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ROUNDTABLE ON THE ROLE OF THE EFFICIENCY CLAIMS IN ANTITRUST PROCEEDINGS

-- Background Note by the Secretariat --

This Background Note is submitted to the Competition Committee FOR DISCUSSION under Item XII at its forthcoming meeting to be held on 24-25 October 2012.

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THE ROLE OF EFFICIENCY CLAIMS IN ANTITRUST PROCEEDINGS: MERGERS AND DOMINANCE CASES

Background Note by the Secretariat *

1. Introduction

1. Although efficiencies and efficiency claims have been vigorously discussed for decades now – notably at least since efficiency considerations were (first implicitly and then explicitly) integrated into the assessment of mergers and agreements between competitors – their role in competition law has recently gained greater prominence, as witnessed by a number of recent merger decisions in different jurisdictions. Efficiency claims are also increasingly more often put forward in abuse of dominance or monopolisation cases, although it is fair to say that in these cases such claims have had little practical impact so far.

2. This growing role of efficiency claims in competition law is partly linked to the steady rise of the importance of economic analysis, including the adoption of an "effect-based" (as opposed to a "per se") approach in many jurisdictions. Economic analysis certainly has the potential of significantly improving the quality of analysis: On the one hand, it helps to determine which types of conducts, agreements and transactions are capable of and likely to raise competition concerns, while on the other hand it helps to understand what types of justification can be used to overturn potential findings of anti-competitive effects.

3. However, the fact that efficiencies play an ever more important role in competition law by no means implies that their assessment is easy and unproblematic. To start with, economic efficiency can mean different things to lawyers and economists. As Professors Gifford and Kudrle (2005) warned, *"although courts, policymakers and lawyers all speak of 'economic efficiency' or 'efficiency', they are not always careful to use those terms in the precise way that economists do."* Consequently, even if there may well be a wide consensus among antitrust scholars and practitioners that one of the prime objectives of competition law should be to promote economic efficiency, competition authorities may find it difficult to duly take into account efficiency claims put forward by the firms, or worse they may apply the concept in an imprecise and inconsistent manner.

4. Moreover, there are a number of issues (several of which are discussed in this Note) which need to be addressed and can be treated differently in different jurisdictions. For example, whether to accept certain types of efficiency gains (*e.g.* fixed-cost savings) or not depends on the welfare standard a specific competition authority applies. Similarly, the different standards of proof required of efficiency claims will determine whether such claims are allowed. A related theme is how to verify (and in many cases quantify) possible efficiency gains. There are several quantitative techniques for carrying out this assessment, either during an investigation or *ex-post*. This is particularly relevant as one of the work streams of the OECD's Competition Committee is precisely to evaluate the impact of competition enforcement and advocacy activities.

5. In the next Section of this Note the basic types of efficiencies (allocative, productive, dynamic and transactional) are introduced, after which a proposal to change priorities in the hierarchy of antitrust

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goals is summarised. The next Chapter covers the treatment of efficiency claims in mergers and is followed by an extensive review of *ex-post* assessment in Chapter 3; the role of efficiency claims in dominance cases is discussed in Chapter 4, while conclusions are presented in Chapter 5.

6. This Note specifically covers the role of efficiency claims in mergers and dominance cases. It does not address the variety of non-merger agreements that competitors can enter into, *e.g.* production and research and development (R&D) joint ventures, joint purchasing agreements and technology licensing agreements. On the one hand, these agreements present the same basic trade-off as mergers, *i.e.* there is a need to balance possible anti-competitive effects deriving from a reduction in competition with consumer-benefitting efficiency gains. Accordingly, some of the issues discussed in this Note will carry over to horizontal and vertical agreements as well. At the same time, there is substantial guidance and case-law available to the parties on how to structure the agreement in a way which does not violate antitrust rules. This is the case, for example, of the European Union, where Article 101(3) of the Treaty on the Functioning of the European Union (TFEU) and the various general block exemption regulations deal with this issue.

1.1 Types of efficiencies

7. In competition policy it is customary to distinguish between *static* and *dynamic* efficiencies. The key difference between the two concepts is the relevant time horizon over which these efficiencies display their effects, as we explain in turn below. An additional and possibly broader category of efficiencies – transactional efficiencies – is also described.

1.1.1 Static efficiencies: Allocative and productive (or technical) efficiency

8. In the case of static efficiencies firms (and consumers) are observed at a particular point in time, like in a snapshot. The technology with which goods are produced is also assumed to be fixed, *i.e.* not subject to change.

9. Within the category of static efficiencies it is possible to distinguish the following two subcategories:

- Allocative efficiency; and
- Productive (or technical) efficiency.

10. A market achieves allocative efficiency when its "*processes lead society's resources to be allocated to their highest valued use among all competing uses*" (Kolasky and Dick, 2003, p. 242) or when "*all gains from trade are exhausted*" (de la Mano, 2002, p. 11). In other words, when allocative efficiency is achieved, firms produce their output until the marginal cost of a unit is equal to the value of such unit for consumers. In that case, consumers willing to pay a price at least equal to the marginal cost of producing a good are supplied. Moreover, the quantity produced of the good is optimal and the aggregate social welfare (*i.e.* the sum of consumer and producer surplus) is maximised.

11. For example, in a perfectly competitive market, where firms are atomistic and their conduct does not affect the market price, all consumers pay exactly a price equal to the marginal cost and their surplus is equal to the aggregate social welfare (*i.e.* producer surplus is equal to zero).

12. Consider, instead, a monopolist who is unable to discriminate and therefore charges the same price to all consumers. In this case the market outcome is not efficient from an allocative viewpoint, because there are some consumers who are willing to pay a price below the price set by the monopolist but still above the marginal cost of the good (so that it is socially efficient to produce an additional unit) and yet they are not supplied. In other words, *"this outcome is allocatively inefficient since there still remain*

opportunities for profitable trade" (de la Mano, 2002, p. 11). This happens because, if the monopolist reduced the price in order to sell to those "marginal" consumers who are not supplied, it would have to do the same for all the other "infra-marginal" consumers and such reduction would not be profitable. The result is that, while both consumers and the monopolist earn a positive surplus, the aggregate social welfare is not maximised and there is a welfare loss which is called "deadweight loss". Moreover, the quantity of the good produced is below the socially optimal amount.





13. A perfectly discriminating monopolist is, however, also an efficient market outcome from an allocative viewpoint, because there is no welfare loss for society. In this case, the monopolist is able to charge each consumer a different price, and in particular each consumer pays exactly the amount he is willing to pay for the good (even if such amount is above the marginal cost). The monopolist then extracts the entire rent from each consumer, so that its surplus is equal to the aggregate social welfare. The quantity of the good produced in this scenario is the same as with perfect competition, although the wealth distribution between consumers and producers is at opposite ends of the possible range.

14. These three different market outcomes are illustrated in the Figure above. In particular, in panel b) it is possible to see the deadweight loss which is equal to the area of the triangle in darker grey and measures the extent of allocative inefficiency.

