a particular field of trade.

Higher market share or higher market concentration resulting from a business combination does not necessarily mean the potential anticompetitive effects of a business combination. However, the market

share or the market concentration is thought to imply the degree of competition after the business combination to a certain degree.

3.3 *Cross-sectional and time-series analysis relating concentration to price or price/cost margins or showing the effects of entry, exit, or merger on price*

The effects of a business combination on price were analyzed in the following published case: in the case of “Capital Alliance of Kirin Group and Kyowa Hakko Group”¹ in FY 2008, it was analyzed how the concerned acquisition of shares had an impact on drug prices (reference prices based on which medical institutions charge medical service fees and which are revised once in two years by the Ministry of Health, Labor and Welfare) of a medicine called Gene-recombination type human granulocyte colony stimulating factor product (hereinafter, a “G-CSF”) and prevailing pharmaceutical market prices (prices based on which the drug wholesalers sell the medical drug to medical institutions and which reflect competition among pharmaceutical manufacturers).

Kyowa Hakko Kogyo Co., Ltd. (hereinafter, “Kyowa Hakko”) entered the market in question two and half years later than the two competitors (one was Kirin Pharma Co., Ltd.) and has been growing in the market in question by depriving the market shares of the two competitors. The product manufactured by Kyowa Hakko (called “Neu-up”) was cheaper than the products manufactured by the other two competitors, and as a result, the rate of decline in the prices of the products of the two competitors expanded after the entry of Kyowa Hakko.

Regarding the prices of medical drugs, there is a tendency where their prevailing market prices delivered to medical institutions decline with the elapse of time after the revision of the reference drug prices. Based on the monthly data regarding the prevailing market price of Neu-up manufactured and sold by Kyowa Hakko, when multiple linear regression analysis was performed by using the prevailing market price of Neu-up as the dependent variable and a dummy variable indicating “before” or “after” the announcement of the business combination in question (“merger announcement dummy variable”) as one of the independent variables together with a secular change variable that represents a price declining tendency over time and a seasonal dummy variable, the merger announcement dummy variable showed a positive value with a significance level of 5% (the other values were significant at 1% level and the adjusted R square was 0.935). The result suggested that the decline in prevailing price of Kyowa Hakko product tended to show the sign of touching the bottom since the acquisition of shares in question had been announced.

The above analysis is thought to suggest that Kyowa Hakko has been leading the competition in the G-CSF market and it was determined that there was a concern that the capital alliance in question would suppress the tendency of decline in the prevailing price of G-CSF, leading to a hovering of the drug price by removing the competitive pressure from Neu-up.

As a result of analyses of the status of competition through interviews with doctors in addition to the above discussed economic analysis, the JFTC concluded in its review that the effect of the capital alliance in question may be substantially to restrain competition in a particular field of trade. The JFTC approved the capital alliance on the condition that appropriate remedies would be taken.

¹ See tentative translation at:
http://www.jftc.go.jp/epage/pressreleases/2009/June/090609_major_business_combinations_fy2008.pdf.

3.4 *Unilateral price effects based on diversion ratios, price/cost margins, Upward Pricing Pressure (UPP), simplified merger simulation such as illustrative price rises, or full-blown merger simulation*

Unilateral price effects of a business combination were analyzed in the following published case: in the case of the acquisition of shares of YAMAKI Co., Ltd. (hereinafter, "YAMAKI") by Ajinomoto Co., Inc. (hereinafter "Ajinomoto") in fiscal year 2006, the JFTC estimated cross price elasticity of demand between products of respective manufacturers to measure the degree of substitutability between the products of the parties. The products in question were household-use seasonings. Each manufacturer tries to differentiate its products by enhancing its brand names with active advertisement through TV commercials and by putting forward its product characteristics such as high qualities. The cross price elasticities of demand between respective manufacturers' products were estimated by using price/quantity data (scanner data) of respective products submitted by the parties. As a result thereof, it was estimated that the degree of the substitutability between the products of the parties and those of other manufacturers was higher than the degree of the substitutability between the products of the parties themselves.

As a result of the consideration of other factors in addition to the above analysis, the JFTC concluded that the results of the business combination in question may not be substantially to restrain competition in a particular field of trade.

Moreover, among the published reports or press releases, the above mentioned joint study titled "Differentiated Products and Economic Analysis of Mergers" implemented merger simulations.

The merger simulation was implemented, in the joint study, on the assumption of a hypothetical business combination, that is, the business combination between a company ranked at the 1st place and a company ranked at the 2nd place in the butter and margarine market. The demand function was estimated by using multiple models (Antitrust Logit model, AIDS model, and PCAIDS model) to compare the results of merger simulations. Merger simulation using ALM and PCAIDS models suggested that the effect of a price increase after the merger would be limited even if each company occupies a large share in the butter and margarine market. On the other hand, when demand estimation based on the AIDS model was used, merger simulation could not be run because the calculated marginal costs of branded products showed negative values or became larger than their prices under the hypothesis of Bertrand competition.

4. How to obtain the data

Materials used in economic analysis are mainly submitted by the concerned parties. Reviews of business combinations in Japan are frequently initiated by a prior consultation requested by the concerned parties in addition to the initiation of reviews upon notifications. In the course of prior consultations, the JFTC requests the concerned parties to provide necessary materials. In either case, the concerned parties are willing to cooperate with the requests by the JFTC, so that the JFTC can normally obtain necessary materials except for the cases where the companies in question are unable to collect the necessary data.

Moreover, when the case in question is made public, the JFTC sometimes requests related information/data from competitors, third parties, and so on.

While the JFTC is capable of issuing an order requiring the submission of reports to the concerned parties and the related parties pursuant to the Antimonopoly Act, which is assured by the imposition of a penalty on non-compliance to the order, when the prior consultation is requested by the parties before the notification, this order is not issued because the necessary materials have already been obtained through the cooperation of the concerned parties.

5. Interaction with the concerned parties' or interested groups' economists

In some cases, concerned parties or interested groups may ask economists for economic analysis. In such cases, they voluntarily submit the result of economic analysis as reference materials. Upon receipt of such materials, the JFTC requests explanations by the economists of the concerned parties or the interested groups so that the analysis can be scrutinized by the staff and the economists in charge of the case. The JFTC sometimes requests the concerned parties or the interested groups not only the submission of the data used for their analysis but also the process of the estimation in their analysis. In addition, the JFTC sometimes points out questions or problems regarding the analysis submitted by the concerned parties or the interested groups.

KOREA

1. Introduction

1.1 *Laws regarding economic evidence for merger review*

The Korea Fair Trade Commission conducts a merger review based on Monopoly Regulation and Fair Trade Act (hereinafter MRFTA), the general competition law of Korea, and Guidelines for M&A Review – the subordinate law of the MRFTA. The MRFTA bans anticompetitive mergers, although it is possible to approve a merger with potential anticompetitive effect in exceptional cases such as where efficiency increase resulting from the transaction outweighs its potential anticompetitive effect.

Guidelines for M&A Review sets forth detailed criteria for merger review. Under the Guidelines, a market is defined based on whether consumers can shift to other products in the case where the “small but significant and non-transitory increase in prices” (SSNIP)¹ is imposed. Anticompetitive effect of a horizontal merger is assessed comprehensively considering various factors such as market concentration, the likelihood of unilateral competitive effect and the possibility of coordinated interaction.

Rules on merger review adopt the concept of economic analysis such as the SSNIP test, which is used for defining a market, but do not set forth specific rules governing the use of econometric analysis such as critical loss analysis. The KFTC, however, has used econometric analysis for merger review, particularly for review of large-scale transactions. When legal analysis is considered not sufficient to bring an accurate judgment in defining a market or assessing anticompetitive effect of a proposed transaction, economic evidence is used to make logical grounds for its decision more compelling. Merging firms also submit economic evidence along with merger notification forms to demonstrate that their transaction would not raise any competitive concerns.

With economic evidence getting more and more important in the course of merger review, there emerged a need for regulation governing economic evidence. In response, the KFTC issued the Guidelines on Submission of Economic Analysis Evidence (hereinafter Economic Analysis Guidelines) in July 21, 2010. The Economic Analysis Guidelines set out detailed rules regarding basic requirements² of economic evidence, timing of its submission and so forth. Based on the Guidelines the KFTC is striving to ensure support from economic analysis on antitrust enforcement including merger review by encouraging timely submission of valid economic evidence.

1.2 *Heightened importance of economic evidence in merger review*

The importance of economic evidence in merger review was highlighted in the 2004 lawsuit on a merger case (Moohak-Daesun merger) where economic analysis was admitted as important evidence by the court in making its ruling. In the lawsuit, both the KFTC and merging firms submitted economic evidence. The issue in dispute at the time was the scope of geographic market. The court admitted the

¹ The concept of the SSNIP (small but significant and non-transitory increase in price) test.

² The requirements to propose appropriate hypothesis, use precise and objective data, choose reasonable methodology and ensure reliability in its result.

KFTC's evidence as it saw that its critical loss analysis faithfully examined monopoly profits possibly caused by a price increase.³

After this lawsuit, there were a growing number of attempts to present economic evidence during the merger review to show that the concerned transactions did not have potential anticompetitive effect. Large-scale transactions involving, for example, large retailers or duty free shops were usually notified to the KFTC with econometric analyses. The KFTC, too, hired independent experts to produce economic evidence, based on which it examined potential anticompetitive effect of proposed transactions.

With the steady increase in the use of economic evidence, the KFTC felt the need for a division specialized in analyzing economic evidence. In 2005, the KFTC set up Economic Analysis Team (changed into Economic Analysis Division later), which has been since carrying out economic analysis for merger along with other antitrust cases such as cartel, market dominance abuse handled by the KFTC. It also plays a leading role in providing education programs for the KFTC staffs to boost their economic expertise.

2. Participation of outside experts and efforts to strengthen economic analysis capacity

2.1 *The role of Economic Analysis Division and participation of outside experts*

The Economic Analysis Division does not consist of staffs with Ph.D degree on economics, but the majority of the staffs in the Division can serve as economic experts as they are selected through a special test requiring strong expertise in economics. They lead economic analysis in merger review which requires economic evidence. The Division performs economic analysis by itself, and sometimes invites economics professors or other outside economic experts to jointly conduct analysis.

In the KFTC, the analysis work for merger review is performed by two divisions: economic analysis is done exclusively by the Economic Analysis Division and legal analysis by the M&A Division.

When merging firms submit economic evidence during the merger review, the Economic Analysis Division first examines validity of the submitted evidence. If deemed necessary, it consults an advisory network of economics professors and independent economic experts on the evidence. This consultation procedure is usually done on a short-term basis for about a month, and the experts assess validity of the presented economic evidence during that time. The Economic Analysis Division exchanges opinions with the hired experts over the course of consultation, reviews their final report by comparing it with its own opinions and reflects the result in merger review.

In the case of a transaction with potentially significant economic impact, the Division commissions outside experts to perform relatively long-term research (usually lasting for 3 months). In the process, the Division sets a basic approach of the research with hired experts, provides them with necessary data and also gives feedback as done in the short-term consultation process. It also examines validity of economic evidence produced by outside experts and revises or/and supplements the evidence for the use in merger review.

The Economic Analysis Division participates in the decision-making process of the KFTC with the M&A Division in merger cases. The Economic Analysis Division discusses the approach of merger review with the M&A Division and presents its opinions during the Committee deliberation process so that the final decision remains consistent with economic evidence. Independent economic experts, however, cannot participate in the decision making, but instead can attend the Committee hearing of the KFTC to give explanation on economic evidence to Commissioners. When a merging firm brings a lawsuit appealing a

³ This will be explained further in "4. Use of Economic Evidence in Lawsuits".

KFTC's decision, outside experts, with the KFTC, can attend a court hearing and help the judge get better understanding on economic evidence.

2.2 KFTC's efforts to strengthen economic analysis capacity

With heightened importance of economic evidence in merger review, the KFTC has been making consistent efforts to boost economic expertise of its staffs.

As part of the efforts, the Economic Analysis Division has been holding the "Economic Analysis Workshop" for the KFTC staffs once or twice in every year since 2006. In the Workshop, which usually lasts for 1~2 days, experts (or staffs of the Economic Analysis Division) give an overview of economic analysis they performed in actual cases handled by the KFTC, or provide a lecture on industrial organizational theory including regression analysis. The topic of the 2006 Workshop, for example, was "regression analysis and economic analysis cases of advanced competition authorities". Since then, the workshops have been held annually providing insightful information on economic analysis theories such as critical loss analysis as well as major antitrust cases handled at home and abroad.

To further develop staff expertise, the KFTC also holds seminars. The seminars, conducted in 2008 and 2010 so far on "merger simulation" and "issuance of the Guidelines on Submission of Economic Analysis Evidence" respectively, helped increase understanding of the KFTC members on economic analysis theories and significance of economic analysis through lectures by outside economic experts.

In the meantime, all the economic evidence produced by or submitted to the KFTC has been accumulated in the database. The KFTC members can access the stored economic evidence whenever they need, and through this process specialized knowledge can be shared and spread across the organization. When economic evidence similar to the existing one is presented in merger notification, the KFTC refers to existing analysis data to review validity of the newly submitted evidence so that the decision-making process can be conducted in an expedited manner.

In addition, the Division issues periodicals "Economic Analysis Trend Report" analyzing major economic theories of home and abroad. The Report provides explanation on various economic theories such as "two-sided market"⁴, "natural experiment"⁵ or "merger simulation" in plain words introducing actual cases. This helps raise the understanding of the KFTC members on economic evidence and encourages its use in the course of handling cases.

3. Obtainment and utilization of economic evidence

3.1 Determining data necessary for economic analysis

Producing sophisticated and detailed economic analysis requires the process of deciding what kind of data is needed for analysis, and obtaining it from merging firms and their competitors as much as possible. The KFTC determines the scope of necessary data after reviewing "on what subject" and "through what kinds of techniques" it will conduct analysis.

⁴ A two-sided market is a market which has two distinct but complementary user groups. It connects the two user groups and enables a transaction between them.

⁵ Natural experiment predicts effects of a change in market structure by performing regression analysis on the relation of a change in market competition over time or difference in competitive situation across local markets with market performance including prices.

Economic evidence used in a recent merger case of duty free shops (2010, Lotte –AK duty free shops merger), for example, contained comparison of “correlation between merging firms” and “correlation between the acquiring firm and its competitor” which was based on examination on price indexes⁶ of major duty free shops. For this, the KFTC and outside experts participating in the research had to determine what price data they needed-more specifically, price data of “what products” sold by “which duty free shops” for “how long”.

In that case, first, the KFTC decided to use price data of competitors as well as merging firms to analyze the relation between merging firms and their rival companies. It also believed that the data needed to include the latest price information so that the economic evidence could be a proper reflection of the recent economic state. Accordingly, it obtained price data of 32 goods from 4 duty free shops⁷ including merging parties - Lotte and AK - and their rival Shilla, which tracked price changes between August 2007 and December 2009.

Outside experts performed regression analysis on the obtained data and the Economic Analysis Division provided feedback. Lastly, the Division finalized and organized the analysis results submitted by the experts for the use in the merger review.

3.2 *Obtaining data for economic analysis*

The KFTC Guidelines for M&A Notification stipulates that the merging firms shall state their business status, market situation such as total domestic demand and supply and financial condition in a notification form. When merging parties submit economic evidence during the review process, the KFTC requests specific data used for the production of the evidence to be presented to secure reliability of the evidence.

When the KFTC needs data in addition to the one already presented by merging firms for economic analysis, it can make a request to merging parties, their competitors, buyers, business associations and other interested parties the necessary data. Most of the interested parties voluntarily provide data for the KFTC as confidentiality of companies’ trade secrets is protected under Article 62 of the MRFTA which prescribes that business secrets obtained by the KFTC in the course of performing the duty shall not be revealed. For a merger involving foreign companies, however, it takes an extensive time to request documents from the merging parties as the request is made first to their Korean legal representatives, who then sends the request to overseas representatives of the companies. Also for a merger of Korean companies, when the KFTC finds it hard to obtain necessary data, or the case is of great importance, the KFTC conducts an on-site investigation to get the needed data.

3.3 *Utilizing economic evidence: market definition*

When it comes to merger review, market definition forms fundamental grounds for determining anticompetitive effect of a transaction. Generally, a market is defined based on such factors as characteristics of products and the likelihood of consumers shifting to other products in case of price increase. However, when it is found difficult to come up with a clear-cut market definition, the KFTC turns to economic evidence. The most frequently used for market definition are “critical loss analysis” and “Elzinga-Hogarty test (E-H test)”.

⁶ Price index is an average price change by time calculated by giving weighting to several factors such as the amount of goods.

⁷ Price data was obtained from 4 duty free shops in total-2 Lotte, 1 AK and 1 Shilla shops.

The most high-profile case where critical loss analysis was applied is a Korean brewery company Hite's acquisition of Jinro, a Korean producer of soju, Korea's traditional distilled liquor (Hite-Jinro merger, 2006). One of the major issues here was defining a product market, and an important question was whether the beer and soju markets could be included in the same product market. In this case, sophisticated market definition was especially important, because if the two markets were defined to belong to the same market, the merged firm would have high market share, which in turn could cause severe anticompetitive effect.

The KFTC carried out critical loss analysis⁸ for the soju and beer markets separately. For the analysis, it estimated actual loss by conducting a consumer survey. It calculated critical loss of the soju market based on profit margins of Jinro as it was the major soju producer. For the critical loss of beer market, it used profit margins of Hite and its competitors and calculated a weighted average of those numbers. The critical loss analysis using the 5~10% price increase showed that critical loss was greater than the actual loss, so the soju market and beer market, respectively, did not need to be expanded. A competing beer company also submitted economic evidence produced through critical loss analysis similar to the KFTC's, according to which soju and beer were defined to be in the same market. The KFTC, however, saw that the evidence submitted by the competing company was not reliable in that samples were not representative enough and profit margins were overestimated.⁹ For these reasons, the KFTC defined the soju and beer markets to be separate markets and, based on this, examined potential anticompetitive effect of the transaction.

The next is a case using the Elzinga-Hogarty Test¹⁰- merger between Moohak and Daesun, Korean soju producers which led the markets in Busan and Gyungnam province, respectively. The important issue in this case was whether the geographic market of the companies was a national market, or Busan and Gyungnam province. That was because the combined market share of those companies was a mere 17% nationally, but more than 80% in Busan and Gyungnam province, respectively. KFTC's economic analysis suggested that the amount of soju flowed in from outside (1-LIFO) and flowed out to other region (1-LOFI) both were only about 15% in Busan and Gyungnam region respectively. Based on this, the KFTC determined the geographic market of the merging firms were Busan and Gyungnam area.

3.4 *Utilizing economic evidence: assessing anticompetitive effect*

The KFTC applies various econometric analysis techniques for determining potential anticompetitiveness of a merger transaction. To assess unilateral competitive effects of a transaction, it performs regression analysis, merger simulation, diversion ratio analysis, etc.

Regression analysis is a technique which analyzes how a change in one variable (independent variable) influences other variables (dependent variable) such as how price changes influence the product's

⁸ Critical loss analysis, an econometric methodology designed to apply the SSNIP test to an actual case, compares critical loss and actual loss in the case of a price increase by x%. Critical loss is the maximum sales reduction that would not decrease profits of a hypothetical monopolist when it increases prices by x% while actual loss is an expected sales reduction caused by the price raise. If actual loss exceeds critical loss, the relevant market will be expanded to include other substitutes.

⁹ An overestimated profit margin facilitates expansion of a product market by reducing critical loss.

¹⁰ E-H test aims to define a geographic market by using statistics on a product's inflow and outflow, i.e. the product's shipping quantity. In the test, LIFO (Little In From Outside-how much consumption in a certain region is dependent on production within the region) and LOFI (Little Out From Inside-how much production in a certain region is dependent on consumption within the region) are estimated to calculate the inflow and outflow of a product. If both LIFO and LOFI exceed 75% in a region, the region is defined as a relevant market.

demand. One of the cases where the KFTC performed regression analysis is a merger between system operators in the cable TV industry (HCN's acquisition of Daegu Cable TV). The merging firms were cable TV system operators which held a duopoly in Guri, Namyangju and Hanam cities in Gyeonggi-do, Korea. If the transaction was approved, the concerned market would turn into a monopoly market, which raised the need for the KFTC to find out whether there are anticompetitive effects resulting from a duopoly market changing into a monopoly one. To examine this monopoly effect, regression analysis was used to identify likely price increases caused by the creation of a monopoly market.

In the analysis, a dependent variable was "price of bundled cable TV channels service", and independent variable was "whether the regional market is monopolized or not". The KFTC consulted the Report on Operation of Cable TV Service released by the Korea Communications Commission to seek data for the analysis. Its analysis found that the price of bundled service was higher by 15.7% in a monopoly market than in a competitive market, and the price of bundled service by channels higher by 17.2%. Based on the research, the Economic Analysis Division concluded that the transaction would cause considerable price hikes.

Merger simulation is another method to quantify potential price increases of a horizontal merger. Under the merger simulation, the price hike effect is measured based on marginal cost calculated from profit maximization equation after estimating demand function using pre-merger price and output data. The KFTC recently used merger simulation to prove potential anticompetitive effect of a proposed joint venture of BHPB and Rio Tinto.¹¹ The two companies, which are among the top three iron ore (lumps and fines) producers of the world, filed a notification to the KFTC on their plan to establish a joint venture. The KFTC determined that the proposed joint venture essentially was a merger transaction, and assessed its potential anticompetitive effect by using merger simulation.

To run a simulation, the KFTC utilized the 'Cournot competition with competitive fringe firms' model.¹² It estimated supply and demand function and predicted price changes caused if a market was dominated by the top two companies instead of the previous top three. The simulation showed that the proposed joint venture would result in an attempt to raise prices of iron ore lumps by 17% ~ 83%, depending on supply elasticity of fringe firms. Based on this analysis, the Economic Analysis Division decided that the proposed transaction could cause severe anticompetitive effect.

Lastly, diversion ratio can be used to analyze potential anticompetitive effect of a merger. Diversion ratio is, in the case of a price hike in Product A, the share of consumers who would give up buying product A and shift into Product B. It is a measurement of competitive level of products. When companies with high diversion ratio merge with each other, it could raise the likelihood of price hikes, which in turn causes higher potential anticompetitive effect.

Diversion ratio analysis was used in a merger between large retailers (HomePlus – Homever merger, 2008). In this case, diversion ratio was measured through a consumer survey. The KFTC determined that a transaction could be deemed highly anticompetitive when merging retailers had the highest diversion ratio and the ratio was 33.3% or higher. The 33.3% diversion ratio was derived from the 50% market share

¹¹ BHPB and Rio Tinto intended to establish a 50-50 joint venture that would combine production facilities including iron ore mines, railways and ports in Western Australia's Pilbara region.

¹² Cournot Competition is an economic model used to describe an industrial structure where a few large companies compete with a great number of small-sized companies on the amount of output they produce for a homogeneous product. Iron ore is basically subject to price competition, but, when production facility is limited, price competition can be considered the same as quantity competition.

criterion used in estimating anti-competitiveness by law (the CK₁ 50% standard)¹³. From the analysis, the KFTC found that some retailers had especially high diversion ratio and a merger between those retailers would raise severe competitive concerns.

4. Use of economic evidence in lawsuits

In the case where a merging firm is dissatisfied with the KFTC's decision on its proposed transaction, it can appeal the decision by filing a lawsuit to the High Court (serving as appellate court)¹⁴. Of the lawsuits brought by merging firms against the KFTC, the ruling on Moohak-Deasun merger clearly shows the court's active stance on economic evidence. This is a case in which Moohak, a dominant soju producer of the Gyeongnam area, acquired a 41% stake in Daesun, a dominant soju producer in Busan area.¹⁵ At that time, the court accepted critical loss analysis submitted by the KFTC as major evidence, which provided significant grounds for the court's ruling.

In that case, both the plaintiff -merging firms- and the KFTC presented economic analysis. The plaintiff's analysis calculated its own price elasticity of demand by using actual soju sales data. It also examined cross elasticity between the merging parties as well as between the acquiring firm and its rival company. The analysis found that a 1% increase in soju prices of the acquirer (Moohak) would reduce the demand of Moohak soju by 2.13% while raising the demand for the acquired firm (Daesun)'s soju by 2.86% and rival company (Jinro)¹⁶'s by 3.39%. Based on this analysis the plaintiff argued that Jinro, who conducts business around the nation, served as a closer substitute for Moohak than Daesun, which was sold mainly in Busan near to the Gyeongnam area, because more consumers would potentially shift to Jinro, rather than Daesun, in the case of a price rise of Moohak. Therefore, the relevant geographic market in this case, they argued, should be defined as a national market reflecting Jinro's business area.

The KFTC refuted the plaintiff's claims with critical loss analysis. For the analysis, it derived actual loss from a consumer survey which asked respondents whether they would shift to other products if there was a 5~30% price increase in one product, and critical sales loss was measured by using profit margins calculated based on business reports of the plaintiff and rival companies. From the analysis the KFTC concluded that the geographic market should be defined as Busan and Gyeongnam province respectively since actual loss would be less than critical loss where a hypothetical monopolist raised prices by 10~30% in those areas.¹⁷

The court concluded that the KFTC's economic analysis was more valid than the plaintiff's indicating details of the analyses in its written judgment. It held that the plaintiffs' analysis lacked validity as evidence of the geographic market definition, because it did not include examination on whether substitutes and price elasticity were strong enough to prevent a monopolist from profitably imposing a "small but significant and non-transitory" increase. On the contrary, the court viewed the KFTC's critical loss analysis systematically applied the SSNIP test, originally used for defining a geographic market, to

¹³ Diversion ratio = market share of Company A / (1 - market share of Company B). When it is assumed that the companies each represent 25% of the market, diversion ratio is calculated at 1/3, i.e. about 33%. If the diversion ratio between the concerned retailers is the highest, it means that the likelihood of price hike is higher than in the case of merging with other competitive retailers.

¹⁴ Plenary session of the KFTC serves as the first instance.

¹⁵ Gyeongnam is a province around Busan area.

¹⁶ As opposed to Moohak and Daesun, which dominated the Gyeongnam area and Busan respectively, Jinro is the biggest soju producer in Korea which represented 50% of the national soju market.

¹⁷ When a 5% price increase was applied, the analysis showed the need to expand the product market. But given that consumer loyalty is strong for soju, the KFTC decided to use a 10~30% price increase.

examine the likelihood of buyers shifting purchase. It also stated that the KFTC's analysis demonstrated whether an attempt by the plaintiff to increase prices would result in the decrease in profits-i.e. whether it would be possible for the plaintiff to exercise its monopoly power.

The plaintiff argued that the KFTC's economic analysis could not constitute evidence for the geographic market definition as it was not included in its Examination Report and submitted only in the middle of the lawsuit. The court, however, rejected the plaintiff's argument by saying that as the analysis was based on factual evidence that formed grounds of the KFTC's remedial measures, there was no reason for the court to not admit the evidence even though it was not presented in the course of the KFTC proceedings.

This ruling stressed the importance of economic evidence, and showed only economic evidence of high validity can be admitted in the court. This can be seen as the court's strong commitment to the use of economic evidence in a lawsuit.

MEXICO

1. Legal framework for the analysis of concentrations

The Federal Law of Economic Competition (FLEC) defines concentrations as the merger, acquisition of control, or any other action whereby an economic agent acquires assets, stock holding, equity interests, trusts, or assets in general from other economic agent (article 16, FLEC).¹

The Commission is empowered to challenge and impose sanctions on any concentration which aim or effect is to reduce, lessen or prevent competition and free market access of products and services that are equal, similar or substantially related.

Article 17 of the FLEC states that the Federal Competition Commission may consider as indicia for challenging a concentration: i) that the transaction grants or may grant to the merging parties unilateral power to set prices or restraint supply in the relevant market and competitors are unable to counteract this power; ii) that the transaction has the purpose of unduly displace competitors or impede entry to the relevant market; and iii) that the new agent gets or strengthens its power to participate in monopolistic practices as referred to in Chapter II of FLEC, namely, absolute (article 9) or relative (article 10) practices.²

¹ The full text of the FLEC can be consulted at: <http://www.cfc.gob.mx>.

² Articles 9 and 10 indicate:

Article 9.- Absolute monopolistic practices are contracts, agreements, arrangements, or combinations among competitors, which aim or effect is any of the following:

I. To fix, raise, to agree upon or manipulate the purchase or sale price of the goods or services supplied or demanded in the markets, or to exchange information with the same aim or effect;

II. To set the obligation to produce, process, distribute, market or acquire only a restricted or limited amount of goods, or to supply a restricted or limited volume or frequency of services.

III. To divide, distribute, assign or impose portions or segments of the current or potential market of goods and services, by means of a determinable group of customers, suppliers, time or spaces; or

IV. To set, agree upon or co-ordinate bids or to abstain from bids, tenders, public auctions or bidding.

Article 10.- Subject to verification of articles 11, 12 and 13 of this Law, relative monopolistic practices are deemed to be those acts, contracts, agreements, procedures or combinations, which aim or effect is to improperly displace other agents from the market; substantially restraint access or establish exclusive advantages in favor of one or several entities or individuals, in the following cases:

I. To set, impose or establish among economic agents that are not competitors, the exclusive sell or distribution of goods or services, geographical location, or specific periods of time, including the division, distribution or assignment of customers or suppliers; and also the obligation to not manufacture or distribute goods or services for a specific period of time;

II. To set the prices or other conditions that a distributor or supplier has to abide by when marketing or distributing goods or providing services;

III. The conditioned sale or transaction when buying, acquiring, marketing or providing other goods or additional services, normally different or that can be differentiated, or on the basis of reciprocity;

In addition, article 18 of the FLEC defines the elements that are necessary to analyze in order to decide whether the concentration will be challenged or sanctioned. More specifically the article in question established that once the relevant market has been defined - following a procedure that is defined in the FLEC and its Code of Regulations- the authority has to identify the economic agents that participate in the market, define their market shares, analyze their power in the market and estimate the level of concentration. To do so, the Commission uses the Herfindahl-Hirschman Index (HHI), and the Dominance Index (DI). The use of concentration indexes is regulated by a ruling issued by the Commission's Plenum in 1998.³

Article 18 considers the examination of the effects of the concentration on other related market, and the efficiency arguments presented by the parties that are involved in the transaction.

In the evaluation of efficiencies, article 16 of the Code of Regulations considers that a concentration can improve efficiency in the market and can have a positive impact in the process of competition and free market access if the parties show that there are permanent benefits for consumers that exceed the anti-competitive effects of the concentration. The kinds of efficiencies that could be accepted in an efficiency defense are related mainly with permanent cost reductions, technology transferences and improvements to infrastructure and distribution networks.

In addition to article 18, the ruling that defines the methodology to estimate concentration indexes stipulates that even in the case where the indexes are below the risk thresholds, the Commission may conclude that a transaction could reduce, damage or impede competition and free market access, when: i) the involved parties have participated in previous transactions in the same relevant market; ii) the parties are related with another agent and from this relationship the parties can obtain a privileged access to an essential input or advantages in distribution, marketing or advertising in the relevant market; iii) the parties can obtain market power in related markets; or iv) any other element that could represent or lead the parties to obtain market power that is not reflected in the market shares before the transaction occurs.

IV. The sale or transaction subject to the condition of not using or acquiring, marketing or providing goods or services produced, processed, distributed or sold by a third party;

V. The unilateral action based on refusing to sell or provide to specific individuals, goods or services available and normally offered to third parties;

VI. The agreement reached among several economic agents or the invitation extended to them to exert pressure against any economic agent, in order to discourage him from a specific behavior, to apply retaliations or force him to act in a specific manner;

VII. The systematic sell of goods or services at prices below their total average cost or their occasional sell at prices below their variable average cost, when there are elements to presume that the loss will be recuperated by future price increases, in terms of the Code of Regulations of this Law;

VIII. To give discounts or incentives by producers or suppliers to the buyers with the obligation not to use, acquire, sell, market or provide the produced goods or services processed, distributed or marketed by a third party, or the purchase or transaction subject to the obligation not to sell, market or provide to a third party the goods or services that are the object of the sell or transaction;

IX. The use of the profits that an economic agent can obtain from selling, marketing or providing a good or service to finance the loss that could result from selling, marketing or providing another good or service;

X. To set different prices or conditions to sell or buy to different buyers or sellers which are situated in similar conditions; and

XI. The action of one or several economic agents which aim or effect is, directly or indirectly, to increase the costs or hinder the production process or reduce the demand the competitors face. (...)

³ The ruling is called "Resolución por la que se da a conocer el método para el cálculo de los índices para determinar el grado de concentración que exista en el mercado relevante y los criterios para su aplicación" and was published in the Official Gazette (Diario Oficial de la Federación) on July 24th, 1998.

2. Use of the hypothetical monopolist test to define relevant markets, including critical loss analysis

For the Commission, market definition is not an end in itself, but a tool for assessing competition effects of mergers. In this regard, the Commission does not seek complete relevant market definitions, and in most cases, it evaluates two or more candidate markets.

To determine the relevant market, the law considers:

I. The possibilities of substitution of the relevant goods or services by domestic and foreign sources, considering technological possibilities, the extent to which consumers have substitutes and the time required for such substitution.

II. Distribution costs of the good, of relevant inputs, their complements and substitutes from other regions and abroad, taking into account freight, insurance, tariffs and restrictions, restrictions imposed by economic agents or their associations and the time required to supply the market from these regions.

III. The costs and the probability of users or consumers accessing to other markets.

IV. Federal, local or international regulatory constraints that could restrict access of consumers to alternative sources of supply.

To define an economic agent as a competitor, i.e. part of the same relevant market, three general conditions are required:

First, that the goods or services offered satisfy similar needs from the demand point of view, under conditions of comparable quality and price. Second, that the supply of this economic agent is available to consumers located in a certain place or location, and the buyers do not need to incur in significant additional costs because of the distance. Third, that the economic agent supply the same relevant market more or less simultaneously.

The definition of relevant markets has three dimensions:

- Product dimension, which is determined by a list of names, and if necessary, specifications of the goods or services, that are candidates to be included in the relevant market.
- The geographic scope, which specifies the locations within which goods or services are considered as alternatives for consumers.
- The temporal dimension, which refers to the period in which the supply of a good or service must be available to be included in a relevant market.

The key factor to determine the three dimensions is the possibility of substitution. If consumers do not demand a product to replace another whose price has increased, then the behavior in terms of pricing of the first producer is not limited by the presence of another producer, that is, they are not competitors, and therefore, they participate in different markets. The same criterion applies to the other two dimensions.

For the analysis of mergers, the Commission uses as the main tool to define the relevant market, the methodology determined in the model of the hypothetical monopolist. This model is convenient because it allows defining relevant markets with reference only to structures of perfect competition and monopoly,

which are the only models that according to industrial organization theory produce a single outcome without the need of assumptions about the behavior of agents in situations of strategic interaction.

In this context, a relevant market must be one in which it is possible that the merger, taken to the extreme of a monopoly, would produce results contrary to competition. In this circumstance, the hypothetical monopolist would be able to charge for its benefit a price substantially greater perfect competition (the other extreme case). If the hypothetical monopolist cannot raise prices because it would lose a substantial portion of its market, because its customers would buy from other vendors, it would appear that these other vendors are competitors, that is, they would be in the same relevant market.

According to the experience of the Commission, in most cases the use of the hypothetical monopolist test and sometimes critical loss analysis, together with indicia about the organization and conduct of market participants, their customers and suppliers, are sufficient to define the relevant market.

3. Measurement of pre- and post-merger market concentration

Market shares are one element to determine the existence of power in a relevant market. Market shares can be calculated taking into account sales indicators, number of customers, production capacity or any other factor that may serve, in each case, to assess the importance of supply (or demand) of each competitor in the total supply (or demand) in the relevant market. To determine market shares, the Commission considers mainly the monetary value of sales (or purchases).

The preference for sales to establish market shares is based on several considerations. Sales is a concept that can be observed without ambiguities, while production capacity is usually an estimate, which normally does not consider the cost at which maximum capacity can be achieved. In addition, a competitor may have a large production capacity but lack of adequate distribution channels or recognized brands to increase its presence in the market. Actual sales are a result of all the factors that determine the real competitiveness of each competitor. In relation to the number of customers, the data itself does not distinguish the importance of each, on the value of their purchases. In contrast, shares in sales are equivalent to the percentage of customers, but weighted by the purchases of each of them.

Market shares are used for the calculation of concentration indexes, which, as previously noted, are estimated according to a 1998 Plenum ruling. The Commission uses the HHI and dominance indexes. The latter has the characteristic that it diminishes when the merging parties are minor competitors in the market so that presumably competition is enhanced by a “new stronger” agent.

An increase in the ID does not imply the achievement of dominant position by the merging parties; in any case, the level and its change are taken as a presumption of the ability of the “new” agent to achieve or strengthen market power.

The concentration indexes only use market share information and are considered, at most, auxiliary elements for the analysis of market power. To determine whether an economic agent has market power or could obtain market power as a result of a merger or acquisition, the Commission takes into consideration, among other elements, barriers to entry, the power and presence of competitors, access to inputs, the recent behavior of the parties involved in the transaction, access to imports, the capacity to fix prices unilaterally without the competitors being able to actually or potentially counteract that capacity and, the cost for the consumers to access other suppliers.

In calculating the indexes resulting from the merger, the Commission assumes that the economic agents not included in the transaction maintain their market shares before the operation, although the operation could lead the parties to produce less than what they produced separately before the merger. The indexes thresholds in the Plenum’s ruling are explicitly designed to be applied under this assumption.

4. Cross-sectional and time-series studies relating concentration to price or price/cost margins or showing the effects of entry, exit or merger on price

There are few records of such studies. The Commission seeks to analyze the relationship between concentration and price / margins but seldom use econometric tools for that.

5. Unilateral price effects based on diversion rates, margins, upward pricing pressure, simplified merger simulation such as illustrative price rises, or full-blown merger simulation

Diversion rates have been used in some investigations, yet there is little experience in applying simulation models.

6. Unilateral output effects based on residual demand analysis

There are no records of this kind of analysis.

7. Integration of anti-competitive effects with merger efficiencies

The analysis is performed continuously, but without using econometric tools. The FLEC states that parties are responsible for presenting evidence of efficiencies.

8. Coordinated effects based on models of repeated oligopolistic interaction

In cases in which there are conditions that normally can lead to coordinated behavior, the Commission analyzes the likeliness of this behavior in the light of models of repeated oligopolistic interaction. The FLEC explicitly considers coordinated effects, as evidence that a merger must be challenged.

9. Collection and processing of data (collect, process, present, and respond to economic evidence)

The FLEC specifies the general information to be submitted when filing a merger. In addition the Commission can request additional information, taking into account the complexity of the case and industry characteristics. Moreover, the Commission often searches in public and official sources and interacts with competitors and consumers who normally provide useful information on how the market operates and is organized.

10. Horizontal mergers: Use of upward pricing pressure as alternative to merger simulation (requires less information but doesn't provide estimation of price increase)

There are no records of this kind of discussion.

11. Vertical mergers: Vertical arithmetic (input or consumer foreclosure incentives)

This situation has been discussed in several cases but only in a few it has led to condition or challenge a merger.

12. General questions

12.1 How are economists integrated into the decision making process (e.g. part of a case team, separate unit)? Do they participate in every merger case?

The area in charge of merger analysis is composed of economists, who are responsible for conducting all procedures. In complex cases, the group is assisted by the Commission's Economic Research Department and the Directorate of Legal Affairs who are responsible for reviewing the technical and legal consistency of the analysis.

12.2 What steps have been undertaken over the years to improve an agency's economic expertise in merger control? Are outside economists used, and if so, in what circumstances?

One of the measures the Commission has undertaken to improve the agency's economic expertise in merger control involved minimizing the burden of the analysis in situations where it is evident that the transaction does not affect markets. As a result the Commission has increased the resources dedicated to cases of greater importance. In these cases the staff often conducts in depth literature reviews and has more interaction with customers and competitors. In addition, quantitative analysis techniques are used more frequently and in the last few years the agency organised quantitative techniques courses taught by experts from other competition agencies. These courses have been combined with internal workshops and seminars.

12.3 What type of quantitative evidence do you typically use in merger cases? What is the role of econometric analysis in your merger practice? Can you describe examples where your agency has relied on data analysis and quantitative evidence to support a theory of harm?

During its early years, the Commission hardly used econometric analysis. Currently, however, such methods are mainly used for determining the relevant market in complex cases. In particular, during the last two years the Commission used time series techniques in several cases to determine the existence of cointegration in price series, as evidence to determine substitution.

Although the use of econometric techniques is still limited, the Commission is relatively familiar with the analysis of statistical information such as: price series, sales, imports, transportation costs, market shares, inputs price series, consumer databases, information about financial returns, costs, brand recognition and loyalty surveys, elasticities, diversion rates, etc.

12.4 What type of quantitative evidence you rely upon when evaluating potential unilateral effects in horizontal merger cases involving differentiated products? Have you quantified diversion between the products sold by the merging firms, e.g. using the merging parties win/loss reports? Have you employed a range of economic tools building on diversion ratios, such as the Gross Upward Pricing Pressure Index (GUPPI), the Illustrative Price Rise (IPR), or more sophisticated forms of merger simulation? Have you applied any of these methodologies in investigations?

In recent years, the Commission has made use of methodologies based on diversion rates and profitability ratios to analyze cases related with movie theatres, education, and tissue paper among others. However, merger simulation techniques are not part of the analysis.

12.5 *What is your experience in obtaining data to carry out quantitative analysis, from the parties or from third parties? How do you determine what data to request to conduct your analysis? What difficulties have you faced obtaining data from the merging parties or third parties?*

The data requested depends on the transaction under review, the degree of complexity of analysis and the lessons offered by the experience of other competition authorities in other jurisdictions. Overall, most of the quantitative information can be obtained from the parties, competitors or official sources.

In general terms, companies (parties and third parties) provide the requested information. If the merging parties do not provide the requested information, the Commission can close the file. Third parties can be penalized if they do not provide information. Mergers approved based on false information provided by the parties may be reversed.

12.6 *Is your experience using quantitative methods in merger cases reflected in documents describing your best practices or in other guideline documents? If not, are you planning to issue guidance in the near future?*

There are no documents that reflect the experience of the Commission in the use of quantitative methods. The Commission has a guideline that describes the information the parties have to present and the information that could be requested depending on the nature and complexity of the case. Currently the Commission works to develop a procedural guideline and it is expected that the agency will publish a paper on relevant market definition and assessment of market power which will serve as a conceptual reference.

12.7 *What is the degree of interaction with the parties' economists and at what stage in the process does it take place, e.g. regarding potential theories of harm or the type of economic analysis to conduct, and to ensure the efficient gathering of evidence?*

The Commission is open to discuss the cases with representatives and economists of the merging parties, even before the formal submission of the notification. In such discussions, it is possible to discuss the agent's theories of harm as well as their efficiency arguments.

12.8 *How have courts assessed the agencies' use of quantitative evidence when parties appealed merger review decisions by an agency?*

Courts have reviewed a few cases of mergers challenged by the Commission. The reviews have focused on procedural issues. There are no cases in which econometric evidence has been reviewed in courts, notably because the parties have decided not to challenge the Commission's decisions based on this type of evidence.

NETHERLANDS

1. Introduction

In this paper, the Netherlands Competition Authority (NMa) sets out how it has successfully used conjoint analysis for revealing buyers' preferences in several merger cases. We introduce conjoint analysis, which has its origins in market research, and briefly illustrate how it has proved useful in four merger investigations, conducted by the Authority. We share the lessons learned and also suggestions for further usage of the conjoint analysis technique by competition authorities.

The goal of competition authorities using competition economics is usually to assess whether a particular action by firms under investigation results in higher prices being paid by customers due to reduced competition. This particular action may be a proposed merger or cartel agreement. Both types of investigations require a careful assessment of the market power of these firms. Market power is defined as the ability of firms to increase prices profitably above the competitive price for a sustained period (Bishop & Walker, 2010).

In the past years some economists have advocated the use of direct evidence in merger investigations. The indirect approach using market shares can perform poorly in markets for differentiated products, where market boundaries are unclear and the proximity of the products sold by the merging firms is a key determinant of the merger's effect on competition (Farrell & Shapiro, 2008). Customer demand responses are a key factor in determining the degree of market power. Consumer demand functions can be used to estimate the effect of a hypothetical raise in price or other competition parameters by the merging parties on their future profits using critical loss analysis (Katz & Shapiro, 2003).

Evidence on consumer demand functions can be gained from analyzing actual transactions in the relevant market or by asking hypothetical questions in consumer surveys. As actual data is often limited (few data and/or endogeneity problems), causal relationships between price variation and consumer responses are difficult to identify. Traditional surveys often rely on stated preferences of the buyers of a product (for example, which products would you buy if the price of product A rose by 5 percent?). These direct hypothetical questions are, however, very different to the actual purchase decisions consumers make in the real world. Responding to hypothetical questions is harder, which raises the possibility that buyers might answer hypothetical questions differently from how they would act in practice (Dubow, 2003). McFadden (2001) lists the sources of survey bias which have been noted by psychologists. These biases include those caused by the way the survey questions are asked (framing effects), and those caused by interviewees' strategic interests in a particular survey-outcome. The solution of psychologists to these problems, is to ensure that the decision made by respondents when answering a survey question is as close as possible to the decision made when actually purchasing a good. In market research, a technique called conjoint analysis has been developed to assist marketing decisions, such as deciding whether to match a competitor's price increase for pricing new brands, and for setting new prices among bundles of existing brands.

Conjoint analysis is most widely employed, both by private and public sector organisations, as a market research tool for strategy planning. It covers a broad range of techniques and has been defined as: *any decompositional method that estimates the structure of a consumer's preferences ... given his/her*

overall evaluations of a set of alternatives that are prespecified in terms of levels of different attributes (Green & Srinivasan, 1978).

In a conjoint analysis, the relevant product can be decomposed into its constituent attributes which include qualitative attributes (such as brand, functionality, reliability, colour, shape, etc.) as well as price. When consumers make a choice between different goods, they are weighing up the relative value of the different levels of the different attributes offered by the rival goods. Conjoint analysis seeks to determine how consumers value these different attributes in order to predict how they will make choices in reality. Conjoint analysis can provide empirical answers for situations in which alternative survey methods would fail, because of a lack of data. With a successful conjoint analysis, it is possible to estimate the underlying consumer demand functions, with reasonable accuracy. (For a detailed description of conjoint analysis, and technical papers on how it works, see <http://www.sawtoothsoftware.com/>).

Several authors have referred to conjoint analysis as a potentially powerful tool in competition cases (Baker & Rubinfeld, 1999; Hildebrand, 2006; Rubinfeld, 2008; Hurley, 2010). However, actual usage of this technique by competition authorities seems to be limited. This may, in part, be due to a perception that conjoint analysis is complex and time-consuming. Some competition authorities may be unaware of the merits of this technique.

The NMa has used this technique in four merger cases. In the remainder of this paper, we will first briefly illustrate three of the four merger cases, explaining why and how conjoint analysis was used. In the subsequent section, the fourth case, a recent merger between producers of artificial fertilizer, will be discussed in more depth. This paper ends with some lessons learned, and also suggestions for useful future usage of conjoint analyses by competition authorities.

2. Experience of the NMa

In the following three merger cases, the NMa used conjoint analyses in its merger investigations. In these cases the NMa had to undertake considerable data-gathering via questionnaires in order to conduct second phase investigations, and this provided the opportunity to conduct conjoint analyses.

2.1 Case No.: 3897/Ziekenhuis Hilversum - Ziekenhuis Gooi-Noord (NMa, 2005)

Ziekenhuis Hilversum and Ziekenhuis Gooi-Noord are both general hospitals, providing clinical and non-clinical care, in the Gooi region. In its first phase merger decision in 2005, the NMa concluded that both hospitals had a very strong position in the Gooi region. In order to assess whether hospitals in the immediate environment could exercise an adequate disciplining effect on the parties' behaviour, it was necessary to conduct research on patients' willingness to travel for care. In the second phase the NMa used several techniques, to determine the extent to which patients, due to a certain change in the services offered, would not be willing to visit the parties' hospitals, but would rather travel to a different hospital. One of these techniques was a conjoint analysis, to establish what patients' responses would be to a hypothetical deterioration in the quality of the healthcare provided. The hypothetical hospitals were described on the basis of the following five attributes: (i) travelling time (in minutes), (ii) waiting lists (in weeks), (iii) reputation of the specialist (reputation/no reputation), (iv) choice of hospital of the general practitioner (advice given on choice of hospital/no advice given on choice of hospital) and (v) attention given to the patient (attention/no attention). It appears from the analysis that the respondents rated travelling time fairly low compared to quality indicators such as the reputation of the hospital. Other factors arose in the NMa's investigation, indicating that it was plausible that several hospitals exercised competitive pressure on Ziekenhuis Hilversum and Ziekenhuis Gooi-Noord. In June 2005, this concentration was unconditionally cleared.

2.2 *Case No.: 5901/Bloemenveiling Aalsmeer – FloraHolland (NMa, 2007)*

In 2007, the two largest flower auctions in the Netherlands (and also worldwide) wanted to merge. FloraHolland and Bloemenveiling Aalsmeer offer growers and buyers a marketplace on which to trade ornamental horticultural products. To facilitate these sales, the auctions also offer services, for instance, in the areas of logistics, financial services, information and quality control. In the second phase, the NMA carried out extensive and far-reaching research to ascertain, in particular, whether sales through alternative channels were a substitute for the sale of ornamental horticultural products through the auctions. This research included both qualitative and quantitative research. In the quantitative research, growers and buyers were asked for their stated preferences, as well as revealed preferences using a conjoint analysis. Flower auctions can be described as two-sided markets where price and supply from flower growers (sellers) is dependent on the demand of buyers and vice versa, so a separate conjoint study was performed for each side of the market. The options for the sellers were described on the basis of the following five attributes: sales channel (Bloemenveiling Aalsmeer/FloraHolland/direct sales/other Dutch auctions/internet auction/ auctions outside of the Netherlands), method of transaction (clock/basic package/ brokering), transaction costs (% of price), certainty of payment (certainty/uncertainty) and average price of product. The aspect “method of transaction” was only shown if the “sales channel” involved “auctions”. For the buyers, other aspects proved to be relevant, so in the conjoint studies these were used with the same attributes as above: procurement channel, method of transaction, total procurement costs, certainty of quality and average price of product

Almost 2000 growers and more than 700 buyers participated in the quantitative market research. The outcomes of the research showed that the parties would not be able to behave independently in respect of growers, buyers and competitors after the proposed merger. This meant that the parties could not allow the parameters of competition to deteriorate profitably because too many growers and buyers would then switch to alternative channels, including, in particular, direct sales.

The results from the conjoint analysis were, however, not conclusive, due to a possible interpretation error on the part of the respondents, of the attribute “other Dutch auctions”. The calculated market shares based on the preferences for “other Dutch auctions” exceeded the parties’ actual market share. One would expect the estimates based on the conjoint preference shares to be similar to the current market shares. It may not have been clear to the respondents that “other Dutch auctions” was not intended to include the parties to the merger, Aalsmeer Flower Auction and FloraHolland. This error meant that the alternative “other Dutch auctions” was over-represented in the preference scores. Therefore, the results of the conjoint-analysis were not used in the decision-making. Nevertheless, based on the outcome of the stated preferences, relating to switching probability, this concentration was unconditionally cleared in December 2007.

2.3 *Case No.: 6900/Nordic Capital – Handicare (NMa, 2010b)*

The NMa’s quantitative research in the concentration between Nordic Capital (owner of Permobil) and Handicare also involved a conjoint analysis. Both Permobil and Handicare are producers of powered wheelchairs (PWC) and active in the Netherlands, with a combined market share of 80-90%. The other competitors are large multinational firms, such as US-based Invacare and Sunrise, but with very low market shares in the Netherlands. Producers of PWC sell their products to multiple dealers. The dealers tender with Dutch municipalities for contracts to supply PWC to their inhabitants, under the Social Support Act. The PWC dealers-market is very concentrated and the seven largest dealers have around 80% of the market. A major part of the NMa’s investigation focused on the possible countervailing buyer power of these dealers. The issue was whether, despite the fact that dealers have not shifted significant orders to other producers in the past, they would switch to other producers, in certain circumstances, following the merger.

The research included both qualitative and quantitative research. In the quantitative research, the NMa only used the conjoint preferences to estimate the demand function. The options for the dealers are described on the basis of the following four attributes: name of producer (Handicare/ Permobil/ Invacare/ Sunrise/ smaller producer), delivery time(10/20/30 days), list price of basic model (in euro's) and dealer discount on list price (in %). The response rate was 56%. As was the fact in the flower auction merger, the preferences shares were divergent from the actual market shares. It appeared, having tried various methods, however, not possible to simulate the current situation. In the simulation, the preferred shares of Invacare and Sunrise were higher than in reality (in fact, Handicare has an actual market share of 50-60%, whereas in the simulation it only had at most 30%). Due to fact that the market for PWC was highly differentiated as well as the fact that different discounts were offered to the dealers, it was not possible to formulate the base scenario (for example, which PWC with what options one should select for determining the list price). This meant that no base model could be constructed, on which an accurate simulation using the conjoint-based preferences could be performed. On the basis of the remainder of the research, in December 2010, this concentration was cleared with remedies.

3. A detailed case: Fertilizers merger (case no.: 6781/Agrifirm – cehave)

3.1 Introduction

In October 2009, the NMa received a notification of a merger between Agrifirm and Cehave, both large cooperatives in the agricultural sector, in the Netherlands. They sell a large number of products to agricultural companies (farmers, horticulturists and cattle farmers), such as mixed feed for animals and crop-protection products. The activities of the merging parties overlap in a relatively large number of markets. In the first phase of its merger investigation, the NMa concluded that no significant impediment of effective competition is likely for any of these markets, except for one: the market for the sale of artificial fertilizers to agricultural companies. Important arguments for this conclusion were the relatively high market share in the northern parts of the Netherlands, and the absence of large competitors in this market.

In its second phase investigation, the NMa investigated the market for fertilizers in the northern parts of the Netherlands in more detail. Research was instigated into the behaviour of several relevant market participants. One important source of evidence was an internet survey of approximately 1600 agricultural companies in the northern parts of the Netherlands. This survey contained various 'normal' questions, but also a conjoint analysis.

The conjoint analysis in the questionnaire served two purposes; (i) to investigate what the most important factors are for customers in the buying process of artificial fertilizers and (ii) to investigate the response of customers to various price changes.

3.2 The design process

The design of a proper conjoint analysis takes careful consideration. One needs to make several choices which cannot be adjusted after the fieldwork is started. Poor choices in the design process may lead to unreliable results. In this case the design process of the conjoint analysis consisted of the following steps;

1. Decide on the conjoint task
2. Choose the appropriate method of conjoint analysis
3. Identify the relevant attributes to incorporate in the conjoint analysis

4. Determine the levels for all the relevant attributes

3.2.1 Ad 1 and 2

The NMa tried to construct a conjoint task that matches the real life buying situation. The buyers of artificial fertilizers tend to buy (ad hoc) from only one supplier. Therefore, the respondent is asked to imagine that s/he is about to buy artificial fertilizer. The respondent is shown three different options and is asked to choose the option s/he prefers most. This task was repeated 13 times. The NMa chose for this *choice-based conjoint* because agricultural companies tend to buy artificial fertilizer from only one supplier and the number of attributes is relatively limited.