15. As discussed in the next Chapter, horizontal mergers – between competitors at the same level of the supply chain – will increase the degree of allocative inefficiency in a market, if there are no off-setting cost reductions or other types of efficiency gains. In contrast, vertical mergers – between firms at different levels of the supply chain – enhance allocative efficiency, *e.g.* by avoiding double marginalisation.

16. Productive (or technical) efficiency refers to the ability of a firm to produce a *given* quantity at a particular point in time using a combination of the necessary inputs (*e.g.* labour, capital, raw material) which minimises production costs. In other words, if a firm is technically efficient, it is not possible to produce that given quantity of output at a lower cost (even though there may be several combinations of inputs available to achieve this result). Another way of saying this is that the firm operates on the frontier of its production possibilities.

17. Again, it is generally accepted that a monopolist is not only allocatively, but also technically inefficient. The reason is that, since a monopolist does not face competition from rival firms, its managers have little incentive to minimise production costs – a concept known as X-inefficiency, first introduced by Leibenstein (1966).

1.1.2 Dynamic efficiencies

18. Dynamic efficiencies are related to the ability of a firm and its incentives to introduce new products or processes of production (or to improve existing ones), *i.e.* to "*move the efficient frontier of production faster or further forward*" (Motta, 2004, p. 55). Dynamic efficiencies are therefore linked to innovation, learning by doing and research and development (R&D) activity; contrary to static efficiencies, then, they display their effects over time.¹

1.1.3 Transactional efficiencies

19. In addition to allocative, productive and dynamic efficiencies, some authors also define a fourth, broad category, transactional efficiencies.² In accordance with the principles of "transaction cost economics", these efficiencies allow firms to reduce the transaction costs they incur in dealings with their business partners, and therefore facilitate the achievement of other types of efficiencies.

20. For example, mergers and other forms of "deep" co-operation among firms (such as research and production joint ventures) can be explained by the desire to achieve transactional efficiencies. This happens when firms prefer to bypass the market and internalise the transactions between them rather than be involved in complex contracts which are costly and difficult to write, execute and enforce. In particular, according to this view, the motivation behind most vertical mergers is not just the pursuit of greater allocative efficiency (through the elimination of double marginalisation), but more often the reduction of transaction costs deriving from not having to rely any longer on arm's-length transactions. As Kolasky and Dick (2003, p. 251) note, *"joint ventures and common ownership can help align firms' incentives and discourage shirking, free riding and opportunistic behaviour that can be very costly and difficult to police using arm's-length transactions."*

21. There are several factors which make the pursuit of transactional efficiencies compelling. For example, the more often two firms interact (or the greater the prospect they will maintain a continuing relationship), the greater is the potential of reducing transaction costs by merging. Similarly, the presence of specialised, transaction-specific assets may also push firms towards deeper integration in order to avoid the risk of opportunistic behaviour or "hold-ups". The same applies when there is uncertainty or incomplete information about the value of resources over time.

1.2 Trade-offs between different types of efficiencies

22. It is important to note that not all types of efficiencies can be realised at the same time. In particular, de la Mano (2002) identifies the following two trade-offs:

- Allocative vs. productive efficiency; and,
- Static vs. dynamic efficiency.

23. In a static context, it may well be that mergers resulting in cost savings (*i.e.* an increase in productive efficiency) increase the price paid by consumers (so these are worse off and there is a greater allocative inefficiency), while at the same time welfare increases for the whole society (*i.e.* consumers and producers taken both into account). This is the essence of Williamson's (1968) trade-off model (see subsection 2.2), where a merger to monopoly is shown to be capable of enhancing welfare when there is a reduction in marginal costs.

¹ For an extensive discussion of dynamic efficiencies, see OECD (2007a), Dynamic Efficiencies in Merger Analysis, DAF/COMP(2007)41.

² See Williamson (1977, section IV) and Kolasky and Dick (2003, pp. 249 - 251).

24. As to the second trade-off (static vs. dynamic efficiency), there can be sectors or industries where innovation is greater when firms have the possibility to acquire a monopolist position, at least temporarily, and thus charge a price which is above marginal cost during such a period.

25. In these sectors competition mainly occurs through "races" to innovate rather than through price setting, in a process known as Schumpeterian rivalry, after the economist Joseph Schumpeter who listed innovation as a central feature of modern economies. In the pharmaceutical sector, for example, firms compete to develop innovative medicines, which can then be patented and protected from competition for several years. During the period of patent protection, firms are usually able to charge a supra-competitive price, which allows them to recoup the high costs incurred during the research and development stages.

26. As a result, a merger to monopoly (or which would create a dominant position) in these sectors where Schumpeterian rivalry is prevalent could (at least in principle) allow the merging firms to pool complementary skills and assets (or avoid duplications of research efforts) and give rise to innovative products in the long run, although price competition might be dampened in the short term. In these cases, where consumers can be immediately harmed by the merger-related price increases, competition authorities face a difficult task because dynamic efficiencies may occur with some delay and are difficult to verify and quantify (see sub-section 2.5),. On the other hand, dynamic efficiencies have the potential to outweigh static reductions in allocative efficiency and therefore should be carefully evaluated.

1.3 Antitrust goals: A need to change priorities?

27. Some commentators – notably, Porter (2001, 2002) – have suggested the need for a re-assessment of the current hierarchy of antitrust goals. In particular, Porter (2002) notes that, while it is important to protect short-run consumer welfare, the benefits of healthy competition are in fact much broader.

28. Competition drives productivity growth through innovation and "productivity growth is central because it is the single most important determinant of long-term consumer welfare and a nation's standard of living" (Porter, 2002, p. 3). Yet, he asserts that this element is missing in the current competition analysis.

29. If productivity growth is to be the new goal of antitrust, dynamic considerations should then have a more prominent role than static concerns (such as increases in market power and reductions in technical efficiency), which Porter (2002) says have dominated U.S. antitrust policy so far. For example, according to this new perspective, higher prices from a merger would be a concern only when they are not justified by improvements in quality features and services, because improvements of this type also enhance productivity (despite the post-merger higher prices).

30. An example in this respect comes from the healthcare market (Coate, 2005). New treatments which improve outcomes and are valued by surviving consumers may also substantially increase the total cost of the treatment. A way for the antitrust analyst to reconcile these effects and properly assess value creation would be to look at the quality-adjusted price of a product rather than at its price only.

31. To determine the impact of a merger on productivity growth, Porter (2002) then suggests a dynamic approach based on five "forces": i) threat of entry; ii) threat of substitute products or services; iii) bargaining power of buyers; iv) bargaining power of suppliers; and, v) rivalry among current competitors. In practice, this new approach puts less emphasis on defining the relevant markets than the current analysis and goes straight into the examination of competitive effects. Moreover, while it takes into consideration market concentration, it gives equal weight to all five forces,

32. Perhaps surprisingly, the adoption of productivity growth as a new antitrust standard calls for more caution in the treatment of mergers than other corporate growth strategies. Porter (2002) explains that

this is so because: i) by removing independent competitors from the market, mergers inevitably raise issues for the health of competition; ii) a merger does not necessarily increase productivity, iii) according to some empirical evidence, mergers do not tend to be successful; iv) smaller, focused acquisitions are more likely to improve productivity than mergers among leaders; and, v) strong financial market pressures favour mergers rather than growth strategies.