3.2.2 Ad 3 and 4

The case team determined the following attribute levels (see figure 1) based on the information gathered in the first phase investigation. It is important that the actual values are within the range of possible attribute levels in the conjoint. For example, if the actual price of Agrifirm was around 30 euro per 100 kilo, then the maximum level of the attribute price at around 25 euro per 100 kilo, would have been poorly chosen in the design process.

Figure 1

Attribute	Level
Supplier	Agrifirm
	Cehave
	A cooperative (not Agrifirm or Cehave)
	A local dealer
Price	27,50 euro per 100 kilo
	30 euro per 100 kilo
	32,50 euro per 100 kilo
	35 euro per 100 kilo
Method of delivery	Delivered by supplier
	Collected by customer
Distance to supplier (only for collecting)	10 kilometer
	20 kilometer
	30 kilometer
Advice of an crop growing advisor	No advice
	Free advice
	Paid advice

3.3 The results

Based on the gathered data, the relative importance of the different attributes and attribute levels can be calculated. This is measured in terms of utility levels, as shown below. Here the utility levels are rescaled so that within a certain attribute the level with the lowest utility level has a value of zero.

Figure 2

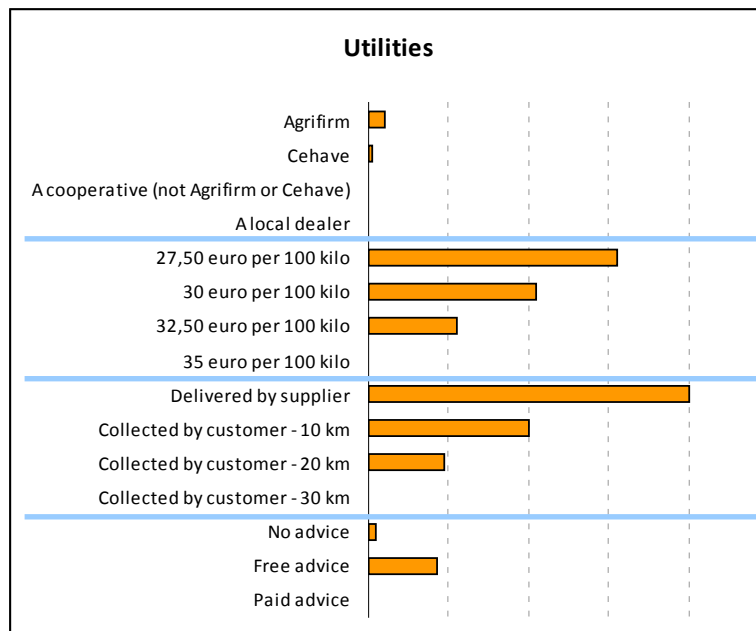


Figure 2 shows that the price of artificial fertilizer and the delivery of this product by the supplier are regarded as relatively important by the customer.

The specific supplier or the advice of a crop growing advisor on the other hand are relatively unimportant factors in the buying process of the customer.

Another useful feature of conjoint analysis is the possibility to simulate the response of customers to various changes in the attributes. The price of artificial fertilizer is one of the attributes, and therefore, it is possible to calculate how the respondents will respond to price changes. In order to do that, the NMa determined the attribute levels for the different suppliers pre-merger (*the base scenario*).

Figure 3

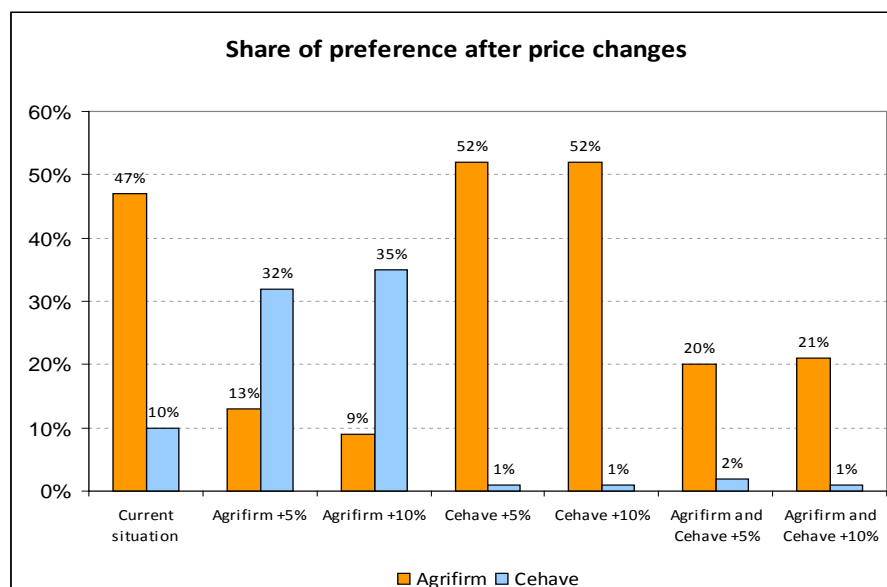


Figure 3, above, shows the results of a price simulation. The percentage is called a *share of preference* and represents the share of respondents that prefer to buy artificial fertilizer from a certain supplier. The column to the left (current situation) represents the shares of preference in the base scenario. Thus, pre merger around 57% of the respondents prefer to buy artificial fertilizer from Agrifirm or Cehave. Based on actual sales data, the market shares of the merging parties, in the northern parts of the Netherlands, are almost similar. The other columns show the shares of preference for various price changes by Agrifirm and/or Cehave.

The results suggest that buyers of artificial fertilizer are relatively price sensitive. A small price increase leads to a relatively large drop in the share of preference. For example, if Agrifirm raises its price by 5% the share of preference drops from 47% to 13%. Thus, Agrifirm would lose 34% share of preference or 72% of its customers. The results also give insight in the *diversion ratios*. Combined with the calculated critical loss, these changes in preference shares loss were an important source of evidence in the second phase decision, that the merging parties could not profitably raise their prices by 5-10% after the merger. In consideration of this factor, combined with other indications that customers are relatively price sensitive, the NMa ultimately approved the merger without restrictions.

4. Lessons learned and future usage

Conducting research is a constant learning experience, and applying conjoint analysis is no exception. In this section, we outline ten lessons we have learned using the conjoint method in the above-mentioned merger cases.

4.1 *Constructing a good conjoint analysis starts in the first phase investigation*

As already discussed in the previous parts of this paper, the design can be complex and laborious. Therefore it is important to think already about the conjoint design during the first phase investigation. It is crucial to understand the real-life choices of buyers. The more closely the conjoint task reflects the actual purchasing decision, the better the results will be. In the first phase investigation the buyers' selection criteria should be identified, as well as what the decision looks like (purchase of one product at a time, or

the use of several suppliers, with one or two preferred suppliers supplying most of the products). All these issues will influence the design of the conjoint.

4.2 *Involve the merging parties in designing the conjoint analysis*

The merging parties know their markets and can help to develop a high quality conjoint analysis, by explaining, for example, the buyer selection criteria and whether there are different segments. Preferably, their contribution should be supported with previous market studies conducted before the merger. Involving the merging parties in the survey design phase can also help to secure their commitment to the results of the study. This is particularly the case where the parties are unfamiliar with the conjoint technique. Involvement at design stage can deliver a quicker acceptance of the results.

Furthermore, the merging parties can often provide client lists, i.e. the potential respondents for the questionnaire, including preferably the name of a contact person. This makes it easier to target the right respondent and improves the response.

4.3 *Test, test, test*

As in all survey research, testing the questionnaire and the conjoint analysis is of utmost importance. The test should be conducted with a sample of the actual respondents; they have to fill out the questionnaire and the conjoint task. During testing it becomes clear whether the respondents understand the questions and the conjoint analysis, and are able to give good answers, and whether the conjoint analysis presents a realistic buying situation.

4.4 *Construct a base-scenario early in the survey design*

One of the advantages of using conjoint analysis is that it enables the researcher to conduct several ‘what-if’ scenarios. The results are expressed in terms of ‘shares of preferences’ summing to 100%. Often these shares are interpreted as market share, although strictly they are not the same as market share. When interpreting the shares of preferences as market shares, it is relatively easy to calculate the actual loss of a 5 to 10% price increase. The loss in shares of preferences is an indication for the loss of market share. The starting point in this analysis is to simulate the actual situation, i.e. the current proposition of the distinct suppliers should be modelled in the conjoint analysis. Preferably, the shares of preference in this base case should be in line with the actual market shares. If the differences are large, it might question the generalizability of the results. In the design phase of the conjoint analysis, it is important to think about and construct the base case. In this way, one can be certain that all the relevant aspects are included in the conjoint analysis and that the shares of preferences of the base case can be calculated.

It may happen that the actual market shares and the simulated shares of preferences in the base case differ to a large extent. This could indicate that the assumptions of the conjoint analysis are not met. Simulating with the conjoint results involves an assumption, among others, that there is perfect information (about the different products/producers), equal effectiveness of sales force and/or marketing efforts, and that all attributes that influence the product choice have been included in the model. For instance, if an important selection criterion is missing, shares of preferences will differ from the actual market shares. Even if the conjoint results cannot be used for an approximation of the actual loss in a critical loss analysis (due to a big difference between predicted and actual market shares), it will provide information on the importance of the different competition parameters.

4.5 *Always use back-up stated preferences*

As discussed in the previous paragraphs, the conjoint analysis will not always work as effectively as hoped. As it is almost impossible to do two surveys in one merger investigation, the first survey must

provide all of the required information. Solely relying on the conjoint results can bear great risks. Therefore it is important to have a fall-back option in the questionnaire. Simple hypothetical questions (such as, 'If Brand A was no longer available, what would you buy' or 'what would you buy if the price of Product B rose by 5%') are good to have as a fall-back option. Based on these questions or stated preferences, one can approximate price elasticities and switching patterns/diversion ratios. Our experience is, however, that the stated preferences result in higher price sensitivity than results via the conjoint analysis. The question can be posed to what degree a gap between predicted and actual market shares, based on the conjoint analysis, can be tolerated. This is something that requires a case-by-case analysis.

4.6 *Consider different types of conjoint analysis: choice based, adaptive conjoint, adaptive choice based, constant sum*

Conjoint analysis is a relatively flexible technique that can be used for different purchasing settings. The conjoint design can be adapted to the purchasing situation. Most of the time, the respondent is asked to select the profile s/he prefers most. If buyers do not buy only one product, but rather products in different quantities (for instance 80% of a raw material from one supplier and 20% from another) researchers can use a summated score scale. The respondents have to allocate 100 points over the different alternatives.

In a simple, full-profile, choice-based design, 5 to 6 attributes are the maximum number of attributes, i.e. selection criteria. With more attributes, respondents might become confused and overloaded with information. However, in practice, there can be purchasing situations with more than 6 decision criteria. For these situations one can use adaptive conjoint analysis or adaptive choice-based conjoint analysis.

4.7 *Transparency in choices*

Several design decisions have to be made during the use of conjoint analysis. Maintaining an accurate record of the different choices made throughout the design contributes to the verifiability of the results. For example, researchers should keep track of the different attributes considered and why certain attributes are not part of the conjoint analysis, how the data is analysed and which econometric techniques are used. This allows the merging parties to 'replicate' the study and verify the results. This step is crucial, especially when the parties are not familiar with the conjoint technique.

4.8 *Different data-collection methods*

Different data-collection methods can be used for conjoint tasks. A conjoint analysis can be part of a face-to-face interview. The different tasks can be shown to the respondent. Written questionnaires (postal or online) can also contain a conjoint analysis. Postal surveys have the disadvantage that the conjoint analysis cannot be adjusted based on the answers of the respondents. Therefore adaptive conjoint and adaptive choice-based conjoint can not be used in a postal survey (one can send a computer disk with the program on it, but this is not a real option). Online questionnaires are ideal for adaptive conjoint analysis. Full profile choice-based conjoint can be included in a postal survey.

Telephone surveys are not very suitable as a data collection method for conjoint tasks. It is easier for the respondent when s/he can see the alternatives. For very simple conjoint tasks with two attributes, telephone interviews might be used.

4.9 *Conjoint analysis is applicable for various settings*

Conjoint analysis can be used for various settings. In our studies so far, we used conjoint analysis for products as well as for services, both for business-to-business, and for business-to-consumer markets. The most important criterion is that it must be possible to mimic the actual purchasing decision. The number of respondents can range from small to very large. In our cases we have had a study with more than 2000

respondents and one with 22. In both cases reliable analyses can be done. With a small sample, it is more important to look at (groups of) influential respondents. If necessary, the analyses can also be done at individual level (via individual choice estimation or hierarchical Bayesian estimation), and this is especially useful in heterogeneous markets.

4.10 *Number of levels influence the results*

There is some evidence that differences in the number of levels per attribute influence the importance that respondents place on the attribute (attributes with more levels are given more importance). Therefore, it is recommended to have an equal number of levels across all attributes in the conjoint design, whenever possible. Competition authorities may be inclined to include a lot of price levels in conjoint design in order to get a better estimation of the price elasticity. This may, however, come at a cost, as it means that respondents appear to become more price sensitive.

5. Conclusion

Conjoint analysis is a useful tool. It has proven a valuable instrument in merger control. The experience of the NMa to date, while limited, has proved insightful. In three of the four cases illustrated here, the results of the conjoint analysis were used in the final NMa decision. In one of those cases, the results proved decisive. The lessons learned, as illustrated in this paper, contribute to more accurate model-building. Conjoint analysis can improve our decision-making, when it is used in a properly constructed questionnaire.

By simulating how consumers might react to changes in current products (either in terms of price or other attributes), conjoint analysis allows competition authorities to analyse product options that vary across multiple attributes. In this way, it mimics as closely as possible the real-life choices of consumers when purchasing products. By more accurately reflecting actual purchasing decisions, conjoint analysis can significantly add insight to more conventional hypothetical questioning.

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NEW ZEALAND

The purpose of this submission is to provide an overview of the New Zealand Commerce Commission's use of economic evidence in merger analysis. The submission is based on the paper 'Quantitative methods in competition cases: A New Zealand perspective', David Law, Qing Gong Yang, and Michael Pickford, *Competition & Consumer Law Journal*, (2010).¹

1. How are economists integrated into the decision making process (e.g., part of a case team, separate unit)? Do they participate in every merger case?

The Enforcement Branch of the New Zealand Commerce Commission (Commission) has a specialist team of economists (lead by the Chief Economist, Enforcement). For every merger case an economist from this team is appointed to the project team (which is typically led by an investigator). The project team provides a joint recommendation on the case to Commissioners.

If the merger is low complexity the economist will provide qualitative and simple quantitative analysis (to determine whether market concentration falls within safe harbours) and review the draft decision. On moderately complex or complex cases the economist may take a more active role, providing more complex quantitative analysis where necessary.

2. What steps have been undertaken over the years to improve an agency's economic expertise in merger control? Are outside economists used, and if so in what circumstances?

To date the majority of quantitative analysis for merger cases has been produced in-house, which led to a high level of modelling/quantitative expertise within the Commission. However, recent staff departures have reduced this capacity somewhat.

The Commission supports the development of the economic expertise of staff by funding travel to conferences, the provision of internal and external training opportunities, and holding technical seminars by external speakers.

The Commission employs outside economists in situations where it does not have the internal expertise/capacity or when it needs to provide an expert witness to the court. Also, the Commission often subjects its internal modelling/quantitative work to peer review by external experts, including those employed by external parties.

3. What type of quantitative evidence do you typically use in merger cases? What is the role of econometric analysis in your merger practice? Can you describe examples where your agency has relied on data analysis and quantitative evidence to support a theory of harm?

The Commission has used a variety of quantitative techniques in its merger analysis. Modelling is used to aid, but not to supplant, the exercise of its judgment.

¹ Please note that the views expressed in the entire Law et al (2010) paper should not be taken necessarily to reflect those of the Commerce Commission.

An effective model will only ever be, at best, a guide to reality, and to the consequences of proposed changes. The Commission has stated that its aim, in each case, is to balance modelling results and predictions against its qualitative analysis and judgment in the context of the issue before it.

The majority of merger cases use only simple quantitative analysis as more complex analysis is not necessary when the Commission considers that it can be satisfied that a substantial lessening of competition will not occur. In such situations the completion of more complex quantitative work may delay prompt decision-making, extending timelines on time-sensitive business acquisitions cases. Also, in many cases complex quantitative analysis is not possible due to data limitations.

In other situations (often larger cases) more complex quantitative analysis would potentially aid decision making.

Potential advantages of such quantitative analysis may be to: allow the consistent application of economic theory to be brought to an issue; make transparent the assumptions underpinning the analysis; facilitate the testing of the sensitivity of the outcomes to changes in key variables; and make possible the quantification of effects that might otherwise be difficult to assess.

On the other side of the ledger, there are, perhaps, two potential disadvantages of using quantitative methods in the analysis of competition cases. The first is that all models are susceptible to challenge. Similarly, econometric analyses rarely produce unequivocal or definitive results.² Further, because good quantitative analysis entails setting out clearly the assumptions used, it may be more exposed to attack than might be the case had qualitative analysis been used.³

The four case studies below provide a sample of more complex quantitative analysis the Commission has undertaken on market definition, merger simulation, analysis of market power, and public benefit analysis.

3.1 Case Study 1: Market definition

In a 2005 merger case between Fonterra Co-operative Group Ltd and New Zealand Dairy Foods Ltd,⁴ the Commission tested empirically whether butter was in a separate market, or was a close substitute for margarine and therefore part of a broader yellow consumer fats market. The Commission had access to supermarket scanner data for all brands of butter, margarine, and blends. A range of quantitative techniques was used to make the assessment including:

- price correlation analysis, which looked at the correspondence of price movements of butter and its potential substitutes, margarine and blend;
- stationarity analysis, which considered to what extent the price levels of two products move together over time;

² This is because it is usually possible to have alternative model specifications, or to use a different set of variables. Sometimes, too, the data required for a particular variable may not be available, or the variable may have to be proxied by using what is thought likely to be a closely related variable.

³ Opponents can undermine the findings of the modelling work by, for example: calling into question the details of the model and its appropriateness for the issue at hand; disputing the variables used, how they are measured, and whether important variables have been omitted, casting doubt on the realism of the underlying assumptions.

⁴ Commerce Commission, Decision 562: Fonterra Co-operative Group Ltd/New Zealand Dairy Foods Ltd, 9 November 2005.

- econometric analysis to estimate the demand functions for butter, margarine, and blends;
- using the price elasticities thus derived in the critical loss analysis to perform the SSNIP test.

Based on all of the above, the Commission in its decision defined a separate market for butter, thereby overturning the Commission's previous thinking on market definition in this area.

3.2 *Case study 2: Merger Simulation*

Since 2001 the Commission has sought to use merger simulations based on the Bertrand oligopoly model. At first, this was in the form of the simple diversion ratio model devised by Shapiro,⁵ which was used, for example, in the clearance application for the merger between the second and the third largest supermarket chains in 2002 (Progressive Enterprises Ltd and Woolworths (NZ) Ltd).

Subsequently, the Commission developed its merger simulation capacity by building the Bertrand-based model devised by Epstein and Rubinfeld.⁶ In this model the demand function, rather than being estimated econometrically using price and quantity data, is instead calibrated using Proportionality Calibrated AIDS (PCAIDS). The Commission's merger simulation model was first used in a car rental clearance case (Cendant Corporation (Avis New Zealand) and Budget Group Inc (Budget New Zealand)) in late 2002.⁷ However, the modelling results were not especially influential in this case.

3.3 *Case study 3: Analysis of Market Power*

In November 2007 the DFS Group Ltd (DFS) applied for clearance to acquire the shares in, or assets of, the New Zealand operations of The Nuance Group (Nuance).⁸ As these were the only two duty-free operators at Auckland International Airport (AIA), the Commission was required to consider whether this would lead to a substantial lessening of competition.

One way in which the Commission sought to examine this question was to consider what happened with the reverse situation at Wellington International Airport (WIA) when in late 2006 Nuance, a second on-airport duty-free retailer, was allowed to enter and compete with Duty Free Stores New Zealand (DFSNZ), the incumbent and until that point the only supplier of duty-free products at the airport. An examination of the pricing behaviour of DFSNZ before and after the entry of Nuance provided a natural experiment in reverse that might reveal how prices might change at AIA if Nuance were acquired and DFS no longer faced competition from Nuance.

Data used for the analysis were sourced primarily from DFSNZ. It provided the Commission with monthly sales revenue and sales volume information for around 40 of its top selling products at WIA for the period April 2005 to December 2007 inclusive. Panel data analysis was used to estimate average price differences before and after the entry of Nuance at WIA for various groups of duty-free products sold by DFSNZ, controlling for product-specific effects. Regressions were weighted by each respective duty-free product's total sales over the period of analysis, so as to give more weight to higher selling products. As well as estimating the model with the full set of pricing information available, for robustness the Commission also tried restricting the sample to include only those products with positive sales in every

⁵ C Shapiro, 'Mergers with Differentiated Products' (1996) Spring Antitrust 23.

⁶ R Epstein and D Rubinfeld, 'Merger Simulation: A Simplified Approach with New Applications' (2001) 69 Antitrust L Jnl 883.

⁷ Commerce Commission, Decision 482: Cendant Corporation/Budget Group Inc, 6 November 2002.

⁸ Commerce Commission, Decision 638: DFS Group Ltd/The Nuance Group, 28 March 2008.

month of the period of analysis. As the model was estimated in logarithmic form, the coefficient on the dummy variable could be interpreted as the average percentage difference in price after the entry of Nuance. Each coefficient value was calculated from separate regressions focusing on various categories of duty-free products.

Both the descriptive and regression analysis suggested that the entry of Nuance at WIA was associated with a reduction of approximately 10% in prices of duty-free products sold by DFCNZ, the incumbent duty-free retailer. This change from monopoly to duopoly was essentially the reverse of what would have happened at AIA if Nuance had been acquired by DFS, and so, all else equal, duty free prices at AIA were expected to rise on average by around 10% if the merger were to proceed.

3.4 Case study 4: Assessing public benefit

The Commission is able to authorise business acquisitions or business arrangements that lead to a substantial lessening of competition, if it can be shown that a net public benefit would flow from the acquisition or arrangement. The following case study, relating to a type of business arrangement, shows how quantitative analysis can be used in the authorisation context.

In 2006 the Commission considered an application by the New Zealand Rugby Football Union (NZRU) for authorisation of certain sports league restrictions of the kind prohibited by ss 27 and 29 of the Commerce Act 1986 (NZ).⁹ The main restriction proposed was the introduction of a total payroll cap for players in each premier division union competing in the National Provincial Championship (NPC).

A key argument advanced by the NZRU in support of authorisation was that the salary cap would lead to a more even distribution of rugby player talent between the unions, since it would limit the ability of the wealthier ones to capture all of the best players by paying higher salaries. This would ultimately increase the public's enjoyment of the game, through maintaining a greater competitive balance between the unions, and hence promoting the uncertainty of outcomes in games and in the competition as a whole. The proposition that greater uncertainty of outcome leads to enhanced spectator enjoyment has become known as the uncertainty of outcome hypothesis (UOH) in sports economics literature.

Consequently, the Commission undertook its own study to explore the determinants of television viewer demand. It estimated econometrically a demand equation for televised NPC matches, where television demand by game was specified as a function of several alternative measures of outcome uncertainty, and of several other control variables that were thought to influence demand. These variables were constructed for the four seasons in the period 2001–04 using programme audience ratings data, historical match results, broadcast schedules for rugby and other sporting events, household income and provincial demographics.

This television viewer demand study found little support for the UOH. All of the measures of outcome uncertainty were found to be statistically insignificant. Instead, match quality (in particular, the involvement of star players) was found to be a significant determinant of the size of television audiences for individual matches. Importantly, this factor operated with diminishing returns, so that a team containing several star players would on average get a relatively small further gain in television audience from employing one more star player.

In making its final determination on the application, the Commission accepted that the NZRU's proposed policies would raise the average quality of each match as star players would be more evenly distributed throughout the league. Thus, although the Commission rejected the UOH, it was persuaded by

⁹ Commerce Commission, Decision 580: New Zealand Rugby Football Union Incorporated, 2 June 2006.

the new evidence from the modelling exercise. Based on this and other evidence, the Commission authorised the NZRU's proposed salary cap.

4. What is your experience in obtaining data required to carry out quantitative analysis, from the parties or from third parties? What difficulties have you faced obtaining data from the merging parties or third parties?

Parties are usually cooperative in providing what data they have. The Commission also has powers under section 98 of the Commerce Act 1986 to require a person to supply information or documents or give evidence.

In some cases detailed data is available (e.g. retail scanner data). However, in many cases parties do not have data that is suitable for complex analysis. Limited data availability is a major impediment for carrying out quantitative analysis, especially in smaller cases.

Another potential problem is that if the data used in the model provided by a party is considered to be confidential, it may prevent reviews by other interested parties. To minimise this risk at reasonable cost, the Commission has recently established a quality control policy for its major modelling work to ensure that time is set aside in the model development process for this to be undertaken, and that the models it relies upon in its adjudicative, enforcement and regulatory decision-making are robust and defensible. The Commission can also provide confidential information to an independent expert working for an interested party subject to confidentiality undertakings being agreed.

5. Is your experience using quantitative methods in merger cases reflected in documents describing your best practices or in other guideline documents? If not, are you planning to issue guidance in the near future?

The Commission's use of quantitative methods in merger cases is not described in detail in any of our external guidelines.

There is a small section in the "The Commerce Commission Mergers and Acquisitions Guidelines", however no detail is given.

These merger outcomes with high barriers to entry can be simulated quantitatively using economic models. Such models are at best imperfect representations both of actual markets and of the behaviour of participants. Judgements need to be made about the assumptions that are built into such models, and the strength of the results that they can produce. Nevertheless, the Commission considers that quantitative modelling may be a useful complement in some cases to qualitative analysis in assessing whether the price effects of a merger would be likely to be sufficient to amount to a substantial lessening of competition.¹⁰

At present there are no plans to issue external guidance on the use of quantitative methods in merger cases.

The Commission does have an internal policy for quality controls for internal models.

¹⁰ Page 32.

6. What is the degree of interaction with the parties' economists and at what stage in the process does it take place, e.g. regarding potential theories of harm or the type of economic analysis to conduct, and to ensure the efficient gathering of evidence?

In cases that involve a more complex quantitative analysis, the Commission routinely puts its quantitative analysis to relevant parties for comment in order to maintain a transparent and robust process. This results in interactions with the parties and (usually) with their legal and economic advisers.

For example, in the butter/margarine case, written submissions were received from the parties' economic experts. The submission made by the applicant tended to confirm the Commission's econometric analysis on price elasticity. However, concerns were raised that the national aggregated data might eliminate important competitive information critical to the analysis of substitution, such as the importance of promotional patterns by individual supermarkets, and that the Commission's price elasticity analysis suffered from a number of data problems. Further analysis was carried out in response to these concerns, and even after taking them into account, the data still indicated that butter was likely to be in a separate market. The Commission always takes into account such responses before making its final decisions.

Similarly, the studies in the NZRU were scrutinised by the NZRU's own economic experts. Comments provided by these experts were taken into account when the Commission finalised its model results.

Commission models that are considered critical to Commission decision-making are subject to considerable quality controls and accountability reporting. Quality controls cover all phases of model development, from initial needs assessment, to designing, building, validating, authorising and maintaining a model. The controls aim to provide reasonable assurance as to the integrity and reliability of model outputs. Models developed for the Commission by external consultants are expected to meet the same standards. Accountability reporting means that the modellers are accountable, through the project team and project manager. The project manager is in turn accountable to the relevant division of the Commission. By these means, there is greater assurance as to the reliability of modelling results, such that the Commission is able to use them with greater confidence.

7. How have courts assessed the agencies' use of quantitative evidence when parties appealed merger review decisions by the agency?

The most useful New Zealand court assessment of economic modelling is found in the Air New Zealand/Qantas business acquisition authorisation. Extensive use was made of Cournot-based modelling in this case to estimate the consequences for prices and allocative inefficiency of the proposed acquisition and strategic alliance arrangement between the two airlines on routes across the Tasman and within New Zealand. The parties appealed the Commission's decision. A significant part of the hearing was devoted to consideration of the modelling results, with both sides making adjustments to their welfare loss figures during the course of the hearing. The issue was hard fought, and the court concluded as follows:

The parties have combined to demonstrate that notwithstanding the best efforts of experts of international standing, both before the commission and before us, the revised model has failed to produce a reliable guide to the quantification of allocative inefficiency. The limitations of the Cournot model (and its implementation) have been clearly shown. It has been inadequate to deal with the complexities of dynamic markets, particularly the interactions between established FSAs and an LCC newcomer. It has been unable to capture the reactions of players to one another let alone the overall dynamism of the airline industry. In addition, the simplifying assumptions required have severely limited the model's ability to replicate real-world outcomes.

*We can say with confidence only that the commission's figure is too high and the appellant's calculation is unrealistically low . . .*¹¹

¹¹ Air New Zealand v Commerce Commission HC Ak CIV 2003 404, at [268]–[270]. ‘FSA’

PORTUGAL

Since its creation in 2003, the Portuguese Competition Authority (PCA) has undertaken an economic approach to merger control, regarding the use of quantitative methodologies as an integrated element in the competitive assessment of merger cases. This conceptual approach to the role of economics in merger review has been the driver of the PCA's recruitment policy, which has privileged economists with a strong background in industrial economics and regulation, in particular those with Masters and PhDs in Industrial Economics or with past experience as officials in sector regulators.

The use of quantitative methods in merger appraisal in Portugal has been reinforced over the years, accompanying the trend of "more economics" in merger analysis, advocated by most experienced competition agencies and international organizations related to competition policy.

As such, the PCA, and in particular the Merger Department, puts great weight on the training of its staff, strongly encouraging their participation in training sessions, both in-house and outside the PCA, conferences and summer schools in merger control and industrial economics. The PCA also endeavours great effort in interacting with international organizations, such as the OECD, the ECN and the ICN, with the aim of cooperating with these organizations by sharing its own views, but also to keep track and follow the most recent best practices on merger control.

In what follows, we describe the role of quantitative methods in merger control, in Portugal; the way economists are integrated in the decision making process; how simple quantitative evidence is incorporated in merger appraisal; providing examples of some cases where econometric analysis and more sophisticated simulation techniques were used to improve the accuracy of the competitive assessment. Furthermore, we also describe the interaction between the PCA and the merging Parties; the involvement of the Parties economists in this context; as well as the role played by the Parties in data collection.

The Merger Department of the PCA is evenly composed of lawyers and economists, such that most case teams put together a lawyer and an economist. For more complex merger cases, the teams are often strengthened by including further economists. Occasionally, when the review of a merger requires the expertise on a particular sector, such as telecommunications or energy, the Department receives the backup of the GEE (Economic Research Bureau, another Department of the PCA), which may involve a direct participation in the case team.

Quantitative evidence plays a central role in merger analysis in the PCA. In simple merger cases, straightforward market structure analysis (market shares, HHI and other concentration indexes) together with a general assessment of potential restrictions to competition in the industry (e.g. entry barriers, sector specific regulation) is frequently sufficient for excluding the possibility of anticompetitive effects arising from the merger.

However, in more complex merger cases, industry data is used for assessing a variety of dimensions that, altogether, build up the case's assessment. The data is mainly collected via information requests to the parties, sector regulators and other informed third parties, and is often related to the assessment of the position of the parties and other players in the industry, covering also an array of other aspects adjusted to each proceeding.

In some cases, particular attention is given to relevant market definition, both at the product and geographic level, as it provides for a context, and may be a crucial element of the case being reviewed, while in others, further focus is given to assess the ability of the merging firms to unilaterally increase price or decrease quality in the post-merger scenario.

In the context of the exercise of relevant market definition, when assessing whether different products have a degree of substitutability that justifies their inclusion in the same relevant market, the PCA collects, among other, information on prices and diversion ratios. As an example of merger review cases where these two types of quantitative information were crucial for the PCA's assessment, we refer to the price-correlation analysis developed in Sumol/Compal,¹ a merger in the beverages industry, and the use of diversion ratios between different fascia to assess the degree of product differentiation in a merger in the grocery retail markets - Sonae/Carrefour.² The latter are also a valuable quantitative tool for assessing the degree of closeness of the merging parties' products and, as such, the merging firm's ability and incentive to deteriorate the conditions of supply in the post-merger scenario, as part of the competitive assessment of a merger.

In another case, the Barraqueiro/Arriva³ merger in the public transportation sector, the PCA conducted a consumer survey aimed at performing a SSNIP test concerning two different transportation alternatives.

In what concerns the definition of the geographic limits of the relevant market, and particularly when this is less straightforward, the PCA requests information concerning the weight of transportation costs relative to the product's price and the commercial inflows/outflows into or out of the boundaries of the candidate relevant geographic market.

It has also been the case, in the past, where the analysis of the degree of geographic differentiation in the competitive conditions, even though the geographic markets were considered to be national in scope, proved essential when discussing and fine-tuning a divestment package in the context of a network proposed as a remedy by the parties. This was the case of some relevant markets in the banking sector, which were considered, by the PCA, as being national in scope (due to, for instance, the mainly national dimension of the price setting strategy in the sector), notwithstanding the importance of the potential local competitive effects of a merger, which had to be duly taken into account.

More sophisticated quantitative techniques have been used in the context of more complex merger cases in Portugal. However, it is important to highlight that, when these more sophisticated tools have been used, there was always the concern of not basing the decision solely on the results obtained, but to complement them with other quantitative and qualitative evidence, so as to have a more robust decision.

In a merger case in the insurance sector (Caixa Seguros/NHC BCP Seguros)⁴, the PCA conducted simulations using the PCAIDS ("*Proportionality-Calibrated Almost Ideal Demand System*") model for assessing the impact of the merger on the insurance price and consumer surplus. In addition to this in-house study, the PCA also commissioned an econometric study⁵ to outside economists, which allowed for

¹ Merger case Ccent. 22/2008 - Sumolis/Compal.

² Merger case Ccent. 51/2007- Sonae/Carrefour.

³ Ccent. 37/2004 - Barraqueiro/Arriva Investimentos.

⁴ Ccent. 28/2004 - Caixa Seguros/NHC BCP Seguros.

⁵ C. Gollier and M. Ivaldi, "*Study on Competition Policy in the Portuguese Insurance Sector: Econometric Measurement of Unilateral Effects in the Caixa /BCP Merger Case*" available at http://www.concorrenca.pt/download/WP07_Seguros_Marc_Ivaldi_12.05.20051.pdf.

a more detailed and sophisticated simulation, with less restrictive departing hypothesis than those underlying the PCAIDS. This study, developed using a database made available by the PCA, aimed at addressing the proposed definition of the relevant markets, characterising firm behaviour on the Portuguese insurance market, simulating the potential price effects and evaluating the cost efficiencies driven by the merger. The specification of the structural model used was based on a descriptive analysis of the data concerning the Portuguese non-life insurance markets. The results obtained with this fully specified model were actually not very different from those which had been obtained using PCAIDS.

More sophisticated quantitative techniques were also used in a merger case in the banking sector (BCP/BPI)⁶. Econometric studies were conducted so as to assess the unilateral and coordinated effects on prices of the merger under review, in some markets where the competitive impact of the merger raised more concerns. After an extensive exercise of information gathering, a cross section of consumer level data and discrete choice models were used to estimate price elasticities of demand and marginal costs, allowing for a simulation of the unilateral and coordinated effects of the merger. For assessing the coordinated effects, this study followed the approach of Kovacic, Marshall, Marx, and Schulenberg (2006), which consists on quantifying the payoffs associated to collusion and analysing how they are affected by the merger, by simulating the effects of a hypothetical collusion before and after the merger. Once the increase in prices and the effects on market shares driven by the merger were estimated, the impact of collusion on firms profits pre and post-merger were evaluated and compared, allowing the measure of the impact on firms' incentives to collude.

In a merger in the telecommunications sector, the Sonaecom/PT merger,⁷ the PCA engaged in an extensive task of data collection to allow for a quantitative assessment of the merger's impact on prices and social welfare. An in-house econometric study assessed the unilateral effects on prices of the merger in the Portuguese mobile telephony market, using aggregate quarterly data from 1999 to 2005 and a nested logit model to estimate the price elasticities of demand and the marginal costs of subscription of mobile telephony. Given these estimates, the study simulates the effects of the merger on prices and consumer surplus. There were also other in-house econometric studies concerning the telecommunications sector in Portugal, which were already undergoing when the merger was notified and which also provided valuable information concerning the sector, namely for assessing the set of commitments put forward by the notifying party. Some of these studies are already published or forthcoming in highly ranked international journal.⁸ Furthermore, the PCA commissioned a number of studies to external consultants such as RBB and Oxera, providing important quantitative information for the competitive assessment of the merger.

In Portugal, in the past years, there were also a few mergers in the electricity sector that have been subject to the PCA review. The assessment of the competitive effects of some of these mergers entailed the collection and processing of extensive and complex data sets. The analysis carried out with this information was crucial for the PCA's assessment and for the development of the theory of harm in some of these cases, allowing, for example, in one of the merger cases – EDP/PebbleHydro,⁹ to quantify the ability and incentive of the merged entity to induce price increases by means of simple simulation exercises, using the information concerning the elasticity of residual demand in the wholesale market for electricity generation. In this case, quantitative methods were used to assess, among others, the potential

⁶ Ccent. 15/2006 - BCP/BPI.

⁷ Ccent. 12/2006 – Sonaecom/PT.

⁸ Among others, L. Grzybowski, P. Pereira (2007), “*Merger Simulation in Mobile Telephony in Portugal*”, *Review of Industrial Organization* 31:205–220 and P. Pereira, T. Ribeiro, “*The Impact on Broadband Access to the Internet of the Dual Ownership of Telephone and Cable Networks*”, forthcoming in the *International Journal of Industrial Organization*.

⁹ Ccent. 02/2008 – EDP/PebbleHydro_Janeiro de Baixo.

for a capacity withholding strategy in the micro-hydro power plants targeted by the merger to have a significant impact on electricity prices to final consumers.

The experience gathered in terms of merger review by the PCA over the last years created the grounds for the development of merger guidelines. The PCA is currently drafting its merger guidelines, intending to address both procedural and substantive analysis, and which will establish the best practices based on the experience accumulated by the PCA in merger review.

In terms of the interaction between the PCA and the Parties, in the context of merger review, it is important to note that a substantive part of the information used in the competitive assessment is obtained by means of information requests. As such, the information provided by the notifying parties and by third parties is often essential to conduct the analysis of a merger, in particular when the merger occurs in a sector which is not subject to sector regulation, and there may be fewer alternative sources of information.

In what concerns the interface between the PCA and the Parties, it is mostly established with the Parties appointed legal representatives, and seldom do the parties actively or directly involve their economists in the interaction with the PCA in the context of simple merger case analysis, although this does happen frequently in more complex merger cases or in those cases where certain sector specificities require a particular expertise, such as, for example, the energy or the telecommunications sector. At the stage where theories of harm are put forward by the PCA and the competitive assessment is discussed with the Parties, it is frequent that the Parties lawyers are accompanied by the Parties economists to address the competitive concerns identified by the PCA.

Occasionally, the PCA requests meetings with the economists of the Parties at the stage of gathering data, with the aim of assuring a more efficient and accurate gathering (this has been common practice in the banking and telecommunications sectors). The PCA finds these meetings very useful, previously to sending out information requests or immediately after, in order to understand which sources of information might be relevant for the case at hand or to clarify what is asked for in the information request. It is of paramount importance to avoid misinterpretation and misreporting of the information needed, considering, in particular, the time constraints of merger review. When the information requests are sent out, not only to the notifying firms, but also to third parties, meetings are therefore important to ensure the harmonization of the elements gathered, avoiding heterogeneous interpretations that would make aggregation and treatment of the data difficult or even impossible.

SWEDEN

Sweden is one of few jurisdictions in the European Union where the merger control process is adjudicative rather than administrative. In order to block a merger, the Swedish Competition Authority (SCA) has to sue in the Stockholm City Court, which has a specialized chamber dealing with Competition law. The ruling of the Stockholm City Court can be appealed to the Market Court - the court of final instance in Competition Law cases.

Suing in court implies that we must submit our substantive analysis to a full review, where we argue, and in principle are assessed on, each step of the quantitative analysis before the court. In practice however, no recent lawsuit has reached far enough in the court proceedings to actually yield an assessment by the court of the SCA's, or the merging parties', substantive analysis.¹

In this note, we will describe the use of quantitative economic methods at the SCA today, using examples from the two last horizontal mergers that were analyzed in the special investigation phase (Phase II):² *GSK/AstraZeneca* in 2008 and 2009, a concentration involving two brands of over-the-counter painkillers with the same active ingredient, and *Åhléns/DSE* in 2009, a concentration between department store chains that raised competitive concerns in high-end cosmetics retailing. *GSK* was cleared without remedies, while the merging parties in *Åhléns* withdrew after the SCA sued to block the merger.

After discussing the methodologies used in these cases, we end by discussing the role of economists and economics in the SCA review process.

1. The use of quantitative methods

1.1 Data collection and consumer surveys

The SCA normally initiates its quantitative analysis at the beginning of Phase II, and sometimes even before that point. Early on in the process the SCA schedules a meeting with the merging parties, as well as with third parties, to discuss the available data. These meetings are usually fruitful as all parties have an interest in moving the analysis forward as quickly as possible. After the meetings, the SCA files a formal request for the parties to submit the data deemed useful. The SCA also purchases additional data from data providers when needed.

In both *GSK* and *Åhléns*, the SCA commissioned consumer surveys at an early stage in the investigation to supplement the already-obtained data. In *GSK*, an outside expert was used to devise a survey consisting of a series of hypothetical price experiments, while in *Åhléns* the SCA constructed the

¹ Since the year 2000, out of the 18 mergers analyzed by the SCA in the special investigation phase (Phase II), none of the four mergers that the SCA sued to block in court stayed in court long enough to be assessed on substantive issues; three were revoked (*Svenska Girot, SF/Sandrews* and *Åhléns/DSE*) and one was dismissed (*Assa/Copiax*).

² According to the Swedish Competition Act, the Competition Authority has 25 days from notification (Phase I) to decide whether there are no grounds for action, or whether to initiate a special investigation (Phase II). The Competition Authority then has three months to can take legal actions before the Stockholm City Court.

survey questionnaire, including the price experiments. Before implementing the survey, the SCA invited the parties to comment.

In both cases the surveys yielded results that were of consequence to the substantive analysis of the case. One lesson learned however was that questions in this type of survey easily become too hypothetical and complex. In view of the usefulness in merger analysis of having consumer data with “exogenous variation”, even if it is only hypothetical, we continue searching for refined methods in this field.

1.2 Demand estimation and merger simulation

One of the theories of harm in *GSK* was that the merger would imply significant unilateral effects due to the high substitutability between the two merging brands in particular, or within active ingredients in general. To test this theory econometrically the SCA worked with an external expert. Based on scanner data for over-the-counter painkillers, he estimated a demand system for the products using nested logit, which he then used to perform a merger simulation.

In *Åhléns*, one theory of harm focused on the low substitutability between high-end cosmetics and mass market cosmetics, implying significant unilateral effects of a retail merger in the high-end segment. To test this theory, we performed nested logit estimations similar to those in *GSK*, using scanner data on cosmetics sales obtained from the parties. This time the estimations were carried out in-house, while the same expert as in *GSK* worked with the SCA in the capacity of an external advisor.

The nested logit estimations in *Åhléns* were supplemented by an additional econometric analysis of substitutability between stores, which was based on data on promotional campaigns. In this analysis as well we had the help of an external advisor. In addition, we also performed an analysis of the cross-elasticity between traditional retail and travel retail.

In both *GSK* and *Åhléns*, the econometric analyses yielded results that influenced our assessment of the overall case and formed a building block in the overall understanding, which also included fact-finding and other qualitative analysis. But since neither case got to the stage where it was argued in court, we unfortunately do not know how the analysis would be assessed in a full review.

1.3 The use of simpler but more tractable methods

Both these horizontal mergers would likely, in retrospect, have lent themselves also to UPP or IPR-style analysis. Such analysis could easily have been performed if we for example had included a second-choice question in our consumer surveys, using the results to calculate simple diversion ratios between the merging painkiller brands in *GSK*, or between the merging cosmetics departments in *Åhléns*.

Being able to supplement the results of the econometric methods described above with a simple but tractable result would definitely have strengthened the analysis. It could also have helped us focus the analysis on the central question of a horizontal unilateral effects case, that of the substitutability between the products of the merging parties, while putting less emphasis on other parts of the analysis that principally served to answer the question of market definition.

For example, in the analysis of the scanner data on cosmetics sales in *Åhléns*, we had to deal with the many thousands of cosmetics products sold by the retailers. This presented us with various categorization and aggregation problems, as well as having to deal with noisy data from small sales volumes. In comparison, the dimensionality of a UPP analysis would have reduced the problem to that of the consumer’s willingness to substitute going to one store for the other.

2. The role of economists and economics in the process

2.1 *The composition of the case team*

The SCA has made use of structured economic analysis in its merger review since the late 1990s. At that time however, the economic analysis - and the economist conducting it - was not fully integrated in the case team. An economist could perform a separate piece of analysis by him- or herself, which was later added to the rest of the analysis.

In recent years, the case team has become much more organized around the economic analysis. It is now more or less a rule that a Phase II investigation team includes at least one Ph.D. economist working full-time on the case team, and often also a second Ph.D. economist working part-time. In addition, the case team may include one or more case officers specializing in economics, and often also interns who are studying for masters degrees in economics. The full-time economist will often lead the economic analysis, working closely together with the case team manager who oversees the overall team product.

2.2 *Theory of harm*

The outline of a coherent and testable theory of harm is increasingly the explicit main priority for the case team in Phase I and in the early stages of Phase II. The goal is to have a workable hypothesis that can guide both the fact-finding and the design of the econometric analysis.

In *Åhléns*, the SCA met early in the process with the merging parties and their economic expert, discussing both data issues as well as potential theories of harm (and non-harm). Their expert submitted a calibrated merger simulation showing near-zero price increases, as well as a longer report on the mitigating effects of vertical control due to “selective distribution”-agreements that are commonplace in high-end cosmetics retailing. The *Åhléns* case team put emphasis on analyzing the effects of this vertical control – and to separate the retail merger’s effect on intra- vs. interbrand competition.

In another recent case, *TT/Retriever*, a vertical merger in 2010 involving news service providers, the case team worked extensively in Phase II on evaluating several potential vertical foreclosure theories. The analysis put emphasis on explaining not only whether there would be increasing ability to foreclose, but foremost whether there would be increased incentives to do so. The problem of whether there were incentives to foreclose, often boiled down to whether any exception to the “one monopoly rent”-theory could be identified. Ultimately, the merger did not seem to cause serious competitive concerns and was cleared.

2.3 *Outside experts or outside advisors*

In the early 2000s, the SCA made more frequent use of outside experts for quantitative methods, but also for other parts of the economic analysis. Lately the SCA has relied much more on doing the analysis in-house and instead using outside advisors to guide and advise the economists in their analysis.

A principal reason for this change is simply that by assigning the entire analysis to an outside expert, the economists on the case team risk losing track of exactly what the final analysis entails. This makes it difficult and time-consuming to change assumptions, or to extend the analysis if needed on short notice.

Relying on outside experts for a portion of the quantitative analysis also makes the final assessment of the case more difficult, since this assessment requires integration of many different kinds of analysis. If the work underlying the commissioned analysis is not fully understood by the economists in the team, it will be much harder for them to help the case team evaluate and integrate the results of that analysis with the many other, often disparate strands of analysis that have been carried out.

Another reason for engaging in more extensive analysis in-house is that it helps the SCA's economists develop their econometrics skills, as well as their general skills in economics, and also helps keep those skills at the SCA by making the merger analysis work more challenging and stimulating.

SWITZERLAND

1. The use of quantitative methods in the Swiss merger control regime

It seems uncontested that the importance of economic analysis in merger control has distinctly increased over the last few years. Accordingly, the “tool box” of quantitative methods for merger analysis has seen a continuous extension. While some of these recently introduced methods are relatively simple and can be implemented with readily available data (e.g. upward pricing pressure measure, UPP), other methods are of a more sophisticated nature.

These developments have been well noticed in Switzerland. However, due to the interpretation made by the Supreme Court of the dominance test applied in Switzerland they have hardly penetrated the practice of the Swiss Competition Commission (ComCo) so far. In general, under a dominance test, a merger may be prohibited if it results in the creation or strengthening of a dominant position which would significantly impede effective competition. According to Art. 10 Para. 2 of the Cartel Act, a merger may however only be prohibited or authorized subject to conditions or obligations if it creates or strengthens a dominant position liable to eliminate effective competition. The Supreme Court has therefore in the past advanced the view that the creation or strengthening of a dominant position which is likely to impede effective competition is not enough to block a merger. Rather, under the Swiss Cartel Act, a merger may only be prohibited if it is likely that competition in the concerned markets will be eliminated. In other words, in Switzerland a merger may only be blocked if it leads to an extremely high concentration in a market (e.g. a merger to monopoly). As a result, it is very difficult for ComCo to prohibit a merger. This is highlighted by the fact that in the whole history of Swiss competition law only one merger was effectively blocked so far (In 2010, ComCo blocked a „three to two merger“ in the Swiss telecommunication market on the grounds of impending post-merger collective dominance).¹

With regard to quantitative analysis in Swiss merger control, this situation has the following implications. The better part of countries in the world use today a substantive test based on the “*substantial lessening of competition (SLC)*” criteria.² Consequently, the modern quantitative methods in unilateral merger analysis tend to focus on the question whether a particular merger leads to a substantial lessening of competition in a market. As explained above, the result of a substantial lessening of competition is however not enough to block a merger in Switzerland. Rather, a merger must result in an extremely high concentration in a market to justify an intervention by ComCo. In general, to come to the conclusion whether a merger leads to extremely high concentration in a market, no sophisticated quantitative methods are necessary. A “traditional” assessment of the relevant markets and concentration measures – in combination with an analysis of actual and potential competition in the concerned markets –, is usually sufficient to come to a decision. Thus, considering the current merger control regime in Switzerland as

¹ “*France Télécom/Sunrise Communications AG*”, LPC 2010/2. The parties to the merger project renounced to appeal against the decision. In the one other case where ComCo prohibited a merger (“*Berner Zeitung AG/20 Minuten (Schweiz) AG*”, LPC 2004/2), the decision was overruled by the appeals court. It is however fair to mention that a few other merger projects were abandoned after exploratory talks with ComCo.

² The substantive test used in the EU is called “*significant impediment to effective competition (SIEC)*” test. From an economic point of view the SLC- and the SIEC-test are basically identical.

well as the time and resource constraints in merger proceedings, the added value of sophisticated quantitative methods for the decision making process is in most cases limited. This is however not to say that no quantitative analysis at all is used in Swiss merger control. For specific questions simpler quantitative methods may be applied. The measurement of pre- and post-merger market concentration is a standard procedure in Switzerland, other quantitative methods – for example the estimation of price correlations for market definition – may be considered where appropriate.

For the reasons explained above, only very few mergers in Switzerland raised unilateral concerns in the recent past. In contrast, a growing number of merger cases involving potential coordinated effects were investigated in the last few years (for example in the retail business³ or the telecommunication sector⁴). It is interesting to note that under a SLC-test some of these mergers doubtlessly would have raised unilateral concerns. Under the Swiss merger control regime only the impending danger of *collective dominance* caused however post-merger concentrations which justified in-depth investigations. Whether a merger increases the likelihood of coordination between firms in general as well as the relevant factors conducive to collusion in a market after a merger (transparency, symmetries, homogeneity of products etc.) are unfortunately often hard to empirically quantify.

With respect to vertical mergers, the Swiss experience is relatively limited. While horizontal mergers often may as well have a vertical dimension in some of the concerned markets, foreclosure considerations hardly ever played an important role in the decision making process. Only very few mergers in Switzerland were of a purely vertical nature and none of them were investigated in-depth in the recent past.⁵ Switzerland has therefore no experience with so-called “vertical arithmetic” or similar instruments.

In summary, due to the currently applied substantive test in Switzerland and its interpretation by the courts, sophisticated quantitative methods are not used in merger analysis so far. In general, given the limited scope for intervention and the scarceness of resources, merger control is not a first priority of ComCo. It is attempted to enforce the merger control regime in a proportional, i.e. purposive and resource-preserving, manner. Currently, a revision of the Cartel Act is however discussed in Switzerland. One pillar of this revision envisages the introduction of a new substantive test. Two alternatives are under consideration. The first option is to establish – in analogy to the EU – a SIEC-test.⁶ The second option is to modify the current dominance test and to abandon the condition that the dominant position must be liable to *eliminate* effective competition. In case of an amendment of the Swiss merger control regime, quantitative methods in merger analysis may thus gain some importance in the future.

2. Other issues

2.1 *The role of economists in the decision making process*

In general, in Switzerland economists and lawyers work together in the service units of the Secretariat of ComCo (Secretariat). This system ensures that on every (important) merger case an economist is involved from the beginning. The Secretariat does not have a special economic unit. There is however a Chief economist who is a member of the staff of the Director. His task is *inter alia* to ensure the economic quality of merger decisions and to support the case teams in the decision making process. The Chief

³ “Migros/Denner” (LPC 2008/1), “Coop/Fust” (LPC 2008/3) or “Coop/Carrefour” (LPC 2008/4).

⁴ See footnote 1.

⁵ A recent merger with a pure vertical dimension was “SWX Group/Verein SWX Swiss Exchange/SIS Swiss Financial Services Group AG/Telekurs Holding AG” (LPC 2007/4). In this case, the parties dispelled foreclosure concerns of ComCo by committing to remedies in Phase I of the investigation.

⁶ See footnote 2.

economist is further the head of the competence center “economics”, which comprises all economists of the Secretariat. The regular meetings of the members of the competence center establish a purposive platform to discuss economic aspects of merger cases. Additionally, the staff of the director comprises an econometrist who is the designated contact person for empirical questions. His primary function is to counsel the case teams with respect to quantitative matters as well as to conduct the more demanding empirical work.

2.2 *Steps to improve comco’s economic expertise*

Paying attention to the improvement of the economic expertise seems particularly important for a small competition authority like ComCo. In general, the economic expertise in a small competition authority may suffer for different reasons. For example, there may simply be less specialization of the economists. This may be due to the fact that in a small competition authority an economist often has to work on all kind of different cases – cartel, dominance and merger cases – and the involvement in the actual handling of the case may be more intense, i.e. the administrative burden may be relatively high. Further, the lower degree of specialization combined with a low (absolute) number of economists may imply a slower learning process, since internal network effects are less pronounced. In other words, there is the risk that economists in small competition authorities reside on lower learning curves than their counterparts in larger competition authorities.

ComCo has become aware of this challenge quite a few years ago and rigorously tries to sustain and enhance the economic expertise within the Secretariat. The creation of the job of a Chief economist, an econometrist and the competence center “economics” have to be seen in this light. It is in particular the task of the competence center to ensure the dissemination of economic knowledge, e.g. by means of presentations of internal and external speakers. Further, the Secretariat attaches great importance to its recruitment policy, which is reflected by the fact that in the recent past most of the recruited economists feature a Ph.D. degree with expertise in industrial organization. It is as well encouraged to invest in further training and education. This may e.g. take the form of summer schools, internships at other competition authorities or the possibility to keep part-time occupations in the academic world. Finally, the Secretariat actively seeks the contact with the academic world in Switzerland. For example, the Secretariat every year co-organizes the so called Swiss IO Day, an informal gathering of academics and practitioners, which constitutes a good platform to sensitize the academic world for the ongoing issues in competition policy.

While outside economists – whether academics, economists from other competition authorities or consultants – are most welcomed and encouraged to share their knowledge and experience with the Secretariat, ComCo hardly ever relies on outside economists within procedures. The reliance on external economic expertise is however not *a priori* excluded.⁷

2.3 *Best practice and guidelines*

ComCo is aware of the international trend to issue merger guidelines and acknowledges that such guidelines help to establish transparency and consistency in merger control. So far, ComCo has not published any merger guidelines for Switzerland. However, all its decisions are published in the bulletin “Law and Policy in Competition” (LPC). ComCo is of the opinion that the existing case law accurately and dynamically reflects ComCo’s best practice and creates enough transparency and consistency.

⁷ In the case “*Migros/Denner*” for example, ComCo asked for an external economic opinion.

2.4 *Interaction with parties economists*

In merger cases, so far, parties hardly ever involved economists. This may primarily be due to the permissive nature of the Swiss merger control regime. With regard to other proceedings (cartel and dominance cases) ComCo observes however a trend to an increased involvement of economic experts by the parties.⁸ Normally this involvement takes the form of a written economic opinion as a reaction to the statement of objection issued by the Secretariat. Direct contacts between the Secretariat and the parties economists are not the standard.

2.5 *Quantitative evidence and the courts*

Since the predominant part of mergers in Switzerland are cleared after Phase I or Phase II, there are only very few merger decisions which are appealed. So far, these appeal proceedings mainly concerned legal questions, in particular the question whether the legal standards to block a merger or impose remedies are met. As mentioned above, the courts in Switzerland hitherto favored a permissive interpretation of the legal standards. The assessment of quantitative evidence by the courts therefore never really constituted a decisive element in the decision making process.

2.6 *Creeping acquisitions*

Within the Swiss merger control regime there are no direct provisions with an objective to catch so-called creeping or serial acquisitions. However, according to Article 9 Para. 4 of the Cartel Act, once ComCo has decided in a proceeding that an enterprise holds a dominant position in a particular market, such an enterprise will be obliged to notify every horizontal or vertical merger irrespective of any notification thresholds. This provision holds as well for a merger that concerns an adjacent, up- or down-stream market.

This system enables ComCo to assess mergers which are not subject to the general notification rules, in particular in regional and/or concentrated markets. The main focus of this provision is to fight against dominant firms which take over smaller competitors and to impede the creation or strengthening of a dominant position liable to eliminate effective competition.

Apart from several cases that Swisscom⁹ notified, in practice Article 9 Para. 4 Cartel Act is of little importance. However, in the decision “*Migros/Denner*”¹⁰ ComCo chose an analog application of Article 9 Para. 4 Cartel Act: as one of the remedies ComCo obliged Migros to notify all mergers analog to Article 9 Para. 4 Cartel Act. Migros had to file several notifications in the meantime.

⁸ This trend may partially be explained by the introduction of direct sanctions for the infringement of the Swiss Cartel Act in 2003.

⁹ In 1997 ComCo first legally determined Telecom PTT (nowadays Swisscom AG) dominant position in the telecommunication sector. As a consequence PTT/Swisscom had to notified several cases in the last years (e.g. “*Swisscom AG/Phone House*”; LPC 2008/2, p. 341 et seq.).

¹⁰ See footnote 3.

TURKEY

1. Introduction

Turkey's current merger control policy is based on the criterion of creation or strengthening of dominant position in a particular relevant market. According to the Act no 4054 on the Protection of Competition (Competition Act) mergers, that would result in significant lessening of competition in a market for goods or services within the whole or a part of the country with a view to creating a dominant position or strengthening a dominant position, are illegal and prohibited. The draft law, which is currently in the Parliament, to amend the Competition Act is expected to widen the scope of the criterion for merger control in parallel with the developments in the competition policy of EU. The draft law does not exclude the dominance criterion but additionally empowers the Competition Board, the decision making body of the Turkish Competition Authority (TCA), to prohibit mergers that lessen competition significantly without making the creation and/or strengthening of dominance a necessary condition for prohibition.

In this respect, currently economic analysis of mergers is based on the structural approach which depends on the definition of the relevant market and the assessment of the structural parameters such as market shares, level of concentration, entry conditions and degree of vertical integration. As a natural consequence of the structural approach adopted by TCA, the quantitative evidence that has used so far in merger analysis was related to the relevant market delineation and the price-concentration analysis.

The number of cases in which the quantitative evidence has been used is far less than those in which qualitative evidence has played a decisive role.

TCA does not have any document that describes the best practices in the economic analysis of mergers except the *Guidelines on the Definition of Relevant Market (Guidelines)*, adopted in 2008, which set the principles that TCA and the relevant parties should follow in defining the relevant market. The *Guidelines* are generally in line with the guidance in the EU described in *Notice on the Definition of Relevant Market*¹ and emphasize the importance of considering the notions of demand and supply substitution among products and regions in defining relevant markets.

In almost every horizontal merger case, the TCA uses concentration measures like CR4 (concentration ratio four) and HHI (Herfindahl-Hirschman Index) which are calculated following the relevant market definition. The HHI levels and the change in HHI are evaluated by making reference to the thresholds indicated in the *US Horizontal Merger Guidelines*² or EU's *Guidelines on the assessment of horizontal mergers*.³

The quantitative techniques, which are used in the merger cases of the TCA to define the relevant markets, are price correlation, shipment test (Elzinga-Hogarty test) and hypothetical monopolist test

¹ Commission Notice on the definition of relevant market for the purposes of Community competition law, OJ C 372 , 09/12/1997 P. 5 – 13.

² Horizontal Merger Guidelines, issued on 9th of August, 2010.

³ Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 31, 5.2.2004, p. 5–18.

(SSNIP). In the assessment stage, only in one particular case, a price-concentration and diversion ratio analyses have been used. The summary of these analyses is given below.

2. Examples of economic evidence used in merger cases

2.1 Price correlation

The price correlation method was used in defining the relevant market in *Cadbury Schweppes/Intergum*⁴ merger case. The weak correlation between prices of different types of chewing gums was considered as supportive evidence to the qualitative assessment about the relevant market definition discussed in the case. As a result, it was decided that the product types like “chewing gum with sugar”, “sugar-free chewing gum” and “chewing gum with sweetener” are in different relevant product markets.

2.2 Elzinga-Hogarty test

The Elzinga-Hogarty test was used by the TCA in 11 horizontal merger cases so far. Ten of those cases were about mergers in the cement industry.⁵ The remaining one concerned the durable consumer goods markets.⁶

The Elzinga-Hogarty test assesses whether significant product flows are present between two regions. In particular, the Elzinga-Hogarty test states that a certain region can constitute a distinct geographic market if a significant proportion of the consumption in that region is provided locally and a significant proportion of the production in that region is consumed locally. TCA generally used 80% as the threshold for what constitutes “the significant proportion”. In practice, LIFO (little in from outside) and LOFI (little out from inside) values are calculated for evaluating the importance of the product flows between regions.

These measures are calculated as follows: $LIFO = 1 - \frac{C}{M}$ and $LOFI = 1 - \frac{X}{P}$, where C, M, X and P stand for consumption, import, export and production levels for the candidate regions. Regions whose LIFO and LOFI values are higher than 80% are considered as distinct geographic markets.

In implementing the Elzinga-Hogarty test, the TCA started from the city where the target firm is located as the initial region to be tested. Other cities are added to that city if either of LIFO or LOFI values is below 80%.

The TCA has not been clear in its decisions about the rule in choosing the city to be added to the candidate region if a larger region is indicated by the Elzinga-Hogarty test. Among the cement cases, in one case,⁷ the city which is the largest importer for the candidate region was chosen as the next city to be added, whereas in other cases the choice criterion is not explicitly expressed.

⁴ Decision of the Competition Board on the case is dated 23.8.2007 and numbered 07-67/836-314.

⁵ Dates and numbers of the decisions of the Competition Board on the relevant cases are as follows: 06.12.2007, 07-89/1130-441; 22.03.2007, 07-27/252-87; 28.04.2006, 06-31/379-96; 20.12.2005, 05-86/1190-342; 20.12.2005, 05-86/1192-344; 20.12.2005, 05-86/1194-346; 20.12.2005, 05-86/1189-341; 20.12.2005, 05-86/1188-340; 20.12.2005, 05-86/1187-339; 20.12.2005, 05-86/1191-343.

⁶ The decision of the Competition Board on the case is dated 28.05.2002 and numbered 02-32/367-153.

⁷ The decision of the Competition Board on the case is dated 06.12.2007 and numbered 07-89/1130-441.

Although in most of the cases the geographic market was defined exactly as the result of the Elzinga-Hogarty test indicated, in one particular case⁸ an additional city has been added to the geographic market that was suggested by the Elzinga-Hogarty test by taking into account other demand and supply conditions related to the case. In that case, it was considered that the distance between the target firm and the additional city, which the Elzinga-Hogarty test did not include in the market, was approximately same as the distance between the target firm and other cities. Therefore, target firm has had similar transportation cost for that city compared to the other cities indicated by the Elzinga-Hogarty test. In addition, it was argued that firms located in that city were able to sell their products to the same regions that the target firm was selling.

2.3 *Small but significant Non-transitory increase in prices (SSNIP)*

The TCA has used the SSNIP test for defining the geographic market in another horizontal merger⁹ in the cement industry. The SSNIP test seeks to find the smallest market within which a 'hypothetical monopolist' can raise the price of a product by 5%-10% for at least one year without customers switching to substitutes (i.e. the product market) or without customers switching to similar products in a different location.

In this case, *Oyak Çimento*, a cement producer located in city *Bolu* aimed to acquire two plants of its rival undertaking *Lafarge*. One of target plants is situated in city *Izmit* which is 151 km to the east of *Bolu*. In *Izmit*, there is also an independent and powerful cement producer, *Nuh Çimento*. Between *Bolu* and *Izmit*, there exist two other cities in which there is not any cement producer. The other plant of Lafarge is located in *Ereğli* which is 159 km to the northwest of *Bolu* and is a part of city *Zonguldak*. These plants are shown in the map below.

Map: Cement plants and their locations



As a prior step to implement the SSNIP test, the own and cross demand elasticities of the products of these producers have been estimated econometrically. Then, the hypothetical monopolist test has been

⁸ The decision of the Competition Board on the case is dated 20.12.2005 and numbered 05-86/1187-339.

⁹ The decision of the Competition Board on the case is dated 18.11.2009 and numbered 09-56/1338-341.

implemented separately for three regions using the estimated demand elasticities and predicted average costs of the plants.

The nested logit demand model proposed by Steven Berry (1994)¹⁰ has been used to estimate the demand elasticities. In this model, the bulk cement products are grouped into three nests according to their degrees of strength. In this approach, cement products are assumed to be differentiated by their degrees of strength. On the other hand, products having a particular degree of strength are assumed to be homogenous. Therefore, for every plant, different items having a particular strength degree have been considered as a distinct “product”. As a technical requirement of the nested logit model, a separate category of “other goods” has been defined as the “packaged cement”. Data on other cement producers located in cities around the merging plants are also included in the model.

Using data for every city/month pair, the relative market share of a particular “product” of a plant to the market share of “other goods” is regressed to the average price of this particular product and to the market share of that product in the nest to which it belongs. In addition to these explanatory variables; the plant, city and month fixed effects, the distance between the plant and the city marketed and its square are also included as regressors. Cost of labor and energy and two-period lagged prices were used as instrumental variables in order to overcome the endogeneity problem that might be caused by correlation between price and unobserved demand shocks. The Sargan test showed that the instruments were valid. The demand elasticities of every product of a particular plant at each city/month pair have been calculated using data on market shares, prices and the coefficients estimated in the nested logit model.

After this step the following method has been followed for implementing the SSNIP test. An initial region that will be subject to SSNIP test has been chosen for each of the three merging plants. Since the acquirer *OYAK Çimento*'s plant is located in *Bolu*, the initial region included *Bolu* and the city situated immediately to the west of it, *Düzce*, where there does not exist a cement producer. Similarly, for Lafarge plant, which is located in city *Izmit*, the cities *Izmit* and *Sakarya* (the city located immediately to east of *Izmit*) are included in the initial region to be tested. Therefore, the two cities which are located between the merging plants without having any cement producers in their own territory, namely cities *Düzce* and *Sakarya*, have been considered in the hinterland of one or the other of the merging plants. The initial region for the third merging plant located in *Ereğli* is chosen as the whole city of *Zonguldak* which also includes *Ereğli*. Then, profits of the hypothetical monopolists operating in those initial regions were calculated before and after 10% price increase. In calculating these profits, the plants located in the same initial region were assumed to be belonging to the same hypothetical monopolist. In addition, the average variable costs of the hypothetical monopolists were assumed to be constant before and after the SSNIP. The price increases were applied to all products that the hypothetical monopolists produce. Therefore, in calculating the effect of price increase, in addition to the own-price elasticity, the cross-price elasticities of demand within nest and between nests are also taken into account. Finally, the SSNIP for every three hypothetical monopolist resulted in increase in profits. This result suggested that the initial regions described above constitute relevant geographic markets for every three merging plant.

The quantitative evidence for this merger case stopped at this stage and the quantitative assessment has been done conventionally depending on parameters of market structures such as market shares, number of undertakings, HHI levels, entry and demand conditions. The merger was allowed along with a divestiture commitment which excludes the plant of Lafarge in *Ereğli* from the scope of the transaction.

¹⁰ Berry, S.T., 1994, *Estimating Discrete-Choice Models of Product Differentiation*, *RAND Journal of Economics*, vol. 25(2), Summer, 242-262.

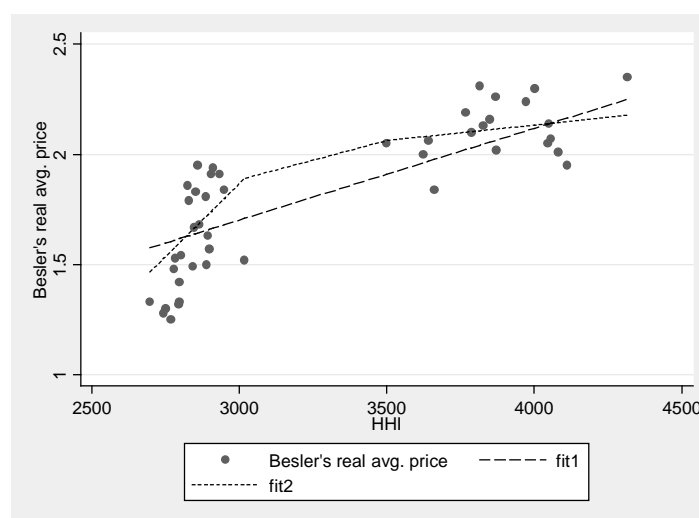
2.4 Price-concentration analysis

A price-concentration analysis has been conducted in assessing the effects of a horizontal merger in industrial margarine market, namely *Besler/Turyağ* merger.¹¹ Prior to the merger, there were three major players in the market: *Besler* and its subsidiary *Marsan* with a total market share above 50%, *Unilever* with a market share close to 30% and *Turyağ* with market share above 13%. The latter was a joint venture controlled by *Besler* and *Uğur* family and *Çallı* family, each having 33% of equities. *Besler*, wanted to increase his equities from 33% to 49% in *Turyağ* by acquiring some of the shares of *Çallı* family. On the other hand, a member of *Uğur* family was holding 10% equities of *Besler* and was a member of board of directors in *Besler*.

The TCA considered that HHI will increase from 3864 to 5220 after the transaction. In order to see the effects of the increase in HHI to prices, the deflated average price of *Besler* has been regressed on the HHI level and the deflated average variable cost of *Besler* using monthly data over 45 periods between January 2006 and September 2009. Using the estimates of this regression, it has been predicted that the change in HHI will increase the price of *Besler* by 22%. However, the economists of the parties objected to this analysis by arguing that the regression model has not taken into account a structural break that took place nearly 1,5 years ago in the market. The TCA first investigated the possible reason of the structural break and it concluded that a previous horizontal merger between *Marsan* and *Gıdasa* in March 2008 increased prices and HHI significantly. The TCA revised the regression by taking into account this structural break by including dummy variables both for the intercept and for the slope term of the HHI. According to the estimates of the revised regression, it has been seen that any increase in HHI beyond 3864 will not have a significant effect on price statistically. This interesting result has been interpreted by some of the TCA's professional staff as the result of a situation where a monopoly power has already emerged in the market because of the merger in March 2008. According to this view, a monopoly power that emerged at that time has increased prices to its maximum and there is no place for prices to rise further. This hypothesis could not be tested during the investigation of the merger at hand but has left as a research topic to the Directorate of Economic Research which is still in progress.

The graph below shows data, the fitted lines and the structural break in data.

Graph: Regression lines and data in Besler/Turyağ merger



¹¹

The decision of the Competition Board on the case is dated 12.10.2010 and numbered 10-64/1355-498.

2.5 *Diversio*n ratio analysis

In addition to the regression analysis done in *Besler/Turyağ* merger described above, the TCA also conducted a Diversion Ratio Analysis to predict the possible price increase after this merger. The diversion ratio between *Besler* and *Turyağ* was calculated by the formula $d_{BT} = \frac{s_T}{1 - s_B}$, where s_T and s_B represent market shares of *Besler* and *Turyağ* respectively. Then, using the price-cost margins of firms and the formulas provided by Shapiro¹² the price effects of the merger were calculated as 3.86% if the demand curve is assumed to be linear and 11.3% if the demand curve is assumed to have constant elasticity. Parties objected to this analysis by arguing that TCA calculated the price effects without showing any evidence on the shape of the demand curve.

3. Data collection

All of the data used in those analyses have been collected from the parties involved in merger and the third parties. In general, data requests are fulfilled timely, however, it is observed that data are sent in different formats and it takes time to reorganize them to be used in the analysis.

4. Capacity

The quantitative analysis that has been introduced in merger cases so far has been conducted by the professional staff of the TCA working in case teams and no outside economists have been commissioned although there is no legal or financial barrier for outsourcing. As to the steps undertaken to improve the TCA's general economic expertise, approximately 20 of the professional staff have been financed by the TCA for their master studies in economics in universities in Europe and the USA. Nearly ten of them are following a PhD program in economics in Turkish universities along with their professional work load. Two of the professional staff of the TCA have already obtained their PhD degrees in 2010 in economics. In addition to the capacity of economic analysis to be carried out by the professional staff in case teams, the Department of Research is under a process of restructuring since October 2010 in order to give support to case teams. In this process, a new head of department was appointed. Along with him, one of the senior professional staff having PhD degree was appointed as the head of the Directorate of Economic Research, which is organized under the Department of Research. Two economists of the Directorate are currently enrolled in MSc programs in Europe. In addition to them, there is one MSc economist and three statisticians in the Directorate. A draft notice describing the procedure how the economic support to be given by the Directorate will be integrated into the analyses of case teams and the decision making process has been prepared and is currently under review. According to the draft notice, the Directorate is expected to prepare an independent opinion related to the case for which a support is asked by the case team. The opinion will be distributed to the case team and also to the Competition Board to be taken into account in the decision making process.

¹²

Shapiro, C. 1996, Mergers with Differentiated Products, *Antitrust*, Spring, p.26.

UNITED KINGDOM

1. Introduction¹

This paper considers recent developments in the economic analysis of mergers in the UK. The UK voluntary merger regime involves two stages: the Office of Fair Trading (OFT) is the first phase body; and if a merger is found to have a realistic prospect of an SLC the OFT refers the merger to a second phase body, the Competition Commission (CC) for an in-depth investigation.

The remainder of this paper is in two parts:

- An overview of the use of economic analysis by the UK authorities;
- Recent developments in the economic analysis of retail mergers by the UK authorities.

2. The use of economic analysis by the UK agencies

This part provides an overview of the use of economic analysis by the UK authorities, and covers the following aspects.

- Economists within the agencies.
- Information Gathering Powers
- Interaction with parties' economists
- Outlining the Approach to Economic Analysis
- Review by the Courts of quantitative analysis

2.1 *Economists within the agencies*

A merger case is generally assigned a staff team. At the OFT, this will involve a case officer and economist on the majority of cases. At the CC, the case team may include several economists assessing different aspects of the case, as well as statisticians and legal advisors where appropriate. The economists at both the OFT and CC take the lead in developing the theories of harm and conducting the economic analysis. Their work forms the basis of the final published decision or report.

Many of the staff at both phases have prior experience in government, academic research, or consultancy. External experts are generally not employed in carrying out technical analysis on the basis that this should be within the core competence of staff teams. Expert economists are therefore employed as full-time staff and both bodies have considerably expanded these teams in recent years.

¹ In the UK the Office of Fair Trading (OFT) is the first phase of merger control and the Competition Commission (CC) is the second phase.

The economists' team at the CC benefits from the advice of an 'academic panel' of economists. This 'panel' provides expertise to the staff team when necessary, reviewing work and suggesting lines of analysis, but does not give opinions on cases and are not employed to act as expert witnesses. A similar function is provided at the OFT by the Chief Economist's Office.

Economists are also an integrated part of the decision-making process. At the OFT, the Chief Economist is one of two senior members of staff with responsibility for making the decision at phase 1 in complex cases that raise concerns. In phase II, the decisions of the CC are taken by a group of part-time appointed Members, at least one of whom will be an economist. Currently the CC's economic Membership includes academics, former consultants and in-house economists.

2.2 Information gathering powers

The OFT has statutory powers enabling it to request information from the notifying parties but does not have any information gathering powers with respect to third parties (customers, competitors, or other market participants). The CC, however, has statutory powers enabling it to obtain information from both notifying *and* third parties and to require witnesses to give evidence. It may also impose penalties in the event that a recipient of a formal notice requesting information fails to comply. Through these powers the OFT and CC are able to gather evidence for the use in economic analysis.

2.3 Interaction with parties' economists

The notifying parties bring in consultant economists at first phase only in certain cases, where there is a perceived need to do so (generally only when the case raises substantial concerns but not in all cases that do so). The OFT may when appropriate recommend the parties engage consultants, but this remains entirely at the parties' discretion.

By the time of the reference to the CC, the merging parties will normally have instructed consultants. Contact between the CC staff and the notifying parties' economic advisers is likely to begin at the outset of the investigation. This provides an opportunity for the CC to explore with the parties the types of information available and the scope of likely information requests.

In addition, the parties may submit significant amounts of analysis and data to support their case. The CC has published a note suggesting Best Practice for submissions of technical economic analysis.²

2.4 Outlining the authorities' approach to economic analysis

The OFT and the CC have published joint guidance relating to the analysis of mergers which explains the approaches of the two authorities.³ Previous cases may also provide some useful information on the approach to be taken. Both authorities have also published additional commentaries or notices on particular aspects of the merger analysis, which assists parties in preparing submissions to the Authorities.

In second phase, the notifying parties will be aware of the approach the OFT took in phase 1, from the OFT's published decision. That decision influences the CC's initial thinking, although the CC is not bound by it and as the investigation progresses, it may take a different approach or reach a different conclusion.

² http://www.competition-commission.org.uk/rep_pub/corporate_documents/corporate_policies/best_practice.pdf.

³ http://www.competition-commission.org.uk/about_us/our_organisation/workstreams/analysis/pdf/100916_merger_assessment_guidelines.pdf.

This can often be the case as the two authorities are required to apply different thresholds to their respective decisions.

2.5 *Review by the Courts of quantitative analysis*

Since the CC became determinative for mergers under the Enterprise Act 2002, there has been one merger in which the Competition Appeal Tribunal (CAT) considered a claim by the merging party that was focused upon the quantitative analysis.⁴

In this case the CC's decision was reached having taken into account five pieces of evidence, one of which was a competitor impact assessment. The CC considered that all the evidence pointed towards the same conclusion on the scope of the competitor set. The appellant claimed that the CC should have relied entirely on the impact assessment and not give the weight it did to the other pieces of evidence (including a survey and retail report).

The CAT noted that the issue of where to draw the line (for those within and outside the competitor set) was for the CC to evaluate. The CAT also considered the other four pieces of evidence supported the CC's conclusions and that the weight given to certain pieces of evidence was for the CC to evaluate.

The CAT found in favour of the CC, concluding that there was no basis for suggesting that the weight given to the different evidence was perverse or that its conclusion was unreasonable on the evidence before it.

3. **Recent developments in the analysis of retail mergers**

In this part we focus on recent developments in the UK authorities' analysis of retail mergers. In retail markets, where the merging parties offer a substitutable but differentiated retail proposition, the parties may have an incentive post-merger to raise price or deteriorate other aspects of the retail offer. The approach of the UK authorities in such cases has increasingly involved an assessment of unilateral effects based on quantifying the changes to price incentives resulting from the merger.

The UK authorities have generally implemented a two stage assessment process where such an approach has been used: first, defining appropriate local catchment areas surrounding a retail outlet and identifying competing fascias within these to identify and filter potentially problematic areas; and second, within these areas estimating illustrative price rises (IPRs) (and other indices of upward pricing pressure). In some cases countervailing factors, such as efficiencies and the existence of national pricing, were considered in a third stage. All these stages and the recent experience of the UK authorities in using this approach are detailed below.

This broad methodology was first used in the CC inquiry into a merger between two national grocery retail chains in 2005.⁵ Since then, the methodology has been refined and applied by the OFT, at first phase, in fifteen to twenty merger inquiries⁶. The approach now effectively takes both steps as filtering exercises and focuses assessment on those areas where competition concerns may potentially arise, after the application of the filters.

⁴ Somerfield PLC v Competition Commission Neutral citation [2006] CAT 4
<http://www.catribunal.org.uk/files/Jdg1051Som13022006.pdf>.

⁵ See *Somerfield plc / William Morrison Supermarkets plc: A Report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc.*, CC, September 2005 (*Somerfield/Morrison*).

⁶ The methodology as applied at first phase is detailed in *Anticipated acquisition by Co-operative Group Ltd. of Somerfield Ltd*, OFT, October 2008 (*Co-operative/Somerfield*).

Not all retail cases have required the full two-step process, particularly if initial filtering has not raised any problematic areas⁷ or the merger involves a small number of stores where filtering is not required⁸. More generally, the methodology has not been applied in all subsequent retail cases, where greater weight has been given to other types of evidence⁹ or there have been limitations to the availability of data.

The UK authorities recognise the IPR methodology has significant limitations and a limited scope of interpretation. The appropriateness of undertaking this type of analysis will be dependent on the case being investigated, and the results must be put in context with the other qualitative and quantitative evidence received and analysis carried out during the investigation.

3.1 *Identifying catchment areas*

Competition between retailers has an intrinsically local aspect, because consumers choose between the shops in their locality. Evidence about the extent of local competition, and the effect of the merger on this, can come from considering the number of competing fascia within a catchment area around one of the stores of the merging parties.

3.1.1 *Catchment areas*

Some mergers involve sectors (notably groceries) that have been the subject of a detailed investigation in the past, and these can inform decisions about suitable catchment areas. When there are no previous investigations to draw upon the OFT at first phase has tended to define a catchment area based on the area within which a proportion of the merging firms' customers or sales originate. For example, a starting point of 80 per cent of customers or sales, with significant sensitivity analysis, has been used in past cases¹⁰. In grocery retail, a range of drive-times around each store has been used to create a set of 'isochrones', approximating the area within which customers generating most of the business originate¹¹.

In a second phase review the CC will consider a range of evidence about the appropriate size of catchment area. For example in *Sports Direct/JJB*, the CC carried out a survey which found that most consumers travelled to the store for up to 15 minutes (most of them used a car). On that basis, the CC defined isochrones as a 15 minute drive time around the merging parties' stores. In another case, the CC carried out econometric analysis of the effects of entry which suggested that the merging parties were constraining each other within a 1 mile isochrone and that large supermarkets constrained them within a 10 minute drive time¹².

⁷ See, for example, *Anticipated acquisition by Tesco plc of six former Somerfield stores from Co-operative Group Ltd.*, OFT, March 2009.

⁸ See, for example, *Completed acquisition by Tesco plc of five stores from Somerfield plc*, OFT, December 2007.

⁹ See, for example, *Anticipated acquisition by HMV Group plc, through Waterstone's Ltd., of Ottakar's plc.*, OFT, December 2005 (*Waterstone's/Ottakar's*).

¹⁰ See, for example, *Completed acquisition by Aggregate Industries Ltd of Atlantic Aggregates Ltd and Stone Haul Ltd*, OFT, March 2009 (*Aggregate Industries/Atlantic Aggregates*); and *Anticipated merger between Co-operative Group (CWS) and United Co-operatives Ltd.*, OFT, July 2007.

¹¹ See, for example, *Somerfield/Morrison* for an outline of this approach.

¹² See *NBTY and Julian Graves: A report on the completed acquisition by NBTY Europe Limited of Julian Graves Limited*, CC August 2009 (*NBTY/Julian Grave Phase 2*).

3.1.2 *Fascia counting*

Having identified the catchment areas, a simple filter is sometimes used to identify areas that are very unlikely to be problematic so that these can be excluded from further detailed scrutiny. These filters are often based on the number of effective competitors within the catchment area. Identifying effective competitors has in the past involved, for example, analysis of diversion ratios, entry and exit analysis and other event studies, and third party views.

3.1.3 *Sensitivity analysis*

When using a filter it is important to be cautious to avoid excluding areas that detailed analysis would have shown to be problematic. To this end the authorities use sensitivity analysis which may involve altering the scope of the catchment area, but can also involve re-centring the catchment area on the other retail stores in the catchment or on major population centres.¹³

3.1.4 *Filtering*

The need to be cautious when using a filter also means that the filtering rules used are designed to minimise the risk that areas are excluded when detailed analysis would have shown them to be problematic. This means that, in many cases, the number of areas that are finally found to raise competition concerns is much smaller than the number that was initially identified by the filter.¹⁴

3.2 *Illustrative Price Rises (IPR)*

The UK authorities have used quantitative indications of potential effects based on combining information on diversion ratios and margins in many retail mergers. The most commonly used indication is an Illustrative Price Rise (IPR), first used in *Somerfield / Morrison*.¹⁵

3.2.1 *Estimating inputs*

The value of sales merging parties lose to each other following a price rise can be estimated by combining two pieces of evidence:

- the **diversion ratios** between the parties, giving the sales each party loses following a price rise that is captured by the other party; and
- the gross **profit margin** on sales, which values those sales that were diverted pre-merger and will be captured by the combined firm post-merger.

Diversion ratios are treated as reflecting the degree of rivalry between the merging firms relative to the rivalry with other firms, and thus the importance of the competitive constraint between the merging firms. Diversion ratios have been used extensively in retail mergers at first and second phase prior to applying the IPR methodology. The UK authorities generally obtain diversion ratios from a variety of

¹³ For an outline of this approach see, for example, *Anticipated acquisition by Cineworld Group plc, through its subsidiary Cine-UK Ltd., of the cinema business operating at the Hollywood Green Leisure Park, Wood Green*, OFT, March 2008.

¹⁴ See, for example, *Co-operative / Somerfield*.

¹⁵ See *Somerfield / Morrison* Appendix D para 13 for a detailed description.

sources, including internal documents and analysis,¹⁶ econometric analysis of the effects on revenue of entry by one retailer in an area where another already operated,¹⁷ consumer surveys,¹⁸ pricing data and elasticity estimates.¹⁹

The extent to which the merging parties can mark-up prices over variable costs is treated as providing an initial indication of the collective pressure from rivals; otherwise price-sensitive marginal consumers would switch and result in lower margins. While the margin can reflect, and be sensitive to, a large number of other factors, this treatment provides a starting point for analysis of the possible effects of the merger, particularly at first phase.

3.2.2 *Methodological approach*

The IPR uses information on diversion ratios and margins to give an indication of the relative lessening of competition arising from the merger; they are not interpreted as predictions of post-merger price rises but are instead used as an indicator of potential price rises post-merger.

3.2.3 *Assumed demand function*

The IPR can vary dependent on the assumed demand function used. Isoelastic demand generates higher IPRs than linear demand does. At first phase, reflecting its need to be conservative, the OFT tends to favour an isoelastic demand (as was used in *Asda/Netto*) but will carry out sensitivity analysis around this.

3.2.4 *Intervention thresholds*

The change in incentives to raise price resulting from the merger, as estimated by the IPR, will vary by case and may be very small for some local areas. The first application of the IPR methodology in *Somerfield/Morrison* introduced a two step threshold of, first, a 5 per cent IPR and, second, a 14 per cent diversion ratio, above which acquired stores were considered to result in competitive harm.²⁰ These thresholds have subsequently been used by the OFT in mergers that involve grocery retailers as an initial filter, with significant additional sensitivity analysis. However, the OFT has not applied such thresholds in other (non-grocery) retail cases.²¹

¹⁶ For example in *NBTY/Julian Graves Phase 2* internal documents that described which competitors the parties monitored informed the CC the closeness of competition.

¹⁷ For example in *HMV Group plc and Ottakar's plc: Proposed acquisition of Ottakar's plc by HMV Group plc through Watertone's Booksellers Ltc*, CC, May 2006 (*Waterstone's/Ottakar's Phase 2*), *NBTY/Julian Graves Phase 2*, and *Sports Direct / JJB Sports plc: A report on the acquisition by Sports Direct International plc of 31 stores from JJB Sports plc.*, CC, March 2010 (*Sports Direct/JJB*), the CC found that entry by one of the merging parties in an area where the other had been incumbent had a stronger impact on the incumbent store's revenues than entry by any other competitor.

¹⁸ See, for example, *Home Retail/Focus*.

¹⁹ For example in *Completed acquisition by Lactalis McLelland Ltd of Lubborn Cheese Ltd*, OFT, August 2009, the OFT estimated price own and cross price elasticities principally used in critical loss analysis for market definition and also to estimate diversion ratios.

²⁰ See *Somerfield/Morrisons*, para. 7.9 to 7.12.

²¹ See, for example, *Completed acquisition by NBTY Europe Ltd of Julian Graves Ltd*, OFT, March 2009.

3.2.5 *Asymmetric firms*

The degree of constraint between the merging parties may be asymmetric, resulting in materially different diversion ratios (from firm A to firm B as from firm B to firm A) and profit margins. Assuming a single diversion ratio and profit margin may overly simplify the analysis.

This was considered in detail in two recent grocery retail mergers at first phase where the OFT considered evidence of asymmetry between the merging parties²². In the more recent merger case, *Asda/Netto*, analysis explicitly took account of this asymmetry in the IPR calculation. However, this approach involves significantly more complex calculations and input data – including relative prices and (own- and cross-price) elasticity estimates – which may not always be available, particularly at first phase.

3.3 *Countervailing factors*

In some cases the UK authorities have considered countervailing factors in a third stage. One possible countervailing factor arises from the fact that, in some cases, retail chains apply the same headline price for some of their products in all stores, regardless of the intensity of competition locally. However prices are not the only way that retailers compete: the range of products on offer, the level of service, opening hours, spending on refurbishments and so on can all be used to attract customers away from nearby rivals. Even if some prices are set nationally, retail chains may still be able to respond to the loss of local competition following a merger by relaxing these other dimensions of competition, which makes the assessment of arguments about national pricing particularly challenging.

The CC has analysed arguments about national pricing in a number of cases during the second phase. The assessment has included:

- analysis of the incentives to change national level prices. Nationally set prices will respond to the overall level of competition faced by a retail chain across its portfolio as a whole, and this will be affected by the loss of competition in a number of locations following a merger. The basic approach is to use the IPR methodology described above, but to use an estimate of the diversion ratio that takes account of the extent of overlap of the two merging chains. For example, in *Sports Direct/JJB*, the CC considered that Sports Direct derived a certain percent of its revenues from the stores in local markets where it overlapped with JJB Sports. Taking into account this percentage, the CC adjusted the IPR calculation to provide evidence about the incentive of Sports Direct to increase national prices post-merger.²³
- econometric studies investigating whether discounts and vouchers, margins, numbers of refurbishments, or other specific dimensions of competition vary depending on the extent of local competition. The aim of these studies is to provide evidence about the importance of local variations in a range of competitive variables in response to changes in competition. For example in *Somerfield/Morrison* the CC found a link between margins and concentration in rural areas;²⁴

²² See *Completed acquisition by Wm. Morrison Supermarkets plc of 30 stores from Co-operative Group Ltd.*, OFT, July 2009; and *Anticipated acquisition by Asda Stores Ltd. of Netto Foodstores Ltd.*, OFT, September 2010 ('*Asda/Netto*').

²³ See *Sports Direct / JJB*.

²⁴ See *Somerfield / Morrison*.

and in *Waterstone's/Ottakar's Phase 2* the CC found that while prices and book quality were set nationally, book signings and general refurbishments responded to local competition;²⁵

- assessment of the impact of the merger on the incentives to introduce local pricing, based on assessing the extent to which the acquiring firm faced different levels of competition in different areas, and the effect of the merger on this.

²⁵ See *Waterstone's/ Ottakar's Phase 2*.

UNITED STATES

This paper responds to the Chair’s letter of December 9, 2010, calling for submissions for the roundtable on economic evidence in merger analysis. The paper discusses a large number of mergers reviewed by the Agencies. These case descriptions are used to illustrate the types of evidence analyzed to determine whether a merger may substantially lessen competition, the sources of such evidence, and some of the techniques used to analyze the evidence. The paper concludes with a discussion of the role of economists in developing and analyzing such evidence. In August 2010, the Antitrust Division of the U.S. Department of Justice (“DOJ”) and the Federal Trade Commission (“FTC”) (collectively, “the Agencies”) issued revised Horizontal Merger Guidelines, which “describe the principal analytical techniques and the main types of evidence on which the Agencies usually rely to predict whether a horizontal merger may substantially lessen competition.”¹ The discussion below draws on sections of these guidelines.

1. Types of evidence

The Agencies consider any reasonably available and reliable evidence to address the central question of whether a merger may substantially lessen competition. This section discusses several categories and sources of evidence that the Agencies, in their experience, have found most informative in predicting the likely competitive effects of mergers. The list provided here is not exhaustive. In any given case, reliable evidence may be available in only some categories or from some sources. For each category of evidence, the Agencies consider evidence indicating that the merger may enhance competition as well as evidence indicating that it may lessen competition.

1.1 Actual effects observed in consummated mergers

When evaluating a consummated merger, the ultimate issue is not only whether adverse competitive effects have already resulted from the merger, but also whether such effects are likely to arise in the future or to persist if they have already occurred. The Agencies give substantial weight to evidence of observed post-merger price increases or other changes adverse to customers. The Agencies evaluate whether such changes are anticompetitive effects resulting from the merger, in which case they can be dispositive.

In the DOJ’s investigation of Microsemi’s acquisition of Semicoa, for example, the Department found evidence of adverse competitive effects resulting from the transaction, which was consummated in 2008. Prices for the relevant products in high-reliability transistors and diodes had increased, while the reliability of delivery times—an aspect of quality critically important to aerospace customers—had declined. Competition in the relevant products was restored through Microsemi’s divestiture of Semicoa’s assets as part of a settlement negotiated with the DOJ.²

The DOJ likewise found anticompetitive effects had flowed from a series of transactions consummated in 2004 that extinguished competition between the Charleston Gazette and the Charleston

¹ DOJ/FTC Horizontal Merger Guidelines (August 19, 2010) at 1, available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.html> and at <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

² See <http://www.justice.gov/atr/cases/microsemi.htm>.

Daily Mail—the only two daily newspapers in Charleston, West Virginia. Almost immediately after the transactions closed, the Gazette Company took a variety of actions that damaged the quantity and quality of content available to Daily Mail readers. These actions contributed to a substantial drop in the Daily Mail’s circulation, most of which was likely recaptured by the Gazette. As part of a settlement negotiated with the Department, the parties entered into a new contractual relationship that restored their incentives to compete.³

As part of the FTC’s Hospital Mergers Retrospectives Project, FTC economists analyzed the competitive effects of four consummated hospitals mergers. Each of these studies analyzed the effect of the transaction on prices by comparing differences in prices at the merging hospitals pre- and post-merger, controlling for patient and hospital characteristics, to those same differences in a group of control hospitals. The estimated price effects for three of the four mergers were either mixed or statistically insignificant, but large and statistically significant price effects were found for four of the five health insurers included in the analysis of the 2000 acquisition of Highland Park Hospital by Evanston Northwestern Healthcare in Highland Park, Illinois. An administrative law judge ruled the transaction violated Section 7 of the Clayton Act,⁴ and that finding was upheld on an appeal to the FTC commissioners.⁵

Both previously published work and internal analyses by DOJ economists have found price effects from the loss of a nonstop air carrier in domestic hub routes. In one such analysis, actual price increases of between 7.2 percent and 29.4 percent have been found to follow the loss of nonstop competition in overlap domestic routes resulting from airline mergers.

A consummated merger may be anticompetitive even if adverse competitive effects have not yet been observed, perhaps because the merged firm may be aware of the possibility of post-merger antitrust review and is moderating its conduct. Consequently, the Agencies also consider the same types of evidence they consider when evaluating unconsummated mergers.

An example of this is the FTC’s 2001 challenge of a merger between two manufacturers of large, field-erected industrial and water storage tanks in a challenge of the consummated merger by Chicago Bridge & Iron Company and Pitt-Des Moines, Inc. The firms had recently completed the merger at the time of the challenge, so the case was prepared much like a prospective merger challenge based on market definition, concentration, and evidence of closeness of competition. The FTC ruled in an administrative proceeding that the acquisition violated antitrust laws, and a petition for appeal was denied by the Federal Court of Appeals. The case concluded with the parties’ consent to divest the acquired assets.⁶

1.2 *Direct comparisons based on experience*

The Agencies look for historical events, or “natural experiments,” that are informative regarding the competitive effects of the merger. For example, the Agencies may examine the impact of recent mergers, entry, expansion, or exit in the relevant market. Effects of analogous events in similar markets may also be informative.

One such natural experiment was important to the analysis of a 2002 acquisition involving Southern Belle and Flav-O-Rich, two suppliers of milk to school districts. For regulatory reasons, the U.S.

³ See <http://www.justice.gov/atr/cases/daily.htm>.

⁴ See <http://www.ftc.gov/os/adjpro/d9315/051021idtextversion.pdf>.

⁵ See Farrell, J., Pautler, P.A., & Vita, M. (2009) Economics at the FTC: Retrospective Merger Analysis with a Focus on Hospitals *Review of Industrial Organization*, 35, pp. 369-385.

⁶ See <http://www.ftc.gov/os/adjpro/d9300/index.shtm>.

Department of Agriculture had suspended Southern Belle from bidding on certain school milk contracts from 1998 to 2000. Competition between Southern Belle and Flav-O-Rich was thus eliminated in some districts during the period. For those districts affected by the loss of Southern Belle as a bidder, relative prices for school milk rose and new entry did not occur to return prices to a competitive level. This helped inform DOJ's conclusion that the 2002 transaction, by eliminating competition between the parties, would likely result in a significant increase in school milk prices for certain districts.⁷

Another such event that helped inform the FTC's evaluation of Nestle Holdings, Inc.'s proposed acquisition of Dreyer's Grand Ice Cream, Inc. in 2003 was the recent entry of Dreyer's into the superpremium ice cream segment. The impact of that entry on sales products in various segments of the market complemented econometric analysis of retail scanner data in both the analysis of market definition and competitive effects.⁸

Also relevant to merger analysis is whether the industry has a record of price-fixing conspiracies. DOJ has prosecuted explicit collusion in school milk pricing on multiple occasions, across multiple geographic regions. This history heightens concerns that transactions eliminating a competitor in the bidding for school milk contracts will facilitate anticompetitive coordination, as was the case in DOJ's 2010 decision to challenge the merger of Dean Foods and Foremost, discussed below.

Another natural experiment informed DOJ's analysis of the 2006 merger between A.O. Smith and GSW-American, two producers of residential tank-style water heaters. Driven largely by tighter energy regulations and increases in raw materials costs, the prices of tank-style water heaters had risen significantly over several years leading up to the merger. Importantly, the factors driving these price increases did not significantly affect the marginal costs of producing tankless water heaters. The relative rise in marginal costs of tank-style water heaters allowed the cross-price elasticity of demand between tank-style and tankless water heaters to be estimated as an upper bound, under the extreme assumption that all growth in tankless unit sales during the period represented diversion from tank-style unit sales. The apparent diversion was small, indicating that losses in sales to tankless products would not likely defeat the profitability of a small but significant and non-transitory increase in the price (SSNIP) of residential tank-style water heaters by a hypothetical monopolist over these tank-style products.⁹

The Agencies also look for reliable evidence based on variations among similar markets. For example, if the merging firms compete in some locales but not others, comparisons of prices charged in regions where they do and do not compete may be informative regarding post-merger prices. In some cases, however, prices are set on such a broad geographic basis that such comparisons are not informative. The Agencies also may examine how prices in similar markets vary with the number of significant competitors in those markets.

In the proposed 1997 merger of office supply stores Staples and Office Depot, FTC economists employed a panel data econometric model that estimated the effect of nearby Staples and Office Depot stores on the prices of the other. The analysis indicated that Staples' prices were 6%-8% lower in markets in which it faced competition from Office Depot, holding competition from third-parties constant. These findings corroborated documentary evidence that suggested a price effect of 7%-10%. The FTC authorized

⁷ See <http://www.justice.gov/atr/cases/indx122.htm>.

⁸ See <http://www.ftc.gov/opa/2003/06/nestle.htm>.

⁹ Elizabeth Armington, Eric Emch and Ken Heyer (2006), "The Year in Review: Economics at the Antitrust Division, 2005-2006," *Review of Industrial Organization*, vol. 29, pp. 305-326.

its staff to seek a preliminary injunction in federal court to enjoin the merger during the pendency of the administrative proceeding. The FTC's motion was granted, and the parties abandoned the transaction.¹⁰

A similar event-study analysis was employed by FTC economists to analyze potential for reduced competition as a result of the 2007 merger of food retailers Whole Foods and Wild Oats. Again, a panel data econometric model was employed to estimate the effect of the nearby Whole Foods and Wild Oats stores on the prices and profit margins of the other, controlling for other nearby potential competitors. These included conventional and gourmet food retailers as well as mass merchandisers and club stores. The results indicated that the presence of Whole Foods stores had a significant effect on the prices at Wild Oats stores and that the presence of most other retailers had little or no effect. A federal judge declined to issue a preliminary injunction and the transaction was consummated. However, this ruling was overturned on appeal, and, ultimately, the FTC and Whole Foods reached a consent agreement requiring the divestiture of some of the former Wild Oats stores.¹¹

The 2008 combination of meat packers JBS, National and Smithfield raised concerns both that the merger might enable the merged firm unilaterally to reduce price for fed cattle in the affected region and that market conditions might facilitate coordinated pricing for fed cattle among the region's few remaining significant packers. DOJ's Economic Analysis Group (EAG) employed a cross-section econometric study of how winning bids for cattle at feedlots varied as a function of the number of independently owned packing facilities located within various distance bands around the feedlot. The Department found that, after controlling for other relevant variables, winning bids tended to be somewhat higher when the number of independent packing facilities located near a feedlot was greater.¹²

An issue in the 2007 merger of health insurers United and Sierra was the extent to which the terms of Medicare Advantage (MA) plans the merged firm could profitably offer to seniors were constrained by the Medicare alternative. DOJ economists examined cross-market panel data on enrollment by seniors in the different types of health insurance plans. Consistent with the hypothesis that insurance provided by MA plans constitutes a relevant product market, the econometric analysis found that, after controlling for other relevant variables, an increase in the number of MA plan competitors in a geographic market generated higher enrollment in these products. This indicated that increased MA plan competition resulted in more favorable plan terms, in both price and quality dimensions. EAG staff also looked at the competitive impact of different sized firms in the market. EAG's cross-market empirical work found that a competitor's impact in the marketplace increases substantially with firm size.¹³

1.3 Market shares and concentration in a relevant market

The Agencies give weight to the merging parties' market shares in a relevant market, the level of concentration, and the change in concentration caused by the merger. Mergers that cause a significant increase in concentration and result in highly concentrated markets are presumed to be likely to enhance market power, but this presumption can be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.

In the aforementioned Chicago Bridge investigation, the FTC produced evidence that the acquisition substantially increased the concentration in four relevant markets to support a prima facie case that the acquisition violated antitrust laws. The opinion of the Court of Appeals for the Fifth Circuit cites evidence

¹⁰ See <http://www.ftc.gov/speeches/other/stspch.shtm>.

¹¹ See <http://www.ftc.gov/os/adjpro/d9324/index.shtm>.

¹² See <http://www.justice.gov/atr/cases/jbsnat.htm>.

¹³ See <http://www.justice.gov/atr/cases/unitedhealth2.htm>.

that the acquisition increased the Herfindahl-Hirschman Index (HHI) by between 2,635 and 4,999 in each of the four markets, and that post-merger HHIs would be as high as 10,000, which is a complete monopoly.¹⁴

In another matter, very high and increasing concentration in commercial health insurance in the Lansing, Michigan area helped to inform DOJ's decision to challenge Blue Cross Blue Shield of Michigan's (Blue Cross-Michigan) 2010 attempt to purchase Physicians Health Plan of Mid-Michigan (PHP). Blue Cross-Michigan and PHP are the two largest providers of commercial health insurance in the Lansing area. Blue Cross-Michigan has almost a 70 percent market share in Lansing, and PHP is its largest competitor with approximately a 20 percent market share. The parties' high shares suggest that they are each other's closest competitors. The results from empirical work on win-loss data by DOJ economists were consistent with this hypothesis. The parties abandoned the merger shortly after being informed of DOJ's decision to challenge it.¹⁵

High and increasing concentration in tin mill products likewise underlay DOJ's concern that the 2006 merger of Mittal Steel with rival producer Arcelor, eliminating Arcelor as an independent competitive force, would significantly increase the risk of anticompetitive conduct between the market's two largest remaining firms. EAG performed an analysis to determine whether these two largest remaining firms could profitably coordinate on a price increase post-merger, taking into account, among other things, the margins of price over marginal cost that the firms would lose on sales captured by non-coordinating fringe players as a result of the price increase, as well as the extent to which these fringe players could expand by filling unused capacity. The potential for fringe expansion was not sufficient to rebut the finding of likely harm from anticompetitive coordination between the two largest remaining firms post-merger.¹⁶

High and increasing concentration also played a role in the FTC's decision to challenge the proposed 2007 acquisition of Prince William Hospital by the Inova Health System in northern Virginia. In this case, the acquiring system had a very large share (65%-70%, depending on the metric used) while the target hospital had a much more modest market share (5%-7%). This disparity in shares suggests that expected price effects due to reduced competition would be highly asymmetric. Consistent with this, the analysis of likely competitive effects performed by FTC economists suggested that the merger would significantly increase the bargaining power of Prince William Hospital in its negotiations with health insurers while having a significantly lower effect on the bargaining power of the Inova Health System. While the competitive effects analysis used in this matter focused on closeness of substitution between the parties, rather than on concentration per se, Inova's very large share strongly suggests that it is likely to be a close substitute for Prince William. Hence, market concentration indices, which were well above the thresholds for which the transaction would be presumed to be anticompetitive, played an important role in the investigation. The parties abandoned the transaction shortly after the FTC announced its challenge.¹⁷

High market shares are not sufficient evidence for a merger challenge, though. In the 2005 merger between Blackboard and WebCT, on the other hand, the parties' very large shares in installed-base course management software implemented by academic institutions raised initial concerns, but these were allayed by further analysis. DOJ economists analyzed accounts that the merging firms had lost in recent competitions. EAG looked at these win-loss data to get a better sense of the extent to which the switching behavior of educational institutions overall, and of specific types of institutions in particular, revealed whether the merging firms' products were next-best substitutes. No more than a small percentage of the

¹⁴ See <http://www.ftc.gov/os/adjpro/d9300/080125opinion.pdf>.

¹⁵ See http://www.justice.gov/atr/public/press_releases/2010/256259.htm.

¹⁶ See <http://www.justice.gov/atr/cases/mittal.htm>.

¹⁷ See <http://www.ftc.gov/os/adjpro/d9326/index.shtm>.

accounts lost by Blackboard were lost to WebCT, and vice versa. Accordingly, the parties' large installed-base shares, though artifacts of past success, overstated their competitive significance in future bidding competitions.¹⁸

The FTC's investigation of the 2010 acquisition of AdMob by Google offers another example of when current shares, or recent trajectories of shares, may be poor predictors of future competitive significance. AdMob was a leading mobile advertising network, and Google was a significant and fast-growing rival. Mobile advertising networks place advertisements in applications on mobile devices such as Apple's iPhone, Android and Blackberry smart-phones, and tablet devices. Initially, there was concern that the merger would reduce competition in the terms that mobile advertising networks offer advertisers and application developers, and that Google would reduce its R&D in mobile advertising once it had AdMob's technology. However, staff learned that Apple itself was about to launch its own mobile advertising network and announced its intention to manage its iPhone platform in a way that would provide advantages to its mobile advertising network that would not be available to competitors. This development made the current shares of AdMob and Google, and Google's recent growth, in this market poor indicators of the likely harm to competition. The FTC closed its investigation and allowed Google to acquire AdMob. See <http://www.ftc.gov/opa/2010/05/ggladmob.shtm>.

1.4 Substantial head-to-head competition

The Agencies consider whether the merging firms have been, or likely will become absent the merger, substantial head-to-head competitors. Such evidence can be especially relevant for evaluating adverse unilateral effects, which result directly from the loss of that competition. This evidence can also inform market definition.

Documents obtained by DOJ in its investigation of the merger between Dean Foods and Foremost revealed that, for many school districts, the merging parties were the only two bidders for school milk contracts in recent years. For other school districts, one of the parties was the only bidder while the other was the next-lowest-cost supplier due to factors such as distance from the processing plant or the nearby presence of an established distribution network.¹⁹

Evidence of head-to-head competition also played a key role in DOJ's 2010 challenge to the merger between Baker Hughes and BJ Services, two of only four companies that operate specially equipped vessels that provide oil and gas companies with vessel stimulation services in the U.S. Gulf of Mexico. For many customers, Baker Hughes and BJ Services ranked first and second in terms of total expenditures on vessel stimulation services. The parties' services also had many characteristics in common. For example, they operated in the same water depths and at many of the same locations. The Department found substantial diversion between the parties. This, together with the high margins the parties earned, implied a high gross upward pricing pressure index (GUPPI), which informed DOJ's conclusion that, absent the negotiated divestiture of vessels, the merger was likely to result in significant unilateral increases in price.²⁰

Evidence of substantial head-to-head competition played an important role in the FTC's challenge of the Whole Foods/Wild Oats merger. In addition to the aforementioned econometric evidence, documentary evidence indicated that the elimination of a key competitor was a primary motivation of the transaction. Whole Foods' documents identified Wild Oats as its closest competitor, and that eliminating the

¹⁸ See Elizabeth Armington et al., *supra* note 9, p. 307.

¹⁹ See <http://www.justice.gov/atr/cases/deanfoods.htm>.

²⁰ See <http://www.justice.gov/atr/cases/baker.htm>.

competition imposed by Wild Oats would enable it to raise price, increase profitability, and would greatly reduce the likelihood that a third-party food retailer could reposition itself to compete with Whole Foods by acquiring Wild Oats.