2. Efficiency claims in mergers

2.1 Introduction

33. Firms merge for a variety of reasons. One motivation may, for example, be market power, *i.e.* the merger may increase the merging firms' ability to raise prices above marginal cost, either unilaterally or in (explicit or tacit) co-operation with their rivals. Some managers may acquire other firms for self-serving purposes, *e.g.* to "build an empire", to enhance their personal reputation or reduce the risk of being ousted by external investors. Or because they want to exploit imperfections in capital markets and see an opportunity in buying undervalued companies. In almost all cases, however, it will also be suggested that the merger allows the merging firms to achieve some efficiencies, such as economies of scale and scope in production and distribution, staff rationalisation, financial synergies (in the form of a lower cost of capital) and other synergies.³

34. Efficiencies can have a prominent role in the case of non-horizontal (*i.e.* vertical and conglomerate) mergers, and this is nowadays explicitly recognised by most antitrust agencies.⁴

35. A vertical merger, *i.e.* between firms operating at different levels of supply chain allows, for example, the internalisation of certain externalities and the alignment of incentives, by avoiding the "double mark-up" problem.⁵ In addition, it can bring about production efficiencies and savings as well as transaction cost savings, *e.g.* because the merger improves the co-ordination between the two merging firms and eliminates the scope for opportunistic behaviour. In a conglomerate merger (where firms have neither a horizontal nor vertical relationship) consumers may benefit from one-stop shopping, *i.e.* the possibility of buying a range or portfolio of products from a single buyer rather than separately from different suppliers.

36. In horizontal mergers the focus has traditionally been on the loss of direct rivalry between the merging firms in the same relevant market, because this loss could enhance market power and harm consumers. Only after Oliver Williamson published his seminal article in 1968, it was realised (as is explained in the next section) that a loss in allocative efficiency resulting from greater market power could well be compensated by an increase in productive efficiency.⁶ Williamson's article then paved the way for a greater consideration of efficiencies in modern merger control.

³ Obviously, firms may decide to merge for a combination of the reasons listed above. See Trautwein (1990), and the references therein, for a survey of merger explanations, and Matsusaka (1993), who explores merger motives during the conglomerate merger wave of the late 1960s in the United States. From a more general view, the economic literature has also tried to explain two stylised facts about mergers, *i.e.* why i) they occur in waves, often in response to technological or regulatory shocks, which may be difficult to predict; and ii), within a wave, mergers cluster by industry. In this respect, see Mitchell and Mulherin (1996) and the discussion in Andrade, Mitchell and Stafford (2001).

⁴ See, for example, paragraph 13 of the European Commission's Guidelines on the assessment of nonhorizontal mergers: "Vertical and conglomerate mergers provide substantial scope for efficiencies."

⁵ See OECD (2007b).

⁶ This trade-off is purely static. For the role of dynamic efficiencies in mergers, see OECD (2007a).

2.2 Williamson's trade-off

37. Williamson (1968) was the first to challenge the conventional wisdom of the time by suggesting that efficiency gains (in the form of cost savings) could outweigh the increase in market power resulting from a merger. To make this point, he used a simple example which he denoted as the "naive trade-off model", described below and in Figure 2.



Figure 2. Williamson's (1968) naive trade-off model

38. Suppose that before the merger the market is in a competitive equilibrium, the price being equal to the marginal cost (p = c). In this case, the aggregate social welfare corresponds entirely to the consumer surplus (because firms earn zero economic profits) and is illustrated by the area of the triangle ABC. Suppose now that there is a merger to monopoly and that after the merger the marginal cost falls to c',⁷ while at the same time the price increases to p' (and the quantity produced declines from q to q'). Note that, while the price does increase, it increases by less than it would have done if there were no reduction in marginal cost; similarly, quantity declines by less than it would have absent cost savings.

39. The merger has two opposite effects on welfare, hence the trade-off between efficiencies and market power.⁸ The reduction in consumer surplus is equal to the area of the trapezoid HBCG, whereas the producer surplus increases from 0 to an amount equal to the area of the rectangle HDEG. The resulting

⁷ The standard assumption in the model is that these costs represent true social costs. In other words, cost savings due to, for example, increased monopsony power resulting from the merger would not count as a social gain (Whinston, 2007).

⁸ In theory, even a merger to monopoly could lead to a reduction in prices (and thus increase the aggregate social welfare) if cost savings are sufficiently large. In that case, there would obviously be no trade-off between efficiencies and market power; on the contrary, the merger would result in a net allocative-efficiency gain. In this respect, Williamson (1977, p. 707, footnote 26) noted that "*market power is only a necessary and not a sufficient condition for undesirable price effects to exist.*" There would still be the question, however, of whether a monopoly is the best way to foster productive and dynamic efficiencies.

aggregate social welfare is then given by the area of the trapezoid ADEG, the rectangle HBFG being a transfer from consumers to producers.

40. Whether society as a whole gains after the merger then depends on whether the producers' gain is larger than the consumers' loss, *i.e.* whether the area of the light-shaded rectangle BDEF (which is equal to the merger-induced cost savings) is larger than the area of the dark-shaded triangle GFC (*i.e.* the deadweight loss caused by price being above marginal cost post-merger).

41. Williamson (1968) made the point that even a small reduction in marginal cost – of the order of 5 to 10 per cent – may be enough to offset the welfare loss due to the price increase caused by the merger, *i.e.* that "*rectangles tend to be larger than triangles*" (Whinston, 2007, p. 2374).

42. One important point, however, to be noted about Williamson's (1968) simple model is the assumption that price is equal to marginal cost before the merger. This may not always be true and, if price is above marginal cost, then the relevant comparison is not between a triangle and a rectangle, but between a trapezoid and a rectangle and "*rectangles are not bigger than trapezoids*". This can be seen in Figure 3 below, where the prevailing price before the merger is p', which increases to p'' afterwards (despite a reduction in marginal costs from c to c'). In other words, when firms have some degree of market power prior to the merger, it is no longer true that small cost savings are sufficient to offset a price increase, *i.e.* even small increases in price can cause significant reductions in welfare (Whinston, 2007, p. 2374).



Figure 3. Williamson's (1968) naive trade-off model

2.3 How the attitude towards efficiencies has changed over time

43. Williamson's paper of 1968 was the first to show rigorously the trade-off between market power and merger efficiencies. His approach, however, was not embraced right away in the Merger Guidelines published that same year in the United States as he "*was too far ahead of his time*" (Shapiro, 2010, p. 141). In fact, it was not fully taken up until the revision of the section on efficiencies in the Horizontal Merger Guidelines in 1997, as is explained in the next sub-section.