The FTC's 2003 investigation of General Electric Co.'s proposed acquisition of Agfa NDT Inc. from Agfa-Gevaert N.V. also found evidence of head-to-head competition between the merging parties. The two largest suppliers of ultrasonic non-destructive testing equipment in the United States were subsidiaries of these companies. The combined firm would have had a market share in excess of 70% in each of several relevant markets. The closeness of competition went beyond high concentration ratios, with documentary and testimonial evidence that the parties' products were often the first and second choices of their customers. The Commission obtained a consent order requiring divestiture of GE's NDT business.²¹

1.5 *Disruptive role of a merging party*

The Agencies consider whether a merger may lessen competition by eliminating a "maverick" firm, i.e., a firm that plays a disruptive role in the market to the benefit of customers. For example, if one of the merging firms has a strong incumbency position and the other merging firm threatens to disrupt market conditions with a new technology or business model, their merger can involve the loss of actual or potential competition.

Likewise, one of the merging firms may have the incentive to take the lead in price cutting or other competitive conduct or to resist increases in industry prices. A firm that may discipline prices based on its ability and incentive to expand production rapidly using available capacity also can be a maverick, as can a firm that has often resisted otherwise prevailing industry norms to cooperate on price setting or other terms of competition.

Dean Foods' acquisition of rival Foremost's milk processing plants, challenged by DOJ in 2010, illustrates how revealing a party's internal documents can be about the nature of competitive interactions. Dean's internal memoranda referred to Foremost in terms suggesting that Foremost was a maverick whose quest for greater plant utilization threatened existing margins in fluid milk. Those same memoranda characterized Dean's other rivals as "good competitors" whose plants were close to full capacity and who therefore lacked Foremost's aggressive pricing incentives.²²

2. Sources of evidence

The Agencies consider many sources of evidence in their merger analysis. The most common sources of reasonably available and reliable evidence are the merging parties, customers, other industry participants, and industry observers.

2.1 *Merging parties*

The Agencies typically obtain substantial information from the merging parties. This information can take the form of documents, testimony, or data, and can consist of descriptions of competitively relevant conditions or reflect actual business conduct and decisions.

Documents created in the normal course of business are more probative than documents created as advocacy materials in merger review. Similarly, documents describing industry conditions can be informative regarding the operation of the market and how a firm identifies and assesses its rivals,

²¹ See <http://www.ftc.gov/opa/2003/12/geagfa.htm>.

²² See <http://www.justice.gov/atr/cases/deanfoods.htm>.

particularly when business decisions are made in reliance on the accuracy of those descriptions. This is aptly illustrated by the discussions of the Miller-Coors (below), Staples-Office Depot (above), and Dean Foods-Foremost (above) cases.²³

The business decisions taken by the merging firms also can be informative about industry conditions. For example, if a firm sets price well above incremental cost, that normally indicates either that the firm believes its customers are not highly sensitive to price (which is not in itself of antitrust concern) or that the firm and its rivals are engaged in coordinated interaction. Incremental cost depends on the relevant increment in output as well as on the time period involved, and in the case of large increments and sustained changes in output it may include some costs that would be fixed for smaller increments of output or shorter time periods.

To assess the potential for the 2008 venture between beer producers Miller and Coors to result in unilateral price increases, DOJ economists ran merger simulations based on estimates from a mixed logit demand system. The analysis revealed that by far the greatest competition facing both Miller and Coors came not from each other but from Anheuser-Busch.²⁴

Explicit or implicit evidence that the merging parties intend to raise prices, reduce output or capacity, reduce product quality or variety, withdraw products or delay their introduction, or curtail research and development efforts after the merger, or explicit or implicit evidence that the ability to engage in such conduct motivated the merger, can be highly informative in evaluating the likely effects of a merger. This is aptly illustrated by the foregoing discussion of the transactions involving the Charleston Gazette and the Charleston Daily Mail, and Whole Foods/Wild Oats.

Another example is given in the FTC's challenge of the 2008 acquisition of the Center for Advanced Imaging (CAI) and the Center for Surgical Excellence (CSE) by the Carilion Clinic. CAI and CSE were free-standing clinics that competed with Carilion on a variety of outpatient services. CAI offered outpatient imaging services similar to Carilion's, but at a lower price, and offered faster, more flexible scheduling (including weekends), and a shorter turnaround time in reporting results to physicians. Carilion noted that CAI's pricing and quality were a significant competitive threat and had directly affected Carilion's volumes. The acquisition, therefore, would limit Carilion's incentives to compete with CAI in both price and non-price attributes. The parties abandoned the transaction shortly after the FTC announced its challenge. *See* <http://www.ftc.gov/os/adjpro/d9338/index.shtm>.

In the FTC's challenge of Dun & Bradstreet Corporation's 2009 acquisition of its nearest rival in the education marketing business, Quality Educational Data, the parties submitted evidence of high profit margins in support of a critical loss argument to support the contention that a post-merger price increase would be unprofitable. In accordance with the 2010 Horizontal Merger Guidelines, the FTC found that absent information to the contrary, high margins should be taken as evidence that the firms face relatively inelastic demand, implying a price increase need not result in a sufficiently large loss in sales to offset the profitability of higher prices. To the contrary, the Commission found that the weight of the evidence suggested that a post-merger price increase would be profitable.²⁵

The 2008 merger between Abitibi and Bowater, the two largest producers of newsprint in North America, raised concerns that the loss of competition would give the merged firm an incentive to withdraw capacity. The evidence made clear that the level of capacity utilization is a key driver of the price of

²³ See ¶¶ 39, 16, and 28 and 34, *infra*.

²⁴ See http://www.justice.gov/atr/public/press_releases/2008/233845.htm.

²⁵ See <http://www.ftc.gov/os/adjpro/d9342/100910dunbradstreetanal.pdf>.

newsprint. In analyzing the merger, DOJ economists developed an econometric model to analyze a firm's unilateral incentive to close capacity, using data from the merging parties. The model predicted that the merged firm would have an incentive to close capacity above and beyond the capacity the parties would have withdrawn individually absent the merger in the face of declining demand. DOJ resolved this competitive concern through a negotiated divestiture that restored incentives to maintain capacity.²⁶

Similar issues arose in the merger of Alitivity and GPC. Both Alitivity and GPC produced coated recycled boxboard (CRB), which is used to make cereal boxes and similar packaging products. GPC, however, also produced roughly half of the North American supply of the closest substitute for CRB. The sole rival producer of that substitute was near capacity. DOJ's EAG developed an econometric model modified to allow for the fact that closing CRB capacity would affect the merged firm's profits on both CRB and the closest substitute. DOJ concluded that the transaction would lead to an anticompetitive withdrawal of CRB capacity and negotiated a divestiture that restored competition.²⁷

The Agencies likewise look for reliable evidence that the merger is likely to result in efficiencies. The Agencies give careful consideration to the views of individuals whose responsibilities, expertise, and experience relating to the issues in question provide particular indicia of reliability.

In the 2008 venture between beer producers Miller and Coors, for example, documents that Miller had produced in the normal course of business provided DOJ with credible evidence on freight efficiencies likely to be realized as a result of the transaction. Miller had, prior to its decision to join with Coors, commissioned a business consulting firm to analyze various potential industry combinations. The consulting firm developed a model of freight efficiencies that could be realized by each such combination, through redistribution of the merged firm's production across its combined production facilities. DOJ examined the consulting firm's modeling approach and found its resulting estimates to be reasonable.²⁸

In 2004, efficiency claims played a key role in the FTC's decision not to challenge Genzyme Corporation's acquisition of Novazyme Pharmaceuticals, Inc. This merger joined the only two firms developing the enzyme replacement therapy to treat Pompe disease. Genzyme asserted that it had sufficient incentive to bring its Pompe treatment to market as soon as possible, regardless of whether it was in a race with Novazyme. Furthermore, Genzyme claimed that the combination of the skills and knowledge of the two firms would hasten the development of such a treatment. The Commission voted to close the investigation without challenging the transaction due, in part, to the evidence supporting the claim that the merger would accelerate development of the drug.²⁹

The 2008 merger of airlines Northwest and Delta posed the prospect of realizing consumer benefits by facilitating schedule improvements. DOJ's EAG conducted an analysis using a number of different hypothetical post-merger flight schedules, including one produced by the parties as part of what appeared to be a legitimate business effort to assess post-merger opportunities, as well as the actual "but-for" schedules for October 2008 that the two carriers had published the previous June. EAG compared the forecasted demand for the merged carrier under plausible post-merger schedules with the but-for schedules. Using demand elasticity estimates consistent with the empirical literature on the airline industry, the economists were able to calculate the change in consumer welfare implied by the predicted traffic changes. The best estimates of the likely increases in consumer welfare from improved scheduling, though

²⁶ See <http://www.justice.gov/atr/cases/abitibi.htm>.

²⁷ See <http://www.justice.gov/atr/cases/alti.htm>.

²⁸ See http://www.justice.gov/atr/public/press_releases/2008/233845.htm.

²⁹ See <http://www.ftc.gov/opa/2004/01/genzyme.shtm>.

modest, significantly exceeded the potential harm to consumers in aggregate on all overlap routes served by the merging carriers.³⁰

The financial terms of a transaction may also be informative regarding its competitive effects. For example, a purchase price in excess of the acquired firm's stand-alone market value may indicate that the acquiring firm is paying a premium because it expects to be able to reduce competition or to achieve efficiencies.

2.2 *Customers*

Customers can provide a variety of information to the Agencies, ranging from information about their own purchasing behavior and choices to their views about the effects of the merger itself.

Information from customers about how they would likely respond to a price increase, and the relative attractiveness of different products or suppliers, may be highly relevant, especially when corroborated by other evidence such as historical purchasing patterns and practices. Customers also can provide valuable information about the impact of historical events such as entry by a new supplier.

The conclusions of well-informed and sophisticated customers on the likely impact of the merger itself can also help the Agencies investigate competitive effects, because customers typically feel the consequences of both competitively beneficial and competitively harmful mergers. In evaluating such evidence, the Agencies are mindful that customers may oppose, or favor, a merger for reasons unrelated to the antitrust issues raised by that merger.

For example, in DOJ's challenge of Microsemi's acquisition of Semicoa assets (discussed above), sophisticated customers provided critical information regarding the importance of certain product and service features, historical events relevant to the competitive effects analysis, and prospects for entry.

Also, FTC staff determined that information from purchasers of ready-mix concrete in Tucson, Arizona suggested that the relevant market in a proposed merger between Cemex and RMC Group included just three independent ready-mix concrete suppliers in the Tucson area. Concern over potential coordinated effects due to the merger in the Tucson area led the Commission to stipulate that Cemex must divest RMC's Tucson-area ready-mix concrete assets as part of a consent agreement.³¹

When some customers express concerns about the competitive effects of a merger while others view the merger as beneficial or neutral, the Agencies take account of this divergence in using the information provided by customers and consider the likely reasons for the divergence of views. For example, if for regulatory reasons some customers cannot buy imported products while others can, a merger between domestic suppliers may harm the former customers even if it leaves the more flexible customers unharmed.

An example of this is the FTC's concern that the 2009 proposed merger of two nationwide chains of travel centers, Pilot and Flying J, would allow the merged firm to increase the price of diesel fuel charged to long-haul truck fleets. Notably, the complaint did not allege potential harm to other customers of the travel centers, such as owners of short-haul truck fleets who may be able to efficiently negotiate with local travel centers or other sellers of diesel fuel. Consequently, the consent agreement accepted by the

³⁰ See http://www.justice.gov/atr/public/press_releases/2008/238849.htm.

³¹ See <http://www.ftc.gov/opa/2005/02/cemex.htm>.

Commission focused on ensuring that the revised terms of the transaction would protect the interest of long-haul truck fleets.³²

When direct customers of the merging firms compete against one another in a downstream market, their interests may not be aligned with the interests of final consumers, especially if the direct customers expect to pass on any anticompetitive price increase. A customer that is protected from adverse competitive effects by a long-term contract, or otherwise relatively immune from the merger's harmful effects, may even welcome an anticompetitive merger that provides that customer with a competitive advantage over its downstream rivals.

2.3 Other industry participants and observers

Suppliers, indirect customers, distributors, other industry participants, and industry analysts can also provide information helpful to a merger inquiry. The interests of firms selling products complementary to those offered by the merging firms often are well aligned with those of customers, making their informed views valuable.

Economic analysis of mergers at the agencies often includes econometric analysis of data collected by third party data vendors including point of sales data. This includes data sources that collect information from grocery store checkout scanners, on subscriptions and advertising insertions from newspapers, gasoline and diesel fuel sales from vehicle fleet sales cards, and pharmaceutical prescription dispensing systems.

Information from firms that are rivals to the merging parties can help illuminate how the market operates. The interests of rival firms often diverge from the interests of customers, since customers normally lose, but rival firms gain, if the merged entity raises its prices. For that reason, the Agencies do not routinely rely on the overall views of rival firms regarding the competitive effects of the merger. However, rival firms may provide relevant facts, and even their overall views may be instructive, especially in cases where the Agencies are concerned that the merged entity may engage in exclusionary conduct.

Findings in published academic research can also inform the Agencies' merger analyses. In DOJ's investigation of the Mittal-Arcelor merger, discussed above, as well in the 2004 merger between the electric and gas utilities Exelon and PSEG,³³ published estimates of industry demand elasticities informed the Department's review of competitive issues.

DOJ economists have used the publicly-available DB1B airline ticket database maintained by the U.S. Department of Transportation to analyze how variation in competitive conditions affects the pricing of tickets on transatlantic flights. The econometric evidence shows that a reduction in the number of competing airlines offering nonstop transatlantic flights can result in large, statistically significant price increases.

3. The role of economists

The remainder of this paper explains briefly the use of economists at the Agencies, including how they are organized within each agency and how their skills are employed in the course of investigations.

³² See <http://www.ftc.gov/os/caselist/0910125/index.shtm>.

³³ See <http://www.justice.gov/atr/cases/exelon.htm>.

3.1 *The structure of the antitrust division's EAG*

The economics arm of the Antitrust Division is its Economic Analysis Group (“EAG”). This is a group of approximately 50 career economists and a small number of financial analysts, supported by research assistants, interns, and computer, administrative, and secretarial support staff. The ratio of economists to attorneys in the Division’s has varied over time, but is currently approximately 1:6. The economists work primarily on merger investigations, allegations of monopolization or anticompetitive monopoly maintenance, and competition advocacy—which typically involves commenting formally or informally on legislative proposals or regulatory proceedings at other federal agencies. EAG also provides support during litigation and assists in criminal investigations and trials. In addition, it has a very active research program and its economists frequently make presentations at conferences and publish in scholarly journals.

There are a total of six EAG managers: a chief and assistant chief for each of three sections. They are supervised by two economists in the Division’s Front Office. The first is a career Division economist who serves as Economics Director. The second, and the Division’s highest ranking economist, is the Deputy Assistant Attorney General for Economics. The latter is a political appointee with a professional background in industrial organization and antitrust chosen from academia for a term of, typically, two years.

Despite its organization into three sections, EAG operates essentially as one integrated section with six managers. The staff operates as a common pool, working for any or all of the managers. We have found this arrangement to be more efficient than assigning individual staff to specific managers, specific industries, or specific legal sections. The approach allows management to take advantage of the staff’s availability and expertise when making assignments, and permits each economist to work with multiple legal sections and multiple EAG managers, allowing maximum flexibility either to specialize or to diversify the work he or she handles. In essence, we view the benefits of added flexibility—including the personal and professional satisfaction to economists who value diversity—to exceed those of rigid specialization.

The six EAG managers specialize somewhat by industry, with each sharing primary responsibility for a portion of the matters within two (of the Division’s six) legal sections. This partial specialization allows the managers to develop industry-specific human capital while at the same time allowing for variety in management assignments and flexibility in dividing up EAG’s overall workload across managers.

The management structure in EAG is relatively flat, with the managers dividing the work amongst themselves rather than, as is the case in many of the Division’s legal sections, having the Chief and Assistant Chief work together on the same investigations. The managers supervise the economists assigned to work on their investigations, and they report regularly to the Economics Director and/or the Deputy for Economics. The Director and Deputy tend to divide primary responsibility amongst themselves for particular investigations, although they frequently work together and interact regularly with the Division’s Legal Deputies and with the Assistant Attorney General for Antitrust. They maintain an involvement throughout the progress of all significant investigations, receiving weekly reports and having weekly meetings with management to discuss resource allocation, staffing, and the status and economic analysis of active matters.

3.2 *The structure of the FTC's Bureau of Economics*

The Federal Trade Commission is organized into three functional bureaus. The Bureau of Consumer Protection and the Bureau of Competition are comprised of attorneys responsible for the FTC’s consumer

protection and competition missions. The third bureau, the Bureau of Economics (BE), contains the economists responsible for supporting both missions.

The approximately 65 non-managerial career staff economists in BE are divided into two antitrust divisions with about 45 economists and one consumer protection division with about 20 economists. The bureau also has a division of about 3 economists that coordinates and supports the applied research undertaken by these other groups of economists. More than two-thirds of the FTC's economists are doing antitrust work, including analysis of mergers and horizontal restraints as well as conducting research relevant to the FTC's overall mission. The Bureau contains also a number of research analysts, financial analysts, and administrative and secretarial support staff.

The head of BE is the Bureau Director, who is appointed by the Chairman of the FTC and serves at the Chairman's pleasure. There are three Deputy Directors with responsibility for the antitrust mission, the consumer protection mission, and the R&D mission.

Within the antitrust group there are two line divisions that are dedicated to antitrust work, each managed by an Assistant Director who reports to the Deputy Director for Antitrust (and ultimately the Bureau Director). Each division has two Deputy Assistant Directors who, along with the Assistant Director, manage cases. Each of the two divisions is roughly the same size with about 20 economists. They are also each roughly the same size as one of the legal divisions in the Bureau of Competition, and experience suggests that this is a fairly efficient size from a managerial perspective. The organization of the antitrust economists has alternated over time between having all housed in one division with six managers, and the current system of two separate divisions. While flexibility in assignments is maximized with the one division system, the FTC has found that its current two division system preserves flexibility and diversity of experiences for the staff economists while being more managerially efficient than the one division system.

Substantively, both BE antitrust divisions perform the same kinds of economic analysis, but there is some specialization according to industry. This specialization helps to maintain institutional memory and expertise in certain industries which are of repeated focus of Commission concerns (e.g. petroleum, health care services, pharmaceuticals, supermarkets). This specialization mirrors some of the industry specialization of the BC divisions. Economists, however are not segregated by type of competitive practice (e.g. mergers and non-merger competitive practices).

Generally, for each case, a staff economist is assigned fairly early. Either an Assistant Director or a Deputy Assistant Director is assigned to manage the case. Throughout the investigation or litigation, the staff economist interacts extensively with the legal staff assigned to the case as well as the manager assigned to the case and with senior BE management. Most cases have only a single staff economist assigned. However, for big cases or cases headed toward litigation, multiple economists may be assigned.

EAG and BE managers are in charge of the allocation of economic resources within their agencies. They make staff assignments to cases or tasks and directly manage the work of the economists and all economic projects or analyses. They also control the hiring of economics staff, subject, of course, to overall budget constraints and government hiring regulations. Performance evaluations, promotions, and bonuses for economic staff are determined by EAG and BE management.

3.3 *The role of economists and economics in an investigation*

Effective and efficient economic analysis begins with identification of a logically consistent candidate theory, or theories, of competitive harm. This is closely followed by the identification of evidence or information necessary to test the various potential theories and help focus the investigation on obtaining

this information. Evidence of actual marketplace conduct fitting a carefully delineated candidate theory of harm, particularly any relevant historical empirical evidence, can be far more telling.

Shortly after receiving pre-merger notification of proposed acquisitions that seem potentially troublesome, the assigned economist, working with others on the investigation, is tasked with focusing the investigation. At least one economist and typically only one—unless the matter is highly complex and/or involves sophisticated econometric work—is assigned at the outset to all investigations.

In the Antitrust Division, economists formally focus investigations early on not merely through discussion, but by preparing a relatively short, albeit formal, “Issues In” memo. These memos, which incorporate input from the attorneys working with EAG on the matter, provide an overview of the basic facts (names of parties, products they produce, where they produce and sell them), a statement of the candidate theory (or theories) of harm, a discussion of the types of evidence that would tend to support or refute these theories, and an indication of projects contemplated to help form a case recommendation. FTC economists compile similar information in their antitrust investigations, most formally in the context of merger-screening memos for merger investigations.

With respect to merger investigations specifically, both agencies have a formal process for determining whether a request for additional information (second request) should be issued. At this point, which by law must be no later than thirty days from the filing of a merger notification form, the economist will often write a short memo outlining the known basic facts, identifying the candidate theories, outlining the evidence that needs to be gathered in the investigation to test the theories, and recommending whether to continue the investigation. Together with a recommendation memo from the legal staff, this helps provide a basis for determining next steps.

Economists in both agencies are involved in identifying all types of relevant evidence that may help test candidate theories -- particularly, though not exclusively, quantitative evidence. For example, if we are examining a proposed merger between two of several firms selling differentiated products throughout the country to a large number of small consumers, a natural investigative focus would be on possible unilateral effects. Relevant economic evidence would be the extent to which product offerings of the merging firms are the first and second choices for consumers. Contemplated projects might include collecting and analyzing scanner data to determine historic substitution patterns in response to changes in relative prices. Obtaining through compulsory process internal documents, such as surveys conducted by the merging parties (or others in the industry) in their normal course of business, would also be of interest. The agencies may, at times, even propose devising and conducting a survey of their own.

3.4 *Working closely throughout with economists hired by the parties*

In the course of an investigation the economists regularly update and modify their theories and evidence as more information becomes available. In virtually all investigations of significance the parties under investigation will have retained their own consulting or testifying economists. As a rule, the agencies’ economists try to work closely with these analysts throughout the course of the investigation; sharing candidate theories of harm and the preliminary results of their empirical analyses (consistent with the confidentiality obligations made to obtain data).

This is particularly important in matters where data analysis plays an important role. Early interaction helps to minimize the parties’ burdens of complying with the agencies’ data requests and helps agency economists understand what data are available and how suitable they are for the analysis the economists are considering.

Agency staff interact closely with the parties' attorneys and economists to learn about any deficiencies in the agencies' theories or evidence from those who may be in the best position, and who surely have the strongest incentive, to know. Interaction with outside economists also helps inform agency staff of the type and effectiveness of defenses they will face if and when the matter proceeds to litigation.

3.5 *Use of outside economists*

Both DOJ and the FTC frequently retain outside economists to prepare and serve as expert witnesses in matters likely to go to trial, although, not infrequently, agency staff is used in this role as well. The agencies seldom, though occasionally, retain outside experts purely as "consultants." In circumstances where an outside economist has particular expertise not available in-house and the investigation requires those particular skills, the agencies may depart from their usual custom; in the vast majority of situations, however, the agencies rely on their professional career staff.

EUROPEAN UNION

1. Introduction

Since the early days of 1989 Merger Regulation, the use of economic analysis in European merger control has increased tremendously. A critical impetus in that direction was the creation of the Chief economist team in 2003, which was followed by the change of the substantive merger test in 2004 (from creation or strengthening of dominance to significant impediment to effective competition), the adoption of guidelines for horizontal mergers in 2004 and for non-horizontal mergers in 2008. Today, the Chief Economist team at DG Competition is composed of more than 20 PhD economists. These specialised economists contribute to merger investigations both by developing and evaluating relevant theories of harm and by assessing and generating empirical evidence (ranging from relatively simple to complex economic analysis depending on the case) alongside regular case handlers (some of which also are economists).

This discussion paper illustrates this increased role for economic analysis in European merger control and is organised as follows. First, it highlights the role of economics from a conceptual point of view, drawing on a few cases to illustrate the importance of understanding the specifics of the market concerned and developing a coherent and well-articulated theory of harm. Second, it details the increased role of economics in generating evidence through a variety of techniques, from the simplest to the most sophisticated ones, and highlighting some of the related data issues. Finally, it discusses some of DG Competition's recent learning regarding the efficient gathering of economic data and evidence.

2. Increased role of economics from a conceptual point of view

The increased role of economic analysis may first call to mind the sophisticated econometric analysis and models on which DG Competition now routinely relies. Indeed, empirical analysis is key to assessing merger effects as analyzing data is often the most efficient and immediate way to validate or refute contradictory claims and opinions made by parties with opposite interests. This in turn helps reduce the likelihood of type I (false conviction) or type II (false acquittal) errors.

Yet, it is important to underscore that the use of economics in merger control is not limited to conducting (sometimes sophisticated) empirical analysis. In fact, economics is now closely embedded within merger control as it provides the essential conceptual framework to analyse the functioning of the markets and to assess merger effects. The adoption of the horizontal and non-horizontal mergers guidelines provide evidence that DG Competition has placed sound economic thinking at the heart of competition enforcement. Following the merger guidelines, the analysis of merger effects needs to be placed within a coherent economic framework that accurately reflects the market specificities.

This section first emphasizes the necessity to understand the competitive interactions in the market concerned, which is illustrated with a few recent cases in which network effects played an important role. It then underlines the need to consider coherent theories of harm relying on sound economic thinking and evidence, with illustrations drawing on the analysis of coordinated effects and vertical mergers.

2.1 *Understanding the functioning of the market: an illustration*

Not all markets are alike. Industries vary for example with respect to the ease of entry, the presence of capacity constraints, product differentiation, negotiations with customers, the degree of innovation or the presence of network effects. Although market shares or other simple measures may provide a starting point for an analysis, these are not in themselves rich enough to capture all these differences. To assess the effects of a merger, it is thus first essential to have a good grasp of how competition is functioning in a particular market.

The importance of understanding the specificities of the market can be illustrated with a recent case, the Oracle/Sun Microsystem merger.¹ The merger focused on the database market, in which Oracle enjoyed a leading position and Sun was present with MySQL. MySQL was offered via a dual licensing model: MySQL Community Server was available for free under an open source license while MySQL Enterprise was offered under subscription. In this industry, network effects are important, meaning that the value of a database for its users increases with its number of users. Indeed, a higher number of users make it more attractive for service providers to acquire expertise in the database and for software providers to integrate the database within their own products, leading to a higher range of applications for the database.

In the context of such network effects, any change in the licensing and development policies of MySQL could have a strong impact on its value for customers and decrease the constraint it exerts on Oracle. The question as to whether Oracle would have an incentive to change MySQL's licensing model depends on many factors, such as the ease of entry and the extent to which software developers would support forks of MySQL or other open source solutions. The purpose here is not to discuss these factors, but simply to underscore the importance of understanding the underlying economics of the market, and in this case in particular the role of network effects,² to assess the possible effects of the merger.

2.2 *Economic contribution to the analysis of coordinated effects: an illustration*

The contribution of economics in terms of conceptual framework can be illustrated in the context of coordinated effects. In the Impala judgment of 10 July 2008 (overturning the CFI decision on the Sony/BMG merger), the ECJ endorsed the economic model of tacit coordination, effectively asking the Commission to go beyond a checklist approach and developing a coherent narrative on how coordination would operate.

¹ For more details on this case, see Damien Neven and Miguel de la Mano, "Economics at DG Comp, 2009-2010", *Review of Industrial Organization*, 2010, vo. 37, n. 4, p.309.

² The Google/DoubleClick merger is another case in which the Commission assessed network effects (in the context of intermediation services for online advertising). In this case, the Commission concluded that these were not such that the transaction would lead to a likely tipping effect that would marginalize rival ad networks. (For more details on this case, see e.g. Raphaël De Coninck and Penelope Papandropoulos, "The non-horizontal merger guidelines in practice", *Concurrences*, 2008-3). Another merger in which network effects played an important role is Travelport/Worldspan. Both Travelport (through Galileo) and Worldspan provided "Global Distribution Systems" (GDS), i.e. platforms for travel agents to access airline flight information and book tickets (alongside two competing platforms, Amadeus and Sabre). GDSs are double-sided platforms: airlines benefit from accessing a larger travel-agents base through a GDS, while the value of a GDS for travel agents depends on the breadth of its airline coverage. Because of the importance of network effects induced by travel agent participation, GDSs competed strongly to acquire travel agents by charging them very low (sometimes even negative) prices, and it was considered that the merged entity would likely continue to have a strong incentive to compete for travel agents. For more details on this case, see e.g. Damien Neven and Svend Albaek, "Economics at DG Comp, 2007-2008", *Review of Industrial Organization*, 2008, vo. 33, n. 3, p. 231.

The Commission's ABF/GBI decision adopted shortly thereafter (and which focused mainly on the compressed yeast business in Spain and Portugal) is in line with the standard established by the Court in this respect. In ABF/GBI, the Commission assessed whether the transaction would likely lead to coordinated effects by making (tacit or explicit) collusion more likely, more stable or more effective.³

In ABF/GBI, the Commission tried to understand how coordination would actually work in practice within a game theoretic framework. That implied understanding what the collusive mechanism would likely be, and in particular the variables on which the colluding partners would agree and the mechanism for detecting, and retaliating against, deviations from a collusive understanding. In particular, the evidence suggested that price increases were the likely focal point of tacit coordination between competitor Lesaffre and the merging parties. Holding significant excess capacity, all three main players would likely be in a position to react in timely fashion to punish deviations from the collusive behavior. In addition, distributors, who regularly reported switching and price information to suppliers, played a decisive role in facilitating the monitoring of any deviations. Within this context, market data (such as the evolution of prices, costs and trade flows) helped understand the dynamics of the industry (both upstream and downstream), which was important to establish the (tacit) collusion mechanism within a coherent economic framework of repeated interactions.

2.3 *Economic contribution to the analysis of vertical mergers: an illustration*

Any assessment of vertical mergers also has to be made in reference to a coherent economic framework. The non-horizontal merger guidelines provide such a framework, in which both possible pro- and anti-competitive effects of vertical mergers are acknowledged. The emphasis of the guidelines is on the net effect of such mergers on consumers, departing from a rigidly sequential analysis of anti-competitive effects and efficiencies in favour of an integrated approach of effects.

The TomTom/Tele Atlas merger provides a good illustration of how the non-horizontal merger guidelines have been applied in practice.⁴ TomTom, a leading supplier of Portable Navigation Devices (hereafter "PNDs") in Europe, integrated backward by acquiring its providers of navigable digital map databases, Tele Atlas. Input foreclosure concerns were investigated in-depth in this case as navigable digital databases constitute an essential input for the production of PNDs and only one competitor, Navteq, supplied navigable digital map with a similar level of precision, attributes and geographical coverage as Tele Atlas.

In order to determine whether an input foreclosure strategy would be profitable, the merged entity faces a trade-off between the profits lost on the upstream market and the profits gained in the downstream market. Using econometric estimates of downstream elasticities⁵ and industry data on prices, margins and sales, the Commission assessed whether the sales that TomTom could capture downstream by raising its rivals' costs would be sufficient to compensate for the lost sales upstream if it engaged in input foreclosure. In particular, the Commission identified the critical price increase by the remaining upstream supplier (Navteq) that would make a foreclosure strategy profitable for the integrated company. In this case, given in particular the small share of the map cost in the PND price and the relatively limited cross-price elasticities downstream, the critical price increase appeared unrealistically high, in particular as it

³ For more details on this case, see e.g. Damien Neven and Miguel de la Mano, "Economics at DG Comp, 2008-2009", *Review of Industrial Organization*, 2009, vo. 35, n. 4, p.317.

⁴ For more details and further illustrations, see e.g. Raphaël De Coninck, "The Application of The Non-Horizontal Merger Guidelines", *Antitrust Bulletin*, forthcoming.

⁵ The downstream elasticities were estimated with a nested logit demand system. For more detail on the demand system estimation in this case, see Raphaël De Coninck "Economic Analysis in Vertical Mergers", *Competition Policy Newsletter*, 2008-3.

might trigger entry. This provided one piece of evidence that suggested that the transaction was unlikely to lead to anticompetitive effects, which was supported by other qualitative and quantitative evidence.⁶

In this respect, the assessment of efficiencies in this case is also informative. In TomTom/Tele Atlas, the Commission acknowledged that the transaction would allow the merged entity to internalize the double mark-ups resulting from both parties setting their prices independently pre-merger, thereby allowing the merged entity to profitably expand output on the downstream market. The Commission found it unlikely that the same effects could be obtained without the transaction, e.g. through the use of non-linear pricing. In particular, the Commission reviewed existing contracts between map databases providers and PND manufacturers, and concluded that the observed volume discounts were too limited to substantially eliminate double marginalization (in particular given that the marginal cost of a map database is close to zero). In addition, the Commission found that the proposed operation would likely improve map quality beyond what could be achieved through contractual means absent the merger.

3. Types of economic evidence

In addition to contribution of economics to the conceptual framework for European merger control, the use of economics in mergers has also significantly increased over the last few years as a way to provide evidence, both for the Commission and the various parties involved in the proceedings. This section reviews some of the main empirical techniques that are routinely used by DG Competition in merger reviews, depending on data availability.

3.1 *Descriptive analysis of commonly available data*

Descriptive statistics are often the first step of any data analysis. In addition, descriptive analysis may provide some evidence regarding the functioning of the market and complement the qualitative evidence gathered during the investigation. In particular, simple data analysis can often confirm, contradict or qualify the facts and views put forward by the parties and market participants. Market data also complements the quantitative evidence by improving the understanding and interpretation of such evidence.

This section describes the types of data, both from industry sources and from companies themselves, which have proved useful for the Commission's assessment in recent merger cases. Although this section focuses on the descriptive analysis of such data, the same data is also used for the more sophisticated analysis described in the following sections.

3.1.1 *Descriptive analysis of industry data*

A variety of sources collects industry data, ranging from trade statistics to collections of individual price transactions depending on the markets concerned. Such data generally has the advantage of being readily available to the parties and presented in a consistent way, and thus constitute a natural source for descriptive statistics of the industry in which a merger takes place. The following paragraphs focus, for

⁶ Depending on the circumstances of the case and data availability, a range of economic evidence can be relied upon in vertical mergers. For example, the Commission has used modelling relying on specific functional demand forms, with estimates of elasticities (e.g. in TomTom/Tele Atlas) or proxies thereof (e.g. Iteima/Barco). Although simple vertical arithmetic faces the difficulty of comparing the critical values with actual ones, it may also be informative in combination with other evidence or at an early stage of the investigation (e.g. IPIC/MANFerrostaal). Finally, qualitative evidence may also provide useful information to dispel concerns at an early stage or to call for further investigation (in WPP/TNS for example, possible input foreclosure concerns were dispelled in the first phase of the investigation in part due to the ease of entry and expansion of competitors in the upstream market for television audience measurement services).

illustrative purposes, on the type of descriptive analysis carried out with industry data in consumer goods, highlighting in particular the use of retail scanner data and consumer panel data.

Retail scanner data

In consumer goods, scanner data at the retail level is often available. Market research companies such as Nielsen or Gfk gather transaction data in a representative sample of stores. In such datasets, unit and sales volumes are usually available at disaggregated product (typically SKU) and frequency (e.g. weekly) levels (and sometimes by store, distribution channel or region), together with a description of the main product characteristics. The product classifications used in these datasets may provide first proxies of the segmentations deemed relevant in the industry. In addition, such data is particularly useful to easily obtain reliable market statistics. It may for example provide information on the price positioning of the parties' brands compared to their competitors or on the evolution of prices and quantities. This allows to quickly verify claims by the parties and other market participants (e.g. with respect to a specific segmentation), which is particularly useful while operating under tight time constraints (in particular when a specific issue was not anticipated at the beginning of the investigation but raised later on).

The following paragraphs provide three illustrations of descriptive analysis of retail scanner data carried out in recent cases.

First, the Pernod Ricard/V&S merger is an example in which Nielsen data was useful to study the price positioning of the parties' brands. The transaction concerned the acquisition by alcoholic beverages company Pernod Ricard of V&S, a Swedish state-owned wine and spirits company whose flagship brand was Absolut vodka. A descriptive analysis of prices of the different brands suggested the existence of a few clusters of vodka brands positioned at different price levels, which suggested that price positioning was an important characteristic for the assessment of closeness of competition in the vodka market, which was confirmed in internal survey documents.

Second, the Kraft/Cadbury merger also shows how a descriptive analysis of the evolution of sales can be informative for the competitive assessment. Both Kraft and Cadbury were strong players in the chocolate confectionary business in Europe, with positions differing according to the Member State (which were considered as different geographic markets). In the UK for example, where Cadbury had a high share of the market, Nielsen data indicated that Cadbury Dairy Milk had recently lost significant market shares over a number of weeks, while Mars Galaxy gained corresponding market shares during this period. On the contrary, Kraft's brands such as Toblerone did not see significant changes during these periods. This suggested that the intensity of competition between Cadbury Dairy Milk and Mars Galaxy (both British heritage chocolates) was stronger than between Cadbury Dairy Milk and e.g. Toblerone (which is a continental-style chocolate packaged in a signature triangular shape). In France, a descriptive analysis of the Nielsen retail data showed that Cadbury's brand, Poulain (mainly black chocolate tablets) significantly decreased its prices in 2008. Following this change however, no change in price, sales or promotions/advertising was observed for Kraft's leading brand, Milka (to the difference of private labels, whose sales were affected by the decrease in Poulain's price). This suggested that Poulain (mainly black chocolate tablets) may not exert a significant competitive constraint on Milka (mainly milk chocolate tablets).

Third, the recent Unilever/SaraLee merger provides another example in which a descriptive analysis of Nielsen retail data was useful in checking the arguments put forward by the parties. The transaction concerned the acquisition by Unilever of Sara Lee's body and laundry care business. Concerns were raised for deodorants in a number of countries, mostly due to the combination of Sara Lee's Sanex brand with Unilever's Dove and Rexona brands. In this case, the parties argued that private labels in Spain were a growing force which strongly constrained Unilever and Sara Lee's deodorant brands. An analysis of the

evolution of market shares confirmed that private labels were growing, but showed that these were gaining shares from smaller brands while Unilever and Sara Lee's brands were not affected. This suggested that, contrary to the parties' claims, the competitive constraint exerted on the parties by private labels remained limited.

Consumer panel data

In addition to retail scanner data, consumer panel data are sometimes also available for consumer goods from market research companies such as Gfk/Europanel and Nielsen. Such datasets can usefully complement retail scanner data, as they allow identifying the purchasing behavior of specific consumers over time and include demographic information about the households in the panel.⁷ As far as descriptive analysis is concerned, such datasets may be useful to analyze switching data obtained by comparing household purchasing patterns over time. In particular the proportion of sales that brand A gained from brand B (and inversely) may provide a useful indication of how closely these two brands compete. As part of their subscriptions with market research companies, the parties or other market participants sometimes commission switching analysis for their normal business purposes. It is often useful to review such analysis when it is available, and complement it with additional analysis based on this data if required for the purpose of the investigation. Since the analysis does not relate the observed switches to price changes however, the derived substitution patterns must be interpreted with care and cross-checked with other evidence.

The Unilever/SaraLee merger provides an example of the descriptive use of consumer panel data. In this case, household purchasing patterns suggested that there was a significant amount of switching between Unilever and Sara Lee's deodorant brands, which is consistent with other pieces of evidence indicating that these brands exerted a significant competitive constraint on each other. Therefore, if e.g. the price of one of the parties' deodorant brand increased, a significant number of customers switching to another brand would be recaptured by the combined entity, making such an increase more likely to be profitable. The decision underlines that the switching evidence based on the consumer panel data should be interpreted cautiously, since the observed switching patterns do not necessarily correspond to actual substitution between brands (as evidenced by observed "switching" between male and female deodorants as deodorants are bought for different members of the household, which constitutes the unit of observation in the dataset).

3.1.2 *Descriptive analysis of company data*

In addition to the analysis of industry data, or when such data is not available, the Commission typically uses company data to produce reliable market descriptive statistics. As explained above, descriptive data analysis is a useful means to check the coherence of the arguments put forward by market participants.

Transaction-level data

It is now typical for companies' accounting systems to store transaction-level data. Such data can for example be used to investigate how the prices and volumes of the parties evolved over the last few years or how comparable their prices and costs are. In addition, comparisons of wholesale margins and prices across time, products and/or regions may be informative with respect to the competitive constraints exerted on the parties. For example, arguments made by the parties about increased worldwide competition may be

⁷ Consumer panel data may also have a coverage of retail outlets that differs from retail scanner databases (e.g. specific distribution channels may not be covered in some retail scanner databases, but be represented in household scanner databases).

put in contrast with the evolution of wholesale prices and margins. Comparisons of prices and margins in markets where the parties have different positions may also be informative of the degree of competition between the parties. Of course, such analysis can only constitute a first indication, as a number of factors may explain the observed patterns; in addition, the interpretation of accounting data, and in particular cost allocations among products, should always be cautious.

A recent case in which company data was analyzed to complement retail data was Friesland/Campina, a merger between the two leading Dutch dairy co-operatives to create one of the top three dairy companies in the world.⁸ In this case, the Commission reviewed the evolution of wholesale prices and volumes for fresh dairy products at the customer level to assess the closeness of competition between the parties. This evidence suggested that the parties responded to each others' pricing for specific customers, which was consistent with the other pieces of evidence suggesting that the parties exerted a significant competitive constraint on each other.

In addition, sales data at the customer level or contract databases may be useful to assess whether the parties' products focus on similar customer groups. For example, in IBM/Telelogic, it was found that while Telelogic's business focused on the Military and Aerospace industry sector, IBM generated most of its revenues in the Finance/Banking/Insurance, Government, and Information Systems industry sectors. Data on customers won and lost may provide information on the degree of competition in the market, and the frequency at which and the extent to which the merging firms are gaining sales from each other. For instance, in IBM/Telelogic, an analysis of all the instances where each party either won a new contract or lost a potential contract suggested that the parties were not particularly close competitors. The evolution of prices, margins or discounts at contract renewal may also be indicative of the degree of competition in the market. In Google/Double Click for instance, there was evidence that the prices were significantly falling when contracts were renewed, which, together with evidence of frequent customer switching, questioned DoubleClick's ability to exert significant market power.⁹

Bidding data

Depending on market specificities and data availability, an analysis of bidding data may provide valuable information with regard to the competitive constraint exerted by the parties on each other. Although econometric analysis of bidding data may be carried out in certain cases (as detailed below), descriptive statistics will always be a first step in the analysis. A descriptive analysis of bidding data can take several forms according to the scope of the data provided and the availability of a sufficient number of observations (i.e. a large enough sample of contracts/bids). These may include the number of bids in which the parties to a merger competed against each other, the value of these bids, the volumes involved by these bids, the extent to which the parties were the only two bidders, the number of times the merging parties were the runner-up in each other's won bids or the number of times the parties won / lost contracts or bids from each other. These descriptive statistics should provide a good overview of the frequency and strength of interaction between the parties. The analysis can also be refined to evaluate whether there are types of contracts, types of customers or geographic areas where the parties seem to compete more often. More generally, such descriptive statistics can identify which are the other rivals that constitute a credible alternative.

There are many examples of descriptive analysis of bidding data. A simple way to gather information regarding closeness of competition is to assess how often parties meet each other in specific tenders, and

⁸ For more details on this case, see e.g. Damien Neven and Miguel de la Mano, "Economics at DG Comp, 2008-2009", *Review of Industrial Organization*, 2009, vo. 35, n. 4, p.317.

⁹ For more details on the Google/DoubleClick case, see e.g. Raphaël De Coninck and Penelope Papandropoulos, "The non-horizontal merger guidelines in practice", *Concurrences*, 2008-3.

who their competitors in these tenders were. For example, in Panasonic/Sanyo, the analysis of tender participation suggested that the parties exert a significant competitive constraint against each other in some, but not in other, battery markets. In particular, Panasonic's tender database of European customers suggested that Panasonic faced Sanyo as its only competitor in 40% of tenders for nickel-metal hydride (NiMH) batteries. On the contrary, for Li-Ion batteries, several other important competitors were identified for nearly all tenders in which the parties took part. The market investigation also indicated that the Li-ion market is a very dynamic market and that both Sony and Samsung had been undertaking significant investment into capacity increases. Both the qualitative and quantitative evidence therefore suggested that although the transaction was likely to significantly impede competition for NiMH batteries, this was not the case for Li-ion batteries.

A descriptive analysis of tender participation was also carried out in the Cisco/Tandberg merger, which concerned videoconferencing solutions. Cisco's opportunities datasets indicated that the parties competed frequently for high-end video conferencing products (dedicated-room solutions) often referred to as "telepresence". Tandberg competed with Cisco for a large number of deals in this segment, to an extent similar to Polycom and less than HP, while other competitors seemed insignificant. Tandberg also appeared as the sole competitor in a non-negligible number of deals. While the dataset had a number of limitations, including a high number of missing observations and the fact that tenders covered a range of different products, these observations appeared consistent with the results of the market test.

An analysis of prices offered in the tender may also be informative as to the competitive constraint exerted by the parties on each other. The Syniverse/BSG case provides an illustration of a descriptive analysis of bidding prices. The activities of Syniverse and of the BSG Group's wireless business overlapped in the market for GSM roaming data clearing services. With these services, data clearing houses provide for the exchange of roaming data between Mobile Network Operators, allowing for the billing of roaming services provided to end-users. In this case, the descriptive analysis of bidding prices indicated that BSG's average (and median) effective price was not significantly different whether Syniverse participated in the tender or not. This analysis was complemented with additional qualitative and quantitative analysis, as described below.

In addition, systematic databases recording information on the competitive constraints faced during contract negotiation may also provide useful information. In the Oracle/Sun Microsystems merger for instance, two databases were available. The first database analyzed was the so-called CRM dataset (Customer Relationship Management) which recorded information on sales opportunities (including the name of the primary competitor). The second database was the so-called HQApps dataset, which recorded internal communications on situations where sales people requested authorization to grant large discounts (i.e. more than 70% off the list price requires approval from the corporate approvals team, known as "HQ Apps"). In such instances, sales people had to explain the reasons for such an effort on a given contract or for a given customer. These explanations often involved naming the rivals against which Oracle was competing. The parties used these datasets to argue that MySQL was rarely quoted, either as a competitor in sales opportunities or as a reason for granting extra discounts. The Commission cast some doubts on these conclusions in view of the incompleteness of the CRM data and inconsistencies with Sun's own data. The Commission's analysis of the HQ Apps data provided evidence that contrary to the parties' claims, MySQL exerted a competitive constraint on Oracle in a significant number of cases.

Finally, it is essential to emphasize that the data used in the type of analysis described above needs to be representative. Ideally, the data should be cross-checked with other sources, including if possible customers. This was the case e.g. in the Syniverse/BSG case, in which customers also provided information on how often the parties were selected as the two preferred bidders in the tenders. This information indicated that although the parties often participated to the same tenders alongside other

competitors, they were very rarely ranked as the first and runner-up bidders, which confirmed that the parties were unlikely to exert strong competitive constraints on each other.

Descriptive event analysis (illustration with company data)

Descriptive data analysis provides a straightforward way to interpret the implication of specific events that may have affected the market. Depending on data availability, such an analysis can be carried out with industry data, company data, or a combination of both. In particular, the various sources of data mentioned above permit to see how variables such as prices, volumes, costs and margins have evolved in response to particular events, such as new brand entry, new product launch, specific innovations, special promotions and advertising campaign, supply disruptions, etc. These events are often informative for understanding the dynamics of the industry and competitive constraints, in conjunction with qualitative evidence and possibly more advanced quantitative analysis.

The Lufthansa/SN Holding merger, which concerned the acquisition of Belgian-based airline SN Brussels by Lufthansa, provides an example of an event analysis with company data. In this case, the Commission analyzed disaggregated fare data obtained from the parties to assess the competitive constraint exerted by easyJet on Lufthansa and Brussels Airlines on certain routes. A descriptive analysis of this data indicated that easyJet's entry in 2007 was associated with a decrease in the parties' fares for non time-sensitive passengers, but not for time-sensitive passengers. Such an analysis, which was complemented with qualitative and quantitative analysis, including a more formal econometric analysis and a passenger survey, provided useful information as to the competitive constraint exerted on the parties in the different passenger segments.

Finally, it should be highlighted that all the pieces of descriptive analysis mentioned above can only be, by themselves, suggestive as they do not investigate all the plausible reasons for the observed changes. They therefore need to be complemented by qualitative evidence, and possibly more detailed empirical analysis, as detailed below.

3.2 *Market definition techniques*

The hypothetical monopolist test assesses whether a market contains sufficient substitutes to prevent the exercise of market power, and hence generally provides the relevant framework for defining antitrust markets. Specifically, the test assesses whether a profit-maximizing monopolist on a candidate market would likely impose at least a small but significant and non-transitory increase in price ("SSNIP"). Both qualitative and quantitative evidence are assessed within this framework for the purpose of market definition. In particular, and as far as qualitative evidence is concerned, it is often useful to gauge which alternatives customer would consider suitable as a starting point for the market definition exercise.

As far as a precise quantitative implementation of the test is concerned, estimating whether a hypothetical monopolist would increase prices by at least 5 or 10% requires information on elasticities that is not always available. There are instances however when these elasticities can be computed, and it is then particularly useful to perform the hypothetical monopolist test to check the consistency of these estimates with other pieces of evidence in the file.

In Unilever/Sara Lee for instance, SSNIP tests of the gender segments (male/non-male deodorants) were run to see whether these can be separated in an antitrust sense. For example in the test of the male segments, the objective was to find the effect of a 5% increase (SSNIP) in the prices of all male products on the total variable profit of the male segment. This exercise was straightforward in this case since the Commission had estimated a demand system to recover elasticity parameters and had built a simulation model. Using the model's implied marginal costs, the implied margins were calculated for all products at

the pre- and post-SSNIP prices. The post SSNIP quantities were found by solving the estimated demand equation at the increased price level. Finally, the margins and quantities were used to calculate the implied total variable profits before and after the price increase. These simulations showed that the profits of a hypothetical monopolist of the male (non-male) deodorant segment would increase if the prices of all male (non-male) deodorants increased by 5%. Hence, this test indicated that male and non-male deodorants could be considered as different antitrust markets, which was consistent with a range of evidence gathered during the market investigation.

Critical loss may be informative when exact information on elasticities is not available. In the context of market definition, critical loss analysis measures the minimum sales volumes that a hypothetical monopolist would need to lose to make a 5-10% price increase unprofitable. This critical loss is then compared to the actual loss that the hypothetical monopolist would incur in response to the same price increase to determine whether such a price increase would be profitable. If the actual loss is smaller than the critical loss, the price increase would be profitable for the hypothetical monopolist, which would be indicative of a relevant antitrust market. However, reliably determining the actual loss requires detailed information on switching patterns, which may not be available.¹⁰ An alternative, when limited data (or time) is available, is to study the evolution of prices, e.g. with correlation and stationarity analysis.¹¹

Correlation analysis is a simple measure sometimes used to describe the evolution of prices in the market definition context. The idea is that prices of products in the same market tend to move closely. In order to assess the degree of correlation, one usually refers to a benchmark, which allows comparing the correlation for the candidate product with the correlation between products that are thought to be in the same market. However, an important caveat is that it is not uncommon for products' prices to be correlated even though they are not substitutes, which could for example be due to common demand or cost shocks. A relatively low price correlation is also possible for products that are in the same market, for example when price co-movement is not simultaneous. Ultimately, correlation is a very preliminary piece of evidence, which always needs to be put in context and complemented by additional evidence.

The Arsenal/DSP merger provides an example where price correlation was used as part of the competitive assessment. In this case, the parties argued that the geographic market for benzoic acid was not limited to Europe but was worldwide. However, it appeared that over the last three years, the parties' prices in Europe had a very low correlation with prices in Asia, while their prices were highly correlated among European countries (the benchmark). This suggested that the parties may face different competitive constraints in Europe and Asia. This constituted one piece of evidence that led to the conclusion that the market for benzoic acid was not worldwide, alongside other pieces of evidence, both qualitative (e.g. the importance of tariffs and the very low presence of Chinese suppliers in Europe due to their lower quality perception) and quantitative (in particular, stationarity analysis). In addition, the lack of additional imports following unexpected plant shutdowns in April 2007 is an example of event-study which further informed market definition in this case.

In the context of market definition, stationarity analysis can be used to examine whether the relative price of two products evolve over time around a constant value. The underlying idea is that if two products are close competitors, their relative price should tend to revert to a long-term average value. Many of the

¹⁰ On the difficulty of assessing the actual loss, see e.g. Andrea Amelio, Miguel de la Mano and Manuel Godinho de Matos, "Ineos/Kerling merger: an example of quantitative analysis in support of a clearance decision", *Competition Policy Newsletter*, 2008-1. In addition, the assumptions used for the critical loss may also be subject to debate (see e.g. Lufthansa/SN holding, KLM/Martinair).

¹¹ More details on these methods and on the two illustrative cases mentioned are provided in Daniel Donath, "The use of pricing analysis for market definition purposes: the Arjowiggins/M-real Zanders Reflex and Arsenal/DSP mergers", *Competition Policy Newsletter*, 2009-1.

limitations of correlation analysis also apply to stationarity analysis, so it is also important to be cautious about its interpretation. In particular, the relative prices of products that are not substitutes may happen to be stationary, so that a finding of stationarity is consistent with two products being in the same market, but does not in itself establish that this is the case. Hence, it is always important to complement such analysis with qualitative evidence, such as internal documents and surveys.

The Arjowiggins/M-real Zanders Reflex case, which concerned the acquisition by Arjowiggins of a paper plant in Germany, provides an example of the use of stationarity analysis for geographic market definition. The key market reviewed in the transaction was carbonless paper and a question of interest was whether the geographic market was wider than Germany. The parties claimed that the geographic market was European, due to relatively limited transport cost, within-Europe trade and centralised manufacturing. However, the Commission found that there was in general no stable long-run relationship between the German prices and the prices in other Member States, which did not provide support for the parties' arguments that the market was European-wide. This observation was consistent with the very different positions of the parties across countries and with observations from past cartel behaviour in the industry (where price increases were fixed separately and varied across countries).

3.3 *UPP-type exercises*

The degree of substitution between the merging parties' brands plays a central role for assessing unilateral effects, as the incentive for the merged entity to raise prices post-merger is directly linked with how closely the parties competed pre-merger. Depending on data availability, different sources may be used to provide a measure of substitution between the parties' brands.

As detailed in the horizontal merger guidelines, the diversion ratio from product A to product B measures the proportion of the sales of product A lost due to a price increase of A that are captured by product B. When precise diversion ratio estimates are not available, internal document or survey evidence may be useful for assessing the degree of substitution between the parties' brands. Data on sales won and lost between competitors may also be used for this purpose. However, it is then important to understand as much as possible the reasons for these customer switches. Indeed, analyzing win/loss data without relating them to price changes may not provide an accurate assessment of the degree of substitution between brands for a given price increase. Diversion ratios proportional to market shares may sometimes be used in the absence of other evidence; in such cases, the reliability of the analysis will critically depend on whether such an assumption on substitution patterns appears plausible in the market studied.

One of the pieces of evidence that can be used on the basis of diversion ratio is the upward pricing measures developed by Farrell and Shapiro.¹² In essence, by combining the diversion ratio with information on margins, such measures focus on the profit that is internalised by the merger due to the elimination of competition between the parties and hence capture the change in pricing incentives. The Commission uses such measures as an additional piece of evidence to identify some potentially anticompetitive mergers. The Commission has also received submissions of UPP analysis by the parties' economic experts in some past and ongoing cases, which are considered according to the principles detailed in the following paragraph.