2.3.1 The United States

44. The U.S. Supreme Court initially adopted a hostile view on efficiencies in merger cases.⁹ For example, Williamson (1968, p. 19) noted that in 1962 "*in a unanimous opinion, the Court took the position in "Brown Shoe"*¹⁰ *that not only were efficiencies no defense, but a showing that a merger resulted in efficiencies could be used affirmatively in attacking the merger since small rivals could be disadvantaged thereby.*" In other words, at the time the main concern seems to have been that efficiencies realised by the merging firms could put small (and often inefficient) rivals at a disadvantage. This view was reaffirmed by the Supreme Court in its *Philadelphia National Bank* and *Procter & Gamble* decisions of 1963 and 1967, respectively.¹¹

45. Despite these judicial precedents, however, the Merger Guidelines published by the U.S. Department of Justice (DoJ) in 1968 did allow a limited efficiency defence.¹² This (as well as the fact that the Supreme Court allowed efficiency considerations in some non-merger cases, *e.g. GTE Sylvania*¹³) encouraged merging parties to put forward efficiency claims in some cases.

46. Another significant step towards incorporating efficiencies in merger analysis occurred when the DoJ revised its Merger Guidelines in 1984. Firstly, with these Guidelines efficiencies became an integral part of the competitive assessment, *i.e.* they ceased to be a defence against a presumption of illegality. Secondly, the 1984 Merger Guidelines explained the criteria which were going to be used to evaluate efficiencies and provided a comprehensive list of the types of efficiencies that the DoJ would consider.¹⁴ These changes represented a marked difference compared to the approach taken by the DoJ just two years earlier (in 1982), when a new set of Merger Guidelines had first been published.¹⁵ At the same, the Federal

¹² Paragraph 10 of the 1968 Merger Guidelines reads as follows: "Unless there are exceptional circumstances, the Department will not accept as a justification for an acquisition normally subject to challenge under its horizontal merger standards the claim that the merger will produce economies (i.e., improvements in efficiency) because, among other reasons, (i) the Department's adherence to the standards will usually result in no challenge being made to mergers of the kind most likely to involve companies operating significantly below the size necessary to achieve significant economies of scale; (ii) where substantial economies are potentially available to a firm, they can normally be realized through internal expansion; and (iii) there usually are severe difficulties in accurately establishing the existence and magnitude of economies claimed for a merger."

It is worth noting that Oliver Williamson worked as Special Economic Assistant to the Assistant Attorney General for Antitrust at the Department of Justice during 1966 and 1967.

- ¹³ Continental T.V. Inc. v. GTE Sylvania Inc., 433 U.S. 35 (1977).
- ¹⁴ Cf. Section 3.5 of the 1984 Merger Guidelines: "Cognizable efficiencies include, but are not limited to, achieving economies of scale, better integration of production facilities, plant specialization, lower transportation costs, and similar efficiencies relating to specific manufacturing, servicing, or distribution operations of the merging firms. The Department may also consider claimed efficiencies resulting from reductions in general selling, administrative, and overhead expenses, or that otherwise do not relate to specific manufacturing, servicing, or distribution operations of the merging firms, although, as a practical matter, these types of efficiencies may be difficult to demonstrate."
- ¹⁵ The 1982 Merger Guidelines had limited the consideration of efficiency claims to "extraordinary cases" only, arguably an even more restrictive standard than the "exceptional circumstances" used in the 1968 Guidelines. Moreover, they had "*tilted the playing field even further against efficiencies by treating efficiencies as an affirmative defense, like the failing company doctrine, and not as part of the agency's competitive effects analysis*" (Kolasky and Dick, 2003, p. 203).

⁹ This section partly draws upon Kolasky and Dick (2003). See also Mueller (1996).

¹⁰ Brown Shoe Co. v. U.S., 370 U.S. 294 (1962).

¹¹ U.S. v. Philadelphia National Bank, 374 U.S. 321 (1963); FTC v. Procter & Gamble Co., 386 U.S. 568 (1967).

Trade Commission (FTC) also relied on efficiencies (as well as other factors) to allow (subject to conditions) a production joint venture between General Motors and Toyota in 1984.

47. The 1992 Horizontal Merger Guidelines – which for the first time were jointly published by the DoJ and the FTC – left the section on efficiencies largely unchanged compared to the 1984 version, with one important exception. That is, the sentence providing that efficiencies would not be considered unless they were established by "clear and convincing evidence" was removed. This change further contributed to efficiency claims being more frequently put forward by merging parties.¹⁶

48. A major revision of the section on efficiencies, however, occurred in 1997, when an approach consistent with Williamson (1968) was adopted. In particular, the 1997 revision explained that "efficiencies generated through a merger can enhance the merged firm's ability and incentive to compete, which may result in lower prices, improved quality, enhanced service, or new products" (section 4). It also set out the criteria to admit efficiencies by defining cognisable efficiencies as "merger-specific efficiencies that have been verified and do not arise from anti-competitive reductions in output or service."

49. Finally, the latest Guidelines published in 2010 did not substantially modify the approach taken in the 1997 revision (see also section 2.5). The 2010 Guidelines, however, considered dynamic efficiencies in more detail and recognised that "such efficiencies may spur innovation but not affect short-term pricing" (section 10). They also cautioned that "research and development cost savings may be substantial and yet not be cognizable efficiencies because they are difficult to verify or result from anticompetitive reductions in innovative activities."

50. In line with this trend, some recent cases examined by the U.S. DoJ and FTC dealt with efficiencies to a significant extent.

51. In 2004, for example, the FTC closed its investigation of Genzyme's acquisition of Novazyme, which was consummated in 2001.¹⁷ Both firms were engaged in conducting early pre-clinical studies relating to a treatment for Pompe disease – a rare, often fatal, disease affecting infants and children, for which there was no effective treatment at the time of the merger.

52. The main concern arising from the merger was that it would negatively affect the pace and scope of research into the development of a treatment for Pompe disease. The FTC, however, found no evidence that the merger reduced R&D spending on either the Genzyme or the Novazyme program or slowed progress along either of the R&D paths. In fact, according to the (majority of) FTC's Commissioners, there were strong reasons to believe that the merger would likely create benefits that would save patients' lives. In particular, FTC's Chairman noted that the merger "made possible comparative experiments and provided information that enabled the Novazyme program to avoid drilling dry holes. By accelerating the Novazyme program, the merger may have increased its odds of success. Moreover, the merger made possible synergies that will help avoid a delay in the Novazyme program."¹⁸

 ¹⁶ Over time, efficiency claims have also been more widely accepted in courts; see, for example, *FTC v.* University Health, Inc., 938 F.2d 1206 (11th Circuit 1991); *FTC v. Butterworth Health Corp.*, 121 F.3d 708 (6th Circuit 1997); *FTC v. Tenet Health Care Corp.*, 186 F.3d 1045 (8th Circuit 1999); and, for a non-hospital case, *FTC v. H.J. Heinz* Co., 246 F.3d 708 (D.C. Circuit 2001).

¹⁷ The investigation was closed with a 3-1-1 vote, with Commissioners Thompson and Jones Harbour dissenting and not participating in the vote, respectively. See the FTC's press release of 13 January 2004 at: http://www.ftc.gov/opa/2004/01/genzyme.shtm.

¹⁸ Statement of Chairman Timothy J. Muris in the matter of *Genzyme Corporation / Novazyme Pharmaceuticals*, available at: <u>www.ftc.gov/os/2004/01/murisgenzymestmt.pdf</u>.

53. Similarly, in March 2008 the DoJ decided not to challenge the proposed merger of XM Satellite Radio with Sirius Satellite Radio, two satellite radio providers.¹⁹ The authority noted that the merger would not enable the parties to profitably increase prices to satellite radio customers for several reasons, including: i) a lack of competition between the parties in important segments (*e.g.* in the car manufacturer channel) even without the merger; ii) the competitive alternative services available to consumers, such as traditional AM/FM and HD radio services; iii) technological change²⁰ that is expected to make those alternatives increasingly attractive over time; and, iv) efficiencies likely to flow from the transaction that could benefit consumers.

54. In respect of efficiencies, the DoJ said that its investigation had confirmed that the parties were likely to realise significant variable and fixed cost savings through the merger. However, it had not been possible to estimate the magnitude of the efficiencies with precision due to the lack of evidentiary support provided by XM and Sirius. Moreover, many of the efficiencies claimed by the parties were not credited or were discounted because they did not reflect improvements in economic welfare, could have been achieved without the proposed transaction, or were not likely to be realised within the next several years.

55. Nevertheless, the DoJ estimated that the variable cost savings most likely to be passed on to consumers in the form of lower prices would be substantial. For example, thanks to these savings the parties would be in a position to consolidate development, production and distribution efforts on a single line of radios and thereby eliminate duplicative costs and realise economies of scale. According to the DoJ, these efficiencies alone were likely to be sufficient to undermine an inference of competitive harm.

56. In another case (*FTC v. H.J. Heinz Co. and Milnot Holding Corporation*), of 2000-01, however, efficiency claims were rejected.

57. The merger would have brought together the second and third largest producers of jarred baby food, since at the time of the proposed merger Heinz and Beech-Nut – accounting for 17 per cent and 15 per cent of total sales, respectively – were much smaller than Gerber, the leading firm with more than 65 per cent of the market. The FTC's main concern was that this "3-to-2" merger would have reduced wholesale competition and this in turn would have led to higher prices at both wholesale and retail levels. Moreover, new entry that could challenge the parties' increased post-merger market power appeared "difficult and improbable" in the presence of high barriers.

58. In turn, the merging parties asserted that the transaction would have yielded merger-specific savings (mostly productive efficiencies) in the range of US\$ 9.4 million to US\$ 12 million. In particular, consolidating production of baby food at Heinz's modern plant in Pittsburgh and closing down outdated Beech-Nut's facility in Canajoharie, New York, would have allowed a reduction in the variable cost of approximately 43 per cent (deriving mostly from cost savings in salaries and operating costs as well as in the cost of converting raw materials, reducing waste and consolidating administrative overhead). This kind of efficiencies is explicitly recognised in the U.S. Horizontal Merger Guidelines, which state in Section 4: *"efficiencies resulting from shifting production among facilities formerly owned separately* […] *enable the combined firm to achieve lower costs in producing a given quantity and quality than either firm could have achieved without the proposed transaction.*" On top of that, the parties provided evidence of distribution efficiencies, notably of a reduction by 15 per cent in the distribution of Beech-Nut products.

59. The FTC argued that the claimed efficiencies were unlikely to outweigh the anti-competitive effects of the merger. Moreover, they were not cognizable as they could have been achieved through other

¹⁹ See the DoJ's press release of 24 March 2008 at: <u>http://www.justice.gov/atr/public/press_releases/2008/231467.htm</u>

²⁰ Namely, next-generation wireless networks will make streaming Internet radio to mobile devices possible.

means. The District Court, however, sided with the parties accepting their efficiency claims and denied the FTC's request for a preliminary injunction.²¹

60. The FTC appealed the judgment, which led to the Court of Appeals reversing the District Court's decision.²² In particular, the Court of Appeals ruled that the evidence accepted by the lower court was insufficient as it fell short of the findings "necessary for a successful efficiencies defence in the circumstances of this case". The Court identified three major deficiencies. First, the District Court should have taken into account the reduction in total variable manufacturing cost rather than mere variable conversion cost which accounts for only a small percentage of the former. Such a difference has significant implications as it "cuts the asserted efficiency gain in half", from 43 per cent to 22.3 per cent. Second, the District Court should have considered the reduction over the merged firm's combined output, rather than that of Beech-Nut alone. Lastly, the District Court did not explain why Heinz could have not achieved the claimed efficiencies by means other than merger. As a result of this judgement, the parties ultimately decided to abandon the proposed merger.

2.3.2 The European Union

61. The Council Regulation no. 4064/89 of 21 December 1989, which originally regulated the appraisal of mergers by the European Commission until 2004, did not contain any specific provision about efficiency claims.

62. As a result, the most viable (and perhaps sole) option for the merging firms to put forward an efficiency claim appeared to be by reference to Article 2(1)(b) of Regulation 4064/89, which stated that the Commission had to take into account (among other factors) "the development of technical and economic progress provided that it is to consumers' advantage and does not form an obstacle to competition" when assessing concentrations.

63. This was not an easy path and, indeed, the Commission's decisional practice in those years was not favourable to efficiency claims. In early decisions the Commission outlined a number of requirements, *e.g.* that efficiencies had to be substantial, merger-specific and passed on to consumers, with the burden of proof resting on the merging parties.²³ In some other cases, however, the Commission adopted a more hostile approach arguing that the claimed efficiencies contributed to creating or strengthening a dominant position and had therefore to be considered as evidence that the proposed concentration would be anticompetitive. It seemed to some commentators that in practice the Commission was putting forward an "efficiency offense" argument.²⁴

64. In contrast, Council Regulation no. 139/2004 of 20 January 2004, which superseded Regulation 4064/89, allowed efficiencies to play a greater and even decisive role in merger assessment. In particular, recital 29 of the preamble states: "It is appropriate to take account of any substantiated and likely efficiencies put forward by the undertakings concerned. It is possible that the efficiencies brought about by the concentration counteract the effects on competition, and in particular the potential harms to

²¹ *FTC v. H.J. Heinz Co.et al*, 116 F. Supp. 2d 190 (2000).

²² *FTC v. H.J. Heinz Co. and Milnot Holding Corporation*, 246 F. 3d 708 (2001).

²³ See Fackelmann (2006, section 3.2) for a review of the early Commission's decisions, including: *Aerospatiale-Alenia / de Havilland* (Case IV/M.053) of 1991; *ACCOR / Wagon-Lits* (Case IV/M.126) of 1992; and, *Saint-Gobain / Wacker-Chemie / NOM* (Case IV/M.774) of 1997.