The informative value of such measures critically depends on the reliability of the inputted data, in particular the diversion ratio measure used in the analysis. In addition, it is also important to underscore that such measures are only one part of the assessment, and that they need to be reviewed in the context of other pieces of evidence. In particular, the UPP is not applied in a mechanistic way as its interpretation

¹² Joseph Farrell and Carl Shapiro, "Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition," *The B.E. Journal of Theoretical Economics*, 2010, Vol. 10, 1 (Policies perspectives), Article 9.

may depend on the specifics of the market concerned. For example, gross margins may be higher in industries with high innovation, leading to higher UPP measures everything else constant; however, such measures may not reflect the key factors of competition in such industries. Finally, although it should be underlined that UPP does not by itself provide information on the magnitude of price changes (information on pass-through is required for that purpose), it may be useful in providing an indication of the level of efficiencies required to offset the incentives to increase prices.

3.4 *Demand estimation and merger simulation*

Price elasticities are an important parameter in the assessment of mergers, as they provide direct evidence on substitution patterns and can also be used as an input to simulate the merger price effects. Depending on data availability, *own-* and *cross-price elasticities* can be estimated relatively precisely using econometric analysis.¹³ This section first discusses how elasticities were estimated in recent cases, and then illustrates how these estimates were used to simulate the price effects of mergers.

The Unilever/SaraLee merger provides an example of an econometric estimation of demand (for deodorants). In this case, the Commission estimated a nested logit demand system, i.e. a discrete choice model where consumer decisions to purchase products depend on both the price and the characteristics of the products.¹⁴ Specifications with both one-level nests (male/non-male deodorants) and two-level nests (where subnets are defined according to whether or not the deodorant is described as skin-friendly) were estimated. The nest structure allows the degree of substitutability between products belonging to the same nest to be stronger than the substitutability between products in different nests. This means that a particular consumer who chooses a particular product (e.g. a Rexona for men deodorant) is more likely to choose from products with the same gender proposition (male, in the example) if there is a rise in the price of the first choice product.

A nested logit demand system offers more flexibility than the standard logit model since the independence of irrelevant alternatives assumption (according to which switching between products takes places in proportion to market shares) only has to hold within a nest. At the same time, a nested logit demand system has the practical advantage that the number of parameters to estimate is limited (compared e.g. to the Almost Ideal Demand System discussed in the next paragraph). Still, one must keep in mind that such a model imposes significant structure on the estimated parameters. As a consequence, this model may fail to fit the data well and only provides a rather basic measure of closeness of competition between products present in the same nest, as it assumes that switching is proportional to market shares within a nest. It is thus important that the nesting assumptions capture the most important dimensions of product differentiation; increasing the number of parameters to be estimated, as e.g. with the two-level nest specifications, provides some flexibility in this respect.¹⁵

The Friesland/Campina merger provides an example of an Almost Ideal Demand System (AIDS) estimation for a variety of dairy products. The AIDS model is derived from the consumer's expenditure

¹³ The *own price elasticity* of a particular product gives the percentage change in the product's sales volumes as a response to a one percent increase in its price. The *cross-price elasticity* of the product with respect to another product gives the percentage change in the sales volumes of the first product as a response to a one percent increase in the other product's price.

¹⁴ For more details on nested logit demand estimation, see Steven Berry, "Estimating Discrete-Choice Models of Product Differentiation", *The RAND Journal of Economics*, 1994, vol. 25, n. 2, p. 242.

¹⁵ In Unilever/SaraLee for example, the Commission increased the flexibility of the standard one-level nested logit model by estimating a two-level nest structure, and by allowing some of the estimated parameters to be nest-specific.

minimization problem and demand elasticities are in principle not restricted.¹⁶ AIDS provides more flexibility, and hence may fit the data better and provide a more direct answer to the closeness of competition between the merging parties' products than (nested) logit models. However, this comes at a cost since more parameters need to be estimated and it is not uncommon to find imprecise parameter estimates and negative cross-price elasticities.

In Friesland/Campina, the results of the AIDS model estimation with scanner data were reported in the statement of objections. The parties' economists were then given access to the data, code and detailed description of the Commission's estimation. In their response to the statement of objections, the parties pointed out that the Commission's estimation did not appropriately account for the inventory behaviour that characterises the purchase of long-life dairy products in the Netherlands. In light of the purchasing patterns in this market, and given time constraints and the complexity to account for such behaviour with a dynamic model of demand, this econometric estimation was not given weight in the final decision. The Commission also improved its original AIDS estimation for fresh-flavoured dairy drinks by accounting for habit persistence (by allowing previous decisions to be influenced by past decisions). Although the improved estimation led to more robust results for these products, the results however were inconclusive for the purpose of assessing the likelihood of unilateral effects. Nevertheless the descriptive data analysis and extensive qualitative evidence in the file were sufficient to conclude that the merger would lead to unilateral effects and the merger was conditionally cleared after appropriate remedies were submitted.

In Unilever/SaraLee, the Commission combined the estimated nested logit demand described above with standard supply-side assumptions (i.e. static Bertrand competition) to simulate the price effects of the merger.¹⁷ On this basis, the Commission found overall market price increases between 2 and 5% depending on the country (in the absence of efficiencies), with generally higher price increases for non-male deodorants due to the parties' stronger position in that market.

It is well known however that the predicted price increases depend on the chosen functional form of demand. In the context of merger simulation, it is particularly interesting to look at compensating efficiencies, i.e. efficiencies that need to be achieved to offset anticompetitive effects. This was done for example in the Unilever/SaraLee case, which reported the percentage decreases in the post-merger marginal costs necessary to avoid a price increase after the merger. The average required efficiencies were around 20% in Belgium and the Netherlands, and 5-10% in Spain and the UK. More generally, the Unilever/SaraLee decision also emphasized the robustness of the estimates, and the consistency of the merger simulations results with other pieces of qualitative and quantitative evidence.

3.5 *Direct evaluation of the competitive constraints*

In some instances, it may be possible to evaluate the direct competitive constraint that the parties exert on each other. This is the case when one can compare outcomes in market configurations that are similar, except that in some configurations the parties compete against each other while in others they do not. Although such an analysis does not in itself provide an estimation of the merger effects, this provides

¹⁶ For more details on AIDS, see Angus Deaton and John Muellbauer, "An Almost Ideal Demand System", *The American Economic Review*, 1980, vol. 70, n. 3, p. 312.

¹⁷ An alternative methodology to a merger simulation with an econometrically estimated demand consists in simulating the price effect of the merger by calibrating demand with cost data. Results based on estimation, when the available data allows it, are typically superior to calibration results, as the latter are not subject to econometric testing and rely on the accuracy of a limited number of parameter values. In Unilever/SaraLee, calibration was used to provide an additional robustness check of the simulated price increases. Other recent cases in which the merger price effects were simulated (by the Commission or the parties) using cost data include EDF/British Energy, BHP/RioTinto and Kraft/Cadbury.

directly relevant information on the intensity of competition between the parties. In addition, this approach has the advantage of not relying on assumptions regarding the nature of competition in the industry (unlike structural simulation models).

The econometric analysis carried out by the Commission in the attempted Ryanair/Aer Lingus merger provides an illustration of a direct estimation of the constraints exerted by the parties on each other.¹⁸ The idea is to analyze whether the price charged by one of the parties on a given route depends on the presence of the other party on that route. Because of unobserved factors affecting prices charged across routes, fixed-effect regressions with panel data were preferred to cross-section regressions across routes at one point in time. In other words, the Commission estimated the impact of the presence of one party on the other party's fares by exploiting the variation in market structure at individual routes over time. This approach was conclusive in showing that Ryanair exerted a competitive constraint on Aer Lingus. In particular, the base specifications indicated that Ryanair's presence on a route was associated with Aer Lingus charging approximately 5-8% lower fares.¹⁹ This effect was found to be stronger than for other flag or non-flag carriers. This suggested that the merged entity would have an incentive to set higher fares for Aer Lingus as most of the customers lost would be captured by Ryanair. Although very useful, such analysis is necessarily incomplete. For example, it does not address the loss in potential competition between the merging parties, nor competition on factors other than price, such as frequencies, advertising or ancillary services. The econometric analysis was therefore complemented with a wealth of additional evidence, including a passenger survey.²⁰

Another context in which competitive constraints can be estimated directly concerns markets where products are sold through (formal or informal) bidding-like negotiation. In such cases, data may exist or be gathered on the offers and characteristics of the bids. If the dataset is sufficiently large, an econometric evaluation of the bids/contracts can provide more quantitative information on the competitive interaction between the merging firms. For example, one can estimate the impact of the participation of one party in a tender on the other party's prices (alternatively, discounts or margins) in that tender, controlling for other factors affecting the variable of interest.

In Syniverse/BSG for example, the descriptive analysis of bidding prices was complemented with an econometric estimation of the relationship between the BSG's price and Syniverse's participation in a tender.²¹ Specifically, the price offered by BSG was modelled as a function of Syniverse's participation in the tender and of other potentially relevant variables, such as the identity of the incumbent, the length of the contract, the size of the customer, whether the tender also covered financial clearing services, and time fixed effects. The results of the econometric analysis confirmed that the participation of Syniverse to a tender was not associated with lower prices offered by BSG (the coefficient for the participation of Syniverse in a tender was positive and not significant). Based on this bidding analysis and the qualitative

¹⁸ For more details on the economic evidence in this case, see Miguel de la Mano, Enrico Pesaresi and Oliver Stehmann, "Econometric and survey evidence in the competitive assessment of the Ryanair-Aer Lingus merger", *Competition Policy Newsletter*, 2007-3.

¹⁹ There was not enough variation in the data to estimate impact of Aer Lingus' presence on a route on Ryanair's fares.

²⁰ The Statoil/Conoco merger provides another illustration of a direct estimation of the competitive constraints exerted by the parties on each other in the retail fuel market in Norway and Sweden. In this case, the Commission estimated whether prices differed significantly when the parties operated fuel stations in the vicinity of each other.

²¹ The symmetric analysis, comparing Syniverse's prices according to whether BSG did or did not participate to the tender, could not be carried out because of the very low number of tenders in which Syniverse participated but BSG did not.

evidence gathered during the investigation (in particular regarding entry), this “3 to 2” merger was cleared in phase II without remedies.

In Cisco/Tandberg, the parties also submitted an econometric analysis of bidding data to show that the presence of one party had no impact on the price charged by the other. However, none of the competitor’s participation had a significant effect on the parties’ prices and the results of this analysis were not judged sufficiently robust to be relied upon. This illustrates that while bidding analysis may be very informative to assess the competitive constraints exerted by the parties on each other, the reliability of the analysis critically depends on the quality of the data and methodology employed.

4. Ensuring an efficient process for generating economic evidence

The time and resources of the various parties involved in antitrust enforcement and merger control are necessarily limited. In particular, DG Competition is required, as an administrative authority, to take a decision within an appropriate or statutory time limit. This fact underscores the importance of ensuring that economic analysis meets certain minimum standards at the outset, and of facilitating the efficient gathering and exchange of relevant evidence, in particular any underlying quantitative data. Similarly, it is important for the decision-maker to base its decisions on all reliable and relevant evidence available during the administrative procedure, whether quantitative or qualitative.

With this respect, it is worth distinguishing between two dimensions in the evaluation of economic analysis. First, the decision maker needs to assess the intrinsic quality of the economic evidence from a technical perspective- i.e. whether it has been generated and presented to adequate professional standards. For instance, is the hypothesis clearly formulated and related to the facts of the case? Are the economic models consistent with the main characteristics of the industry? Does the modelling approach find support in the literature? Are the empirical methods and data suitable for the analysis? Are the results correctly interpreted and sufficiently robust?

Second, the decision-maker needs to determine how much weight to assign to the economic analysis. This depends importantly on its relevance with respect to the main issues at stake. For example, is the evidence a direct test of the theory of harm? Or does it merely provide useful circumstantial evidence? Other considerations include the potential for error when relying on certain types of evidence, and the congruence and consistency of the economic analysis with other evidentiary elements (such as customer responses and documentary evidence).

When alternative economic studies produce contradictory conclusions, their relative merits should be carefully investigated; the right approach cannot be to discard them as if they were incorrect or unscientific. Indeed, those apparent contradictions may result from differences in the data, differences in the approach to economic modelling or in the assumptions used to interpret the data, differences in the empirical techniques and methodologies, or may be the result of unintentional mistakes. Understanding the sources of such differences often provides important insights, thus reducing the likelihood of type I (false conviction) or type II (false acquittal) errors. For experts on either side to be accountable, economic analysis needs to be framed in such a way that decision-makers can evaluate its quality and relevance.

Against this background, DG Competition has published draft Best Practices on the submission of economic evidence (hereafter Best Practices) as part of its effort to enhance transparency and predictability in antitrust proceedings. First, the Best Practices provide recommendations regarding the content and presentation of economic or econometric analysis, in order “to facilitate its assessment and the replication of any empirical results by DG Competition and/or other parties”. In particular, the Best Practices present recommendations concerning the main elements of economic analysis, namely the formulation of the relevant question, the data, the methodology, the presentation of the results and the robustness of the

analysis. Second, they provide guidance to respond to the Commission's requests for quantitative data "to ensure that timely and relevant input for the investigation can be provided".

In addition to the substantive recommendations presented in the Best Practices regarding the quality standards for economic analysis, the Best Practices also address a number of practical issues. In particular, the Best Practices highlight the importance of early interaction with the parties' economists to ensure an efficient gathering of data and evidence. Second, replicability of the analysis is essential, and there is a strong emphasis on the cross-examination of economic evidence to ensure that it withstands scrutiny. Finally, it is important to underscore that the Best Practices are meant to apply to all the parties concerned, including DG Competition.

The Best Practices are a codification of DG Competition's practice since at least Ryanair/Aer Lingus, in particular concerning the interaction with the parties at various stages of the data gathering process and the development and cross examination of the various pieces of evidence. In its judgment of 6 July 2010, the General Court upheld the Commission's prohibition decision in the Ryanair/Aer Lingus merger case and validated this procedure. In this respect, it is important to stress that the Court did not shy away from a detailed review of the economic evidence (within the Commission's margin of discretion), which appears clearly in the judgment's detailed discussion of the econometric analysis carried out in this case. Further, the Court validated the process followed by the Commission in dealing with the various pieces of econometric evidence in this case, and the interaction with the parties in confronting such evidence.

5. Conclusion

This discussion paper reviewed a number of recent merger cases to illustrate the role of economic evidence in European merger control. This review makes it clear that economic analysis plays a central role in the assessment of merger effects, both from a conceptual point of view and for the generation of evidence. In its competitive assessment of complex mergers, and depending on data availability, the Commission typically relies on a variety of data and empirical techniques, ranging from descriptive statistics to merger simulation with demand estimation or direct evaluations of competitive constraints, in order to complement the qualitative evidence gathered in the market investigation. In this respect, DG Competition's Best Practices provide important guidance to ensure that the generation of economic data and evidence is as efficient as possible.

BRAZIL

The Brazilian Competition Policy System (BCPS) composed by the Brazilian Administrative Council for Economic Defence (CADE), the Secretariat of Economic Law (SDE) and the Secretariat of Economic Monitoring (SEAE) rely most of its work regarding merger cases on economic surveys. SEAE and SDE, which are the primary investigative entities of the BCPS, have economists that participate in merger cases, particularly those that involve detailed economic analysis.

CADE has undertaken many improvements towards improving its economic expertise in merger control. During the past few years, CADE focused in the process of structuring its Department of Economic Studies (DEE). In 2008, CADE started a working group on economic methods (GTME) to study and disseminate economic analysis methods among its staff.

In 2009, the Economic Studies Department was formally created, with a Chief Economist and three economists, along with the rules that regulate its structure and responsibilities. Two economists of DEE's staff have PhD's degrees in Industrial Organization and in Economics and an additional Doctor joined in 2010, counting nowadays with five full-time economists. The main activity of DEE is to provide economic assistance to CADE's Commissioners. The DEE is often asked to provide reviews of experts' documents in merger and conduct cases, and also provides technical knowledge to the Commissioners' offices in order to help with case analysis. It is noteworthy to stress that outside economists are not used.

In regard to the analysis made by DEE concerning merger cases, quantitative data represents an important method used in most of large cases. The data is obtained either by data requests from the authority on prices, shares and costs or presented by the parties. In general, quantitative methods, including econometric studies and simulation are brought into a case by the merging parties or merging opposing parties by means of expert economic studies. The authority often uses these data to conduct their own analysis. In most of the cases, data and econometric studies are used in delimiting relevant markets through demand studies (Nestlé/Garoto, MatteLeão/Coca Cola, Sanofi-Aventis/Medley cases) or price cointegration studies for geographic market delineation (Vale do Rio Doce, Ipiranga/Petrobras, cases).

Simulation has been used in a few cases (Nestlé/Garoto, MatteLeão/Coca Cola) involving differentiated consumer goods, where it has been used to evaluate required efficiencies to compensate likely price increases from mergers. In one conduct case, the "Cartel das Britas" cartel case, econometric evidence was used to support the idea that price trends changed during the cartel.

Unilateral effects theories have been explored at the MatteLeão-Coca Cola case, where diversion ratios and substitution patterns were inferred from demand system elasticities estimates. GUPPI or IPR have not been used as far we know as these are relatively new techniques (GUPPI was published in a paper by Shapiro and Farrell in early 2010 and IPR was formally presented at the 2010 merger guideline revision jointly published by the OFT and the Competition).

Coca-Cola/ Mate-Leão case opened a very important precedent regarding the use of econometric evidence and merger simulation methods, once it relied upon quantitative and qualitative analysis. Coca-Cola agreed with Leão Júnior S/A, a Brazilian company, to acquire the entire capital of the latter which is a company that actuates in the manufacture and sale of ready-to-drink tea ("mate") and iced tea. Coca-Cola already sold these products in Brazil under the Nestea brand pursuant to a joint venture with Nestlé, the

owner of the brand. Pepsi-Cola Industrial da Amazônia Ltda (Pepsi), which also sold these products under its Lipton brand, claimed that the concentration resulting from the operation was quite high and that these could affect directly the Brazilian beverage industry. Furthermore, the Brazilian Association of Soft Drink Producers (AFREBAS) submitted to the Secretariat of Economic Law of the Ministry of Justice (SDE) a representation against Coca-Cola for undermining the economic order and free competition, besides the consumers' collective.

CADE and Coca-Cola negotiated an Agreement to Preserve the Reversibility of Transaction (APRO) in order to preserve the assets, rights and management of the acquired company (Leão Júnior S/A) until the investigation was concluded.

Coca-Cola simultaneously raised contradictory arguments, claiming, in a first moment, that the market would be so big that the merger would not produce any kind of effect and then, claimed that mate (the market where Leão Júnior is strong) and iced tea (the market where Coca-Cola is the leader) could be analyzed as separate markets, once they had different characteristics.¹ Thus, the Secretariat of Economic Monitoring (SEAE) requested economic studies to Coca-Cola and Pepsi in order to identify the degree of substitution between mate and iced tea.

Coca-Cola, initially, presented two econometric studies. In the first study, it was obtained the result that only the price of iced tea generated substitution effects in terms of the quantity of mate in the segment of large packs, while other results were not conclusive. To estimate the elasticities, the authors used two types of econometric models, in view of the presence of fixed effects: (i) Generalized Method of Moments (GMM) in first difference and (ii) GMM with dummy variables. They also considered the presence of dynamic effects in both models. In the construction of this database, the authors chose to target the small packages products (up to 500ml) and large packs (up to 1.5 l). Although the used technique was appropriate to estimate the direct and cross price elasticity, considering mate and iced tea, three points were made by SEAE: (i) small number of observations used to estimate the model, (ii) the lack of clarity regarding the regions considered during the analysis, and (iii) the interpretation of results. The use of small number of observations for the estimation of proposed models (less than 30 observations) could not guarantee the validity of assumptions of the estimated models, making the quality of statistics resulting from the econometric analysis less effective. Also, it was unclear whether the series used, arranged in a panel, referred to all these regions subject to the merger economic analysis. Furthermore, the chose and studied regions were not specified in the work. Finally, the results were not conclusive and sometimes were contradictory, considering both adopted models.

In the second study presented by Coca-Cola, concerning the possibility of substitution between mate and iced tea in the Grande Rio de Janeiro, without specifying a package, it was obtained a cross-elasticity between iced tea and mate as zero, *i.e.*, no replacement was identified among the products. Moreover, it was found negative own elasticities, representing the expected result.

In order to estimate the elasticities, the authors used the Generalized Method of Moments (GMM) in first difference, considering the presence of fixed effects. They also considered dynamic effects. Although the technique used was appropriate to estimate the direct and cross elasticity price, this study also used small number of observations to estimate the model. However, despite the shortcomings of the model presented, the results, although questionable, thrown light on the possibility of substitution between mate

¹ The claimants argued that the taste, the opportunities and consumption habits of the two products were different, since mate's flavor is stronger than the iced tea. These characteristics were derived from the use of different herbs to make the product, once mate is used in tea mate and the black tea leaves are used to produce iced tea.

and iced tea. It should be noted also that the authors did not consider the natural guaraná on the econometric study due to unavailability of comparable data of iced tea and mate.

On the other hand, the study conducted by Pepsi, about the possibility of substitution between "Matte Leão", "Nestea" and "Lipton" demonstrated that: (i) the price elasticities of brands were greater than unity in absolute value, indicating that demand was elastic in face to their own prices, and (ii) the cross-price elasticities were positive, indicating that the brands could be substitutes for the average of Brazilian consumers.

The authors also used the Almost Ideal Demand System (AIDS), using panel data. The data are weekly, covering 105 weeks (14/07/2005 to 15/07/2007), obtained from the Nielsen company. Estimations were made for Brazil and eight regions (Grande Rio de Janeiro, Belo Horizonte, Grande São Paulo, Campinas, Sorocaba, São José do Rio Preto, Curitiba, Porto Alegre and Brasília). In summary, the results showed that the products of the brands "Lipton", "Matte Lion" and "Nestea" were perceived as substitutes by consumers. Moreover, it was found that the brand "Matte Leão" had lower elasticity itself in Rio de Janeiro and higher in Porto Alegre, demonstrating that consumers are more brand loyal for "Matte Leão" in Rio de Janeiro. The technique adopted was appropriate to estimate the direct and cross price elasticity of different brands and the results were statically significant.

Although the study of Coca-Cola did not make clear the possibility of substitution between iced tea and mate, the study of Pepsi pointed to this possibility. In addition, Pepsi, through qualitative arguments, concluded that there was a similarity between iced tea and mate. Moreover, the study presented by Coca-Cola demonstrated that the elasticity of the mate may be associated with other products not considered in the analysis, which could be the natural guaraná.

There were several other studies presented and discussed very deeply. Also, it was made a complementary instruction in CADE, collecting more data about this case.

After using this econometric evidence, together with simulation methods and qualitative data, CADE understood that this merger could harm consumers. For that, on June of 2009, CADE negotiated a Plea Agreement on Merger Case (TCD), where the merger would be approved with the divestiture of Nestea Brand by Coca-Cola, prohibiting Coca-Cola to produce, market, distribute or practice any other activity related to the Nestea Brand, in Brazil.

Therefore, as previously mentioned and exemplified with the Coca-Cola/Matte Leão Júnior case, econometric studies or simulation studies are usually brought forth by parties' economic experts' studies. In the case of homogeneous goods, data comes from sector institutions or official statistics offices (usually trade data). In the case of differentiated goods, data comes from data collection firms, such as Nielsen. Obtaining long time series for a range of products from the parties themselves is usually very hard as there does not seem to be a data management culture in the main Brazilian firms.

CHINA

1. Introduction¹

China's Anti-Monopoly Law (hereinafter referred to as “AML”) starts to enforce in August 2008. In September of the same year, Anti-Monopoly Bureau (hereinafter referred to as “AMB”) is found by the Ministry of Commerce of the People's Republic of China (hereinafter referred to as “MOFCOM”), which takes charge in the merger control in China. To December 2010, MOFCOM had reviewed over 200 cases that make MOFCOM constantly accumulate its experience in merger control. Nowadays, MOFCOM is becoming an important merger control authority in the world. China's merger control practice adopts the global accepted rules and the function of economic analysis is increasingly important.

2. The applications of economic methods in merger control

In merger review practice, economic methods are widely used by AMB of MOFCOM, which is embodied in not only the rule enactment, but also the enforcement practice. In rule enactment, the Anti-Monopoly Commission under the State Council issued the *Guidelines Concerning the Definition of Relevant Markets*,² which establish the basic ideas and factors of relevant markets definition on the demand and supply aspects. The SSNIP method is also introduced in the Guidelines.

In the enforcement practice, AMB attaches great importance to economic analysis ideas and methods. The use of the economic methods is embodied in the evaluation of horizontal merger such as relevant markets definition, the measurement of market shares and concentration, evaluating of unilateral and bilateral effect, entry, efficiencies, failure, etc., and non-horizontal merger such as foreclosure effect. At present time, AMB mainly uses the qualitative methods. The applications of quantitative methods are being learning and researching. We track and research lots of Global accepted quantitative tools including critical loss analysis, diversion ratio, upward pricing pressure, merger simulation, etc. In some cases, some of the methods were used for reference in the decision making process.

3. The role of economists

The economic division is founded by the AMB to provide economic theoretical support for the investigations. In the practice, economists participate in the whole course of every case. To a case, before placing on file, economists participate in the examination of the notification materials and give their independent opinions to the issues which should be clarified. They mainly focus on the examination of relevant markets definition and competition analysis. After placing on file, a case group will be constituted by AMB to enforce investigations. The group includes lawyer and economist, and the economist mainly focuses on providing essential economic analysis to the case.

¹ The author, Jiang Yongliang, is an official with the Anti-Monopoly Bureau of Ministry of Commerce of the People's Republic of China.

² For detail, please refer to the official website of MOFCOM at <http://fldj.mofcom.gov.cn/aarticle/j/200907/20090706384131.html>.

In past cases, AMB once attempted to engage the outside economists to provide essential technological support and submit research report based on the specific problems. On the basis of data from market survey, outside economists do some quantitative analysis on relevant markets definition and harm to competition to provide evidences for the investigations.

4. The improvement of economic expertise

In the past two years, the AMB of MOFCOM increasingly improves the economic expertise through international communication and accumulation in the practice. After the enforcement of the AML, MOFCOM actively extend international communication in competition area. In the bilateral cooperation, MOFCOM has established communication and cooperation mechanism of competition policy with several countries. In the multilateral cooperation, MOFCOM actively attends activities related to competition policy organized by international organizations. These communications provide good opportunities for AMB to learn and refer to experience including the using of economic methods from other authorities. Simultaneously, AMB often holds and attends academic seminars to discuss economic theories and methods with the economists from China and foreign countries. That will also enrich the economic expertise of AMB.

In order to improve the expertise of economists as soon as possible and make good use of economic methods in the enforcement, AMB makes economist participate in the whole course of every case to create conditions for the introduction of economic evidence in merger control. That will be a good opportunity for the economists to improve their economic expertise. Furthermore, the participation of outside economists in the case also provides opportunities for the economists in AMB to improve.

INDONESIA

The 2010 marks the beginning of merger control regime by Indonesian competition law after ten years waiting for its implementing regulation. As mandated by the Article 28 of the Law, KPPU has mandate to supervise mergers and acquisitions in Indonesia, but its implementation is further regulated by a government regulation. Last year, the Government Regulation No. 57/2010 concerning Mergers is established after intensive approaches by the Commission. The regulation stipulates that any mergers meeting the threshold requirement must be notified to the KPPU within 30 days after the merger is effective by law/regulation. The threshold involves merged asset value over IDR 2.5 trillion and/or sales value over IDR 5 trillion. As for banking sector, the asset threshold is IDR 20 trillion. For failing to notify, businesses can lead to an administrative fine of IDR 1 billion for each due day, with an IDR 25 billion maximum.

Apart from mandatory notification, the Government Regulation also regulates consultation or voluntary procedure. This procedure provides business actors and opportunity to business to let them know in advance whether their merger plans comply with the regulation. The consultation procedure uses similar standards of those post notification.

The merger analysis as stipulated in the government regulation will be made based on five factors, namely market concentration, market entry, potential anti competitive behavior, efficiency, bankruptcy, or other factors necessary to consider. Therefore, economic evidences are crucial.

The merger analysis on the five factors is scrupulously described in the guideline published by the KPPU and made public through KPPU's official website. Therefore, the stakeholder will know the methodology used by the KPPU in analyzing notified mergers.

Economic analysis is used in most of analysis, especially those related to market concentration and merger impacts. In evaluating a market concentration, the KPPU rely heavily on the Concentration Ratio (CR) and or the Herfindahl Hirschman Index (HHI). The HHI always come first heading the CR analysis. The KPPU use the value of 1800 as the threshold for HHI. If the mergers accounted to score lower than 1800, then the mergers may not lead to monopolistic practice and unfair business competition. This is because; the average HHI of most of industries in Indonesia is 2000.

In determining entry barrier, the KPPU will focus on three factors, namely (1) absolute barrier through government regulation, licensing, and IPR; (2) structural barrier through industry characteristic (high technology, high economic of scale, high sunk cost, and high switching cost); and (3) strategic advantage by the incumbent. High entry barrier may indicate from historical number of entrepreneur in the relevant market, number of potential entrepreneur, consideration of entry cost with expected market return, as well as estimated return on investment.

Impact of mergers could be indicated from two different effects, unilateral and coordinated effect. The KPPU use buyer power as main measurement for unilateral effect, by considering business plans, mergers documents, market analysis, market intelligent, and other relevant document. Coordinated effect is a different thing, because the KPPU has to measure market transparency, product differentiation, the existence of maverick entrepreneur, interlocking directorate, and level of market entry.

Efficiency defense will be analyzed through potential price reduction after the mergers. The measurement will focus on the variable, marginal, and fixed cost of merging parties. Bankruptcy will be carefully analyzed through different factors, such as dreadful financial condition where merging is the only option available; no opportunity to reorganize their business; and no alternative other than anti-competitive attempt.

Data and information in merger analysis mainly obtain through secondary data provided by the merging parties. If necessary, the KPPU is allowed to procure data from the third parties or conduct a market survey to obtain the relevant data independently.

The KPPU noted that there were five mergers and 46 (forty-six) consultations on mergers were notified. To date, there were no mergers denied or rejected by the Commission. Therefore, the KPPU is yet to experience an objection process on merger case.¹

¹ This document was prepared by the Foreign Cooperation Division for the 2011 OECD Competition Committee Meeting. For any comments and inquiries, please contact international@kppu.go.id.

ROMANIA

1. **Merger control in Romania and the involvement of economists in the merger review process**

Romanian Competition Council (RCC) is the national competition authority empowered to enforce Law No. 21/1996 (the Competition Law). The merger control rules provided for in the Competition Law are further detailed through the secondary legislation adopted by the Competition Council. The Competition Law has recently been amended and completed by the Emergency Govt. Ordinance 75/2010. An important change concerns the adoption of the SIEC test in the merger control system, to replace the previously used market dominance assessment test. This change implies that the share of economic evidence in merger analysis needs to increase accordingly, so that the competition authority can take into account important dynamic and behavioral factors in mergers assessment.

RCC has recently undergone a substantial review of its procedures, in the framework of the Functional Review of the Romanian central public administration conducted by World Bank. As a result, the Council is currently implementing a thorough organizational and procedural revision. The Report drafted by the World Bank recommended the Council to take the necessary steps to further increase the use of quantitative economic analysis at various stages in the decision-making process. The Council's Board acknowledged this recommendation through the recruitment of PhD holders from visible international universities, and there are plans to further increase the number of economists with advanced degrees.

Outside economists have been commissioned for certain sector studies centered on competition issues, but merger revisions are being entirely conducted with in-house economists.

Currently, mergers reviews take place within each corresponding specialized division (e.g. consumer goods, services, oil & energy, etc.). The Economics team, whose aim is to deploy in-depth quantitative studies, is currently organized in a separate Unit, and it participates in various cases on an ad-hoc basis, at the request of the Case Handler, or following a recommendation from the Council's Board. Presently, the team includes PhD holders in Economics or Statistics.

2. **RCC experience with in-depth economic analysis in merger review**

For the past two decades the Romanian economy has been undergoing a transitional phase towards a fully-fledged market economy. It can be rightfully identified as an emerging market. Although it has experienced sustained growth rates during most of the last decade, the economic crisis severely affected the economy, pushing it into deep red (-7.1% GDP in 2009). Because of its transitory development stage, alongside privatization and liberalization, the economy exhibits dynamic developments in most of its industrial sectors. At the same time most markets experience a high entry/exit rate. Consequently, actors in many markets had a relative short history of existence and markets exhibited a high degree of fragmentation.

Because of the above mentioned facts, most mergers analyzed insofar by the RCC occurred horizontally, between competitors that aimed to consolidate their position, and usually these mergers involved small to medium companies. Since the RCC practice favored the use of market dominance assessment test over the SIEC test prior to August 2010, when the legislation was amended as mentioned

above, there was little need for detailed economic analysis, in the direction of e.g. illustrative price rises or gross upward pricing pressure index.

Consequently, merger notification and approval has been historically a smooth process, because the mergers under review rarely involved an outcome that could have the potential to impede effective competition or to substantially alter the market structure.

We are currently developing a set of Best Practices for incorporating Economic Analysis in antitrust investigations, where we are emphasizing the importance of the data collection process, the quality of data sets, the need to ensure correspondence between various data sets etc. Distinct chapters will focus on various antitrust techniques, and merger analysis will be allotted an important share. Particular emphasis will be placed on the process of internal autonomous review of complex economic analyses.

The Economics team of the RCC aims to increase the use of quantitative techniques in the immediate future, both for mergers revision but also for other impact assessment studies, in relation to decisions adopted by the competition authority.

3. The potential of Data Envelopment Analysis as a quantitative technique in merger review

The literature accounts for a plethora of reasons behind the occurrence of horizontal mergers, but it is generally agreed that mergers have the potential to lessen competition, thus providing opportunities for price increases. Price increases are more likely to occur in particular instances e.g. 1) the merging entities have a substantial share of the market; 2) they are close competitors 3) the consumers' options for switching are limited 4) competitors are unable to increase the supply in the event of a price increase.

The market developments following a merger have potential anticompetitive effects, but these effects could be countervailed by cost efficiencies and other synergies leading to **increases in efficiency**, which in turn could be reflected in lower prices, to the benefit of consumers.

In order to evaluate potential efficiency gains following mergers, RCC Economics unit takes into account the use of an Operations Research tool that has been extensively used in management, for evaluating the economic efficiency of different production units (or decision making units - DMUs -) like companies, banks, bank branches, hospitals etc. The tool is called Data Envelopment Analysis (DEA) and it is particularly prone to conduct pre- and post-merger evaluations with regard to the distribution of efficiencies in the market on focus. At the same time, this tool allows for the simulation of a potential merger's effect and powerful visual tools have been developed to assist the decision-maker.

A standard DEA requires information about factors of production (inputs) and about the quantities produced (outputs). Several other types of analyses can be conducted, when factor and output prices are available. Although vertical mergers can be subject to a DEA, horizontal mergers are particularly prone to a data envelopment analysis.

DEA basically constructs a sector-wise technological frontier, which represents the best-practice technology in an industry, and then it calculates the distance from the frontier to each individual DMU. By doing so, DEA provides a measure for the efficiency of individual units, as well as an overall sector measure of efficiency. Both indicators are relevant for evaluating the potential gains in efficiency following a merger. The DEA measures are relative, meaning that they are depended on the sample available to analyze, but if the sample covers the scrutinized market to a considerable extent, they provide a satisfactory image of the resulting market outcome, following a merger.

DEA can also assist in decomposing efficiency gains in scale, scope (harmony) and even the potential for **synergies**, which are those efficiency gains pertaining to the "intimate integration of the parties"

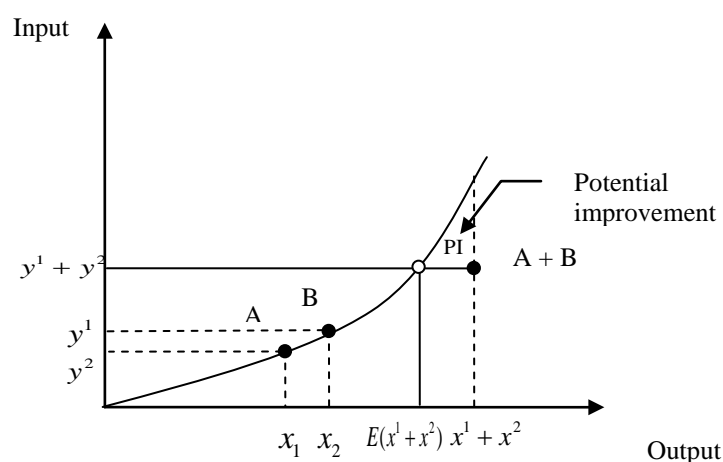
unique, hard-to-trade assets” (Farrel and Shapiro, 2001)¹. The actual evaluation of synergy effect could only take place in a post-merger evaluation.

DEA basically constructs sector-wise technological frontier, which represents the best-practice technology in an industry, and then it calculates the distance from the frontier of each individual producer. By doing so, DEA provides a measure for the efficiency of individual units, as well as an overall sector measure of efficiency. Both indicators are relevant for evaluating the potential gains in efficiency following a merger. The DEA measures are relative, meaning that they are depended on the sample available to measure, but if the sample covers the market to a considerable extent, they provide a satisfactory picture of the resulting market outcome.

Figure 1 below (Bogetoft and Lars, 2010)² shows in a stylized manner the potential for efficiency improvement following a merger involving two technically efficient companies (located on the production frontier). One can see that the potential for improvement lies to the north-east of a hypothetical company, which is simply the result of combining the inputs/outputs used before the pre-merger enterprises. In a post-merger assessment, the competition authority should be concerned if the actual enterprise arising from the merger lies outside the PI area.

Several concerns (outliers, sample size etc.) have been raised in connection with a data envelopment analysis, and remedies (e.g. bootstrapping) have been proposed to deal with these issues. In mergers, data requirement might be of particular concern, because it is desirable to analyze data from most players on a particular market, and this data might not be available in some cases.

Figure 1



DEA has already been used in merger analysis. Ferrier and Valdmanis (2004)³ analyzed hospital mergers in the USA, including the construction of pseudo-hospitals (the outcome of potential mergers).

¹ Farrel, J. and C. Shapiro 2001 “Scale economies and synergies in horizontal merger analysis”, *Antitrust Law Journal*, 68:685-710.

² Bogetoft P. and Otto L. (2010) “Benchmarking with DEA, SFA and R”, Springer-Verlag, New York Inc.

³ Ferrier, G.D., and V.G. Valdmanis (2004), “Do mergers improve hospital productivity”?, *Journal of the Operational Research Society* 55:1071-80.

Sherman and Rupert (2006)⁴ apply DEA to bank mergers, in an analysis involving bank-branches as well. Bogetoft and Wang (2005)⁵ discuss in great detail the decomposition of efficiency gains following a merger into technical, scale and scope (harmony), and provide an empirical example on Danish offices for agricultural advisory services.

⁴ Sherman, H. D., and T.J. Rupert (2006), "Do bank mergers have hidden or foregone value? Realized and unrealized operating synergies in one bank merger", *European Journal of Operational Research*, 168:253-68.

⁵ Bogetoft, P., and D. Wang (2005) "Estimating the potential gains from mergers", *Journal of Productivity Analysis* 23:2, 145-71.

RUSSIAN FEDERATION

The FAS Russia controls economic concentration in the Russian Federation in accordance with the provisions of the Federal Law №135-FZ of July, 26, 2006, “On Protection of Competition”.

According to the legislation, while conducting preliminary control over economic concentration, the Antimonopoly authority takes one of the following decisions:

- to satisfy the notification, if the transaction in question, or any other action, alleged in the notification do not restrict competition;
- to extend the term of the notification consideration, if the antimonopoly authority has established that the transaction in question can result in restriction of competition, or if the transaction in question is to be considered on the subject of its compliance with the Federal Law № 57-FZ of April, 29, 2008, “On foreign investment in companies having strategic importance for State security and defense”;
- to satisfy the notification with imposition of a remedy (structural and behavioral remedies aiming at maintenance of competition);
- to refuse the notification, in case the antimonopoly authority while considering the notification has come to the conclusion that the transaction in question or any other action alleged in the notification would lead or can lead to restriction of competition.

The remedies that the Antimonopoly authority may impose on the companies, taking part in the transaction in question, to ensure competition on the market are formulated in the binding instruction and can contain the following: conditions for the provision of access and connection to the production facilities of the applicant, sequence of granting to other persons rights to the objects that the applicant disposes of, as well as the remedies to the group of persons while merger transaction concerning partial assets divestiture, and remedies about advance notice (information) of the Antimonopoly authority about the intention to act in a certain way, about sale of certain amount of products on the exchange, etc.

Control over the economic concentration carried out by the FAS Russia is also regulated by the Administrative Regulation of the FAS Russia, which determines the sequence and procedure of interaction between the antimonopoly authority and persons, arranging the transaction. Under the above mentioned Administrative Regulation, the decision of the FAS Russia is to be based upon analysis of the competition condition on a relevant market, before the transaction takes place, as well as upon the data of the prospective analysis of the market with impact of the transaction in question taken into consideration.

The procedure for the product market analysis was approved by the Order of the FAS Russia № 220 of April, 28, 2010.

The procedure for the product market analysis includes the following stages:

- determination of the period for the product market research;

- determination of borders of the product market;
- determination of the geographical borders of the product market;
- determination of the companies, acting as sellers and purchasers on the product market;
- calculation of the product market amount and companies' shares in the market;
- calculation of the concentration level of the product market;
- determination of the entry barriers for the product market;
- assessment of the competition condition on the product market;
- drawing of the analytical report.

Under the above mentioned procedure, application of the relevant economic instruments is provided for each stage of analysis. Such instruments include inter alia the following: testing on the hypothetical monopolist (which is applied to determine borders of the product market), calculation of the product market concentration level (Herfindal-Hirshman Index (HHI), Market concentration Index (CR)).

Since the organizational structure of the FAS Russia is a sectoral one, the transactions in the FAS Russia are considered by all structural departments which apply competition law (Department for Control over Transport and Communications, Department for Control over the Fuel-Energy Complex, Department for Control over Power Energy Sector, Department for Control over Financial Markets, Department for Control over Industry and Defense Complex, Anti-Cartel Department, Department for Control over Construction, Natural resources and Public Utilities, Department for Control over Social Sphere and Trade, Department for Control over Advertising and Unfair Competition, Department for Control over Foreign Investments, Department for Control over Chemical Industry and Agricultural-Industry Complex, and etc.), which enables the departments to obtain more detailed information concerning the relevant market structure and its participants.

When the impact of the transaction at request is assessed, the economists from the FAS Russia (Analytical Department), as well as the external economists are involved in the analysis procedure. If needed, the survey about possible impact of the transaction in question among the consumers and the rivals is carried out.

In case the FAS Russia establishes that the transaction in question will result in abuse of the dominant position by the company, then, for the purposes of the prospective analysis of the transaction at request, the Antimonopoly Authority can impose remedies to maintain competition on the market after the transaction in question is concluded.

The most interesting and significant examples of transactions, approved by the FAS Russia, with instructions to execute the remedies for the competition maintenance issued, are given below.

1. In 2010 the FAS Russia approved three intertwined transactions on the purchase, production and sale of milk and milk products markets

These transactions were aimed at consolidation of the milk- and- milk- products- production- and - sale business, belonging to the DANONE group of persons, and the one, belonging to the UNIMILK group of persons, on territory of the Russian Federation so as to establish a joint undertaking.

The decision of the FAS Russia to satisfy the notification in question was accompanied with imposition of certain remedies to the joint DANON-UNIMILK group of persons. These remedies were aimed at competition maintenance on the purchase, production –and sale–of-milk-and milk-products markets.

The imposition of the above mentioned remedies was due to the following circumstances revealed by the FAS Russia while examining the transactions.

Basing on the statistic data about the amount of the purchase, production – and sale-of milk-and-milk products markets, published in the open sources by the regional units of the Federal State Statistics Service, and the data of the regional offices of the FAS Russia and the companies, parties to the transaction, as well, the FAS Russia established that the UNIMILK group has high market potential in a number of regions, in particular, on the milk- purchase market.

The DANONE Company operates business on the milk-and – milk-products market as well, however, mainly in segments other than those, the UNIMILK Company operates in.

Alongside with that, according to the market research data, basing inter alia on the market segmentation, the FAS Russia established that transactions in question can result in establishment and intensification of dominant position of the group of persons, created as a result of a the transaction, in certain regional purchase, production and sale of milk and milk products markets concerning certain market segments.

2. In 2011the FAS Russia approved the notification of the Pepsi-Cola Company (production and sale of foods and beverage (juices)) on acquisition of 100% of shares of the OJSC Wimm-Bill-Dann –Foods (the biggest producer of milk in Russia) with an instruction to maintain competition on the juice and dairy market issued

During the transaction analysis the FAS Russia examined the competition condition on the milk and dairy products market, as well as the juice products market.

2.1 *Milk and dairy products market*

The FAS Russia established that the OJSC Wimm-Bill-Dann-Foods holds the significant share in the milk and dairy products market in the Russian Federation. Moreover, a certain number of undertakings from the same group of persons as Wimm-Bill-Dann-Foods occupy a dominant position in a certain product market in the number of regions of the Russian Federation.

In addition, on the basis of the analysis and assessment of the condition and prospective development of competition on the milk and dairy products market (inter alia by market segmentation), carried out by the Pepsi-Cola Company (the results of independent surveys were identical), the FAS Russia established that the group of persons, created as a result of the transaction, would exercise control over quite a significant share of milk and dairy products market within the geographic scope of the Russian Federation.

2.2 *The juice-products market*

As the data, received from the same sources, states, the transaction at request will result into the increase of the Pepsi-Co group shares on the market from 42% to 47% of shares which will lead to the significant growth of concentration of the market in question as before the conclusion of the transaction its parties already had significant assets in this sphere on the territory of the Russian Federation.

Thus under analysis of this transaction the product segmentation of the milk and milk product market was done, geographic borders of the markets were defined, there were revealed circumstances that lead to enhancement of dominant position of the joint company and there were formulated remedies in order to maintain price competition on this market.

When the FAS Russia revealed the signs of occupying dominant position by the joint company after the transaction is approved, the authority took into account the following indicators such as owning of considerable number of well-known brands, opportunity to provide customers with the wide range of value added costs products produced on the basis of milk, fruits, vegetables and grain, opportunity to reshape the production of juices for production of milk and vice-versa.

However, despite the fact that, as the result of the transaction, the Pepsi-Co Company will hold a significant share on both markets, the FAS Russia approved the transaction, taking into consideration the social-economic impact of the transaction on Russia, specifically, significant investments, technology adoption by the Pepsi-Co Company in milk and dairy products production, which will give the consumers the possibility to receive adequate benefits after the transaction conclusion.

On approval of the transaction, the FAS Russia ordered Pepsi-Co to maintain competition on the milk and dairy products market, and the juice market as well.

3. In 2010 the OJSC MTS, one of the biggest mobile operators in Russia, filed with the FAS Russia a notification on acquisition of CJSC SMART (mobile operator, which conducts business in several Russian regions)

While considering the transaction in question the FAS Russia carried out the economic analysis, assessing economic indices of the companies participating in the transaction, as well as major rivals – national mobile operators Vypelcom and MegaFon in order to determine their position on the Russian market under different types of rendered services. The FAS Russia approved the transaction and imposed certain remedies on the OJSC MTS, specifically, such remedies included the following: the company was to divest its mobile assets in those regions, where the company set up as a result of the transaction, will hold a dominant position (more than 50 %), into separate companies, and to sell in a given period these companies to undertakings, that do not belong to the OJSC Company group.

4. In 2010 the FAS Russia dismissed the notification of the OJSC "Ural mining and smelting" company (CJSC "Kolchugtsevtmet" and "Kirovsky non-ferrous metal working plant" belong to the OJSC "Ural mining and smelting" company's group of persons) on acquisition of 100% of voting shares of the LLC "Shatravan Holdings Limited", which is in possession of the OJSC "Revdinsky non-ferrous metal working plant"

While considering this notification the FAS Russia requested the companies, participants in transaction, and their rivals to provide information about the production turnover and sale, moreover the FAS Russia applied the data of the Federal Customs Service, concerning the share of the companies in the import and export market. Upon the examination of the data, the FAS Russia concluded that the transaction at hand the share of the OJSC "Ural mining and smelting" group will be more than 35% in the cooper, latten and bronze rolled stock market and more than 50 % in the cooper-nickel rolled stock market, so, the FAS Russia made a decision to refuse the notification.

5. In 2010 the FAS Russia also dismissed the notification of the OJSC “Rosprint” (printed production distributor), situated in Moscow, on the acquisition of 100% of share of the “KP-Roznitsa” company, situated in Rostov-on-Don

The FAS Russia made a decision to dismiss the notification since as the result of the transaction the share of the OJSC “Rosprint” company in the market would be 98.6%, which would lead to restriction of competition and decrease number of market participants.

While considering the transaction in question, the Rostov regional office of the FAS Russia made a research in the printed production retail market within the territory of Rostov-on-Don during the period from 2009 to 2010., applying inter alia the data of the Federal State Statistics Service in Rostov region concerning the turnover of the distribution of the printed\text production services market on the territory of Rostov-on-Don.

Alongside with that the following shall be taken into consideration: within the application of the antimonopoly legislation the Competition Authority can analyze price and quality indices, e.g. while assessing the favorable impact on consumers by means of production optimization as a result of the transaction. The Law on protection of competition provides for transactions, which result into restriction of competition, but which result or can result into:

(revised, Federal Law of July 17, 2009, N 164-FZ)

5. *industry improvement, sale of goods or encouragement of technical and economic progress or growth of competitive ability of the Russian goods on the world product market;*
6. *consumers’ advantages (benefits) adequate to undertakings’ advantages (benefits) which the latter receive as a result of action (inaction), agreements and concerted actions.*

One of the examples of the situation described above is approval by the FAS Russia of acquisition of the local telephone communication operator by a big operator, as a sequence that the former could not invest in development of the communication net which is crucial to render services the consumers are in need of. During the approval procedure the FAS Russia took into consideration the fact that the local telephone communication services are subject to public regulation, thus excluding the possible abuse of the purchaser by means of predatory high prices for the subscribers. However, the pre-requisite for introduction of new services is created, and for competition development in future.

It is worth mentioning that any transaction, or any other action concerning the assets, interests, main industrial facilities, which is subject to consideration on its compliance with the Law on protection of competition, is considered by the FAS Russia separately, and the decision on each transaction separately. Alongside with that the FAS Russia may consider several successive transactions in a parallel way, basing on the final aim of these successive transactions.

SOUTH AFRICA

1. Introduction

At the outset it is worth highlighting that the South African Competition Act requires an analysis of whether or not a merger is likely to substantially prevent or lessen competition including by assessing a set of factors explicitly set out. These factors include: the actual and potential level of import competition; barriers to entry; level and trends of concentration and history of collusion in the market; the degree of countervailing power; dynamic characteristics (such as growth, innovation and product differentiation); the nature and extent of vertical integration in the market; failure or likelihood of failure of the business or part of the business of a party to the merger; and whether the merger will result in the removal of an effective competitor. The Act further directs that technology, efficiency or other pro-competitive gains that may outweigh an anti-competitive effect should be considered.

There is compulsory pre-merger notification above a threshold, with a higher threshold for large mergers. Large mergers are decided by the Competition Tribunal with recommendations being made by the Competition Commission. Merger decisions by the Commission on intermediate mergers can be taken by parties to the Tribunal if they contest the decision. In effect this means that complex and contested mergers come before the Tribunal. The consequence of this is that the economic evidence in such matters is fully interrogated and expert economists testify and are cross-examined. In major cases there is normally at least one international economics consultancy involved, and hearings can extend over several weeks.

Economic evidence has thus been very important from the coming into effect of the Act in 1999, while the nature and sophistication of the analysis has undoubtedly evolved over time. Early cases involved questions of market definition, establishing how effects in vertical mergers were to be treated, as well as how different types of efficiencies should be taken into account. Over time, more sophisticated economic techniques have been employed, although the core economic questions are of course the same.

The rest of the paper is structured as follows: Section two explores how the use of economics in merger evaluation has evolved over time and the factors that have influenced this evolution. Section three describes economic methodologies that have been employed by the Commission, and reviews some of the cases that have made use of them. Section four concludes the paper.

2. The evolving role of economics in merger analysis

The extent of economic analysis required for mergers essentially turns on the number of mergers notified that raise possible competition concerns, as the Act essentially directs that necessary tests will involve an economic assessment.¹ The total number of mergers notified increased to a high of 513 in 2007,² before falling to 190 in 2010³ following the economic slowdown and the revision of merger thresholds. Of these, the Commission sorts 'Phase 3' cases, being mergers in which an analysis of likely

¹ Section 12A (2) of the Competition Act No. 89 of 1998, as amended.

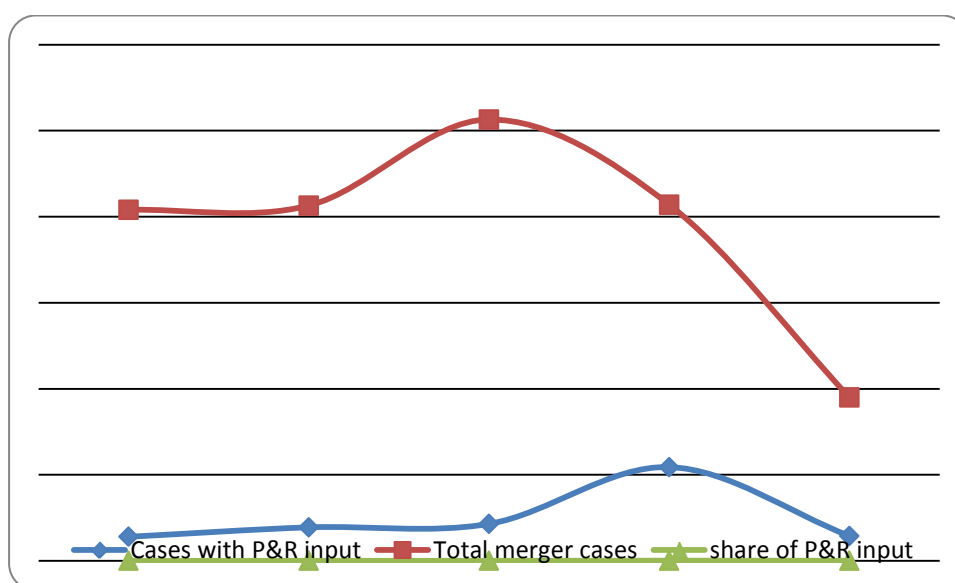
² Competition Commission Annual Report 2006/2007.

³ Competition Commission Annual Report 2009/2010.

effects is required given their vertical and horizontal nature and market shares in the upstream and/or downstream markets.

Typically the Policy and Research Division (P&R) of the Competition Commission, headed by the Chief Economist, joins the case teams in complex cases. P&R is essentially the economics division of the Commission, and has grown over recent years to have around 20 economists. Economists from P&R also participate in some less complex Phase 2 matters especially when such transactions take place in one of the priority sectors identified by the Commission (that is, Banking Infrastructure & Construction, Food & Agro-processing, Intermediate Industrial products) and where there are concerns about cartel conduct (this factor explains the high proportion of cases with P&R participation in 2009). As illustrated in Figure 1, the proportion of the notified mergers on which P&R economic input has been involved has been as much as 25%, in 2009.

Figure 1: Merger cases with P&R input



Note: Data for the graph is from various annual reports of the Commission. Total merger cases and number of mergers with P&R input are on the primary y-axis. The share of cases with P&R input is on the secondary y-axis.

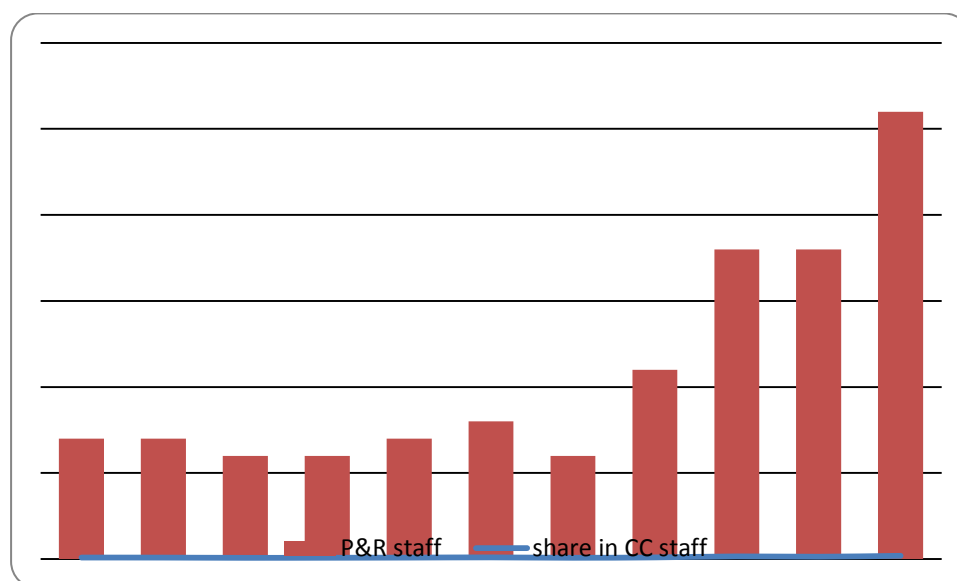
Economists typically participate throughout the process of evaluation of complex cases, as integral members of the Commission team, and then in leading evidence in the Tribunal. It is common for the Commission team to interact with economic experts employed by the merging parties during the evaluation in complex cases.

The Tribunal process is also setup to facilitate the hearing and interrogation of economic evidence. A panel of three Tribunal members hears each case, of which one member will normally be an economist. A discovery process and the filing of factual witness statements normally precede the filing of economists' expert reports. This means further analysis is undertaken for the Tribunal hearing based on the additional factual evidence available. The Tribunal hearing process has also allowed for economic analysis to respond to points made during the hearing, with additional data analysis, normally in the form of charts and tables, being generated as exhibits during the hearings for the purposes of leading evidence and of cross-examination. This does, however, place additional burdens on the Commission which cannot match the resources that merging parties are generally able to bring to bear.

Outside economists are utilized by the Commission in two main ways. First, the Commission has drawn on external economic expertise to do training and run seminars on key issues in competition economics, including merger analysis. Second, outside economists have been appointed by the Commission in some especially challenging cases. The increasing use of sophisticated economics in merger evaluation can be explained by five broad factors related to the youthfulness of the institution: ability to attract and retain qualified economists, the empirical challenges that come with the use of economics, the time period available to evaluate mergers, the role of private economic consultancies and the increasing influence of the post-Chicago school of thought.

The P&R division has grown in size over recent years (Figure 2), associated with the increasing workload and the challenges of undertaking more sophisticated economic analysis. However, it should be noted that this is as much to do with the role of P&R in the Commission's abuse of dominance work. Over the years, the Commission has also taken steps to enhance the quality of its economists. Besides the explicit policies (such as revision of pay packages) to attract skilled economists to the Commission, the P&R division recruits young economic graduates who are trained to become professionals. The division conducts capacity building exercises facilitated by its more experienced economists and draws on leading international economists to conduct intensive training at least twice per year. Furthermore, the division also encourages its economists to attend international conferences and courses. In 2010, the division's staff presented papers in local and international conferences, three of which have been published as journal articles (or book chapters) and eight others in the form of policy briefings.

Figure 2: Policy and Research Division staff in Commission's staff complement



There is a range of challenges related to obtaining the necessary data for robust economic analysis. Though South African corporations keep relatively reliable data (e.g. the use of systems such as SAP and AC Nielsen data), there remains a considerable challenge in terms of obtaining this information within a useful time period. This can affect the quality of economic analysis, given the timing constraints within which merger transactions should be analysed. The time period prescribed from merger notification to decision is tighter where data gathering and analysis is required. The initial evaluation period is 20 days for intermediate mergers and 40 days for large mergers. These periods are extendable. The maximum extension allowed for intermediate mergers is 40 business days. The evaluation period of large mergers is extendable for not more than 15 business days at a time. This prescribed period is the time an analyst has to study the notification documents, conceive a methodology for the analysis, collect data, analyse and make

recommendations that have to withstand the arguments of the parties at the Competition Tribunal (for large mergers).

Private consultancies have increasingly provided economic expertise to strengthen the arguments of merging parties in cases of possible problematic mergers. This is matched by the increase in the number of independent competition economic consulting firms working in South Africa in recent years. The involvement of economic experts during the evaluation stage has also played a role in the Commission's employment of more sophisticated economic analysis in complex mergers.

Apart from the factors discussed above, the recent tendency in deepening and widening the use of economics in merger analysis can also be attributed to the increasing awareness and adoption of 'post-Chicago' frameworks, emphasising the need to understand the factors influencing firms' strategic behavior and the nature of competition in dynamic and static terms. This is particularly important given the already concentrated nature of the South African economy.⁴ For example, in outlining the framework for analyzing vertical mergers in early cases, such as Mondi – Kohler Cores & Tubes,⁵ the Tribunal explicitly made reference to post-Chicago theories of anti-competitive harm.

3. Economic techniques and case-specific experiences

In this section, a brief overview of the economic methodologies that have been used by the South African competition authorities is presented, followed by a review of the respective cases that have applied them.

3.1 Overview of economic methodologies

Market definition, and the application of the hypothetical monopolist (or SSNIP) test, is central to all mergers involving competition problems. The South African authorities have grappled with this in various ways, all involving its application to a proper economic understanding of the nature of competition in the relevant markets. For example, in the JD – Ellerrine⁶ merger of furniture retailers in 2001 the market was defined by the Tribunal as the sale of furniture on credit because of the importance of this in the South African economy given the high proportion of the population without a bank account or access to bank finance. In the SFW-Distel⁷ case of 2001, similar careful analysis of the evidence through the Tribunal process, including of consumer behavior, led to a determination of the markets for alcoholic spirits in terms of quality and price bands cutting across the spirit categories, rather than following international precedent.

The Commission has calculated market shares and HHIs as part of the competitive assessment. However, cases involving differentiated products have emphasised that market shares rarely provide a good indicator of the likely competitive effects in such markets. Cases in industries such as private healthcare and radios have also involved very detailed examination of the nature of competition, segmentation of customers, and questions of two-sided markets as part of assessing market definition and the likely accretion of market power.

Quantitative analysis in the form of price correlation and of consumer behavior, including surveys, has also recently been done. Examples of the Commission's experience with consumer surveys and of the

⁴ See for example, Aghion P, M Braun and J Fedderke (2008) 'Competition and productivity growth in South Africa', *Economics of Transition* 16(4): 741-768.

⁵ Competition Tribunal case No. 06/LM/Jan02.

⁶ Competition Tribunal case No. 78/LM/Jul00.

⁷ Competition Tribunal case No. 94/FN/Nov00 and 101/FN/Dec00.

calculation of diversion ratios are given below. These methods present two main challenges – obtaining adequate data and econometric expertise. The latter challenge has been overcome by increasing economic human capacity within the Commission. Critical loss analysis is seldom used.

Data is typically sought on price and cost in order to assess, margins, price determination and market power. Given the large distances between the main economic centres, transport costs have also been an important part of this analysis in several cases and have underpinned divestiture remedies of operations in some locations. Noteworthy cases involving significant transport cost are as follows: In 2008, Bayne Investments (Pty) sought to acquire Wood Chemicals South Africa (Pty) Ltd, a subsidiary of Clidet a producer of formaldehyde and formaldehyde resin.⁸ The transaction was approved with a condition that the merging parties supply resins to rivals for 8 years. Another example is a merger involving three firms (York Timber Organisation, Global Forest Products and South African Plywood) in the saw logs industry. In approving the merger, a condition was imposed that no further acquisition be made by York without prior consent of the Tribunal for the next five years.

Contestability and entry are similarly important components of the analysis, in assessing conduct and the likely exertion of market power. For example, comparisons of margins across different regions for the Fruit & VegCity - Pick n Pay merger of grocery chains, showed that mark-ups were significantly higher in geographic locations where there had not been any entry and concentration levels were higher. This was an important basis for the Commission's decision to block the merger.

As already noted, efficiencies are integrated with the anti-competitive effects analysis, against a total welfare standard. The key Tribunal decision on efficiencies in merger evaluation is that for the merger of Trident Steel (Pty) Ltd and Dorbyl Ltd, approved by the Tribunal on efficiency grounds despite being effectively a two to one merger, with reasons issued in 2001.⁹ With reference to the treatment in other jurisdictions, the Tribunal distinguished dynamic efficiencies, production efficiencies and pecuniary efficiencies and examined evidence relating to each. Pecuniary efficiencies, for example, tax savings or lower input costs resulting from improved bargaining power with suppliers were not considered real savings in resources, as they are effectively just transfers between entities that do not lead to net gains in efficiency. Other mergers have followed this approach.

In establishing the possibility of coordinated effects post merger, the analytical effort seeks to prove that the participating firms would both reasonably reach consensus on the terms of coordination and the mechanism of deterrence of deviation from those terms. The Mondi and Kohler Cores and Tubes case mentioned above, is an example where the Tribunal relied heavily on game theory to evaluate coordinated effects in proposed mergers. In other cases, the Commission has inferred from actual collusive activity uncovered in the market in question.

3.2 Case examples illustrative of the use of quantitative techniques

The cases presented are: Sasol/Engen,¹⁰ for setting the pace by using econometric modeling and merger simulation; Unilever/Sara Lee merger¹¹ because of Diversion ratio; Massmart/Finro for the use of survey, diversion ratios and economic modeling; and Scaw/Ozz for the use of econometrics in market definition.

⁸ Competition Tribunal case number 90/LM/Aug07.

⁹ Competition Tribunal case number 89/LM/Oct00.

¹⁰ 101/LM/Dec04.

¹¹ 14/LM/Mar10.

3.2.1 *Sasol/Engen (uHambo) merger*

In 2005, the competition authorities assessed the proposed merger in the oil industry between Sasol and Engen (the two largest oil companies in South Africa, combining the largest inland refiner with the largest distribution and marketing network) to form uHambo. Although the merger had both horizontal and vertical dimensions, the Tribunal's determination that the inland area was a separate market meant the merger was viewed as predominantly vertical in nature.

The merging parties and three of the intervenors (Shell, BP and Chevron) used international economic experts, all of whom modeled the likely outcomes of the merger. Two specific types of analysis were determinative. The first was the analysis of likely foreclosure in terms of ability and incentive. The second (and important input to the first) was the modeling of demand using econometric analysis.

The case illustrated the importance of utilizing economic theories that explain strategic behavior of firms and of applying these theories to the factual information at hand. The Tribunal concluded, after a detailed consideration of all the factual and expert evidence led, that a credible threat of foreclosure existed and blocked the merger.

3.2.2 *Unilever/Sara Lee merger*

This merger involved the acquisition of Sara Lee Corporation's worldwide body care (and its European laundry care businesses) ("Sara Lee Body Care") by Unilever Plc and Unilever N.V. (collectively referred to as "Unilever"). In South Africa, the Sara Lee Body Care business involved the manufacture and supply of bath and shower products, deodorants, body care products, men's toiletries and oral care products under the brands Radox, Neutral, Duschdas, Sanex, Zwitsal, Fissan, Aqua Velva and Status. Unilever is a worldwide supplier of fast moving consumer goods (FMCGs), food, home care and personal care categories. Its activities in South Africa included the supply of deodorants, bath and shower products, skin care products, oral care products, and hair care products under brands such as Shield, Axe, Impulse, Vaseline, Pond's, Dove, Lux and Sunsilk. Therefore there was a significant overlap in the activities of the merging parties.

In its analysis of the transaction, the Commission found that the merger raised no significant competition concerns in the skin cleansing products; skin care products; hair care products and male aftershave markets. However, in the deodorants market the Commission found that the merged entity would have high market shares. In respect of the deodorants market, the parties argued that market share data should be interpreted with care as deodorants market comprises differentiated products (in terms of gender, format, functionality, and pricing), with some competing very closely than others. The parties submitted that each party's products were stronger in some dimensions than others, hence leading to differentiated markets, and were not each other's closest competitors.

Using the merging parties' internal documents (such as reports provided by AC Nielsen - Repertoire Analysis and Gain/Loss Reports, and marketing documents), the Commission showed that the parties' Status (Sara Lee) and Axe (Unilever) brands presented very strong competition to each other as opposed to other deodorants in the market. In addition to this evidence, the Commission calculated diversion ratios and likely post-merger price increases. However, although the diversion ratios were quite useful in forming preliminary understanding regarding the nature of competition within the differentiated deodorants market, they are heavily reliant on the assumptions made. In this regard, it was important that the closeness of competition between these brands was also confirmed by other third parties.

Given the likely elimination of competition between Status and Axe, the Commission recommended to the Tribunal that the merged entity divest of the Status brand to an independent player. The Tribunal concurred with the Commission.

3.2.3 *Massmart Holdings Limited and Finro Enterprises*

In this transaction, Massmart Holdings Limited (active in the retail and wholesale of grocery products, liquor and general merchandise in South Africa) sought to acquire a 75% interest in Finro Cash & Carry (a single family-owned independent wholesaler of groceries and general merchandise in Port Elizabeth). Massmart owns, amongst others, the Makro wholesale chain and Jumbo Cash & Carry. In the Port Elizabeth area specifically, Massmart owned two grocery wholesalers (Weirs Cash & Carry and Makro).

In order to predict the possible competitive concerns, the Commission conducted a customer survey to determine diversion ratios to assess the closeness of competition between the merging parties. Using economic simulation, the Commission combined the ratios with the gross margins of the parties' wholesale outlets to predict the likely post-merger price effects of the proposed deal.

The Commission's recommendation to prohibit the merger was heavily challenged at the Tribunal for lack of robustness of the customer survey. Notwithstanding the fact that the Commission had used a large reputable international survey firm, this included questioning: the small sample size; the way the questions had been drawn up; the failure to evaluate the quality of the quantitative survey against industry, commercial and economic facts, including the views of market participants, company documents and other qualitative information sources; the implementation of the survey in terms of how it was administered. Together with other factors, the questions about the survey and its result led the Tribunal to find that the merger was unlikely to substantially prevent or lessen competition.

The case demonstrates that while it is undoubtedly desirable to have data on consumer behavior, account also needs to be taken of the challenges in undertaking and using consumer surveys, especially given the time constraint that exist in merger evaluation.

3.2.4 *Scaw/Ozz merger*

The primary acquiring firm in this merger was Scaw South Africa (Pty) Ltd ("Scaw"), and the primary target firm was Ozz Industries (Pty) Ltd ("Ozz"), firms that operated steel foundries in South Africa and exported some of their products internationally. The major overlaps in the activities of the merging firms were in respect of high chrome grinding media, standard grinding media, high chrome mill liners, manganese rounds, and tumblers and idlers.

Price correlation analysis was employed by the Commission to assess whether sub-categories of grinding media (produced using different processes) were in the same or different markets. In this analysis it was very important to correct for the movement of common costs, in this case the scrap metal input. The correlation analysis formed one component of the overall analysis. Again, it was important to assess the results against other information such as from customers. This merger was ultimately conditionally approved.

4. **Conclusion**

The nature of the South African Competition Act ensures that economics is an integral part of every merger evaluation. Over time the analysis has become more sophisticated, something which the nature of the competition regime in South Africa allows for. This is evident in the weight given to expert economists in the merger evaluation process and the role played by international, as well as local, specialist

competition economics consultancies. It is worth reiterating, however, that the South African case experience demonstrates the importance of the sophisticated analysis being consistent with other evidence, or the reasons for differences to be explainable.

There are major challenges in continuing to extend the application of economic technique. Chief among these are the ability to obtain the necessary data and the capacity of the institutions to engage with it. The Commission faces an ongoing challenge in building capacity for advanced economic analysis. In this regard it has drawn on international expertise and forums including the OECD and ICN. Lastly, one of the areas that is currently being tried (by the parties) in a case that is still under investigation is experimental economics.

CHINESE TAIPEI

1. Introduction

This paper will illustrate the issues related to the assessment factors for a merger review, types of quantitative evidence, as well as analysis in merger cases by the Fair Trade Commission (hereinafter “the FTC”).

2. Assessment factors for a merger review

2.1 *Current FTC law enforcement in a merger review*

Pursuant to Article 12 of the Fair Trade Act, the FTC may not prohibit any of the mergers filed if the overall economic benefit of the merger outweighs the disadvantages resulted from the competition restraints. The standard for merger review, however, is not specifically defined in Chinese Taipei’s Fair Trade Act, but Chinese Taipei applies the “Guidelines on Handling Merger Filings” when reviewing mergers.

The FTC’s standard for a merger review depends on whether the overall economic benefit of the merger outweighs the disadvantages resulted from its restraints on competition. Thus, the net effect between the economic benefit and the disadvantages of competition restraint resulting from the merger is the basis of the substantive test.

As the FTC reviews a merger proposal, the first step is to define the relevant market and calculate the market share or market concentration ratio, such as the CR4 and HHI index. The FTC uses the market share or market concentration ratio to measure the market power and market concentration of each industry. The FTC also evaluates how market competition is affected by the number of enterprises in a merger and the increase in market concentration after the merger.

2.2 *Factors affecting competition restraint in a merger*

The FTC, in the general procedure of a merger review, shall consider the following factors when assessing the competition restraints resulted from a merger:

- Horizontal Merger: unilateral effects, coordinated effects, degree of entry, countervailing power and other factors affecting the result of competition restraints.
- Vertical Merger: the probability that other competitors could choose their trading counterparts after the merger, the degree of difficulty for an enterprise not participating in the merger to enter the relevant market, the possibility of merging parties abusing their market power in the relevant market and other factors that may result in market foreclosure.
- Conglomerate Mergers: the impact of regulation and control being lifted on the merging parties’ cross-industry operations, the probability of cross-industry operations by the merging parties because of technology advancements, the original cross-industry development plan of the

merging parties besides the merger and other factors that affect the likelihood of material potential competition.

2.3 *Horizontal merger that has obvious suspicions of competition restraints*

In principle, the FTC deems that the horizontal merger filing of a general procedure that meets any of the following conditions raises suspicions of obvious competition restraints and the overall economic benefits shall be examined further:

- The combined market share of the merging enterprises reaches 50 percent.
- The market share of the two largest enterprises of the relevant market reaches two-thirds.
- The market share of the three largest enterprises of the relevant market reaches three-fourths. For circumstances stated in the above-mentioned second or third paragraph, the combined market share that enterprises participating in the merger have to reach to 15 percent.

2.4 *Considerations of overall economic benefits*

With regard to merger filings that raise suspicion of obvious competition restraints, the filing enterprises shall submit information regarding the following factors with respect to the overall economic benefits to the FTC for deliberation.

- Consumer interests.
- The merging parties were originally in a weaker position when trading.
- One of the merging parties is a failing enterprise.
- Other concrete results related to the overall economic benefits.

In principle, Chinese Taipei does not commission outside economists to participate in a merger review. Nevertheless, in merger cases that are important and controversial, the FTC will hold consultation meetings for obtaining professional opinions from economists and other professionals.

3. Types of quantitative evidence

According to our enforcement experiences in a merger proposal, the FTC usually employs the quantitative evidence to calculate the market share or market concentration ratio, such as the CR4 and HHI index. The FTC uses the quantitative evidence to measure the variation in market concentration both after and before the merger. The FTC also calculates the cross elasticity to define the relevant market as reference. The FTC does not employ economic tools to construct a diversion ratio, such as the Gross Upward Pricing Pressure Index, or a merger simulation.

4. Market information collection

If a merger filing falls within one of the merger types in Article 6 of the Fair Trade Act and falls below the notification thresholds including market shares and turnover prescribed in Article 11 of the Fair Trade Act, the merging parties are required to notify the FTC before implementing a merger. At the same time, the merging parties are required to present sufficient documents and information on the merger, such

as information regarding the market structure, an explanation of the benefits of the merger for the overall economy and any disadvantages due to restraints on competition and so on.

In practice, the FTC employs industry information provided by the merging parties, the industrial competent authority, other governmental agencies, internal staff of the FTC through investigations, financial statements of publicly traded companies and trade associations to measure competition in the relevant market. In this way the FTC measures the degree of competition in different industries. Meanwhile, the FTC has difficulties collecting related information according to the statistical regulations. In addition, the data related to service industries and the sales prices of individual products compared to other information are not easy to be collected.

5. Merger cases studies

5.1 Case 1: Uni-President Enterprises Corp. & Weilih Food Corp.

In 2010, Uni-President Enterprises Corp. (hereinafter UPEC), through its subsidiaries which indirectly held 16.45% of the total shares of the Weilih Food Corp. (hereinafter Weilih) and its original shares, acquired 50.75 of the total shares of Weilih. This merger met the criteria defined in Subparagraphs 2 and 5, Paragraph 1, Article 6 and Subparagraphs 2 and 3, Paragraph 1, Article 11 of the Fair Trade Act. As a result, UPEC and Weilih filed a merger application to the FTC accordingly.

In this case, UPEC contended that cookies, crackers, sandwiches, canned food and frozen food are ready-to-eat food products and that there is a high degree of substitution between ready-to-eat food products and instant noodle products. Both of them should be defined as the relevant market. After investigation and calculation, the FTC found that the cross elasticity of demand between instant noodle products and ready-to-eat food products was not high. Moreover, taking into consideration the products in terms of function, characteristics, purposes, price, marketing channels and consumers' purchasing situations, the FTC concluded that the relevant market in this case was defined as the instant noodles market, not the ready-to-eat food market as the merging parties claimed.

According to the data from the FTC's database, UPEC and Weilih have the largest and second largest market shares in the domestic instant noodles market. The HHI index is 3443 in the domestic noodles market before merging, and the same index is 5712 after merging. It clearly shows that the domestic instant noodles market is a highly-concentrated market. It was the first time that the FTC had employed the research from Nelson & Sun (2001) on market power¹ to determine that if the market price was likely to increase after merging, it could presume that the ability of merging parties to adjust prices would increase.

In addition, the combined market share of the two merging parties would reach 70% in the instant noodles market after a merger. The market shares of other competitors in this relevant market are only 10% and there had been no new players entering this market in recent years. Thus, the FTC prohibited the application for a merger filing.

5.2 Case 2: Yieh United Steel Corp. & Tang Eng Iron Works Co., Ltd.

In 2009, the merger through which Yieh United Steel Corp. (hereinafter Yieh United) intended to acquire 34% of the shares of Tang Eng Iron Works Co., Ltd. (hereinafter Tang Eng) fell under the type of merger set forth in Articles 6 (1)(ii) and 11(1)(iii) of the Fair Trade Act. As the overall economic benefits

¹ Nelson. P. & S. Sun (2001), Consumer Savings from Merger Enforcement: A Review of the Antitrust Agencies' Estimates, *Antitrust Law Journal*, 69, pp921-954.

of such a merger would not outweigh the disadvantages resulting from the competition restraint caused by the merger, the FTC decided to prohibit the merger in accordance with Article 12(1) of the Fair Trade Act.

After investigating the total sales values of the relevant market, the FTC found that their market share would increase from 39.08% to 57.25% in the stainless steel market after merging. With regard to the domestic sales volumes, the market share would increase from 35.53% to 55.29%. According to the data provided by the merging parties, the market share would increase from 37.52% to 58.73%.

In addition, the FTC found that the stainless steel industry is a globalized market, that stainless steel products circulate around the world, and that the raw material price fluctuates according to the international price movements. In addition, the raw material imports of stainless steel products are still affected by some factors, including geographic areas, long delivery time, international raw material prices, foreign exchange risk, the floating supply of imported materials and uncontrollable quality.

After merging, their market share would reach more than one half of the relevant market and the competition in the relevant market would diminish. As a result, they would have more discretion to adjust prices unilaterally, to be more influential in raising the product price and, furthermore, create coordinated effects of coordinated price or concerted actions in raising the price. Although the merger could reduce production costs, expand economic scale and improve international competitiveness, if material imports by the downstream enterprises were impeded, the market concentration and market share of the two merged parties would increase, which would affect the midstream and downstream enterprises in the stainless steel products market and diminish the competition in the domestic market.

In addition, the production technology in the stainless steel industry is rather mature. Due to factory costs and investments in hot mills/ cold mills ranging from about NT\$4.5 billion to NT\$6.8 billion, which cannot be easily converted for use in other industries, the possibility of potential competitors entering the relevant market is thus unlikely. Besides, Yieh United and Tang Eng have the largest and the second largest market shares in the stainless steel market prior to the merger, respectively. After merging, the countervailing power between the two merged companies would weaken, the extent of competition between the two merged companies would diminish and the merged company would have more discretion to adjust prices unilaterally. After merging, the combined market share of the merging parties reaches 50%. Thus, the FTC concluded that the overall economic benefits of the merger did not outweigh the disadvantages resulting from competition restraints in the Yieh United and Tang Eng merger case and rejected the application for a merger filing.

BIAC

1. Introduction

The Business and Industry Advisory Committee to the OECD (BIAC) on the issues identified for discussion in the OECD's Working Party roundtable discussion on "*economic evidence in merger analysis*" scheduled for 15 February 2011.

The paper focuses on three core areas identified within the invitation to comment which have the potential to impact most significantly on the business community;

- UPP analysis of unilateral effects in horizontal mergers;
- Developments in the analysis of vertical mergers; and;
- The treatment of efficiencies in merger cases.

Throughout the paper, a number of conclusions are highlighted which serve to indicate the preferences of BIAC when it comes to the application of evidence and the choice of techniques employed by Competition Authorities. The general principles underlying these conclusions can be summarised as follows:

- avoid the application of techniques which increase the prospect of type I and type II errors and the degree of uncertainty for merging firms;
- consider evidence 'in the round' and do not rely unduly on specific indicators (such as for example diversion ratios and margins) which are subject to measurement error;
- when determining safe harbour thresholds guard against introducing an unnecessarily interventionist standard for merger screening and avoid capturing mergers very unlikely to result in anti competitive effects; and
- be open to credible evidence pertaining to a range of factors including pro-competitive efficiencies.

2. UPP analysis of unilateral effects in horizontal mergers

2.1 Introduction

Upwards Pricing Pressure ('UPP') methods outlined in the US merger guidelines can be of significant value to Competition Authorities as a tool for merger analysis.¹ In particular, these techniques incorporate

¹ U.S. Department of Justice and the Federal Trade Commission Horizontal Merger Guidelines <http://www.ftc.gov/os/2010/08/100819hmg.pdf>.

measures of the ‘closeness of competition’ between merging firms that are not taken into account within traditional market share based approaches to merger screening.

But realising these potential benefits depends on the way in which UPP methods are implemented and there are risks in moving away from the traditional tools currently employed by Competition Authorities. These are discussed in more detail below.

2.2 Loss of transparency and useful sense checks if market definition and market share considerations are discarded

Traditionally, market definition, and the assessment of market shares, has been used by Competition Authorities as an important screening device to identify those mergers most likely to give rise to potential anti competitive effects.

Whilst UPP methods in principle offer benefits for Competition Authorities seeking to identify those mergers most likely to lead to anticompetitive effects, a significant issue for business and its advisers in implementing these techniques as a merger screen surrounds the availability of the necessary evidence at the pre notification stage. Specifically, UPP analysis relies on two crucial pieces of economic evidence (diversion ratios and variable margins) and these are by no means widely available or trivial to estimate (see section 2.4). In turn, this can only serve to decrease transparency and predictability over the degree of regulatory risk arising from potential merger activity.

BIAC submits that when compared to an analysis of market shares the UPP test will often increase the legal uncertainty for merging firms resulting in fewer efficiency enhancing mergers.

More generally, the process of market definition – and in particular gathering informative evidence on the scope for demand and supply side substitution – provides a rigorous and well tested framework for understanding the supply-side and demand-side constraints on merging parties. While this framework can, in theory, also be established via a direct analysis of competitive constraints on the merging parties, in practice the process of market definition provides greater certainty that Competition Authorities will fully consider the broad set of potential competitive constraints, and greater transparency as to the approach used by the Authorities to identify them.

BIAC submits that while diversion ratios can, in theory, provide an initial filter for competition concerns it is vital that the Authorities maintain a balanced overview of all available evidence and check each and every form of evidence against other analyses in order to avoid unrealistic conclusions.

2.3 Risk of higher intervention standards

As with any tool used to identify potentially problematic mergers, UPP analysis requires intervention thresholds to be set before any judgement can be made as to which mergers would be considered sufficiently concerning to warrant further investigation.²

In line with this, leading economists behind the US merger guidelines have suggested a standard ‘efficiency credit’ of 10% should be applied to all mergers so that those generating UPPs below 10%

² Absent such thresholds, all mergers involving firms in the same market would deliver a positive ‘UPP’.

would not be challenged by the US agencies on the grounds that their anti-competitive tendencies are outweighed by assumed efficiency advantages.³

However, where intervention thresholds are set lower than this level, there is a clear implication that the adoption of a UPP-oriented approach to merger screening would result in significantly more cases being subject to a costly second phase merger assessment.⁴ Even more concerning, were these tests to be used as a basis for full blown merger assessment (and there is some evidence from the UK merger regime that they have been) then low thresholds would imply a lower standard for intervention.

BIAC submits that when considering the appropriate thresholds for UPP and IPR analysis Competition Authorities must guard against inadvertently introducing a more interventionist standard for merger screening.

2.4 *Measurement difficulties*

As noted above, UPP techniques require two critical pieces of information: diversion ratios and variable margins. However there are potentially significant difficulties associated with measuring both of these variables which are discussed in turn below.

2.4.1 *Diversion ratios*

To estimate the diversion ratio between the two merging firms three main approaches have been advocated: (i) market shares, (ii) consumer surveys and (iii) econometric studies.

One of the supposed main advantages of UPP and its related screens is to add greater insight than market share based screens alone. Indeed, leading economists originally portrayed the UPP measure as “an economic alternative to market definition”. If the implementation of UPP requires market share information, and therefore a market definition exercise to be undertaken, it is not clear how much of an alternative they are.

Consumer surveys have been used in the UK to measure diversion ratios in several cases.⁵ The standard question is usually along the lines of: “You purchased product X from store 1. If store 1 had been closed, where would you have purchased product X instead?” However, these questions may well reflect bias or inaccuracy as a result of being stated preferences (i.e. answers to hypothetical questions can be quite different from actual behaviour). Moreover, experience shows that consumers’ responses to these

³ See Farrel & Shapiro, “Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition”, BE Journal of Theoretical Economics, Vol 10, Issue 1, 2010, available at <http://faculty.haas.berkeley.edu/shapiro/alternative.pdf>.

⁴ This point is illustrated by comparing the outcomes of UPP tests with the more traditional approach of fascia counts. Generally it is not controversial to assume that Competition Authorities have not usually been concerned about mergers that reduce the number of firms in the market from five to four (or above). In a symmetric case in which market demand was always re-distributed between the remaining firms, the diversion ratio expected in such a scenario would be 25%. By way of comparison, the margins required to trigger a finding of positive incentives to raise prices under the UPP formula with a diversion ratio of 25% and an efficiencies credit of 10% is 30%. When the intervention threshold is set at 5%, the level of margins required to warrant a positive outcome of the test falls to 16%. The reality is that at this lower threshold many merging will find that they have sufficiently high variable margins to fall foul of such calculations, leading to larger numbers of in depth investigations.

⁵ See for example the CC enquiry into the merger between Somerfield and Morrisons; http://www.competition-commission.org.uk/rep_pub/reports/2005/fulltext/501.pdf.

questions can vary significantly depending on the precise way that they are phrased. Put differently, different variations on the same questions can potentially imply significantly different levels of unilateral effects.

Another approach in theory to estimating diversion ratios is the use of econometrics. While such techniques may allow analysts to measure diversion ratios more accurately (data permitting), in practice they are not suitable for use in initial screens due to the time and information requirements and have traditionally been highly controversial when applied in previous cases.

BIAC submits that, like any other evidence, diversion ratios are subject to measurement errors. High diversion ratios should not therefore form the basis of a structural presumption of anti competitive effects but should instead be reviewed with other evidence in the round.

2.4.2 Margins

At the initial filter stage Competition Authorities may consider estimating firms variable margins based on management accounts. However, this approach is rarely justified as variable margins should be measured over the time period in which firms make pricing decisions. These timeframes are rarely likely to coincide with those used to periodically apportion costs from a management accountancy perspective. In summary, the measurement of the relevant margin from accounting data is by no means a straightforward exercise.

BIAC submits that management accounts do not form an economically coherent basis for estimating variable margins because they do not correspond to the timeframes of pricing decisions. There are both practical measurement and conceptual questions on the most appropriate margin figures to use that have not yet been satisfactorily resolved, and that make very big differences to the outcome of UPP enquiries.

2.5 *Risks associated with “black box” methods that divorce economic analysis from business reality (inc UPP, IPRs, merger simulation)*

Whilst UPP and other techniques such as Illustrative Price Rise formulas (IPRs) and full blown merger simulation offer potentially significant benefits in terms of their ability to better identify potentially problematic mergers, Competition Authorities should be wary of the spurious precision created by such approaches and certainly should not see them as an alternative to an in depth analysis of merger effects.

UPP and IPR formulae are, by their nature, simplified formulations based on a wide range of restrictive assumptions. For example, both models rely on static models of competition to generate predictions on the price effects of mergers (see section 2.6). Moreover, IPRs also require a number of untested assumptions to be made as to the shape of firms’ demand curves.⁶ When these apparently simple formulae are amended to take into account the realities of competition they may rapidly become unworkable. Yet failing to modify simple formulae to reflect market realities can lead to unreliable predictions. The UPP model relies on fewer assumptions than the IPR approach. However, its failure to assess the scale of price effects makes it effectively incomplete as a tool for assessing the likely impact of mergers in the context of in depth merger assessment.

⁶ The Lerner condition states that there is an inverse relationship between the percentage gross margins (defined as the mark up over variable costs) which firms make and the elasticity of demand which they face. Where firms have high margins it is argued that this implies they face inelastic demand as, if they did not, it would be profit maximising to lower prices (they would gain many more sales at a slightly lower margin).

Some merger simulation techniques rely on fewer assumptions than these simple approaches whilst also providing predictions as to the scale of price effects. Unfortunately the trade off for relying on fewer assumptions is that these techniques have considerably larger data requirements and invoke complex econometric techniques to estimate the necessary parameters. Consequently, the use of these techniques is still controversial and they do not tend to provide a workable alternative to classic empirical techniques in the majority of cases.

BIAC submits that Competition Authorities should be wary of the spurious precision created by simplistic models which seek to estimate the pricing effects of mergers as they rely on a number of untested assumptions.

2.6 *Ignoring or downplaying the many important factors that cannot be incorporated into UPP (dynamics, entry, supply-side responses)*

A principal shortcoming with UPP analysis is that it unduly focuses on a static model of competition and does not therefore accommodate other important factors which serve to constrain the behaviour of firms. Such factors can often provide much more important influences on the impact that mergers have on competition than the immediate static impact on price incentives.

For example, expansion, entry and brand repositioning allow competitors to win business by supplying a substitute good to the merging parties' products, and therefore may prevent price increases following a merger, either at all or at least to a substantial degree. These factors are entirely ignored by the UPP framework, meaning that this approach necessarily overstates the potential for anti competitive merger effects, particularly in dynamic and innovative markets.

BIAC submits that it is simply not possible to develop a meaningful measure of incentives to raise prices without a detailed analysis of supply-side responses and Competition Authorities should be particularly wary of applying these techniques in highly dynamic markets.

3. *Developments in the analysis of vertical and conglomerate mergers*

3.1 *Introduction*

The introduction of the EU Non Horizontal Merger Guidelines and a number of high-profile merger decisions including *Google/DoubleClick*, *Nokia/Navteq*, and *TomTom/Tele Atlas* have made an important contribution in aligning EU and US approaches on non-horizontal mergers, especially with respect to vertical mergers.

However, whilst the developments are largely positive, there remain some concerns within the business community that the approach to analysing vertical mergers leads to an unnecessary burden on merging firms. These issues are discussed in detail below.

3.2 *Economic analysis – e.g. vertical arithmetic – can play an important role in ensuring a more robust framework for such cases*

At the EU and US level, Competition Authorities have increasingly employed 'vertical arithmetic' in order to assess the potential for anti competitive effects to arise from vertical mergers.⁷ The primary benefit of the vertical arithmetic approach is that it provides a clearly structured framework for analysing the costs and benefits associated with a foreclosure strategy. It also helps to stress the range of factors which must

⁷ See for example, Case No COMP/M.4942 NOKIA / NAVTEQ.

necessarily hold for foreclosure to be credible and profitable. In this regard the implementation of vertical arithmetic should be viewed as an important development in the assessment of vertical mergers as it tends to ensure that factors which may serve to dismiss foreclosure concerns are not overlooked by Competition Authorities.

One criticism that may be levelled at this formalistic approach is that it is often tricky to implement because it relies on a number of factors which are hard to measure.⁸ However, rather than serving to undermine the usefulness of this approach, these difficulties simply highlight the general uncertainties that surround necessarily speculative theories of harm relating to foreclosure in vertical mergers. Consequently, where Competition Authorities lack evidence to prove conclusively that foreclosure is likely using vertical arithmetic, the right conclusion should be that foreclosure is unlikely, and not that the economic tools used to analyse these effects are inappropriate.

BIAC submits that vertical arithmetic introduces a rigorous structure to the assessment of vertical cases and ensures that factors which may serve to dismiss foreclosure concerns are not overlooked by Competition Authorities.

3.3 Critical that businesses have confidence to engage in vertical mergers that create synergies and pursue competitive advantage

In the large majority of cases, non horizontal mergers are very unlikely to lead to anti competitive outcomes. For example, where merging firms do not benefit from market power in overlapping markets, there is no prospect that anti competitive foreclosure would arise as a result of a merger. Moreover, it is widely accepted that vertical mergers can lead to synergies and pricing efficiencies as they bring together parts of the supply chain that can be viewed in economic terms as largely 'complementary'.

This point is now generally accepted by Competition Authorities, but the reality is that the safe harbours applied to vertical cases remain excessively cautious. The purpose of providing market share thresholds is (or should be) to provide a clear one-tailed test; if neither of the merging parties has a market share in excess of the threshold then all competition concerns can be readily dismissed without the need for detailed investigations. In the view of BIAC, given the fact that significant market power has rarely been established below 40 per cent, a higher market share threshold than, say, the 30 per cent threshold applied by the European Commission is justified.

BIAC submits that to avoid creating unnecessary legal uncertainty for merging Parties, Competition Authorities should seek to set safe harbour thresholds at a level where only mergers with a realistic prospect of resulting in anti competitive foreclosure would be captured.

3.4 Authorities must guard against incentives for third parties and lobby groups to use competition arguments as a cloak for special interest pleading or protectionism

When analysing a merger it is often crucial for Competition Authorities to gather evidence from a wide range of sources in order to best analyse its likely effects on consumers and (where foreclosure concerns are alleged) competitors. However, in circumstances where evidence is presented by third parties such as competitors or lobby groups with a special interest in the outcome of an investigation, it is crucial

⁸ For example the benefits accruing from an input foreclosure strategy will generally depend on the cross price elasticities of demand in downstream markets, and the extent to which a refusal to supply would increase costs (which in turn depends on the supply side responses of upstream rivals and possibly on economies of scale).

that Competition Authorities have regard to those interests and do not seek to burden merging firms unduly as a result of potentially spurious allegations.

In the case of vertical mergers, it is relatively easy for competitors to induce Competition Authorities to engage in in-depth investigations by presenting evidence or concerns pertaining to potential foreclosure issues. The result is that merging firms are burdened with substantially greater deadweight legal and business costs as well as delays associated with regulatory clearance in spite of the fact that the general presumption is that such mergers are likely to be pro competitive or competitively benign.

BIAC submits that Competition Authorities must seek to apply appropriate weightings to evidence presented by third parties with a special interest in the outcome of an investigation, and to be at least as sceptical of their motivations as they are of the arguments of the merging parties.

4. The treatment of efficiencies in merger cases

4.1 Introduction

It is well recognised that both horizontal and vertical mergers can lead to efficiencies that may feed through to customers in the form of lower prices. However, a concern remains that merger efficiencies are not given the prominence they deserve as a credible defence in merger assessment and there is little evidence of a willingness on the part of Competition Authorities to engage fully on these issues. To the contrary, where efficiencies have formed a key element of merger decisions they have actually tended to form part of a theory of harm rather than a reason for clearing deals.

4.2 The efficiency offence

It is well documented that, as well as offering a reason for clearing mergers, efficiencies have sometimes been invoked by Competition Authorities as a potential reason to prohibit transactions.⁹ This is particularly relevant in the context of conglomerate and vertical mergers, where it has been argued that a merger between suppliers of complementary products could make the merged firm 'too efficient', and that this in turn could result in commercial damage and hence to the foreclosure of competitors.

The use of such 'efficiency offences' is generally considered to be highly controversial. The reason for this is that anti competitive effects arising from the foreclosure of competitors is speculative and any consumer harm will necessarily occur at some potentially distant point in the future after competition has been foreclosed from the market in its entirety. Against this, these theories of harm are predicated on the existence of considerable efficiencies which enable the merging parties to compete more aggressively. Taking these factors into account, a Competition Authority should have to be certain of concrete anti-competitive effects to outweigh the considerable benefits to consumers implied by these theories of harm – a scenario which is rarely satisfied in the context of foreclosure analysis. Hence these theories of harm rarely have a strong foundation in practice.

BIAC submits that theories of harm relying on pro competitive efficiencies are highly speculative and rarely justified in practice.

4.3 Limited concept of static variable cost efficiencies

When analysing mergers, it is crucial for Competition Authorities to consider the full range of potential efficiencies which may give rise to lower prices and quality improvements for customers.

⁹ See for example Case No COMP/M.2220 General Electric/Honeywell.

Traditionally, in the context of horizontal mergers, the discussion of merger efficiencies has tended to focus on static variable cost efficiencies. The rationale for this approach is that, where a merger leads to fixed cost savings, but no reduction in variable costs, it is unlikely to reduce prices since economic theory generally suggests that variable costs, rather than fixed costs, primarily affect pricing decisions. Further, efficiencies relating to more dynamic elements of competition (such as innovation) can be hard to assess and evidence in practice.

However, there are many instances when fixed costs will have a direct effect on the prices. For example, where firms compete on non-price factors requiring substantial investments that are treated as fixed costs for accounting purposes, it is still very likely that these costs will affect pricing decisions (i.e. they will be viewed as a marginal cost of increasing output and sales over the medium term) and savings in these overheads may well lead to price reductions and/or to the ability to offer make new sales propositions profitable.¹⁰ Where it can be shown that fixed costs are intrinsically linked to final prices in this way, Competition Authorities should be open to evidence of countervailing efficiencies arising from fixed cost reductions in merger cases.

Moreover, whilst difficult to measure, it is perfectly credible that many mergers will give rise to material 'dynamic' efficiencies which will significantly benefit consumers. For example, where a merger enables firms to invest more in research and development as a result then there may be considerable benefits to customers in the long term as a result. Over time, the benefits of dynamic efficiencies will typically substantially outweigh those of static efficiencies and they should not therefore be dismissed by Competition Authorities where reasonable evidence is presented to support their existence.

BIAC submits that Competition Authorities should be open to evidence of the full range of efficiencies that can result from mergers.

4.4 *Quantification of efficiency effects – low priority and high burden of proof applied*

Merger cases in which efficiency defences have been accepted remain few and far between, reflecting the difficulties which firms face in persuading Competition Authorities of these benefits. This reflects the fact that merging firms face an unduly high burden of proof when attempting to support efficiency claims in practice.

The difficulties facing merging parties in evidencing merger efficiencies are particularly pertinent in the context of non-horizontal mergers as these types of mergers generally offer significant scope to create efficiencies (see section 3.3). In this context, it is still questionable whether the assessment of efficiencies is given sufficient prominence by Competition Authorities. For example in recent non-horizontal cases considered by the EC such as *Nokia/Navteq*, and *TomTom/Tele Atlas*, the Commission ultimately declined to reach a conclusion on the efficiencies proposals (although it was noted that apparent efficiencies 'strengthened' its conclusions that neither merger gave rise to anticompetitive effects).

BIAC submits that merging firms continue to face prohibitively high evidentiary standards in supporting efficiencies claims.

¹⁰ A simple example of this comes from luxury goods such as designer handbags. Marketing costs associated with maintaining brand image are very likely to be viewed as being fundamentally linked with sales volumes and will therefore be considered when prices are being set.

4.5 *Important that emerging competition authorities are also encouraged to follow this approach, avoiding the temptation to use competition laws to effect industrial policy objectives*

From an economics perspective, it is perfectly reasonable for Government agencies to pursue a potentially diverse range of industrial policy objectives. Moreover, in some circumstances industrial concerns may be considered to ‘trump’ competition issues, resulting in mergers being allowed that may otherwise have been blocked or remedied on purely competition grounds. An example of this can be taken from the UK regime where the merger between Lloyds and HBOS was cleared on special interest grounds because it was considered crucial to the continued functioning of financial markets, and despite the existence of competition concerns.¹¹

However, Competition Authorities must guard against the use of competition instruments such as the merger control regime as a way to covertly effect other industrial policy objectives such as the protection of national champions from international control. Such practices risk undermining the credibility of merger control regimes and considerably increase the uncertainty for firms considering potential mergers and acquisitions. In turn this can lead to reduction in the number of efficiency enhancing mergers taking place.

BIAC submits that Competition Authorities should not use competition instruments as a way of covertly effecting wider industrial policy objectives.

¹¹ Report by the Secretary of state for Business Enterprise and Regulatory reform: Anticipated acquisition by Lloyds TSB of HBOS http://www.ofc.gov.uk/shared_ofc/press_release_attachments/LLoydstsb.pdf.

SUMMARY OF DISCUSSION

By the Secretariat

The Chair began the roundtable by thanking the delegations for their written submissions. The Secretariat received 29 contributions, which was a clear indication of the high level of interest in the topic.

The role of economic analysis in the assessment of mergers has become significantly more important over time. A variety of quantitative tools are used in merger analysis, from the basic, such as the measurement of market shares, to the more sophisticated, such as critical loss analysis and upward pricing pressures. The written contributions received by the Secretariat indicated that many agencies had recently used complex economic tools. The purpose of the roundtable was to share learning on the increased use of economic techniques in recent years and to highlight the circumstances in which these tools can be useful, in addition to discussing their limitations. Two main areas of discussion would be covered.

1. Agency guidance on the use of economic tools in merger review, including a discussion of the guidance documents recently issued and the experience of agencies in dealing with economic evidence.
2. Agency experience with the use of specific economic tools to assess unilateral and coordinated effects of mergers and to measure efficiencies.

Prof. Mike Walker briefly summarised the background paper, which covered the following issues: the role of economics in merger analysis; the basic economics is largely settled; use of merger simulations; use of UPP measures; and best practice guidelines.

Economics plays two roles in merger control. First, it helps to define the conceptual framework within which mergers can be appraised. Second, it helps to answer the empirical questions that need to be answered within this conceptual framework.

The economics of the conceptual framework are now largely settled although there remain some controversial aspects. Most of the improvements in the use of economics in merger control relate to the use of empirical analysis to answer empirical questions. Horizontal mergers can give rise to unilateral or coordinated effects. Unilateral effects arise where differentiated products or homogenous products are allied to capacity constraints. Suppose firms A and B merge. This means that competitive constraints that each firm imposed on the other are removed (assuming there were positive cross-elasticities between them). Basic economics tells us that prices will rise post-merger, everything else being equal. We then need to investigate the strength of pre-merger constraints and look at the “everything equal” assumption (e.g. barriers to entry, efficiencies, and possibilities for product repositioning). So the analysis of unilateral effects is fairly uncontroversial.

The analysis of coordinated effects is also largely uncontroversial but the economics is somewhat less clear cut. Coordinated effects are relevant where the products are homogenous rather than differentiated. The simple theory of harm is that the reduction in the number of firms in the market as a result of the merger makes tacit coordination possible or strengthens existing coordination. This is not controversial. However, the empirical requirements are less clear cut than with unilateral effects. Transparency is

important to facilitating coordination, in addition to a lack of competitive pressure from outside the coordinating group and incentives of the various firms to coordinate.

The analysis of vertical mergers in the last few years has demonstrated a general understanding that they are unlikely to raise competition concerns. Instead, they are likely to be pro-competitive when there is market power (in the sense of pricing above marginal cost) because of the pricing efficiencies that vertical mergers can lead to. There is general agreement that anticompetitive theories of harm in vertical mergers are all based on exclusion and raising rivals' costs.

The great strength of this framework is that it highlights the importance not just of analysing whether the merged entity has the *ability* to exclude rivals, but also whether it has the *incentive* to exclude rivals. The economic literature shows that firms can often have the ability to exclude rivals, but not the incentive, particularly when the rivals offer an efficient route to market. A now standard approach to thinking about the merged entity's incentives is to analyse the "vertical arithmetic" of the merger.

As noted above, the general agreement on the conceptual framework of analysis means that the focus has moved to the use of empirical analysis to answer the questions that are relevant to the conceptual framework. Two of these techniques are discussed further: merger simulation and Upward Pricing Pressure measures.

The economic theory underlying merger simulation is an attempt to predict directly the effect of the merger rather than use indirect measures (such as market definition). However, despite the rationality of merger simulation, it has not been used as much as originally expected. This is because economists have found it difficult to carry out robust merger simulations that genuinely aid the assessment of mergers. In particular, it has become clear that "generic" or "off the shelf" merger simulation packages are unlikely to be helpful. It is now understood that merger simulations are useful when they take account of the particular facts of the market in question. Bespoke models, rather than generic models, are therefore required. This makes them much more resource intensive, but also much more useful.

Upward Pricing Pressure (UPP) measures are essentially measures of the incentives for firms to raise prices post-merger. They are based only on diversion ratios and gross margins. For a given gross margin, the higher the diversion ratio, the greater the incentive to raise prices post-merger. Equally for a given diversion ratio, the higher the gross margin, the greater the incentive to raise prices post-merger. The various UPP measures make sense because they focus on what actually matters in terms of the incentives of the merging parties. However, caution should be taken against the misuse of these simple measures. There has been a tendency, particularly amongst some of the economic consultancies, to treat them as "merger simulation lite" with attempts to provide precise predictions of the price effects of mergers. This is not the purpose of these measures and they are not well suited to being used in this fashion. So it is important to be careful about how they are used in practice.

Prof. Walker concluded his presentation by discussing the recent Best Practice Guidelines issued by various competition agencies. Best Practice Guidelines on the use of economic evidence can significantly improve the use of economics in the merger control process. Good Best Practice Guidelines are most useful when they apply not only to the outside parties but also to the competition agencies themselves. Good empirical evidence should be based on clear economic theory that leads to testable propositions. These propositions should be tested in a transparent manner, should ideally be accessible to non-economists and, importantly, the results should be replicable. This is the role of Best Practice Guidelines: to ensure that each side of the debate has the opportunity to appraise fully the empirical evidence presented by others. When these principles are followed, even complex econometrics can become uncontroversial, and hence useful. Instead of arguing about whose econometrics is best, the discussion focuses on what the econometric results tell us that is relevant to the merger.

The Chair commented that quantitative analysis is most useful when it is based on robust and testable data sets. She noted that the Background Paper correctly emphasised the need for agencies to adopt a sound approach to submitting economic evidence, arguing that this will improve the quality of the evidence submitted in merger cases. The Background Paper refers to a number of Guidelines issued recently by agencies including the European Commission's 2010 Best Practice Guidelines on the submission of economic evidence. The Chair invited the Chief Economist of DG Comp, Professor Damien Neven, to discuss these.

Professor Damien Neven (Chief Economist at the Directorate General for Competition of the European Commission) noted that in the EU the role for economic analysis has increased significantly in recent years. This is partly a consequence of the change in the EU merger rules in 2004, which move away from the concept of dominance towards a concept of significant impediment to effective competition with regard to the substantive test applied by the European Commission (the "Commission").

Professor Neven made a few remarks on Prof. Walker's presentation.

Coordinated effects: The economics in the area of coordinated effects is not as settled as in the area of unilateral effects. In the EU, the economics of coordinated effects have become much clearer in the last 10 years following the *Airtours* decision¹ and the European Court of Justice (the "Court")'s decision with respect to *Sony/BMG/Impala*.² The analysis of coordinated effects in the EU is now firmly grounded on the analysis of coordination: as a result of a merger the firms in the market concerned may be in a better position to coordinate their repeated interactions. The EU has moved away from a broader concept of coordinated effects which would include more general concepts such as changing accommodating behaviour. This was the language that was used in the *Airtours* decision. There is now a clear theoretical framework for thinking about coordinated effects and both the Court and the Commission have developed a set of empirical approaches to the evaluation of the prospect for coordinated effects that is now much more mature.

UPP: The new US guidelines redefine the significance of market definition by accepting that there are some instances in which one should not be hostage to market definition. Instead it may be possible to estimate directly the unilateral effect of a merger. This is something which is consistent with the wording of the Commission guidelines but perhaps not with EU practice. The Commission does not intend to be constrained by market definition and requires the freedom to evaluate unilateral effects directly where appropriate. The concept underlying UPP is not new and the European Commission has used UPP in merger analysis for some time. However, the new US merger guidelines set out UPP in a clearer and more prominent way. Following the adoption of the US merger guidelines, the Commission has seen a flow of submissions by economic consultants estimating UPP in European cases. However, the Commission has probably given more prominence and weight to merger simulations than in other jurisdictions. The key element of a merger simulation is the demand estimation and if a reliable demand estimation is available then the Commission's preferred approach would be to carry out a merger simulation.

The motivation for publication of the Commission's recent Best Practice Guidelines (the "Guidelines") followed the popular scepticism about the use of economics in merger analysis. This can be attributed to the fact that apparently sound but contradictory pieces of evidence can be submitted by economists on different sides of a case. There is an understandable but incorrect belief that the professional application of rigorous methods should produce unambiguous and consistent results. However, divergences among economists in their submissions can be due to intrinsic differences in quality. The appropriate

¹ Case T-342/99 – *Airtours v Commission*

² Case C-413/06P – *Bertelsmann and Sony Corporation of America v. Impala*

approach to contradictory submissions is not to reject them all but to understand the source of the differences. This may often lead to further insights about the merger.