²⁴ See, for example: AT&T / NCR (Case IV/M.50) of 1991, MSG Media Service (Case IV/M.469) of 1994, Nordic Satellite Distribution (Case IV/M.490) of 1996, De Beers / LVHM (Case IV/M.2333) of 2003, and especially General Electric / Honeywell (Case IV/M.2220) of 2004, which illustrated the extent of the divergence between the European and U.S. approaches at the time.

consumers, that it might otherwise have and that, as a consequence, the concentration would not significantly impede effective competition.²⁵ Also, the Guidelines for the assessment of horizontal mergers issued by the Commission just few weeks later contained a specific section on efficiencies (see section 2.5 for a summary of the main provisions).²⁶ More recently, in 2008, the Commission once again confirmed the role of efficiencies in merger assessment in the context of non-horizontal mergers.²⁷

65. In practice, to date the European Commission has cleared no merger solely on the basis of efficiencies. Efficiency claims, however, have been discussed in a number of mergers; and, in some cases remedies accepted by the Commission may have helped securing efficiencies. Below is a summary of the Commission's approach in a recent horizontal case (*Ryanair / Air Lingus*) and two non-horizontal (*TomTom / TeleAtlas* and *Nokia / Navteq*) ones.

• Efficiencies in *Ryanair / Air Lingus*²⁸

Ryanair and Aer Lingus are the biggest airlines operating from Ireland, competing (at the time of the proposed merger) on 35 routes. The European Commission found that post-merger the new entity would have a monopoly on 22 routes and a market share exceeding 60 per cent on the remaining 13 routes.

Ryanair asserted that the merger would allow significant efficiencies, deriving mainly from "operational cost savings", as a result of: i) larger scale; and, ii) rationalisation within Aer Lingus, once Ryanair's business model (and related expertise in generating lower costs and greater efficiencies) would be applied to it (including via better and more innovative management). These savings would come from several areas, such as: staff costs, aircraft ownership costs, maintenance costs, airport charges and ground operational costs, ancillary sales and, finally, distribution efficiencies.

The Commission, however, identified erroneous assumptions and inaccuracies in Ryanair's estimations and rejected the efficiency claims, predominantly on the ground that they were not verifiable.

• Efficiencies in *TomTom / TeleAtlas* and *Nokia / Navteq*²⁹

At the time of the proposed merger, TomTom was one of the main suppliers of Portable Navigation Devices (PNDs) and navigation software and decided to integrate backwards by acquiring a provider of navigable digital map databases, TeleAtlas.

The parties argued that the merger would allow them to eliminate a double mark-up, thereby allowing them to expand profitably sales of PNDs. However, the problem raised by efficiencies associated with the elimination of double mark-ups is that they may not always be merger-specific. In this respect the Commission's Non-Horizontal Merger Guidelines explain that "the problem of double mark-ups is not always present or significant pre-merger, for instance because

²⁷ Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, O.J. [2008] C 265/6.

²⁵ However, as Fackelmann (2006, p. 21) notes, efficiencies as such are not mentioned in the legally binding part of Regulation 139/2004. Moreover, the wording of article 2(1)(b) is also the same as in Regulation 4064/89.

²⁶ Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, O.J. [2004] C 31/5.

²⁸ Case COMP/M.4439, *Ryanair / Aer Lingus* [2007].

²⁹ Cases COMP/M.4854, *TomTom / TeleAtlas* [2008] and COMP/M.4942, *Nokia / Navteq* [2008].

the merging parties had already concluded a supply agreement with a price mechanism providing for volume discounts eliminating the mark-up.³⁰ In TomTom / TeleAtlas, however, the Commission had evidence that showed that it was unlikely that the same beneficial effects could be secured in other ways and therefore concluded that the claimed efficiencies were merger-specific.

Similar arguments were examined in *Nokia / Navteq*, which also involved backward integration. This time, Nokia, active in the downstream market for the provision of mobile handsets, acquired Navteq, a provider of navigable digital maps.

As in *TomTom / TeleAtlas*, the Commission considered efficiencies resulting from the internalisation of the double mark-ups to be merger-specific. Unlike in the previous case, however, the Commission could not rely on existing contracts to conclude that the same effects could not have been achieved in the absence of the merger. This was because at the time the provision of navigation services on mobile handset was a nascent activity. Nonetheless, the Commission considered that "the pricing structure for sales of digital map databases for mobile applications should not be significantly different than those that currently exist in the PND market" (paragraph 368).

In *TomTom / TeleAtlas* the merging parties also asserted that, by using data collected by TomTom, the map generation process would improve post-merger. Consequently, the new entity could produce "better maps – faster". The Commission agreed that the claimed efficiency would benefit consumers, but doubted whether such efficiency was merger-specific and verifiable. A precise estimation of claimed efficiencies, however, was not necessary because the proposed transaction did not give rise to anti-competitive effects.

2.3.3 *Current trends and recent cases in other jurisdictions*

66. Efficiency claims have never had an easy life in merger analysis, as summarised above. Nowadays, however, an increasing number of jurisdictions incorporate efficiency considerations into the merger guidelines issued by national competition authorities and are often explicitly acknowledged in national competition acts and statutes. By way of example, the Korean Monopoly Regulation and Fair Trade Act states that a merger which may substantially lessen competition in a particular relevant market is nonetheless to be permitted when "the enhancement of efficiency attainable through the merger is greater than the anticompetitive effect."

67. Moreover, even if the number of cases decided on the basis of efficiencies continues to be low, merging parties increasingly more often put forward efficiency claims, and on a few occasions efficiencies have actually turned out to be an important factor in the analysis.

68. Furthermore, most often, the merging parties will claim that the merger brings about supply-side efficiencies, *i.e.* efficiencies which allow them to lower their production costs and in turn their prices (see also the Appendix). This kind of efficiencies is relatively difficult to prove, as discussed so far.

69. Demand-side efficiencies – which arise in the case of complementary products – may instead be easier to prove, because it is in the parties' own interest (*i.e.* it is profit-maximising) to lower prices. This happens because lowering the price of one product increases the demand for all the products brought under common ownership after the merger (since the products are complements) and in turn increases profits.

70. This logic has recently been applied in a merger of radio stations in the United Kingdom, as discussed in Box 1 below.

³⁰ Footnote 7 in para. 55.

Box 1: Demand-side efficiencies in a merger of radio stations in the United Kingdom

In August 2008, the UK Office of Fair Trading (OFT) cleared the acquisition of GCap Media by Global Radio UK with respect to the Greater London area. While efficiencies were not the only reason behind the OFT's decision to clear the acquisition in this area, they actually "tipped the balance in favour of clearance in London". This is the first OFT's decision in which the authority relied on efficiencies to conclude that the acquisition would not harm consumers.