The Guidelines have two goals. The first is to develop a quality standard for the assessment of the various submissions. This helps those involved in the production and presentation of economic evidence in framing their submission, and assists those with decision making responsibilities to assess the relative quality of the submission. The second is to ensure that economic analysis meets certain minimum standards at the outset which facilitates the merger control procedure. A good economic submission at the beginning of the procedure will ensure that the procedure is much more efficient. Poor submissions at the beginning will have to be progressively improved. There are two parts to the Commission's Guidelines: Recommendations regarding the content and presentation of economic or econometric analysis; and Guidance in responding to the Commission's requests for quantitative data. The Guidelines also apply to the Commission, as well as to the parties, and the Commission must respect them when producing evidence in the context of a merger investigation.

The Chair invited Germany to describe the recently adopted notice on quality standards for economic evidence.

The delegate from Germany explained that the number of cases where parties submitted economic evidence is growing. This is particularly the case for mergers which are controversial or difficult. The Bundeskartellamt (BKartA) observed that the evidence was of variable quality and reliability and started work on a set of standards for expert economic opinions (the "Notice") to be made publicly available. The objective was to clarify the criteria that economic expert opinion must fulfil and to ensure that the evidence submitted has maximum value for the BKartA's proceedings and for the parties involved.

The Notice was published in October 2010 and has already had a positive effect on the BKartA's practice and in its interaction with parties. The key elements of the Notice are similar to those set out in the EU Guidelines:

1. *Relevance*: it must be clear from the economic opinion which competition issues the evidence is relevant to.
2. *Completeness*: an expert's opinion must be written so that it can be appraised within a reasonable period of time. Opinions which do not contain the necessary information to understand and replicate the results are considered incomplete.
3. *Transparency*: economic analysis is generally based on simplifying assumptions. These must be disclosed and assessed for their compatibility with the relevant facts of the case under review.
4. *Consistency*: if the opinion contains several analyses of the same circumstances, the assumptions and results of these individual analyses should not exclude or contradict each other. Any inconsistencies must be acknowledged and explained.

The BKartA has already witnessed an increasing acceptance of the Notice in the EU, and it has facilitated communication with the parties in a number of cases. Although the Notice is aimed predominantly at external experts, the best practices contained within the notice refer to established economic principles and they should be regarded as a benchmark for all parties, including the agency.

The delegate from Canada commented on the difficulties that can arise when collecting data in merger cases. When obtaining data to carry out quantitative analysis, the competition authority must strike a balance on how much information it should request. Too much information may create an unnecessary burden for external parties, as well as creating a costly internal process. Too little information may be

insufficient for a proper analysis. The Bureau attempts to choose the most effective methodology with the minimum data requirement. Merger simulations may require more information than natural experiments, but if natural experiments are deemed suitable for the Bureau's analysis then the Bureau will choose this methodology. A difficulty that often arises is obtaining data in the form required for most methodologies. The parties may have price data but the chosen methodology may require price indices. This difficulty can be alleviated by engaging in an open dialogue with the parties about what format data is kept in. The Bureau can then determine how the data can be provided in a form suitable for the proposed analysis.

The Chair next asked Hungary to comment on its guidance paper entitled "Frequently asked questions on the competitive assessment of mergers" and explain whether this had improved the ability of the competition authority to collect data and the parties' ability to understand the merger control process.

The Hungarian delegate explained that there had been an increased use of economics by the competition authority. This was not the result of encouragement from the court or as a result of economic submissions from the parties. Rather, the authority itself had tried to introduce economic analysis in more depth into all antitrust cases, but especially into merger cases. The authority began to emphasise the importance of theories of competitive harm in a more consistent manner, and the importance of early discussions between the parties and the authority. It took time for the parties to be convinced that this alternative approach to antitrust assessment was the correct way to approach market definition and competitive concerns. The parties were also faced with larger data requests than before. It became clear from 2008-2009 that the authority was pushing harder for remedies in certain mergers.

Economic submissions tend to originate from firms' internal economists, rather than antitrust economists or consultants. Guidance was therefore needed on the differences between a company's way of approaching market developments and the approach used by the authority. The guidance is therefore aimed at internal economists, marketing managers and competition lawyers. The guidance is titled "Frequently asked questions". It is a combination of guidance on conceptual approaches and best practices and consists of four parts:

- general approach: similar to merger guidelines;
- best practice guidelines on quality and data requirements: similar to the EU paper although much less detailed;
- market definition questions in detail; and
- horizontal non-coordinated effects: these introduce the conceptual framework as a tool kit i.e. what methodology can be used for different market structures? What are the weaknesses of the methodology?

The authority also plans to issue two other guidance papers. One will be on coordinated effects and the other will be on non-horizontal mergers. It is too early to comment on how the first guidance paper has changed the parties' approach to the authority.

The Chair noted that an important issue is the confidentiality of the information that can be used in economic analysis. Difficulties relating to confidential information have recently arisen in Finland with respect to the Fortum Eon merger and in Denmark with respect to the AO&LM transaction.

A delegate from Finland explained that the Fortum Eon case concerned the merger between Fortum, which was a leading energy company in Finland, and Eon Finland which was a relatively small player in the Finnish market. Both companies were active, among others, in the production and distribution of

electricity in Finland. The Finnish competition authority (FCA) found that the proposed merger would have led to the strengthening of Fortum's dominant position in Finland. The merger was conditionally approved by the FCA in 2006. The FCA's decision was annulled by the Market Court in 2008. The Market Court's decision was eventually confirmed by the Supreme Administrative Court in 2010.

As part of the overall assessment of potential competitive harm, the FCA considered several factors. Among these was the so-called Nord Pool data which the FCA received from the Nordic electricity exchange. This data was based on audits made in Finland and Sweden between 2002 and 2005. The FCA considered that economic analysis of the Nord Pool data gave it considerable insight into how the market worked and hence into the potential competition problems that the proposed merger might have created. However, the economic evidence based on the Nord Pool data did not play a major role in the FCA's analysis. Instead the FCA considered other factors and found that they were enough to prove that the merger would strengthen Fortum's dominant position.

The FCA did not rely on the Nord Pool data in its decision, or in the Market Court, as the data had to be kept confidential. Revealing it would have revealed the bidding strategies of other market participants to Fortum. Although the Nord Pool data might have supported the FCA case in the Market Court, the FCA relied on other evidence, including the fact that Fortum had significant spare production capacity which could be used during peak hours. This evidence did not directly depend on the Nord Pool data. It would have been interesting to see how the Market Court would have reacted to the evidence based on the Nord Pool data and if this evidence would have eventually changed the Market Court's decision. Unfortunately it was not possible in this case.

The Danish delegation commented on a 2008 case involving two wholesalers in the Danish plumbing market who sold to professional customers. The market was highly concentrated and it displayed many of the characteristics which give rise to concerns about coordinated effects. The Danish competition agency began an investigation into two separate theories of harm: coordinated effects and unilateral effects. The analysis of unilateral effects involved the collection of a vast amount of data so that a panel data estimation could be carried out to determine the degree to which different outlets competed against each other. The lawyers of the merging parties played an important role in the data collection process. In addition to facilitating the flow of information from their clients to the authority, they were also required to make sure that the combined data which reached the authority from both merging parties was internally consistent and suitable for a panel data estimation. The lawyers were required to liaise with each other, in addition to the authority. Queries also had to be dealt with relating to the choice of specific products which were to be analysed, without exposing sensitive confidential information to either of the merging parties.

It was clear to the parties that the merger was problematic and that it might not go through, even with remedies. The merging parties therefore risked revealing confidential data to each other, with the knowledge that if the merger did not go through they would revert to being competitors. In the event, this is what happened: the merger was blocked, and negotiations about remedies broke down. As a consequence the case serves as an example of how important it is to make sure the process of collecting data for a quantitative analysis is carried out in a way that does not facilitate or encourage the parties to exchange more information than absolutely necessary.

The delegate from China commented that during the past two years the Antimonopoly Bureau Mofcom ("Mofcom") had increasingly improved its economic expertise as a result of both international dialogue and case experience. Following the adoption of China's antimonopoly law, Mofcom actively engaged in both bilateral and multilateral communication and cooperation. Mofcom also plays an active role in competition policy meetings organized by international organizations. This has enabled Mofcom to learn from the experiences of other competition authorities in using economic methods in merger assessment. Mofcom holds and attends regular economic seminars to discuss economic theories and

methods with economists from China and elsewhere to improve the economic expertise of the Antimonopoly Bureau. Economists are included in every case team, which facilitates the use of economic evidence in merger control while also increasing the expertise of the economists. The participation of outside economists in cases has also helped the development of economists at Mofcom.

The Chair handed the floor back to Prof. Walker to summarise the first part of the session.

Prof. Walker followed up on Prof. Neven's point that even if best practices are followed and transparency is ensured, agreement between experts as to the right interpretation of the data may still not be possible. This is true, but if the process is transparent, then the source of the disagreement should be evident. Competition agencies may have to use their judgment to distinguish between different theories. However, it is much easier to do this if the key issues on which the competition authority has to exercise its judgment are clear.

Best practice guidelines can impose a discipline on the parties and on competition agencies with respect to their documentation (i.e. providing the underlying data, providing the explanation of what was done with the data, providing the programming, etc.). It is also important that limitations are not hidden in the data analysis. Even the highest quality empirical analysis is unlikely to be a perfect description of reality. Competition authorities and parties should be upfront about the limitations of their analysis and competition authorities should make clear when they do not understand a particular result. This indicates the competition agency understands the industry sufficiently to spot anomalous results.

The Chair next asked the US delegation to discuss the recently updated US Horizontal Merger Guidelines.

The delegate from the United States explained that the previous guidelines dated back to 1992, and focused on the assessment of market concentration through the Herfindahl-Hirschman Index (HHI) as a gauge of competitive effects. However, today mergers are assessed through direct analysis of economic effects rather than looking at market shares. Market shares and the HHI are still considered and are included in the revised guidelines, but the focus is on different ways of assessing effects. Some of these are based on data and quantitative methods, but many are based on more qualitative methods, such as the testimony of customers and documents of the merging parties indicating how they see the market and their business plans.

It is almost 60 years since the US Supreme Court established the structural presumption of harm to competition following a substantial increase in concentration in a relevant market. The earlier US guidelines (dating back to 1968) have reflected that structural presumption. However, the practice in the US agencies has moved steadily towards more direct consideration of the evidence of economic effects. This is largely an exercise in predicting how a merger will affect market conduct and hence impact on consumers. Since it is a prediction exercise, it necessarily relies heavily on economics, with a mix of theory and evidence. The revised guidelines discuss the different types and sources of evidence that the agencies rely on.

The change of approach was illustrated with various case examples. There has been a steady evolution in the agencies assessment of mergers and the revised guidelines explain the practice that the agencies have adopted over a number of years. For instance, with consummated mergers the tendency is to look directly at what happened as a result of the merger. In some cases it is possible to see that anticompetitive effects have taken place and so there is no need to predict them. The Microsemi-Semicoa transaction is one example of this approach. It involved high reliability transistors and diodes. It was possible to observe that following the merger, prices went up and the reliability of deliveries fell. This was a market where customers (military and high technology customers) cared greatly about delivery times. The agencies could

rely on actual data for the prices and customers' experience regarding delivery times in order to establish the existence of anticompetitive effects. This was an important basis for the challenge to that merger.

Natural experiments are another category of evidence. These relate to past variations in competitive conditions in an industry that can be used to provide indications of the likely effects of a merger. The US agencies have reviewed a number of airline mergers and typically look at whether there are overlaps on city pairs between the merging parties (i.e. going from two to one non-stop carriers or three to two non-stop carriers on specific routes). They also look at whether the carriers involved are so-called 'legacy carriers' which are established in the market or so-called 'low cost carriers' which are more recent competitors, that tend to be more efficient. The agencies have extensive data for this industry from the Department of Transportation. A consistent result is that for routes within the US, going from two to one non-stop carriers on a route tends to raise price by 10%. The agencies have also analysed the effects of three to two mergers and the effects of competition at nearby airports. All of this analysis is directly relevant for predicting the effects of a merger that will eliminate competition on a certain number of overlap routes.

The most sophisticated or elaborate method that the DoJ uses is merger simulation. This approach can be complicated, time consuming, and requires a great deal of data so is not adopted frequently. However, it was used in the transaction between Miller and Coors, two of the largest providers of beer in the US. One of the advantages of merger simulation is that one can include and integrate efficiencies into the analysis. In this case the parties argued that the merger would result in lower shipping costs through coordinated operations that would accordingly lower marginal costs. These efficiencies were integrated into the merger simulation.

Another area where the DoJ uses merger simulations is in electricity markets, and a number of these mergers have been investigated in recent years. In some areas of the US, very highly organized markets exist where the producers or generators of electricity submit bids to supply that electricity into the market and then customers draw on the electricity that has been supplied. With data on those bidding strategies and the way in which the market is organized through a very formal bidding and auction method, it is possible to build models that fit the industry well and then predict the effects of mergers using merger simulation methods. These models are quite different to merger simulations with differentiated products: they involve bidding for a very homogeneous product (electricity). The DoJ estimates the residual demand for the merging parties. This involves estimating what the demand would look like for the merged firm given the overall demand for electricity and the supply of other suppliers. Having estimated the residual demand, it is possible to calculate the optimal bidding strategies for the merging entity. The DoJ also has knowledge on marginal costs in this industry as the costs of running different generators can be observed.

The case examples and the new Guidelines demonstrate that there are a number of empirical methods that can be adopted, and the most suitable will depend on the facts of the case. When applying the new US guidelines, or indeed any framework that involves the use of economic evidence, three universal questions of competition policy must be addressed: (i) market power, (ii) the theory of competitive effects and (iii) efficiencies. These three issues link every area of policy making that competition authorities are involved in.

The first issue concerns how agencies can accumulate and apply evidence based on their own experience to answer the conceptual questions that are posed in the new US guidelines or in the guidelines of other jurisdictions:

- How can agencies use their own experience to inform the application of these standards?

- How does one apply economic evidence in litigated proceedings? What happens if the party finds itself before court? How can a party present evidence effectively within the merger control framework?

Each agency that carries out merger review accumulates experience during the course of investigations. Investigations not only perform the function of resolving specific disputes but provide crucial opportunities for the education of the agency staff and its leadership, and can also be the foundation for assembling a rich base of knowledge that informs the application of individual concepts. An agency that does a good job of reflecting upon and marshalling that experience and focusing it on the next transaction is going to be much better informed in deciding how to treat critical questions that involve difficult judgments in the future, such as for example assessing efficiency claims. There are two ways to go about ensuring that the accumulation of experience in individual transactions can usefully be applied in a way that makes the agency better at what it does progressively as it looks at transactions over time. The first is to emphasise specialisation within individual case teams. The best work occurs when an agency uses dedicated case teams that had repeated experiences working on specific types of transactions. If deep industry knowledge, for example in pharmaceuticals or petroleum, can be marshalled quickly, this provides an extraordinarily valuable source of data and information. This enables the agency to apply the competition policy standards and framework more efficiently. Conscious development of specialisation and the maintenance within the teams of both physical data and know-how built up over time can be extremely valuable when applying the conceptual framework. One way to build that knowledge is to carry out ex-post assessments of how things have turned out. This has been a focus of attention in the OECD Competition Committee for a number of years. This can involve a specific internal research capability, allowing retrospective consideration of actual experience, or an informal process in which specific assumptions that were made at the time are considered.

The Chair noted that France had warned against the indiscriminate use of sophisticated analyses such as the hypothetical monopolist test, and asked the French delegation to explain their position with respect to the use of UPP analysis and other economic tools.

The delegate from France responded that while the hypothetical monopolist and the UPP tests are useful tools of economic analysis, they should be used with pragmatism. The hypothetical monopolist test is well suited to cases where the traditional elements of qualitative analysis, such as identifying the potential competitors, market shares, entry barriers, and consumers' ability to choose alternative products in the case of a price increase, fail to clearly define a market. The use of this kind of test can compensate for the lack of insight gained from the qualitative analysis. On the other hand, if the market definition is easy to assess and if it is superfluous to collect more data, the hypothetical monopolist test is not required. Hence, the usefulness of this particular test is dependent on the nature of the case. Moreover, the practical use of this test can lead to two main problems:

- First, it is difficult to compute an accurate hypothetical monopolist test given the amount of data required, e.g. precise information on the margin for every product that could be taken into account as well as the diversion ratios between those products. For instance if four products are considered, the margins for each of those four products and the diversion ratios between each pair of products are needed. Since they might not be symmetrical, that is, the diversion ratio from A to B might not be the same as the one from B to A, this leads to 12 different diversion ratios to calculate. In cases involving a large number of products, it is not an easy task to measure the margins (since this requires the incremental costs and not the average costs which are already sometimes difficult to evaluate) and the diversion ratios (which can require costly surveys with a large number of consumers).

- There are methodological issues to be considered, such as: what should be the reference price, a problem known as the ‘Cellophane Fallacy’; how to treat multi-products firms with the risk of defining a too broad market if considering the price decision effect on the portfolio of products and not product by product; how to approach two-sided markets and innovative products; how to consider quality differences, not price differences?

In the same way, the UPP test is an interesting complement to the existing methods, since it is a rather simple screening test and less costly in data than the hypothetical monopolist test while the methodology is almost the same. Yet, it does not seem appropriate to use it alone, as it would not take into account a relevant market definition, coordinated effects but only unilateral effects. For such a test, it is necessary to identify the closest substitutes - if any - to the products offered by the firms that are likely to coordinate. Finally, the remedies evaluation - and especially its structure - once again requires being able to identify the closest competitors.

The delegate from Mexico commented that in its early years the Competition Commission of Mexico (the “Commission”) hardly used economic analysis. The Commission has now had the opportunity to use economic analysis and quantitative techniques such as co-integration, price series tests, diversion ratios and profitability analyses, in more complex cases. However, it is important that the results of economic analysis are consistent with common sense.

The Commission does not usually use merger simulation. However, while the use of econometrics is still quite limited, the Commission is familiar with economic models that use the following types of data: price series, consumer databases, sales, imports, transportation costs, market shares, input price, financial margins, brand recognition, measures of consumer loyalty, demand elasticity and diversion rates. Economic analysis is also applied to infrastructure auctions, for example tenders relating to airports. The Commission has issued guidelines on the merger control process and, recently, has issued further guidelines written by well-known scholars on defining relevant markets and assessing market power. These are useful to both Commission staff and the parties. The Commission also has a particular concern over the ability of judges to evaluate its decisions properly. For this reason it has been encouraging judges to be trained specifically in competition policy analysis.

The delegate from Japan referred to a 2006 study that was conducted jointly by an outside economist and by the economists at the Mergers and Acquisitions Division of the Japanese Fair Trade Commission (JFTC). The purpose of the study was to learn about the theory and methodology for the analysis of unilateral conduct effects in differentiated product markets. The economists obtained detailed scanner data on sales of butter and margarine and used models to estimate demand. A critical loss analysis was then performed, based on the different demand functions, to find out whether butter and margarine were in the same relevant market or not. Following the results from the AIDS model, critical loss analysis implied that butter and margarine were in the same relevant market. However, critical loss analysis based on a double-log-form demand function model led to the opposite conclusion: butter and margarine were in separate relevant markets. The implication was that different demand functions could lead to different market definitions.

The study also included a hypothetical merger simulation that considered what would happen if a dominant firm in the butter market and a dominant firm in the margarine market were to merge. Several functional forms were used: the Antitrust Logit model, the AIDS model, and the PCAIDS model. The result of the merger simulation using the Antitrust Logit model suggested that the price increase after the merger would be limited even if each company had a large market share in the butter and margarine market. However, when a different functional form was used it was not possible to get robust results.

The study therefore showed that using quantitative methods can lead to conclusions that are contrary to those expected from high market shares or high concentration. However, the study also showed that the results of quantitative analyses may sometimes be sensitive to the specific assumptions made or functional form chosen. Greater care must therefore be taken when these types of model are used. More robust models and better data are needed, all within the time and resource constraints of the actual merger review. A safer approach is not to rely solely on economic evidence but to also use other evidence before drawing conclusions.

The delegate from Korea described the first case in which economic evidence was seriously considered by a court. The case, from 2004, involved the proposed merger between Moohak and Daesun, two firms which sold a Korean liquor called soju. Moohak acquired a 41% stake in Daesun. An important issue was the geographic market definition: was the market national (in which case the two companies had only 17% of the market) or was it regional i.e. the Busan and Gyungnam area, (in which case the two companies accounted for more than 80% of production). A narrow market definition therefore suggested greater potential anti-competitive effects from the merger.

During the investigation process the Korean Fair Trade Commission (KFTC) used the Elzinga-Hogarty Test to define the relevant geographic market. For this test the KFTC first calculated the LIFO (“little in from outside”) in the Busan and Gyungnam area to show how much demand in a certain region is served by local production. The KFTC also measured LOFI (“little out from inside”). Both the LIFO and the LOFI for the Busan and Gyungnam area exceeded the benchmark ratio of 75%. The KFTC therefore found that the relevant geographic market was the Busan and Gyungnam area instead of a national market and decided to block the merger.

The merging parties appealed the KFTC’s decision by filing a law suit to the Seoul High Court. Both the merging parties and the KFTC produced economic evidence. The merging parties calculated the own price elasticity of demand by using actual soju sales data and also examined the cross-price elasticity between the merging parties as well as with a rival national company, Jinro. The merging parties argued that Jinro was a closer substitute for Moohak than Daesun, because more consumers would potentially shift to Jinro rather than Daesun in the case of price rise by Moohak. The parties then argued that the relevant geographical market should be defined as a national market as this reflected Jinro’s business area. In response, the KFTC introduced critical loss analysis evidence based on evidence from a consumer survey. The KFTC concluded that the geographic market should be defined as Busan and Gyungnam province since the actual loss was less than the critical loss when a hypothetical monopolist raised price by between 10% and 30% in those areas.

The court held that the merging parties’ analysis of the relevant geographic market was not valid because it failed to show whether there was enough substitutability at the local level to stop a hypothetical monopolist at the local level raising prices profitably. The court held that the KFTC’s critical loss analysis was sound, and agreed with the KFTC’s decision. Following this case economic evidence has been used more frequently in competition law cases in both KFTC and court proceedings.

The delegation from the United Kingdom took the floor and discussed the experience of the OFT and the Competition Commission in evaluating retail mergers in the UK. The UK authorities have looked at a number of retail mergers (over twenty in the last five years) and so have considerable experience. Retail mergers also raise issues requiring techniques which allow for the direct assessment of unilateral effects.

The general approach to looking at these mergers in the UK involves two steps: 1) Filter out clearly unproblematic areas; and 2) Look in detail at the remaining areas. Having filtered out the unproblematic areas, the UK authorities gather information about diversion ratios that are specific to the local areas. This may be done, for example, by conducting a customer survey or examining natural experiments. The former

asks shoppers where they would go if their preferred outlet was not available or if prices in their preferred outlet rose significantly. These diversion ratios can then be combined with information about margins in order to give a ranking of local areas according to how problematic they might be. To establish when an area may or may not be problematic, an absolute threshold of any pricing pressure index or illustrative price rise (IPR) is generally not considered outcome-determinative alone. Instead, the combination of diversion ratios and margins, where used, is considered alongside a range of other evidence, including, for example, views and evidence gathered from other third parties and internal business documents.

An IPR is an indication of potential price effects based on margins and diversion ratios. It is not a price prediction. Instead, it is used to rank areas according to the degree of competitive concern. One reason why the UK authorities do not interpret the IPR as a price prediction is that retailers do not compete only on the basis of prices. Instead, a reduction in competition post-merger can manifest not in a price rise but in changes in the quality of local offering, the quality of service and so on. Hence the IPR is used as an index of the reduction in competitive pressure post-merger.

The final element of the analysis is to think about countervailing factors, such as supply-side responses (entry, expansion or repositioning) and national pricing effects. On the latter, changes in local competitive conditions can affect national prices. For instance, if two retail chains merge and their stores tend to be located close to each other at a local level, then it is quite possible that the reduction in local competition will affect national prices. Conversely, if the stores of the two retail chains are not located close to each other at a local level but are generally located much closer to other rivals, then the merger is much less likely to have an effect on national prices. The important point to note is that the scale of any national effect will likely depend critically on the change in the local competition, and the initial analysis of local competition and the initial gathering of evidence about local diversion ratios is going to be crucial even for understanding national effects.

Using diversion ratios and margins to look directly at unilateral effects in retail mergers is challenging. It can be hard to collect reliable data. However, the UK authorities have adopted this approach for pragmatic reasons. The challenges of using direct evidence in retail mergers are not as great as the challenge of trying to make the right decision in a merger involving hundreds of markets, each one very different from the next and where market shares really do not provide much useful information.

The delegate from Chile provided details on an interesting analysis used to assess the competitive effects of an acquisition by the leading supermarket chain (D&S Walmart) of the largest wholesale distributor (Alvi). Although a wholesaler, Alvi exerted competitive pressure on D&S Walmart as some consumers, particularly those with a lower income, bought directly in bulk from Alvi rather than buying from D&S Walmart. The merger would have removed this competitive constraint on D&S Walmart.

The Competition Authority sought to estimate the effect of the merger on prices using an econometric model which used data from Santiago City. The data included an index of the D&S selling prices along with:

- whether Alvi was within a given radius from each D&S store;
- concentration levels of each local area and different store format ; and
- the district/town or the administrative division.

The competition authority used unbalanced panel data with monthly D&S sales data from January 2006 to June 2010.

The analysis showed that the proximity of an Alvi store had a negative effect on D&S pricing. The effect was significant and consistent across a number of different models (i.e. random or fixed effects used with three different price baskets). The presence of an Alvi store 5 minutes away from a D&S store caused the D&S price index to fall by 1.4%. This effect fell to 1% at 10 minutes and was still significant at 15 minutes. The coefficients obtained from the regression analysis made it possible to calculate the potential effect of the merger on prices. The competition authority concluded that prices at some stores could rise by between 2% and 3.4%. In the end the analysis was not reviewed by the Competition Tribunal because the parties abandoned the transaction and Alvi was bought by another supermarket group.

The Greek delegate explained that the Hellenic Competition Commission (HCC) uses a standard approach to stock market event studies. It calculates the expected change in stock prices around the announcement of a transaction and then looks at how the actual stock price movements varied from what was expected (i.e. look at the “residuals”). If the residuals of both the merging parties and their competitors are positive (i.e. the announcement of the merger was associated with stock price movements that were more positive than expected), then the HCC considers that the merger is anti-competitive. If the residuals for the competitors are negative, the HCC considers it pro-competitive.

The HCC used this kind of analysis in a merger in 2009 to assess a proposed acquisition in the petroleum sector. It found the residuals for competitors, evaluated over the period three days before to three days after the announcement, were positive. The HCC concluded that this implied the merger was anti-competitive. However, when it looked at the period from one month before to one month after the announcement, it found that the residuals for competitors became negative. The HCC therefore concluded that the merger would increase consumer surplus in the long run as a result of efficiencies. As a result the HCC cleared the merger.

The Chair noted that the written submission from Israel discussed merger cases where the authority used various quantitative tools in their analysis, and asked Israel to describe the HHI and price effects analysis used in a recent petrol station merger.

The delegate from Israel explained that in the petrol station merger there were four main competitors, accounting for 90% of the market, with a fringe of small competitors accounting for the rest of the market. The merging parties accounted for 40% of the market. This implied that the correct conceptual framework for analysis was price competition within a differentiated products market where the differentiation came from geographic dispersion (since petrol itself is a homogeneous product). Competition therefore took place within local markets. The competition authority (the “Authority”) considered that there were high barriers to entry as it takes on average seven years to build a petrol station in Israel and there are some areas where it is not possible to build new stations at all. Economic theory predicts that in such a market a merger is likely to lead to prices rising. However, the merging parties argued that the relevant geographic market was wide, and hence there were unlikely to be any price effects, as consumers can travel to stations outside their locality for petrol and there was an overlapping chain of substitution.

The Authority undertook a formal analysis of the effect of concentration (HHI) at the local level (i.e. 5km radius markets). Using cross-sectional data, it found statistically significant and robust evidence of a positive relationship between concentration at the local level and price across 950 geographical areas in Israel. This analysis was used to complement the other evidence that was available on the likely anti-competitive effects of the merger.

It is important to be clear about a number of caveats related to the analysis. First, it was assumed that demand and supply conditions were the same across all the markets. This assumption may not be correct. For instance, it maybe that demand is higher in urban areas or that costs are higher in more remote southern and northern areas. The Authority tried to control for these factors in its analysis. The analysis did

not seek to predict the equilibrium post-merger prices. Instead, it aimed to answer the following questions: (a) should the analysis focus on larger geographic areas or on local areas; and (b) should Israel be considered as constituting a single relevant market?

The Authority decided to block the merger. This decision was overturned by the Antitrust Tribunal in Israel, but was reinstated on appeal by the Supreme Court.

The Dutch delegate explained that the competition authority, (the “NMa”), has used conjoint analysis in four second-phase merger cases in the last five years. In 2009 it investigated a merger between two large agricultural cooperative firms which sold fertilizers to farmers. Because of high market shares in some areas of the Netherlands, the NMa opened up a second phase investigation. When customers make a purchasing decision in this market they weigh up the relative value of different aspects of the goods: price, brand name and also other factors involved in the different products. A conjoint analysis is a way to analyse the preferences of purchasers across these different aspects of the product. The NMa used an online questionnaire to gather data: in total there were 1600 responses to the survey and the results indicated that the price of the product, as well as the method of delivery, were relatively important to customers, whilst brand name and the advice offered by the different suppliers were rated quite low. By using these results the NMa was able to calculate the “share of preferences” for the different suppliers and these were compared to the data available on market shares to test the validity of inferences made from just the market shares.

The results of the conjoint analysis were used to simulate the responses of customers to different potential price increases. The NMa determined that customers were relatively price sensitive and that a small increase in price by one or both of the merging firms led to a relatively large number of customers switching to competitive firms. Conjoint analysis offers a great insight into diversion ratios. When combined with data on the margins of the firms, it allows a critical loss analysis to be carried out as it facilitates the calculation of whether a price rise will lead to a large enough reduction in demand to make the price rise unprofitable.

The NMa has learnt several lessons from using conjoint analysis. First, it is important to start work on the conjoint analysis in the first phase of the investigation as, in the Netherlands at least, time can be limited in the second phase. Second, it is important to involve the merging parties at an early stage in constructing the questionnaire. This is because it is important to identify a large set of the relevant attributes that need to be addressed. Whilst the NMa has experience in some sectors, the merging parties still have more industry knowledge than the competition authority. Furthermore, the merging parties can supply a list of respondents for the survey. Third, it is important to test the questionnaire using a small sample of respondents to make sure that the results make sense and that the questions reflect a realistic buying situation. Finally, it is important to construct a “base scenario” at an early stage. A base scenario is the starting level of the different attributes for all the firms and it should include all the relevant aspects of the product. Constructing this base scenario also helps the competition agency to design appropriate questions for the questionnaire. The NMa has learnt that when using a properly constructed questionnaire conjoint analysis can improve the decision making of the competition agency.

Portugal has used fairly sophisticated quantitative analysis techniques when looking at coordinated effects, and the Chair asked Portugal to describe the use of this approach in the banking sector.

The delegate from Portugal provided details on a merger between the second and fifth largest banks in Portugal. The competition authority was concerned about potential post-merger collusion and so applied an economic methodology to estimate the demand curve for two products. One product was the mortgage market, which at the time represented about 80% of the loans granted to households, and the other product was short term commercial credit, which represented 45% of the loans extended to the private sector. By

estimating the demand and cost curves, it was possible to estimate the pay-offs to collusion and the effect of the merger on these pay-offs. If the merger increased the pay-offs then the probability of collusion would increase, and this is what the analysis suggested. However, it needed to be considered in the light of the other quantitative and qualitative evidence that was available. In the end the competition authority did not oppose the merger because the largest state-owned bank was sufficiently sized to destabilise any post-merger collusion that might have arisen.

One lesson that the authority has learnt from this exercise is the importance of careful data collection. Collecting data for any quantitative approach is a major undertaking, requires great care and it is important to talk to the parties to avoid misinterpretation of the data.

The Turkish delegate provided details on a case concerning a merger in the margarine market. A previous investigation by the Turkish competition agency had established a separate market for industrial margarine (compared to consumer margarine). The case involved a three to two merger, leaving a number of smaller firms with low market shares active on the market. The merging parties would have had more than 60% of the market. The HHI was very high and would rise significantly (to 5220) after the merger. The delta therefore exceeded the thresholds in the EU and US merger guidelines for raising competition concerns. The authority carried out two complementary pieces of economic analysis; a reduced form regression (which related the prices of the market leader to market concentration, as measured by the HHI, and to the average variable costs of the market leader) and a diversion ratio analysis.

The regression model was simple. It regressed the prices of the market leader against its average variable costs and market concentration as measured by the HHI. The model predicted that prices would increase by 22% if the HHI delta was 1356. The parties contested this result as they argued that there had been a very significant increase in the HHI eighteen months earlier (caused by a merger) and this could have led to a structural change in competition that the model did not allow for. In response, the competition authority repeated the analysis including dummy variables to allow for a possible structural change. The results of this analysis were different to the previous analysis as the model no longer showed a statistically significant relationship between the HHI and the market leader's prices.

The diversion ratio analysis was based on a working paper (Shapiro) which showed that there could be different formulae for predicting the price effects of a merger depending on the form of the demand function. Two different assumptions about the demand function were set out in the paper: linear demand and constant elasticity demand. Using linear demand implied a 3% increase in prices, whilst using constant elasticity demand implied an 11% increase.

The Swedish delegate explained that the competition agency has increasingly used consumer survey evidence to complement the estimates that they derive from the demand data submitted by the parties. This approach has been adopted following scepticism about the quality of the demand estimates derived from the data and the need for an additional approach to demand estimation, even though it is based on stated preference data. The competition authority also believes that evidence based on surveys is more understandable to a judge than econometric estimates.

The authority has experimented with various hypothetical price increases and has also used more elaborate choice experiments where consumers have to choose between bundles of goods at different prices. The aim was to use this evidence to estimate elasticities, but so far the results have been mixed. The surveys have been carried out by phone or through the web, raising concerns that the hypothetical situations in the surveys are too far removed from the customers' original purchasing situation. More recently in-store surveys or exit surveys have been used instead. The authority has also started to focus on more simple hypotheticals, such as "second choice" questions, allowing the authority to calculate diversion ratios, if not cross-elasticities.

BIAC commented that the business community supports the use of economic analysis, particularly in phase two cases. It considers economic analysis as critical and the increased use of economic analysis as being a positive development. However, the objective of merger analysis should be to marry factual reality with sound economic foundations. While economic analysis is important, it cannot be a substitute for factual reality. Economic analysis is vitally important to merger analysis for the small number of cases that require an in-depth investigation. But it is not a useful tool for screening cases to determine which require an in-depth assessment. Sound economic analysis is time consuming, costly, and burdensome and it is important to bear in mind this reservation about the use of economics.

The UPP test is a very elegant theory which appeals because of its simplicity and is an alternative to critical loss analysis. However, while the UPP method is technically simple, practically speaking the two metrics on which it depends are notoriously sensitive and difficult to evaluate. Margins are not simple measures. Accounting margins do not always incorporate many of the important factors that are relevant to competition. Decisions on how to account for different costs are often subjective and those decisions are divorced from the timing of pricing decisions. Accounting margins are based on a snapshot in time, unlike the economic realities of the market, which are dynamic. This makes margins a difficult concept to measure as a test of competition. Accepting accounting margins because they are simple to obtain removes from the UPP test the precision that is being sought. Making that sacrifice, sacrifices the purpose of the test itself. Diversion ratios are equally sensitive. Whilst using market shares as a basis for diversion ratios is understandable, it involves putting the cart before the horse. The GUPPI analysis was originally proposed as a substitute for market share analysis, so if market shares are used as the basis for diversion ratios, then the degree to which the GUPPI is a substitute for market share analysis is questionable.

Surveys are notoriously unreliable with respect to trying to measure diversion ratios. Using historic data to look at actual effects and diversion ratios is more useful and meaningful than using a survey, but it is costly, difficult and challenging to get the correct data.

The test discussed are extremely sensitive. This does not mean that UPP tests are not useful measures for merger analysis, but they need to be approached with caution and with due regard for their limitations. It is important to recognise that they are a complement to factual analysis and not a substitute for it. An UPP test can verify what is observable both in the market place and through significant factual analysis. While factual analysis does not lead to a price prediction, it is still crucial and should be the foundation of the test.

When looking for a screening mechanism for mergers, one should look to the structural framework that has long been the hallmark of competition analysis. This is a common approach that is understandable across jurisdictions and borders. In a world of ever increasing trans-national mergers, this is an important factor. Agencies, their economists, their lawyers and their staff need to communicate effectively on the basis of a common framework, as opposed to on the basis of competing views on the utility of economic tests, such as for example UPP versus critical loss analysis.

Prof. Walker emphasised some of the key points emanating from the discussion.

The importance of using a “Devil’s advocate” approach to investigating mergers should be emphasised. A theory can be constructed that is consistent with a majority of the facts but which fails to take into account other theories that are also consistent with those facts, or with a slightly different subset of facts. It is therefore a good discipline both for competition agencies and parties to internally carry out a “Devil’s Advocate” procedure on their own arguments.

The economic evidence should be considered in the context of all the other evidence. If the economic evidence is consistent with the other evidence, then that lends support to the argument. Sometimes the

economic evidence does not seem to be consistent with the other evidence and this can pose interesting questions. The correct response is not to assume that either evidence is wrong, but instead to try and understand why the economics is giving a different result. It might be that the economics is pointing to an insight that the other evidence has missed. Equally, it could be that the economics is missing something. Where there is a divergence between the different types of evidence, it is very important to make the effort to understand what is driving the divergence.

It was argued that since none of the quantitative techniques is perfect and it is rare that all the data is available, it is important to ask the question: is this the best that can be done with the limited data that is available? The UK delegation emphasised that the IPR methodology is not perfect, but it is the best available approach when confronted with potentially hundreds of markets in a retail merger. If a competition authority, or the parties to a merger, wants to argue that the evidence provided by the other side is not perfect or is not complete, then a better alternative needs to be provided. It is not sufficient to dismiss the party's evidence or for the party to dismiss the competition agency's evidence. If economic evidence that is not perfect is dismissed, then there will be no role for economics in merger control.

BIAC argued that UPP measures are very sensitive to the underlying assumptions about margins and diversion ratios. This does not mean that the measures are not useful, but that it is very important to carry out a sensitivity analysis when using such measures. If the relevant measure points in the same direction under all plausible input values, then precise measurement issues are less of a concern. When different plausible inputs lead to significantly different results, then it is necessary to either obtain more precise inputs or to accept that the relevant measure is not useful in that case.

BIAC also raised the important point that stated preference results from surveys can be misleading. It is true that when asked whether they would switch in response to a 5-10% price increase, consumers tends to overstate their price sensitivity. But this does not mean that stated preference data is always unreliable. Conjoint analysis, as discussed by the Netherlands, is stated preference data, but it is much more sophisticated than standard price questions. It asks consumers to choose between different scenarios presented by the investigator and the evidence is that consumers are better at choosing between hypothetical scenarios than at answering simple price rise questions. When carried out carefully, conjoint analysis can therefore be useful and can allow investigators to draw reasonable inferences about consumer demand.

The Chair thanked the delegates for their participation and closed the session.

COMPTE RENDU DE LA DISCUSSION

par le Secrétariat

La Présidente ouvre la séance de la table ronde en remerciant les délégations de leurs communications écrites. Le nombre élevé de contributions reçues par le Secrétariat (29) indique clairement le haut niveau d'intérêt que suscite le sujet.

Le rôle de l'analyse économique dans l'évaluation des fusions s'est considérablement élargi au fil du temps. L'analyse des fusions fait appel à une palette d'outils quantitatifs qui vont des plus simples, comme la mesure des parts de marché, aux plus complexes, tels que l'analyse de la perte critique et les pressions à la hausse sur les prix. Les contributions écrites reçues par le Secrétariat indiquent que de nombreux organismes ont récemment employé des outils économiques complexes. L'objet de la table ronde est de mettre en commun les acquis de l'expérience concernant l'usage croissant des techniques économiques ces dernières années, de mettre en évidence les circonstances dans lesquelles ces outils peuvent être utiles et d'examiner leurs limites. Les débats vont porter sur deux grands thèmes.

Les recommandations des organismes quant à l'utilisation des outils économiques dans l'analyse des fusions, y compris un examen des lignes directrices récemment publiées et un compte rendu de l'expérience des organismes dans l'utilisation des preuves économiques.

L'expérience acquise par les organismes dans l'emploi de certains outils économiques pour évaluer les effets unilatéraux et coordonnés des fusions et pour mesurer les gains d'efficacité.

M. Mike Walker résume brièvement le document de référence, qui couvre les points suivants : le rôle de la science économique dans l'analyse des fusions ; le large consensus autour des principes économiques de base ; le recours aux simulations de fusion ; l'utilisation de la mesure des pressions à la hausse sur les prix ; et les lignes directrices définissant les meilleures pratiques.

La science économique joue un double rôle dans le contrôle des concentrations. Premièrement, elle permet de définir un cadre conceptuel au sein duquel évaluer les fusions. Deuxièmement, elle aide à répondre aux questions empiriques qui se posent dans ce cadre conceptuel.

Les principes économiques qui sous-tendent le cadre conceptuel font désormais l'objet d'un large consensus, bien que certaines controverses demeurent. La plupart des améliorations relatives à l'utilisation de la science économique dans le contrôle des fusions ont trait à l'usage de l'analyse empirique pour répondre aux questions empiriques. Les concentrations horizontales peuvent produire des effets unilatéraux ou coordonnés. Des effets unilatéraux surviennent lorsque des produits différenciés ou homogènes sont associés à des contraintes de capacité. Ainsi, la fusion des entreprises A et B implique la disparition des contraintes concurrentielles que chaque entreprise exerçait sur l'autre (dans l'hypothèse où il existait des élasticités croisées positives entre elles). Selon la théorie économique standard, les prix vont augmenter après la fusion, toutes choses égales par ailleurs. Il faut ensuite étudier la puissance des contraintes existant avant la fusion ainsi que l'hypothèse du « toutes choses égales par ailleurs » (par exemple, les obstacles à l'entrée, les gains d'efficacité et les possibilités de repositionnement des produits). L'analyse des effets unilatéraux ne prête donc guère à controverse.

L'analyse des effets coordonnés ne fait guère, elle non plus, l'objet de controverses, mais les principes économiques sous-jacents sont un peu moins clairs. Il se produit des effets coordonnés lorsque les produits sont non pas différenciés, mais homogènes. D'après la simple théorie des atteintes à la concurrence, la réduction du nombre d'entreprises sur le marché par suite d'une fusion rend possible la coordination tacite ou renforce la coordination existante. Les avis convergent sur ce point. Les conditions empiriques sont cependant moins clairement délimitées que pour les effets unilatéraux. La transparence facilite grandement la coordination, outre le manque de pressions concurrentielles provenant de l'extérieur du groupe qui se coordonne et les incitations qu'ont les différentes entreprises à se coordonner.

L'analyse des fusions verticales opérées ces dernières années a mis en évidence un consensus général sur le fait qu'elles ne risquent guère de fausser la concurrence. Au contraire, elles ont tendance à favoriser la concurrence, en présence d'un pouvoir de marché (lorsque les prix sont établis au-dessus du coût marginal), parce qu'elles peuvent conduire à une meilleure efficacité des prix. De l'avis général, les théories des atteintes à la concurrence appliquées aux fusions verticales sont toutes fondées sur l'exclusion et sur les pressions à la hausse sur les coûts des entreprises rivales.

La puissance de ce cadre réside dans l'importance qu'il accorde au fait d'analyser non seulement la question de savoir si l'entité fusionnée a la *capacité* d'exclure ses rivales mais aussi celle de savoir si elle y est *incitée*. La littérature économique montre que, si les entreprises sont souvent en mesure d'exclure leurs concurrentes, elles n'y sont cependant guère incitées, en particulier lorsque les rivales offrent une voie d'accès efficace au marché. Une manière désormais classique d'étudier ces incitations consiste à analyser l'« arithmétique verticale » de la fusion.

Comme indiqué ci-dessus, compte tenu du consensus général quant au cadre conceptuel de l'analyse, l'attention se tourne désormais vers l'utilisation de l'analyse empirique pour répondre aux questions qui relèvent du cadre conceptuel. Deux de ces techniques sont examinées plus avant : la simulation de fusion et la mesure des pressions à la hausse sur les prix.

La théorie économique qui sous-tend la simulation de fusion vise à prévoir directement l'effet de la fusion, plutôt que d'avoir recours à des mesures indirectes (telles que la délimitation du marché pertinent). Pourtant, en dépit de sa rationalité, la simulation de fusion n'est pas aussi utilisée qu'on le prévoyait initialement. La raison en est que les économistes ont constaté qu'il était difficile de réaliser des simulations de fusion suffisamment robustes pour offrir un véritable fondement à l'évaluation des fusions. Il s'est avéré en particulier que les modules de simulation « génériques » ou « prêts à l'emploi » ne servaient souvent à rien. Il apparaît maintenant que les simulations sont utiles lorsqu'elles tiennent compte des aspects particuliers du marché en question. Ce sont donc des modèles sur mesure, et non génériques, qu'il convient d'utiliser. Ils sont beaucoup plus gourmands en ressources, mais aussi beaucoup plus utiles.

L'indicateur des pressions à la hausse sur les prix (PHP) vise avant tout à mesurer les incitations qu'ont les entreprises à relever leurs prix après une fusion. Cet indicateur se fonde uniquement sur les ratios de diversion et les marges brutes. Pour une marge brute donnée, plus le ratio de diversion est élevé, plus l'entreprise est incitée à augmenter ses prix après la fusion. De même, pour un ratio de diversion donné, plus la marge brute est élevée, plus forte est l'incitation à accroître les prix. Les diverses mesures des PHP sont justifiées dans la mesure où elles se concentrent sur la dimension importante des incitations pour les entités qui fusionnent. Il convient cependant d'être vigilant dans l'utilisation de ces mesures simples. Il existe une tendance, notamment dans certains cabinets de conseil économique, à les traiter comme des simulations « allégées » et à s'en servir pour fournir une prévision précise des effets d'une fusion sur les prix. Or, ce n'est pas l'objet de ces indicateurs, et ils ne sont pas adaptés à une telle utilisation. Il est donc important de veiller à ce qu'ils soient correctement utilisés en pratique.

M. Walker conclut sa présentation en abordant les lignes directrices relatives aux bonnes pratiques qui ont été publiées récemment par plusieurs autorités de la concurrence. De telles lignes directrices portant sur l'utilisation des preuves économiques peuvent améliorer considérablement l'emploi qui est fait des sciences économiques dans le processus de contrôle des concentrations. Ces orientations sont particulièrement utiles lorsqu'elles s'appliquent non seulement aux parties externes mais aussi aux autorités de la concurrence elles-mêmes. De bonnes preuves empiriques doivent être fondées sur une théorie économique claire qui débouche sur des propositions vérifiables. Celles-ci doivent être mises à l'épreuve en toute transparence et, dans l'idéal, être accessibles à des non-économistes ; mais surtout, les résultats doivent pouvoir être reproduits. C'est là le rôle des lignes directrices relatives aux bonnes pratiques : faire en sorte que chaque partie au débat ait la possibilité d'évaluer pleinement les preuves empiriques présentées par d'autres parties. Lorsque ces principes sont respectés, l'économétrie, même complexe, perd toute dimension de controverse et, partant, devient utile. Le débat porte alors non plus sur la question de savoir quels sont les meilleurs principes économétriques, mais sur l'analyse des résultats économétriques qui sont pertinents pour la fusion.

La Présidente fait remarquer que c'est lorsque l'analyse quantitative se fonde sur des jeux de données robustes et vérifiables qu'elle présente le plus grand intérêt. Le document de référence souligne à juste titre que les organismes doivent adopter des méthodes solides pour soumettre des preuves économiques, car c'est une manière d'améliorer la qualité des preuves qui sont présentées dans les procès relatifs aux fusions. Le document de référence évoque un certain nombre de lignes directrices publiées récemment par les organes chargés de la concurrence, notamment celui de la Commission européenne (2010), qui porte sur la soumission de preuves économiques. La Présidente invite M. Damien Neven, de la Commission, à commenter ces orientations.

M. Damien Neven (économiste en chef au sein de la direction générale de la concurrence à la Commission européenne) note que, dans l'UE, le rôle de l'analyse économique s'est sensiblement renforcé ces dernières années. C'est là, en partie, une conséquence du changement des règles de l'Union concernant les fusions, intervenu en 2004, et qui a entériné l'abandon du concept de position dominante au profit de la notion d'entrave substantielle à une concurrence effective, au regard du critère de fond appliqué par la Commission européenne (ci-après « la Commission »).

M. Neven formule quelques commentaires au sujet de la présentation de M. Walker.

Effets coordonnés : l'économie des effets coordonnés n'est, en effet, pas aussi clairement établie que pour les effets unilatéraux. Dans l'UE, la dimension économique des effets coordonnés s'est fortement clarifiée ces dix dernières années à la suite de l'arrêt *Airtours*¹ et de l'arrêt rendu par la Cour de justice européenne (« la Cour de justice ») dans l'affaire *Sony/BMG/Impala*². L'analyse des effets coordonnés est désormais fermement fondée sur l'examen de la coordination : ainsi, sous l'effet d'une fusion, il se peut que les entreprises du marché concerné soient mieux à même de coordonner leurs interactions répétées. L'UE a cessé de se référer à un concept large des effets coordonnés, qui inclut des notions générales telles que le changement de comportement accommodant. C'est le langage qui était employé dans l'arrêt *Airtours*. La réflexion sur les effets coordonnés s'inscrivant désormais dans un cadre théorique clair, la Cour de justice et la Commission ont mis au point une série de méthodes empiriques plus abouties pour évaluer les risques de stratégie coordonnée.

Pressions à la hausse sur les prix (PHP) : les nouvelles lignes directrices des États-Unis donnent une nouvelle définition de la délimitation du marché en acceptant que, dans certains, on puisse s'éloigner de ce concept et estimer directement l'effet unilatéral d'une fusion. C'est là une démarche qui est compatible

¹ Affaire T-342/99 – *Airtours plc* contre Commission des Communautés européennes

² Affaire C-413/06P – *Bertelsmann et Sony Corporation of America / Impala*

avec le texte des lignes directrices de la Commission mais qui ne correspond peut-être pas à la pratique au sein de l'Union européenne. La Commission n'est pas disposée à accepter les contraintes de la délimitation du marché et revendique la possibilité d'évaluer directement les effets unilatéraux lorsque c'est approprié. Le concept qui sous-tend les PHP n'est pas nouveau, et la Commission européenne utilise les PHP depuis un certain temps déjà. Les nouvelles lignes directrices des États-Unis en matière de fusion y font toutefois appel de façon plus claire et évidente. À la suite de l'adoption des lignes directrices américaines sur les fusions, la Commission a vu affluer des contributions d'économistes-conseil qui estimaient les PHP dans des dossiers européens. Mais la Commission accorde probablement plus de poids aux simulations de fusion que d'autres juridictions. L'élément clé d'une simulation de fusion est l'estimation de la demande, et si une estimation fiable est disponible, la Commission privilégie alors l'approche de la simulation.

La publication récente par la Commission de ses lignes directrices relatives aux bonnes pratiques (« les lignes directrices ») a répondu aux doutes fréquemment exprimés quant à l'utilisation des sciences économiques dans l'analyse des concentrations. Ces doutes sont attribuables au fait que des preuves apparemment solides mais contradictoires peuvent être soumises par des économistes relevant des deux parties opposées dans une affaire. Une croyance compréhensible mais néanmoins fautive veut que l'application professionnelle de méthodes rigoureuses produise des résultats cohérents et dépourvus d'ambiguïté. Pourtant, des divergences de vues entre économistes peuvent être dues à des différences intrinsèques de qualité. Face à des positions contradictoires, il convient non pas de les rejeter en bloc, mais de déceler la source de leurs divergences. Une telle approche offre souvent de nouveaux éléments de compréhension au sujet de la fusion.

Les lignes directrices ont deux objectifs. Le premier consiste à mettre au point une norme de qualité pour l'évaluation des dossiers soumis. Une telle référence aidera les personnes chargées de la production et de la présentation des preuves économiques à préparer leur dossier et elle facilitera en outre, pour les instances appelées à prendre une décision, l'évaluation de la qualité relative du dossier. Le second vise à s'assurer que l'analyse économique répond d'emblée à certains critères minimum, ce qui facilite la procédure de contrôle de la fusion. Si le dossier économique soumis au départ est de bonne qualité, la procédure sera beaucoup plus efficace. Les dossiers d'une mauvaise qualité initiale devront être progressivement améliorés. Les lignes directrices de la Commission sont composées de deux parties : des recommandations concernant le contenu et la présentation de l'analyse économique ou économétrique ; et des conseils pour répondre aux demandes de données chiffrées formulées par la Commission. Les lignes directrices s'appliquent non seulement aux parties mais aussi à la Commission, et celle-ci doit les respecter lorsqu'elle fournit des preuves dans le cadre d'une enquête sur une fusion.

La Présidente invite l'Allemagne à décrire l'avis récemment adopté sur les normes de qualité applicables aux preuves économiques.

Le délégué de l'Allemagne explique qu'on assiste à une augmentation du nombre d'affaires dans lesquelles les parties soumettent des preuves économiques. C'est particulièrement le cas des fusions qui sont sujettes à controverse ou difficiles. Ayant observé que les preuves soumises étaient d'une qualité et d'une fiabilité variables, le Bundeskartellamt (BKartA – autorité fédérale de la concurrence) a commencé à mettre au point un ensemble de normes (« l'Avis ») destinées à être soumises à l'opinion d'experts économiques et à être publiées. L'objectif était de préciser les critères que doit remplir une opinion d'expert économique et de faire en sorte que les preuves soumises revêtent un intérêt maximal pour la procédure engagée par le BKartA et pour les parties concernées.

L'Avis été publié en octobre 2010 et a déjà eu un effet positif sur la pratique du BKartA et dans ses interactions avec les parties. Les principaux éléments de l'Avis correspondent à ce que proposent les lignes directrices de l'UE.

1. *Pertinence* : l'opinion doit indiquer clairement à quels problèmes de concurrence se réfèrent les preuves soumises.
2. *Exhaustivité* : une opinion d'expert doit être rédigée de telle sorte qu'elle puisse être étudiée dans un délai raisonnable. Est considérée comme incomplète une opinion qui ne contient pas les informations nécessaires pour comprendre et reproduire les résultats.
3. *Transparence* : l'analyse économique repose généralement sur des hypothèses simplificatrices. Celles-ci doivent être communiquées et évaluées au regard de leur compatibilité avec les faits pertinents de l'affaire examinée.
4. *Cohérence* : si l'opinion contient plusieurs analyses des mêmes circonstances, les hypothèses et les résultats de ces différentes analyses ne doivent pas s'exclure mutuellement ni se contredire. Toute incohérence doit être dûment reconnue et expliquée.

Le BKartA a déjà pu constater que l'Avis est de mieux en mieux accepté dans l'UE et qu'il a facilité la communication avec les parties dans plusieurs affaires. Bien que l'Avis soit avant tout destiné aux experts externes, les bonnes pratiques qu'il présente renvoient à des principes économiques bien établis et elles doivent être considérées comme une référence par toutes les parties, y compris l'autorité de la concurrence.