In the UK efficiencies can be taken into account where: i) they avert the adverse effects of a substantial lessening of competition (SLC) by enhancing rivalry; or, ii) they do not avert an SLC, but will nonetheless be passed on after the merger in the form of customer benefits that offset the adverse effects that would arise from the SLC. The relevant criteria are essentially the same as those of the European Commission, *i.e.* efficiencies must be demonstrable, merger-specific and likely to be passed on to customers.

In *Global / GCap* the OFT found compelling evidence of a specific type of demand-side efficiencies known as Cournot effects. These arise when products are complements so that lowering the price of one product drives additional sales of it and also of other products which are used with (but not instead of) it. Common ownership (*e.g.* by way of a merger) then makes it possible to internalise the positive effect of a lower price of one product on sales of its complements. In other words, as in vertical mergers, common ownership solves a double-marginalisation problem and enhances allocative efficiency.

In the specific case, after the merger the merging parties would become able to set the price of bundles of their complementary radio stations³¹ in London more efficiently (from the advertisers' viewpoint) than either party selling advertising on one or more than one of its radio stations independently.

The OFT also gave some credit to the proposition that in a two-sided market, such as radio, additional demandside efficiencies could result from post-merger product repositioning of radio stations in London. In particular, by changing format and/or programming after the merger, the parties' radio stations would individually achieve greater demographic specialisation and, all combined, a larger and more focused total audience. These indirect network effects would in turn increase the value of airtime to advertisers. This argument, as the OFT pointed out, is supported both by economic theory as well as empirical evidence concerning the radio broadcasting sector in other jurisdictions.

The OFT noted that both types of efficiencies would improve the merging parties' offer to listeners and advertisers and could be characterised as rivalry-enhancing. The parties' rivals would indeed need to improve their commercial offer if they want to win and retain customers made better off by the merger. As a result, the merger would enhance overall rivalry and benefit customers in the London area, notwithstanding the loss of rivalry between the merging parties themselves.

As a final remark it is worth noting that, while the OFT accepted efficiency claims with respect to the London area, it found that such claims did not meet the required standard of proof in relation to the East Midlands and they were therefore discarded.³²

2.4 Welfare standards and efficiency claims

71. The assessment of potential efficiency gains in merger analysis crucially depends on which welfare standard a specific competition authority applies. The most common standards proposed by the

³¹ The OFT noted that, although the merger between Global Radio UK and GCap Media is horizontal to a degree (because it is a merger of owners of radio stations in the London area which are substitutable for each other to some degree), the parties' respective stations are more complementary than they are substitutable. Since advertisers often purchase airtime from multiple London stations as a bundle to ensure maximum coverage for their campaigns, the horizontal merger in London is then more like a conglomerate merger.

³² In this case the OFT also considered supply-side rivalry-enhancing efficiencies, namely savings in fixed and variable costs. However, it found that variable cost savings were not substantiated, whereas the large savings in fixed costs claimed by the parties could not demonstrably passed on to customers.

literature and used in practice are briefly described below. As in Renckens (2007), the order (see Figure 4 below) is increasing in the weight given to producer surplus and the role that efficiency claims play.





2.4.1 Price standard

72. Under this standard, a merger resulting in a price increase will not be approved. In the literature, however, it is not always clear whether efficiencies can be taken into account. For example, a distinction can be made between a *pure* price standard (where efficiencies are not taken into account, even if they are large enough to outweigh any merger-induced price increases), and a *modified* price standard, where a merger would be approved if it gave rise to efficiencies capable to offset a price increase post-merger.

2.4.2 Consumer surplus (CS) welfare standard

73. The difference between this standard and the modified price standard discussed above is not always well defined in the literature. In short, a merger which reduces consumer surplus will not be approved. Under a broad definition of the standard, efficiencies as well as non-price considerations (*e.g.* those related to product quality, choice and innovation) can be taken into account to offset a post-merger price increase. Among the jurisdictions which rely on this standard, there are the European Commission, the United Kingdom, the United States³³, Finland and Ireland.

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While there has been some debate about which welfare standard the U.S. competition authorities effectively apply, it is now generally accepted that the United States rely on the consumer welfare standard. Judge Frank Easterbrook, for example, observed that: *"the choice* [Congress] *saw was between leaving*

2.4.3 Hillsdown standard

74. Unlike previous standards, this standard – which takes its name from a Canadian case of the early $1990s^{34}$ – considers both consumer and producer surplus. According to this standard, a merger is approved only if the efficiencies it generates exceed the entire reduction in consumer surplus.

75. In other words, while producer surplus is taken into account, it is given a smaller weight than consumer surplus. This criterion is seldom applied in practice, because it is difficult to implement and is also internally inconsistent since "*it would permit some mergers that make consumers worse off and block some mergers that make society as a whole better off*" (de la Mano, 2002, p. 23).

2.4.4 Weighted surplus (WS) welfare standard

76. Suggested for the first time in the Canadian *Superior Propane* case (see below), this standard requires competition authorities to assign their own weight to the two components of aggregate social welfare, *i.e.* consumer and producer surplus, even on a case-by-case basis. A merger is then approved only when the weighted sum of consumer and producer surplus is positive. While this standard explicitly recognises producers' gains (and there is no requirement for these to be passed on to consumers), these are typically given less weight than consumers' interests. There is also a question of legal certainty in respect of which weights need to be used to evaluate consumer and producer surplus.

2.4.5 Total surplus (TS) welfare standard

77. The total surplus welfare standard assigns equal weights to the consumer and producer surplus. This means that a merger resulting in a price increase can still be approved if the efficiency gains accruing to producers are greater than the deadweight loss suffered by consumers. In other words, not only efficiency gains are permitted even if they are not passed on to consumers (as in the Hillsdown and weighted surplus criteria), but transfers of wealth from consumers to producers are also completely neutral (in that consumer and producer surplus are given the same weight).

78. The total welfare standard is often advocated by economists, who argue that competition authorities should not consider redistributive effects of mergers on the grounds that: i) such effects are difficult to assess; and, ii) benefits to both consumers and producers are equally worthy of protection. In practice, however, few competition authorities, notably Norway and Canada, use this standard today.³⁵

consumers at the mercy of trusts and authorizing the judges to protect consumers. However you slice the legislative history, the dominant theme is the protection of consumers from overcharges" (Easterbrook, 1986).

³⁴ Hillsdown Holdings Ltd. had acquired Ontario Rendering Company Ltd in July 1990. The Commissioner of Competition challenged the merger arguing that it resulted in a substantial lessening of competition in the non-captive red meat rendering market in southern Ontario. The Tribunal, however, was not convinced and allowed the merger arguing that Section 96 of the Canadian Competition Act suggests considering wealth transfers as well as deadweight losses in the trade-off analysis between efficiency gains and higher monopoly power.

³⁵ The choice is to some extent politically motivated. See, for example, Kokkoris (2010): "In reality [...], the choice of as welfare standard does not reflect the findings of the economic science, but rather has the nature of a political choice, which works against the adoption of the total surplus standard." For theoretical discussions of the merits of different welfare standards, see Besanko and Spulber (1993), Lyons (2002), and Neven and Röller (2005). See also Heyer (2006).