Le délégué du Canada commente les difficultés qui peuvent se présenter lors de la collecte des données pour une affaire de fusion. Lorsqu'elle recueille des données pour mener une analyse quantitative, l'autorité de la concurrence doit trouver le juste milieu quant au volume d'information qu'elle sollicite. Demander trop d'information peut donner lieu à une charge de travail inutile pour les parties externes, ainsi qu'à un processus interne onéreux. Demander trop peu d'information risque de nuire à l'analyse. Le Bureau tente de choisir la méthode la plus efficace qui requiert le minimum de données. Une simulation de fusion peut nécessiter plus d'informations qu'un champ d'expérience grandeur nature, mais si ce dernier est jugé acceptable pour l'analyse, alors le Bureau choisira cette méthode. Pour la plupart des méthodologies, il est souvent difficile d'obtenir des données sous la forme requise. Par exemple, les parties disposent de données sur les prix, mais la méthode choisie exige des indices de prix. Cette difficulté peut être atténuée par un dialogue ouvert avec les parties sur le format dans lequel les données sont conservées. Le Bureau peut alors déterminer comment les données peuvent être fournies sous une forme appropriée pour l'analyse.

La Présidente demande ensuite à la Hongrie de commenter son document d'orientation, intitulé « Questions fréquemment posées sur l'évaluation des fusions sous l'angle de la concurrence », et d'indiquer si ce document a permis à l'autorité de la concurrence d'améliorer la collecte de données et aux parties de mieux comprendre le processus de contrôle des concentrations.

Le délégué de la Hongrie explique que l'autorité de la concurrence a de plus en plus recours aux études économiques. Cette évolution ne résulte pas d'un encouragement des tribunaux ni du nombre croissant d'études économiques soumises par les parties, mais du fait que l'autorité elle-même s'est efforcée d'intégrer une analyse économique plus poussée dans l'instruction de toutes les affaires antitrust, et en particulier dans les affaires concernant des fusions. L'autorité a commencé à attirer plus systématiquement l'attention sur l'importance de la théorie des atteintes à la concurrence ainsi que sur l'intérêt d'entamer, tôt dans la procédure, des consultations entre les parties et l'autorité. Il a fallu du temps pour convaincre les parties que cette nouvelle approche de l'évaluation des concentrations était une bonne manière d'aborder la définition du marché et les problèmes de concurrence. En outre, l'autorité demande désormais plus de données aux parties que par le passé. Il est devenu clair à partir de 2008-2009 que l'autorité insistait davantage pour obtenir des mesures correctives dans certaines affaires de fusion.

Les études économiques soumises émanent généralement des économistes employés par les entreprises, plutôt que d'économistes ou de consultants spécialisés dans les affaires de concurrence. Des recommandations s'imposaient donc pour aplanir les différences entre la vision de l'entreprise sur l'évolution d'un marché et l'approche adoptée par l'autorité. Le document est donc destiné aux économistes internes, aux responsables du marketing et aux juristes de la concurrence. Intitulé « Questions fréquemment posées », il associe des recommandations relatives à l'approche conceptuelle et une présentation des bonnes pratiques, et s'articule en quatre parties :

- approche générale : semblable aux lignes directrices sur les fusions ;
- lignes directrices sur les bonnes pratiques, portant sur la qualité et les données requises : semblable au document de l'UE mais beaucoup moins détaillé ;
- présentation détaillée des questions de définition du marché ;
- effets horizontaux non coordonnés : le cadre conceptuel est présenté sous forme de boîte à outils ; par exemple, quelle méthodologie utiliser pour différentes structures de marché ? Quelles sont les faiblesses de la méthodologie ?

L'autorité de la concurrence prévoit de publier deux autres documents d'orientation. L'un portera sur les effets coordonnés, l'autre sur les concentrations non horizontales. Il est encore trop tôt pour déterminer comment le premier document d'orientation a modifié l'approche des parties vis-à-vis de l'autorité.

La Présidente note qu'une question importante est celle de la confidentialité des informations que l'on peut utiliser dans une analyse économique. Des difficultés à ce sujet se sont récemment posées en Finlande, à propos de la fusion Fortum Eon, et au Danemark, dans la transaction AO&LM.

Un délégué de la Finlande explique que l'affaire Fortum Eon concerne la fusion de Fortum, qui est l'une des principales compagnies d'énergie en Finlande, et d'Eon Finland, un acteur relativement modeste sur le marché finlandais. Ces deux entreprises opèrent notamment dans la production et la distribution d'électricité en Finlande. L'autorité finlandaise de la concurrence (FCA) a établi que la fusion proposée conduirait à un renforcement de la position dominante de Fortum en Finlande. La fusion a été approuvée par la FCA en 2006, sous réserve de certaines conditions. La décision de la FCA a été annulée par le Tribunal du commerce en 2008, annulation confirmée par la Cour suprême administrative en 2010.

Dans son évaluation globale de l'atteinte potentielle à la concurrence, la FCA a examiné plusieurs facteurs, et notamment le jeu de données du « Nord Pool », communiqué par la Bourse nordique de l'électricité. Ces données étaient issues d'audits réalisés en Finlande et en Suède entre 2002 et 2005. La FCA estime que l'analyse économique des données du Nord Pool lui a offert un éclairage très instructif sur le fonctionnement du marché et, partant, sur les problèmes de concurrence que la fusion proposée aurait pu entraîner. Pourtant, les preuves économiques fondées sur les données du Nord Pool n'ont pas joué un rôle majeur dans l'analyse de la FCA. Celle-ci a pris en compte d'autres facteurs et constaté qu'ils apportaient suffisamment d'éléments prouvant que la fusion renforcerait la position dominante de Fortum.

La FCA ne s'est pas référée aux données du Nord Pool dans sa décision, ni devant le Tribunal du commerce, car ces données étaient confidentielles. En révélant ces données, elle aurait en effet révélé à Fortum les stratégies de soumissionnement d'autres acteurs du marché. Les données du Nord Pool auraient certes pu étayer la position de la FCA devant le Tribunal du commerce, mais la FCA a fait appel à d'autres preuves, par exemple le fait que Fortum disposait d'une importante capacité de production excédentaire qu'elle pouvait utiliser pendant les heures de pointe. Cette preuve n'était pas directement issue des données du Nord Pool. Il aurait été intéressant de voir la réaction du Tribunal du commerce face à des preuves

issues des données du Nord Pool et de savoir si ces preuves auraient, *in fine*, modifié la décision du Tribunal du commerce. Malheureusement, ce n'était pas possible dans ce cas.

La délégation du Danemark commente une affaire de 2008, concernant deux grossistes opérant sur le marché danois de la plomberie à l'intention de clients professionnels. Le marché était fortement concentré et présentait nombre des caractéristiques qui évoquent une présomption de stratégie coordonnée. L'autorité danoise de la concurrence a mené une enquête fondée sur deux théories distinctes des atteintes à la concurrence – effets coordonnés et effets unilatéraux. Pour l'analyse des effets unilatéraux, la vaste quantité de données recueillie a donné lieu à une analyse de données longitudinales, permettant de déterminer le degré de concurrence que se livraient différentes succursales. Les avocats des parties à la fusion ont joué un rôle important dans le processus de collecte des données. En effet, ils ont non seulement facilité les flux d'informations entre leurs clients et l'autorité, mais aussi vérifié que les données combinées qui étaient fournies à l'autorité par les deux parties à la fusion présentaient une cohérence interne et convenaient à une analyse de données longitudinales. Les avocats étaient tenus d'assurer la liaison entre eux et avec l'autorité. Il fallait en outre répondre à des questions concernant le choix des produits spécifiques à analyser, sans révéler d'informations confidentielles et sensibles à l'une ou à l'autre partie.

Il était clair pour les parties que la fusion posait des problèmes et qu'elle pourrait ne pas être approuvée, même avec des mesures correctives. Les parties à la fusion risquaient donc de se révéler mutuellement des données confidentielles, sachant que si la fusion n'aboutissait pas, elles redeviendraient des entreprises concurrentes. En l'occurrence, c'est ce qui s'est passé : la fusion a été interdite, et les négociations sur les mesures correctives ont échoué. Cette affaire constitue donc un exemple montrant combien il est important de s'assurer que la collecte des données destinées à une analyse quantitative est menée d'une manière qui n'encourage pas les parties à échanger plus d'informations qu'il n'est strictement nécessaire.

Le délégué de la Chine fait remarquer que, au cours des deux dernières années, le Bureau antimonopole (« le Mofcom ») a constamment amélioré son approche économique grâce au dialogue international et à l'expérience acquise dans les affaires traitées. À la suite de l'adoption par la Chine d'une loi antimonopole, le Mofcom s'est activement engagé dans la communication et la coopération tant bilatérale que multilatérale. Il joue également un rôle actif dans les réunions internationales relatives à la politique de la concurrence. Il a ainsi pu profiter de l'expérience d'autres autorités de la concurrence dans l'utilisation des méthodes économiques pour évaluer les fusions. Le Mofcom participe régulièrement, en tant qu'organisateur ou invité, à des séminaires économiques où sont examinées des théories et des méthodes économiques avec des économistes venus de Chine ou d'ailleurs, afin d'améliorer son expertise économique. Les équipes constituées pour traiter les affaires comprennent toujours des économistes, ce qui facilite l'utilisation des preuves économiques dans l'évaluation des concentrations et renforce parallèlement le savoir-faire des économistes. La participation d'économistes externes à certaines affaires contribue également au développement professionnel des économistes du Mofcom.

La Présidente rend la parole à M. Walker pour qu'il résume la première partie des débats.

M. Walker poursuit l'idée avancée par M. Neven : même si les meilleures pratiques sont appliquées et la transparence assurée, il se peut que les experts n'arrivent pas à se mettre d'accord sur l'interprétation des données. C'est vrai, mais si le processus est transparent, la source des désaccords devrait être évidente. Les autorités de la concurrence peuvent être appelées à user de leur faculté d'appréciation à l'égard des différentes théories. C'est toutefois beaucoup plus facile si les grandes questions laissées à l'appréciation de l'autorité ont été clarifiées au préalable.

Les lignes directrices relatives aux bonnes pratiques peuvent imposer une discipline aux parties et aux autorités de la concurrence en ce qui concerne leur documentation (par exemple, fournir les données sous-

jacentes, expliquer comment les données ont été traitées, exposer la programmation, etc.). Il est important en outre que l'analyse des données ne fasse pas l'objet de limitations cachées. L'analyse empirique, même de la plus haute qualité, ne saurait décrire parfaitement la réalité. Les autorités de la concurrence et les parties devraient annoncer franchement les limites de leur analyse et, lorsque les autorités ne comprennent pas un résultat, elles devraient le signaler clairement. C'est aussi un signe que l'organisme comprend suffisamment le domaine pour repérer des anomalies.

La Présidente demande ensuite à la délégation des États-Unis de commenter les lignes directrices américaines sur les concentrations horizontales, récemment mises à jour.

La déléguée des États-Unis explique que les précédentes lignes directrices, qui remontaient à 1992, évaluaient la concentration du marché en utilisant l'indice de Herfindahl-Hirschman (HHI) pour juger des effets d'une fusion sur la concurrence. Or, aujourd'hui, les fusions sont évaluées non plus par observation des parts de marché, mais par analyse directe des effets économiques. La méthode des parts de marché et le HHI sont encore pris en considération et figurent dans les lignes directrices révisées, mais l'attention est désormais centrée sur d'autres manières d'évaluer les effets des concentrations. Ces méthodes sont pour partie fondées sur des analyses de données et quantitatives, mais elles reposent souvent sur des approches plus qualitatives, telles que des témoignages de consommateurs et des documents des parties à la fusion indiquant comment elles envisagent le marché et quels sont leurs plans d'activité.

Voilà maintenant près de 60 ans que la Cour suprême des États-Unis a établi la présomption structurelle d'atteinte à la concurrence suite à un renforcement substantiel de la concentration sur un marché donné. Cette présomption structurelle figurait dans la version précédente des lignes directrices (qui remonte à 1968). Mais la pratique des organismes américains a évolué constamment vers une prise en compte plus directe des preuves des effets économiques. Il s'agit pour l'essentiel de prévoir quelle va être l'influence d'une fusion sur le marché et donc sur les consommateurs. Puisqu'il s'agit d'un processus prédictif, il fait nécessairement appel aux sciences économiques, avec une combinaison de théorie et de preuves concrètes. Les lignes directrices révisées passent en revue les différents types et sources de preuves auxquels les organismes ont recours.

Ce changement d'approche est illustré par plusieurs exemples d'affaires. On a constaté une évolution régulière dans l'évaluation des concentrations par les autorités, et les lignes directrices exposent la pratique adoptée par les organismes depuis plusieurs années. Par exemple, en présence d'une fusion achevée, ils ont tendance à observer directement ce qui est arrivé à la suite de la fusion. Dans certains cas, il est possible de constater des effets anticoncurrentiels et il n'est donc pas besoin de les prévoir. La transaction Microsemi-Semicoa est un exemple de cette approche. Il s'agissait de transistors et de diodes à haute fiabilité. On a pu observer que, suite à la fusion, les prix ont augmenté et la fiabilité des livraisons a diminué. Sur ce marché (matériel militaire et de haute technologie), les clients sont très exigeants sur les délais de livraison. Les organismes ont pu utiliser les données de prix réelles et les témoignages des clients sur les délais de livraison pour établir l'existence d'effets anticoncurrentiels. C'était là une base importante pour contester cette fusion.

Une autre méthode consiste à s'appuyer sur un champ d'expérience grandeur nature, à savoir les variations passées des conditions de concurrence dans un secteur, qui peuvent donner une indication des effets probables d'une fusion. Les organismes américains ont passé en revue un certain nombre de fusions de compagnies aériennes, sous l'angle des chevauchements de paires de destinations entre les parties à la fusion (c'est-à-dire le passage de deux à un transporteur assurant des liaisons directes, ou de trois à deux sur des itinéraires spécifiques). Ils regardent aussi si les transporteurs concernés sont « historiques », implantés de longue date sur le marché, ou s'il s'agit de compagnies à bas coûts, entrées plus récemment sur le marché et souvent plus efficaces. Le ministère des transports communique aux organismes des données très détaillées sur ce secteur. Un résultat qui apparaît régulièrement est que, sur les liaisons

internes aux États-Unis, le passage de deux à une compagnie assurant des vols directs fait généralement augmenter les prix de 10 %. Les organismes ont également analysé les effets des fusions avec passage de trois à deux, ainsi que les effets de la concurrence exercée par les aéroports voisins. Toutes ces analyses s'appliquent directement à la prévision des effets d'une concentration qui va éliminer la concurrence sur un certain nombre de liaisons desservies par plusieurs transporteurs.

La simulation de fusion est la méthode la plus élaborée qu'utilise le ministère de la justice. Cette méthode n'est pas fréquemment utilisée, car elle peut être compliquée, elle prend du temps et elle exige de gros volumes de données. Elle a cependant été adoptée dans la transaction entre Miller et Coors, deux des plus grands brasseurs de bière des États-Unis. L'un des avantages de la simulation est qu'elle permet d'inclure et d'intégrer les gains d'efficacité dans l'analyse. Dans le cas mentionné, les parties ont affirmé que la fusion se traduirait par une baisse des frais d'expédition, grâce à la coordination des activités, qui abaisserait les coûts marginaux. Ces gains d'efficacité ont été intégrés dans la simulation.

Un autre domaine dans lequel le ministère de la justice utilise les simulations de fusion est celui des marchés de l'électricité, où il a évalué un certain nombre de concentrations ces dernières années. Dans certaines régions des États-Unis, il existe des marchés très organisés sur lesquels les producteurs d'électricité soumettent des offres pour fournir de l'électricité au marché, et les usagers consomment l'électricité qui est ainsi fournie. Grâce aux données sur la stratégie des soumissionnaires et à la structuration très rigoureuse du marché par le processus d'adjudication, il est possible de construire des modèles qui sont bien adaptés au secteur et permettent de prévoir les effets des concentrations à l'aide de méthodes de simulation de fusion. Ces modèles sont très différents de simulations de fusion concernant des produits différenciés, puisqu'ils concernent un produit très homogène, l'électricité. Le ministère procède à une estimation de la demande résiduelle pour les parties à la fusion, c'est-à-dire qu'il évalue quelle serait la demande pour l'entreprise acquise, compte tenu de la demande globale d'électricité et des quantités fournies par d'autres producteurs. Sur la base de la demande résiduelle estimée, on peut calculer les stratégies optimales de soumissionnement pour l'entreprise acquérante. Le ministère dispose en outre de données sur les coûts marginaux dans ce secteur, car il peut observer les coûts de fonctionnement de différents producteurs.

Les exemples cités et les nouvelles lignes directrices montrent qu'on peut adopter différentes méthodes empiriques et que ce sont les spécificités du dossier qui guident le choix de la méthode la plus adaptée. Dans l'application des nouvelles lignes directrices américaines, comme d'ailleurs de tout cadre qui suppose l'utilisation de preuves économiques, trois questions universelles se posent au sujet de la concurrence : i) le pouvoir de marché, ii) la théorie des effets concurrentiels et iii) les gains d'efficacité. Ces trois questions relient tous les aspects de l'action publique concernant les autorités de la concurrence.

Le premier problème porte sur la manière dont les organismes peuvent accumuler et appliquer des preuves, sur la base de leur propre expérience, pour répondre aux questions conceptuelles qui sont posées dans les nouvelles lignes directrices américaines, ou dans celles d'autres juridictions :

- Comment les organismes peuvent-ils mettre à profit leur propre expérience dans l'application de ces normes ?
- Comment se sert-on des preuves économiques dans les procédures judiciaires ? Que se passe-t-il si la partie concernée est convoquée au tribunal ? Comment une partie peut-elle présenter des preuves de manière efficace dans le cadre du contrôle des fusions ?

Chaque organisme chargé d'examiner les fusions accumule de l'expérience au cours de ses enquêtes. Celles-ci servent non seulement à résoudre des différends spécifiques mais aussi à offrir des occasions cruciales de former le personnel de l'organisme et sa direction ; elles peuvent aussi constituer les

fondements d'une riche base de connaissances qui apporte des éléments d'information pour l'application de différents concepts. Un organisme qui fait bien son travail, en menant une réflexion sur cette expérience et en la mobilisant pour l'appliquer à l'affaire suivante, sera beaucoup mieux informé lorsqu'il s'agira, à l'avenir, de décider du traitement à appliquer à des questions critiques qui font appel à une appréciation délicate, par exemple pour évaluer des revendications de gains d'efficacité. Il existe deux façons de s'assurer que l'expérience accumulée à l'occasion des différentes transactions sera appliquée utilement et d'une manière qui améliore progressivement le travail de l'organisme lorsqu'il examine de nouvelles transactions. La première consiste à mettre l'accent sur la spécialisation au sein des différentes équipes chargées des affaires. La meilleure qualité de travail est obtenue lorsqu'un organisme fait appel à des équipes spécialisées qui ont déjà travaillé de façon répétée sur le même type de transaction. Lorsqu'on peut mobiliser rapidement des connaissances approfondies sur un secteur, par exemple les produits pharmaceutiques ou le pétrole, c'est une source de données et d'informations extraordinairement précieuse. Cela permet à l'organisme d'appliquer avec plus d'efficacité les normes et le cadre de la politique de la concurrence. Un développement consciencieux de la spécialisation ainsi que l'entretien, au sein des équipes, des données physiques et du savoir-faire construit au fil du temps sont deux facteurs extrêmement utiles lorsqu'il s'agit d'appliquer le cadre conceptuel. Une manière d'accumuler ces connaissances consiste à mener une évaluation *ex post* du déroulement de l'affaire. C'est un sujet auquel le Comité de la concurrence de l'OCDE est très attentif depuis plusieurs années. Cette procédure peut faire appel à des capacités internes spécifiques de recherche, à un examen rétrospectif de la situation réelle ou à un processus informel d'examen des hypothèses spécifiques qui avaient été formulées.

La Présidente note que la France met en garde contre un usage inconsidéré d'analyses complexes telles que le test du monopoleur hypothétique, et demande à la délégation française de préciser sa position vis-à-vis de l'utilisation de l'analyse des PHP et d'autres outils économiques.

La déléguée de la France explique que, si les tests du monopoleur hypothétique (ou test SSNIP) et des PHP sont utiles pour l'analyse économique, ils doivent néanmoins être utilisés avec pragmatisme. En effet, le test SSNIP est bien adapté aux cas où il n'est pas possible de définir clairement un marché à l'aide des outils traditionnels de l'analyse qualitative, tels que l'identification des concurrents potentiels, les parts de marché, les obstacles à l'entrée et la possibilité pour les consommateurs de choisir d'autres produits en cas de hausse des prix. Le recours à ce type de test peut compenser le manque d'informations fournies par l'analyse qualitative. En revanche, si le marché est facile à définir et s'il est superflu de recueillir plus de données, le test SSNIP ne s'impose pas. L'utilité de ce test particulier dépend donc de la nature de l'affaire. De plus, l'application pratique de ce test peut conduire à deux problèmes :

- Tout d'abord, il est difficile de calculer exactement un test SSNIP en raison de la quantité de données nécessaires pour ce faire, notamment des informations précises sur la marge pour chaque produit à prendre en compte et les ratios de diversion entre ces produits. Par exemple, si l'on étudie quatre produits, on a besoin de connaître la marge sur chacun de ces produits ainsi que le ratio de diversion entre chaque paire de produits. Comme ils ne sont pas nécessairement symétriques – le ratio de diversion de A vers B n'est peut-être pas le même que pour la paire B-A –, on est ainsi amené à calculer 12 ratios de diversion. On voit donc que si le dossier concerne un grand nombre de produits, il devient très laborieux de calculer les marges (sur la base des coûts marginaux, car les coûts moyens sont parfois difficiles à évaluer) et les ratios de diversion (exigeant souvent des sondages onéreux auprès d'un grand nombre de consommateurs).
- Ensuite, il se pose des questions de méthodologie : quel est le prix de référence à retenir, un problème connu sous le nom du « sophisme de la cellophane » ? Comment faut-il traiter les entreprises qui vendent de nombreux produits, le risque étant de définir un marché trop large si l'effet des décisions en matière de prix est appliqué au portefeuille de produits et non produit par

produit ? Comment doit-on aborder les marchés biface et les produits innovants ? Comment peut-on tenir compte des différences de qualité, outre les différences de prix ?

De même, le test PHP est un complément intéressant aux méthodes existantes, puisqu'il s'agit d'un critère de sélection assez simple, moins coûteux en données que le test SSNIP, alors que la méthodologie est pratiquement la même. Pourtant, il ne semble pas approprié de l'utiliser seul, car il ne reposerait pas sur une définition du marché pertinent ni sur les effets coordonnés, mais sur les effets unilatéraux seulement. Pour ce test, il est nécessaire de déterminer les substituts les plus proches, s'il en existe, aux produits vendus par les entreprises qui sont susceptibles de se coordonner. Enfin, l'évaluation des mesures correctives – et en particulier de leur structure – exige, là encore, de pouvoir identifier les concurrents les plus proches.

Le délégué du Mexique signale que, pendant ses premières années d'existence, la Commission de la concurrence du Mexique (« la Commission ») n'utilisait pratiquement pas l'analyse économique. La Commission a maintenant eu l'occasion d'appliquer à des cas plus complexes l'analyse économique ainsi que des techniques quantitatives telles que la co-intégration, les tests de séries de prix, les ratios de diversion et les analyses de rentabilité. Il importe cependant que l'analyse économique produise des résultats compatibles avec le bon sens.

La Commission ne fait pas couramment appel à la simulation de fusion. Si son recours à l'économétrie reste très limité, elle est néanmoins au fait des modèles économiques qui reposent sur les types suivants de données : séries de prix, bases de données de consommateurs, chiffre d'affaires, importations, coûts de transport, parts de marché, prix des intrants, marges financières, reconnaissance de marque, indicateurs de fidélité des consommateurs, élasticité de la demande et taux de diversion. L'analyse économique est appliquée à l'attribution des marchés d'infrastructures par voie d'adjudication, par exemple les appels d'offres concernant les aéroports. La Commission a publié des lignes directrices relatives au contrôle des concentrations ainsi que, récemment, de nouveaux textes rédigés par des spécialistes renommés sur la définition du marché pertinent et l'évaluation du pouvoir de marché. Ces documents sont utiles pour le personnel de la Commission comme pour les parties. La Commission se soucie en particulier de la capacité des juges à évaluer ses décisions correctement. C'est la raison pour laquelle elle encourage les juges à suivre une formation spécifique en analyse de la politique de la concurrence.

Le délégué du Japon se réfère à une étude de 2006 qui a été réalisée conjointement par un économiste externe et par les économistes de la Division fusions-acquisitions de l'autorité japonaise de la concurrence (JFTC). L'objet de cette étude était de comprendre la théorie et la méthodologie de l'analyse des effets unilatéraux sur des marchés de produits différenciés. Les économistes ont obtenu des données détaillées sur les ventes de beurre et de margarine, et ont utilisé des modèles pour estimer la demande. Ils ont ensuite effectué une analyse de la perte critique sur la base des différentes fonctions de demande, afin de déterminer si le beurre et la margarine faisaient partie du même marché pertinent. Suite aux résultats donnés par le modèle AIDS, l'analyse de la perte critique a conclu que ces deux produits appartenaient bien au même marché pertinent, alors que l'analyse de la perte critique fondée sur un modèle double logarithmique pour la fonction demande a abouti à la conclusion opposée. On est donc obligé de constater que des fonctions de demande différentes peuvent conduire à des définitions de marché différentes.

L'étude comprenait également une simulation de fusion hypothétique qui étudiait les conséquences d'une fusion entre une entreprise dominante du marché du beurre et une entreprise dominante du marché de la margarine. Plusieurs formes de fonction ont été utilisées : le modèle Antitrust Logit, le modèle AIDS et le modèle PCAIDS. Le résultat de la simulation fondée sur le premier modèle indiquait que la hausse de prix suivant la fusion serait limitée même si chacune des deux entreprises détenait une grande part du

marché du beurre et de la margarine. L'utilisation d'une autre forme de fonction n'a toutefois pas permis d'obtenir des résultats robustes.

Cette étude a donc montré que l'utilisation de méthodes quantitatives peut aboutir à des conclusions opposées à celles que l'on pourrait déduire de parts de marché importantes ou d'une forte concentration. Par ailleurs, l'étude a aussi montré que les résultats des analyses quantitatives sont parfois sensibles aux hypothèses spécifiques qui ont été posées ou à la forme de fonction choisie. Il convient donc de faire preuve de la plus grande prudence lorsqu'on applique ces types de modèles, et d'utiliser des modèles plus robustes et de meilleures données, tout en restant dans les contraintes de temps et de ressources imposées par l'instruction d'une affaire de fusion. Une approche plus sûre consiste à ne pas se fier exclusivement aux preuves économiques, mais à consulter également d'autres preuves avant de formuler des conclusions.

Le délégué de la Corée décrit la première affaire dans laquelle un tribunal a sérieusement pris en compte des preuves économiques. L'affaire a débuté en 2004 : il s'agissait d'une proposition de fusion entre Moohak et Daesun, deux entreprises qui vendaient une liqueur coréenne appelée soju. Moohak a acquis 41 % du capital de Daesun. Un enjeu important était la définition du marché géographique : le marché était-il national (auquel cas les deux entreprises n'avaient que 17 % du marché) ou régional, c'est-à-dire sur la région de Busan et Gyungnam (auquel cas les deux entreprises représentaient plus de 80 % de la production) ? Une définition étroite du marché laissait donc penser que les effets de la fusion sur la concurrence seraient potentiellement plus grands.

Pendant l'instruction de l'affaire, l'autorité coréenne de la concurrence (KFTC) a appliqué le test d'Elzinga-Hogarty pour définir le marché géographique pertinent. Pour ce faire, elle a calculé tout d'abord l'indicateur « LIFO » (*little in from outside*) pour la région de Busan et Gyungnam, qui montre la part de la demande, dans une région donnée, qui est desservie par la production locale. Elle a également calculé le « LOFI » (« *little out from inside* »). Pour la région concernée, ces deux indicateurs dépassaient le ratio de référence, établi à 75 %. La KFTC a conclu que le marché géographique pertinent était la région de Busan and Gyungnam, et non le marché national, et a donc interdit la fusion.

Les parties à la fusion ont fait appel de la décision de la KFTC auprès de la Haute Cour de Séoul. Les parties et la KFTC ont fourni des preuves économiques. Les parties ont calculé l'élasticité-prix de la demande sur la base des données réelles relatives aux ventes de soju, et ont en outre étudié l'élasticité croisée des prix entre les parties à la fusion ainsi qu'avec un concurrent au niveau national, Jinro. Les parties ont affirmé que Jinro était un substitut plus proche pour Moohak que Daesun, parce que davantage de consommateurs étaient susceptibles de reporter leurs achats sur Jinro plutôt que sur Daesun, en cas de hausse des prix par Moohak. Elles ont ensuite soutenu que le marché géographique pertinent devrait être le marché national, parce que c'était le marché où opérait Jinro. En réponse, la KFTC a présenté une analyse de perte critique fondée sur une enquête auprès des consommateurs. La KFTC en a conclu que le marché géographique approprié était la province de Busan and Gyungnam, car la perte effective était inférieure à la perte critique lorsqu'un monopoleur hypothétique relevait ses prix de 10 à 30 % dans cette région.

La cour a retenu que l'analyse du marché géographique pertinent par les parties à la fusion n'était pas valable, parce qu'elle ne montrait pas si la substituabilité au niveau local était suffisante pour empêcher un monopoleur hypothétique au niveau local de relever ses prix de façon à en retirer des bénéfices. La cour a conclu que l'analyse de perte critique de la KFTC était solide et a validé la décision de la KFTC. Depuis cette affaire, les preuves économiques sont utilisées plus fréquemment dans les affaires relevant du droit de la concurrence, que ce soit devant la KFTC ou devant les tribunaux.

La délégation du Royaume-Uni prend la parole pour présenter l'expérience de l'OFT et de la Commission de la concurrence en matière d'évaluation des fusions concernant le commerce de détail au Royaume-Uni. Ayant examiné plus d'une vingtaine de cas de concentration dans le secteur de la vente au

détail ces cinq dernières années, les autorités britanniques disposent d'une expérience considérable dans ce domaine. Ce type de fusion soulève des questions qui nécessitent l'application de techniques permettant d'évaluer directement les effets unilatéraux.

L'approche générale de ces fusions au Royaume-Uni procède en deux étapes : 1) éliminer les points clairement exempts de problèmes ; et 2) étudier en détail les domaines restants. Après élimination des aspects non problématiques, les autorités britanniques rassemblent des informations sur les ratios de diversion qui sont spécifiques à la région, par exemple en effectuant des sondages auprès des consommateurs ou en analysant les expérimentations menées sur le terrain. Dans le cadre des sondages, les enquêteurs demandent par exemple aux clients où ils se dirigeraient si leur magasin préféré n'était pas disponible ou s'il augmentait sensiblement ses prix. Ces ratios de diversion peuvent ensuite se combiner avec des informations sur les marges afin de classer les zones locales en fonction de leur caractère potentiellement problématique. Pour décider d'une limite au-delà de laquelle une zone est déclarée problématique, un seuil absolu fixé par un indice de pression à la hausse sur les prix ou une hausse des prix indicative (IPR) n'est généralement pas réputé avoir, à lui seul, un effet déterminant sur les résultats. Au lieu de cela, la combinaison de ratios de diversion et de marges, lorsqu'elle est utilisée, est analysée aux côtés d'un ensemble d'autres preuves (par exemple les opinions et les preuves recueillies auprès de tiers ou dans les documents internes de l'entreprise).

Une IPR donne une indication des effets potentiels sur les prix à partir des marges et des ratios de diversion. Il ne s'agit pas d'une prévision de prix. Elle est utilisée pour classer les zones en fonction du degré d'atteinte potentielle à la concurrence. L'une des raisons pour lesquelles les autorités britanniques ne l'interprètent pas comme une prévision de prix est que la concurrence entre les détaillants n'est pas uniquement fondée sur les prix. Ainsi, une diminution de la concurrence suite à une fusion peut se manifester non pas par une hausse de prix mais par un changement dans la qualité de l'offre locale, la qualité du service, etc. L'IPR est donc interprétée comme un indice de la réduction des pressions concurrentielles après une fusion.

Le dernier élément de l'analyse concerne les facteurs compensatoires comme les effets produits par le côté de la demande (entrée sur le marché, expansion ou repositionnement) et les effets sur les prix au niveau national. S'agissant de ces derniers, une évolution des conditions de la concurrence au niveau local peut avoir une incidence sur les prix à l'échelle nationale. Par exemple, si deux chaînes de distribution fusionnent et que leurs magasins sont proches les uns des autres dans une zone donnée, il est alors tout à fait possible que la réduction de la concurrence au plan local influe sur les prix nationaux. À l'inverse, si les points de vente des deux chaînes sont éloignés les uns des autres mais généralement beaucoup plus proches des succursales des concurrents, alors il est beaucoup moins probable que la fusion aura une incidence sur les prix nationaux. Le point important, c'est que l'échelle d'éventuels effets nationaux dépendra probablement avant tout de l'évolution des conditions locales de la concurrence ; l'analyse initiale de la concurrence locale et la collecte initiale de preuves sur les ratios locaux de diversion sont alors d'une importance cruciale, même pour comprendre les effets à l'échelle nationale.

Il n'est pas aisé d'utiliser les ratios de diversion et les marges pour étudier directement les effets unilatéraux des fusions dans le commerce de détail. Il peut en effet être difficile de recueillir des données fiables. Mais les autorités britanniques ont adopté cette méthode pour des raisons pragmatiques. Les problèmes que pose l'utilisation de preuves directes dans ces fusions ne sont rien à côté de la difficulté de prendre la bonne décision dans une fusion qui implique des centaines de marchés, tous très différents les uns des autres et dans lesquels les parts de marché n'offrent guère d'informations utiles.

Le délégué du Chili apporte des précisions sur une analyse intéressante qui a été utilisée pour évaluer les effets sur la concurrence de l'acquisition du plus grand distributeur du pays (Alvi) par la principale chaîne de supermarchés (D&S Walmart). Bien que grossiste, Alvi concurrençait D&S Walmart parce que

certain clients, en particulier les moins aisés, achetaient directement en gros auprès d'Alvi au lieu de faire leurs achats chez D&S Walmart. La fusion aurait supprimé cette contrainte concurrentielle pour D&S Walmart.

L'autorité de la concurrence a cherché à estimer les effets de la fusion sur les prix en utilisant un modèle économétrique fondé sur des données provenant de Santiago du Chili. Ces données comprenaient un indice des prix de vente de D&S ainsi que :

- la présence d'Alvi dans un certain rayon autour de chaque magasin D&S ;
- les niveaux de concentration de chaque bassin local et les différents formats des magasins ;
- le district, la commune ou la division administrative.

L'autorité de la concurrence a utilisé des données longitudinales non pondérées, les données mensuelles sur les ventes de D&S allant de janvier 2006 à juin 2010.

L'analyse a montré que la proximité d'un magasin Alvi avait un effet négatif sur les prix de D&S. Cet effet était significatif et concordant avec plusieurs modèles différents (effets aléatoires ou fixés, avec trois paniers de prix différents). La présence d'un magasin Alvi à 5 mn d'une succursale D&S faisait chuter l'indice des prix de D&S de 1,4 %. Cet effet tombait à 1 % pour une distance équivalant à 10 mn, et restait significatif à 15 mn. Les coefficients obtenus par régression ont permis de calculer l'effet potentiel de la fusion sur les prix. L'autorité de la concurrence a conclu que, dans certains magasins, les prix pouvaient augmenter de 2 à 3,4 %. En fin de compte, cette analyse n'a pas été étudiée par le tribunal du commerce, parce que les parties ont abandonné la transaction et Alvi a été racheté par un autre groupe de distribution.

La déléguée de la Grèce explique que l'autorité grecque de la concurrence (HCC) applique une approche standard aux études sur les variations des cours de bourse. Elle calcule le changement attendu du cours de l'action à l'annonce d'une transaction, puis elle examine la différence entre cette prévision et les mouvements effectifs des cours. Si ce différentiel est positif à la fois pour les parties à la fusion et pour leurs concurrents (c'est-à-dire si l'annonce de la fusion a donné lieu à des variations de cours plus positives que prévu), alors la HCC considère que la fusion porte atteinte à la concurrence. Si le différentiel est négatif pour les concurrents, il estime que la fusion favorise la concurrence.

La HCC a appliqué ce type d'analyse en 2009 pour évaluer une acquisition proposée dans le secteur pétrolier. Elle a constaté que le différentiel, évalué entre trois jours avant et trois jours après l'annonce, était positif pour les concurrents. La HCC en a conclu que la fusion portait atteinte à la concurrence. Cependant, en examinant la période allant d'un mois avant à un mois après l'annonce, elle a découvert que le différentiel pour les concurrents devenait négatif. La HCC a donc conclu que la concentration allait accroître le surplus du consommateur à long terme, grâce aux gains d'efficacité. Par conséquent, la HCC a approuvé la fusion.

La Présidente note que la contribution écrite d'Israël évoque des affaires de fusion dans lesquelles l'autorité de la concurrence a utilisé divers outils quantitatifs, et demande à Israël de décrire l'analyse HHI et l'étude des effets sur les prix employées récemment au sujet d'une fusion de stations-service.

Le délégué d'Israël explique que cette concentration de stations-service concernait quatre concurrents principaux, qui représentaient 90 % du marché, une série de petits distributeurs se partageant le reste du marché. Les parties à la fusion occupaient 40 % du marché, ce qui implique que le cadre conceptuel correct de l'analyse était une concurrence sur les prix, avec un marché de produits différenciés sur lequel la différenciation venait de la dispersion géographique (puisque l'essence elle-même est un produit

homogène). La concurrence se déroulait donc sur le terrain local. L'autorité de la concurrence a considéré que les obstacles à l'entrée étaient élevés : il faut en moyenne sept ans pour installer une station-service en Israël et, dans certains secteurs, il n'est pas possible de construire de nouvelles stations. D'après la théorie économique, une fusion sur un tel marché risque fort de pousser les prix à la hausse. Pourtant, les parties à la fusion ont soutenu que le marché géographique pertinent était large et que des effets sur les prix étaient donc peu probables, puisque les consommateurs pouvaient aller chercher de l'essence en dehors de leur commune et qu'il existait en parallèle une chaîne de substitution.

L'autorité a mené une analyse formelle des effets de la concentration (HHI) au niveau local (dans un rayon de 5 km). En s'appuyant sur des données transversales, elle a trouvé des preuves statistiquement significatives et robustes d'une relation positive entre la concentration à l'échelle locale et les prix constatés dans 950 zones géographiques en Israël. Cette analyse a été utilisée en complément d'autres preuves disponibles laissant prévoir des effets néfastes sur la concurrence.

Il importe d'explicitier quelques réserves concernant cette analyse. Premièrement, on a supposé que les conditions de l'offre et de la demande étaient identiques sur tous les marchés. Or, il se peut que cette hypothèse ne soit pas correcte. Par exemple, la demande peut être plus grande en milieu urbain ou les coûts plus élevés dans les régions du sud et du nord, peu accessibles. L'autorité a tenté de prendre ces facteurs en compte dans son analyse. L'étude n'a pas cherché à prévoir les prix d'équilibre après la fusion, mais à répondre aux questions suivantes : a) l'analyse doit-elle se concentrer sur de grandes zones géographiques ou sur des territoires plus restreints ? b) Israël doit-il être considéré comme un marché pertinent unique ?

L'autorité a décidé d'interdire la fusion. Cette décision a été annulée par le tribunal antitrust d'Israël, mais rétablie en appel par la Cour suprême.

La délégation des Pays-Bas explique que l'autorité de la concurrence (« le NMa ») a utilisé une analyse conjointe de phase 2 dans quatre affaires de fusion au cours des cinq dernières années. En 2009, elle a enquêté sur une fusion entre deux grandes coopératives agricoles qui vendaient des engrais aux agriculteurs. Les parties ayant des parts de marché élevées dans certaines régions des Pays-Bas, le NMa a lancé une enquête plus approfondie (phase 2). Lorsque les consommateurs prennent une décision d'achat sur ce marché, ils comparent la valeur relative de différents aspects des produits : prix, marque et autres facteurs. Une analyse conjointe est une manière d'étudier les préférences des acheteurs au regard de ces différents aspects des produits. Le NMa a utilisé un questionnaire en ligne pour recueillir des données ; il a reçu au total 1 600 réponses et les résultats indiquaient que le prix du produit, ainsi que le mode de livraison, étaient relativement importants pour les clients, tandis que la marque et les conseils des fournisseurs ne revêtaient qu'une importance mineure. Sur la base de ces résultats, le NMa a calculé la « part des préférences » pour les différents fournisseurs et l'a comparée aux données disponibles sur les parts de marché pour tester la validité des déductions faites à partir des parts de marché.

Les résultats de l'analyse conjointe ont été utilisés pour simuler la réponse des clients à différentes hausses de prix potentielles. Le NMa a déterminé que les clients étaient relativement sensibles au prix et que, si l'une des parties à la fusion, ou les deux, augmentaient leurs prix, même faiblement, les clients seraient relativement nombreux à se tourner vers les concurrents. L'analyse conjointe donne une bonne idée des ratios de diversion. Associée à des données sur les marges des entreprises, elle permet de mener une analyse de la perte critique afin de déterminer si une hausse de prix va conduire à une réduction de la demande suffisamment grande pour rendre cette hausse de prix non rentable.

Le NMa a tiré plusieurs enseignements du recours à l'analyse conjointe. Premièrement, il est important de lancer l'analyse conjointe dès la première phase de l'enquête car, aux Pays-Bas du moins, les délais peuvent être limités en seconde phase. Deuxièmement, les parties à la fusion doivent être impliquées très tôt dans la conception du questionnaire, parce qu'il faut déterminer un grand ensemble d'attributs

pertinents. Si le NMa a quelque expérience dans certains secteurs, les parties à la fusion ont toujours une meilleure connaissance du secteur que l'autorité de la concurrence et elles peuvent en outre fournir une liste de personnes à interroger. Troisièmement, il convient de tester le questionnaire sur un petit nombre de personnes pour vérifier que les résultats ont un sens et que les questions reflètent une situation d'achat réaliste. Enfin, un « scénario de base » doit être élaboré très tôt dans le processus, car c'est le niveau de départ des différents attributs pour toutes les entreprises, et il doit inclure tous les aspects pertinents du produit. La construction de ce scénario de base aide en outre l'autorité de la concurrence à concevoir des questions appropriées pour le sondage. Le NMa a ainsi constaté que, si le questionnaire était bien construit, l'analyse conjointe pouvait améliorer le processus de prise de décision de l'autorité de la concurrence.

Dans son étude des effets coordonnés, le Portugal utilise des techniques d'analyse quantitative assez complexes. La Présidente demande au Portugal de décrire l'application de cette approche dans le secteur bancaire.

Le délégué du Portugal commente le cas d'une fusion entre la deuxième et la cinquième banque portugaise. L'autorité de la concurrence, suspectant une collusion potentielle après la fusion, a appliqué une méthode économique pour estimer la courbe de la demande de deux produits : d'une part, les emprunts immobiliers, qui représentaient à l'époque 80 % des prêts accordés aux ménages, et d'autre part, le crédit commercial à court terme, constituant 45 % des prêts octroyés au secteur privé. En estimant les courbes de la demande et des coûts, il a été possible d'estimer le montant des pots-de-vin versés pour la collusion et les effets de la fusion sur ces sommes. Si la fusion accroissait les pots-de-vin, la probabilité d'une collusion augmentait, et c'est d'ailleurs ce que l'analyse laissait penser. Ce résultat devait toutefois être envisagé à la lumière des autres preuves quantitatives et qualitatives disponibles. En fin de compte, l'autorité de la concurrence ne s'est pas opposée à la fusion, parce que la plus grande banque publique avait une taille suffisante pour déstabiliser toute collusion qui aurait pu survenir après la fusion.

L'un des enseignements retenus par l'autorité est l'importance d'une collecte soignée des données. Recueillir des données pour appliquer une méthode quantitative est une vaste entreprise qui nécessite beaucoup d'attention. Il est en outre important de consulter les parties pour éviter une mauvaise interprétation des données.

Le délégué de la Turquie fournit des précisions sur une affaire de fusion sur le marché de la margarine. Une précédente enquête de l'autorité turque de la concurrence avait établi que la margarine industrielle (par opposition à la margarine de consommation courante) constituait un marché distinct. L'affaire concernait une fusion qui allait faire passer les principaux acteurs de trois à deux, aux côtés de plusieurs petites entreprises ayant des parts de marché plus modestes. Les parties à la fusion auraient accaparé plus de 60 % du marché. L'indice HHI était très élevé et allait croître fortement (à 5 220) après la fusion. Le différentiel dépassait donc les seuils prévus par les lignes directrices européennes et américaines en matière d'atteinte à la concurrence. L'autorité a mené deux analyses économiques complémentaires : d'une part, une régression de forme réduite (qui mettait en relation les prix du numéro un du marché avec la concentration du marché, telle que mesurée par le HHI, et avec les coûts variables moyens de cette entreprise) ; et d'autre part, une analyse du ratio de diversion.

Le modèle de régression était simple : il cherchait à établir la relation entre, d'une part, les prix du numéro un du marché et, d'autre part, ses coûts variables moyens et la concentration du marché telle que mesurée par le HHI. Le modèle prévoyait que les prix augmenteraient de 22 % si le delta du HHI était de 1 356. Les parties ont contesté ce résultat, affirmant que le HHI avait fortement augmenté 18 mois plus tôt (sous l'effet d'une fusion) et que cela avait pu entraîner un changement structurel de la concurrence dont le modèle ne tenait pas compte. En réponse, l'autorité de la concurrence a renouvelé l'analyse en incluant une variable muette représentant cet éventuel changement structurel. Les résultats ont été différents de ceux de

la première analyse : le modèle ne mettait plus en évidence une relation statistiquement significative entre le HHI et les prix du principal acteur du marché.

L'analyse du ratio de diversion était fondée sur un document de travail (Shapiro) qui montrait qu'il existe plusieurs formules pour prévoir les effets d'une fusion sur les prix, selon la forme de la fonction de demande. Ce document présentait deux hypothèses différentes au sujet de cette fonction : demande linéaire et demande à élasticité constante. L'emploi de la fonction de demande linéaire impliquait une hausse des prix de 3 %, tandis que l'utilisation de la demande à élasticité constante se traduisait par une hausse de 11 %.

La déléguée de la Suède explique que l'autorité de la concurrence utilise de plus en plus les données issues d'enquêtes auprès des consommateurs pour compléter les estimations qu'elle établit à partir des données sur la demande fournies par les parties. Elle a adopté cette approche suite aux doutes qui se sont fait jour quant à la qualité des estimations de la demande déduites des données et de la nécessité de les compléter par une autre méthode, même si elle repose sur l'expression de préférences. L'autorité de la concurrence estime d'ailleurs que les juges comprennent mieux les preuves fondées sur des sondages que les estimations économétriques.

L'autorité a mis à l'épreuve plusieurs scénarios hypothétiques de hausse des prix, et a fait également appel à des expériences de choix plus élaborées, dans lesquelles les consommateurs devaient choisir entre des paniers de produits à différents prix. L'objectif était d'utiliser ces données pour estimer les élasticités, mais les résultats sont pour le moment mitigés. Les enquêtes ont été menées par téléphone ou par Internet, ce qui laisse craindre que les situations hypothétiques présentées soient trop éloignées des situations initiales d'achat dans lesquelles se trouvent les clients. Ce type de sondage a récemment été remplacé par des enquêtes en magasin ou à la sortie des magasins. De plus, l'autorité a commencé à se concentrer sur des situations hypothétiques plus simples, telles que des questions de « second choix », qui lui permettent de calculer les ratios de diversion, à défaut des élasticités croisées.

Le BIAC fait remarquer que le monde des affaires soutient l'utilisation de l'analyse économique, particulièrement en phase 2. Il estime en effet que l'analyse économique est décisive et que le développement de son usage est une évolution positive. Cependant, l'objectif de l'analyse des fusions devrait être d'associer la réalité des faits à de solides fondements économiques. En effet, si l'analyse économique est importante, elle ne saurait se substituer à la réalité des faits. Ce type d'analyse est d'une importance cruciale pour le faible nombre de cas qui exigent une instruction approfondie. En revanche, ce n'est pas un outil utile pour sélectionner les cas qui nécessitent une évaluation détaillée. Une solide analyse économique est fastidieuse, demande du temps et coûte cher : il importe de garder cette réserve à l'esprit quand il s'agit d'utiliser la science économique.

Le test des PHP est une théorie très élégante, qui séduit par sa simplicité et peut se substituer à une analyse de la perte critique. Pourtant, si cette méthode est techniquement simple, elle dépend en pratique de deux paramètres qui sont notoirement sensibles et difficiles à évaluer. Premièrement, les marges ne sont pas simples à mesurer. Bien souvent, les marges comptables n'intègrent pas un grand nombre de facteurs importants qui sont pertinents pour la concurrence. Les décisions portant sur le mode de comptabilisation de différents coûts sont souvent subjectives, et elles ne sont pas prises au même moment que les décisions de fixation des prix. Les marges comptables sont une sorte de photo, figée dans le temps, alors que les réalités économiques du marché sont une grandeur dynamique. C'est pourquoi les marges sont un concept difficile à mesurer en tant que critère de concurrence. Si l'on accepte de se fonder sur les marges comptables parce qu'elles sont faciles à calculer, on prive le test PHP de la précision que l'on recherche. Ce sacrifice équivaut à sacrifier l'objet du test lui-même. Deuxièmement, les ratios de diversion sont un paramètre tout aussi sensible. Il est compréhensible d'utiliser les parts de marché comme base pour calculer les ratios de diversion, mais cela revient à mettre la charrue avant les bœufs. Il a été proposé de

remplacer l'analyse des parts de marché par l'analyse GUPPI mais, si les parts de marché servent de base pour calculer les ratios de diversion, on peut alors se demander à quel point la méthode GUPPI est un substitut à l'analyse des parts de marché.

Les sondages manquent notoirement de fiabilité lorsqu'il s'agit de mesurer les ratios de diversion. Pour examiner les effets réels et les ratios de diversion, il est plus utile et significatif d'utiliser les données historiques, mais il est coûteux et difficile d'obtenir des données correctes.

Les tests évoqués sont extrêmement sensibles. Cela ne signifie pas que le test des PHP n'est pas utile dans l'analyse des fusions, mais il doit être employé avec prudence et en tenant dûment compte de ses limites. Il importe en effet de reconnaître que c'est un complément à l'analyse factuelle, et non un substitut. Un test PHP permet de vérifier ce qui est observable tant sur le marché que par une analyse factuelle approfondie. Si celle-ci ne conduit pas à des prévisions de prix, elle demeure néanmoins cruciale et doit constituer le fondement du test.

Lorsqu'on recherche un mécanisme de sélection pour les fusions, il convient de se tourner vers le cadre structurel qui est depuis longtemps la marque distinctive de l'analyse de la concurrence. C'est une approche courante, qui peut être comprise dans différents pays. Dans un monde où les fusions s'internationalisent, c'est là un facteur important. Les autorités, leurs économistes, leurs juristes et leur personnel ont besoin de communiquer de façon efficace en s'appuyant sur un cadre commun, et non pas en comparant des avis concurrents sur l'utilité des tests économiques, par exemple en opposant test PHP et analyse de la perte critique.

M. Walker revient sur les points clés qui ont été abordés pendant les débats.

Il convient de souligner l'importance du recours à un « avocat du diable » quand il s'agit d'enquêter sur les fusions. On peut construire une théorie qui concorde avec la majorité des faits mais qui ne tient pas compte d'autres théories, elles aussi compatibles avec ces faits, ou avec un sous-ensemble de faits légèrement différent. C'est donc une bonne discipline, tant pour les autorités de la concurrence que pour les parties, de mener en interne une procédure contradictoire à l'égard de leurs propres arguments.

Les preuves économiques doivent être envisagées dans le contexte de toutes les autres preuves. Si les preuves économiques concordent avec les autres preuves, elles auront alors plus de poids. Il arrive que les preuves économiques ne semblent pas coïncider avec les autres preuves, ce qui peut susciter des questions intéressantes. La réponse correcte consiste non pas à supposer que l'un ou l'autre ensemble de preuves est faux, mais à tenter de comprendre pourquoi la science économique donne des résultats différents. Il se peut que la théorie économique mette le doigt sur une dimension qui est passée inaperçue dans les autres preuves. Il se peut aussi que l'approche économique ait ignoré certains aspects. Lorsqu'il y a divergence entre différents types de preuves, il est très important de déployer des efforts pour comprendre les sources de cette divergence.

Puisqu'aucune technique quantitative n'est parfaite et qu'il est rare de pouvoir disposer de l'ensemble des données nécessaires, une question importante doit être posée : l'évaluation réalisée est-elle la meilleure que l'on puisse obtenir avec les données limitées dont on dispose ? La délégation britannique a souligné que la méthodologie de l'IPR était imparfaite, mais que c'était la meilleure approche disponible lorsque des centaines de marchés étaient en jeu dans le cas d'une fusion dans le commerce de détail. Si une autorité de la concurrence, ou les parties à une fusion, soutiennent que les preuves fournies par l'autre partie ne sont parfaites ou complètes, alors elles doivent trouver une meilleure solution. Elles ne sauraient se contenter de rejeter les preuves de l'autre partie. Si l'on élimine les preuves économiques imparfaites, alors la science économique n'aura aucun rôle à jouer dans le contrôle des concentrations.

Le BIAC a affirmé que le test PHP était très sensible aux hypothèses sous-jacentes quant aux marges et aux ratios de diversion. Ce test reste utile, mais il importe de mener une analyse de sensibilité quand on l'utilise. Si le critère concerné pointe dans la même direction en présence de toutes les valeurs plausibles des variables, les questions d'exactitude de la mesure deviennent moins importantes. Lorsque, en revanche, différents paramètres plausibles conduisent à des résultats différents, il est alors nécessaire d'obtenir des données plus précises ou d'admettre que l'indicateur concerné n'est pas pertinent dans ce cas.

Le BIAC a également avancé un argument important à l'encontre des sondages, soutenant que leurs résultats en termes de préférences exprimées peuvent induire en erreur. Il est vrai que, lorsqu'on leur demande s'ils modifieraient leur comportement en réponse à une hausse de prix de 5 à 10 %, les consommateurs ont tendance à surestimer leur sensibilité aux prix. Mais cela ne signifie pas que les données sur les préférences exprimées manquent toujours de fiabilité. L'analyse conjointe présentée par les Pays-Bas repose sur ce type de données, mais celles-ci sont beaucoup plus complexes que celles qui émanent de questions standard sur les prix. Cette analyse consiste en effet à demander aux consommateurs de choisir entre différents scénarios présentés par l'enquêteur, et force est de constater que les consommateurs parviennent mieux à choisir entre des scénarios hypothétiques qu'à répondre à de simples questions sur l'augmentation des prix. Si elle est menée soigneusement, une analyse conjointe peut donc être utile en permettant aux enquêteurs de tirer des conclusions raisonnables quant à la demande des consommateurs.

La Présidente remercie les délégués et clôt les débats.