2.4.6 Weighted and total surplus in Canada: The Superior Propane case

79. Canada provides an interesting example of the debate around which standard – notably, a weighted or total surplus standard – should be used to assess mergers. This debate originated with the *Superior Propane* case.

80. In December 1998, Superior Propane acquired all the shares of its main competitor, ICG Propane, thereby merging Canada's two largest firms active in the market for the distribution of propane and related equipment. Following the merger, the new entity's market share amounted to approximately 70 per cent.

81. After the acquisition had taken place, the Commissioner of Competition filed an application before the Competition Tribunal, seeking an order to dissolve a merger or any other remedy that would prevent the 'substantial lessening of competition'. The Tribunal issued its first decision in August 2000, with which it denied the Commissioner's application and allowed the merger.

82. In its decision the Tribunal agreed with the Commissioner that the merger was likely to substantially lessen competition in the market. However, the Tribunal also accepted the efficiency claims submitted by the parties and found that gains in efficiency would be greater than and would offset anticompetitive effects. In particular, on the basis of the submitted evidence, the Tribunal found that, while higher prices would have led to a deadweight loss to the economy of approximately \$6 million per year, the merger would produce significant costs savings from efficiencies of \$29.2 million per year. Most of Superior's claimed efficiencies were productive in nature. Dynamic efficiencies, on the other hand, were discarded since they were considered to be too speculative.

83. To balance the anti-competitive effects, the Tribunal employed the total surplus standard. In the Tribunal's view this standard was correct for two reasons. First, it was consistent with the economists' view on what was the appropriate method of estimating the effects. Second, it complied with section 96 of the Act, the Commissioner's own Merger Enforcement Guidelines of 1991 and the objectives pursued by the Parliament in adopting merger-specific provisions of the Act.

84. The Commissioner appealed the first Tribunal's decision to the Federal Court, arguing that the Tribunal was wrong to apply the (unweighted) total surplus standard and refused to consider the redistributive effects of the wealth transfer from consumers to producers. The Court remanded the case for re-consideration to the Tribunal, because, in its view, the Tribunal had failed to "*ensure that all of the objectives of the Competition Act, and the particular circumstances of each merger, could be considered in the balancing exercise mandated by section 96*." In particular, the Court stated that the Tribunal had erred when it ignored potential transfer of wealth from consumers to producers. The Court, however, did not provide guidance as to what test it would consider appropriate for balancing the merger's anticompetitive effects, but pointed out that the balancing proposed by the Commission seemed to take into account all of the Competition Act's objectives.

85. The Tribunal took a second decision in 2002, when it dismissed the Commissioner's application again. The Commissioner appealed again to the Court, attacking the Tribunal's second decision on the grounds that it had not complied with the court's guidance, which clearly suggested that redistributive effects should be taken into account when assessing potential effects of the merger. This time, however, the Court dismissed the Commissioner's appeal, ruling that the Tribunal's second decision followed its previous direction.

2.5 Standard of proof: When do competition authorities admit efficiency claims?

2.5.1 Criteria to admit efficiency claims

86. Since information about potential efficiency gains in mergers is solely in the merging firms' possession (which puts competition authorities at disadvantage), or sketchy or non-existing at all in some cases, it is not surprising that most agencies adopt a cautious approach when they evaluate efficiency claims.

87. The European Commission, for example, allows efficiencies only when the following three conditions are cumulatively met:³⁶

- <u>Efficiencies must benefit consumers</u>. This condition requires that at least some of potential efficiency gains from the merger are passed on to consumers, for example in the form of lower prices. This follows from the application of a consumer welfare standard (see section 2.4 above) which, in the European Commission's Horizontal Merger Guidelines (paragraph 79), is stated as "consumers will not be worse off as a result of the merger."³⁷ In addition, the Commission mentions at paragraph 81 of the Guidelines that consumers may also benefit from new or improved products or services which may result, for example, from increased R&D activity and innovation, thus explicitly recognising the role that dynamic efficiencies can play in merger cases.³⁸
- <u>Efficiencies must be merger-specific</u>. Claimed efficiencies are only allowed when: i) they are the direct result of the proposed merger; and, ii) they cannot be achieved to a similar extent by less anti-competitive, yet realistic and attainable alternatives, such as internal expansion by one or both merging parties, licensing agreements, joint ventures or a merger which is structured differently. If these alternatives³⁹ exist, then the claimed efficiencies cannot be considered as merger-specific and are therefore to be disregarded.
- <u>Efficiencies must be verifiable</u>. In order for efficiency claims to be admitted, the merging parties are required to provide evidence that efficiencies are likely to materialise and are large enough to offset any potential harm to consumers deriving from the merger. Ideally, this evidence should enable antitrust agencies to *quantify* the claimed efficiencies and the resulting benefit to consumers. Or, if this is not possible, the evidence provided should at least allow them to clearly identify a positive and non-marginal impact on consumers.⁴⁰

³⁶ See Section VII of the European Union's Guidelines on the assessment of horizontal mergers. Other jurisdictions use a similar framework, although there may of course be variations.

³⁷ See also paragraph 77: "The efficiencies generated by the merger are likely to enhance the ability and incentive of the merged entity to act pro-competitively for the benefit of consumers, thereby counteracting the adverse effects on competition which the merger might otherwise have."

³⁸ See, however, Fackelmann (2006, section 3.4) for a critical assessment of the role that dynamic efficiencies can play in the European merger control system.

³⁹ In its assessment the European Commission only considers "alternatives that are reasonably practical in the business situation faced by the merging parties having regard to established business practices in the industry concerned" (Horizontal Guidelines, paragraph 85). The U.S. authorities adopt a similar approach, *i.e.* the assessment does not to include merely theoretical alternatives.

⁴⁰ de la Mano (2002, p. 52) stresses the need not to overemphasise the requirement to quantify efficiencies, especially in the case of dynamic efficiencies: "*The risk is that undue weighting is placed on quantifiable* factors such as short term productive efficiency gains at the expense of hard-to-measure dynamic efficiency effects. Dynamic efficiency is the least quantifiable form of efficiency but is almost always the most economically significant component of global efficiency gains. Therefore, in practice, sufficient weight

88. A number of related requirements follow from these three conditions, namely in the case of the European Commission:

a) Efficiencies must be substantial and timely.

89. As noted above, the claimed efficiencies must be of a magnitude capable to offset any potential harm to consumers. There is a relationship between the two metrics, *i.e.* the greater the potential harm to consumers, the greater in size (and more certain) efficiencies must be, at least up to a certain market concentration threshold.

90. Efficiencies will therefore be seldom useful in extreme cases. The European Commission's Guidelines on the assessment of horizontal mergers (at paragraph 84) state that "it is highly unlikely that a merger leading to a market position approaching that of a monopoly, or leading to a similar level of market power, can be declared compatible with the common market on the ground that efficiency gains would be sufficient to counteract its potential anti-competitive effects." The U.S. Horizontal Merger Guidelines also make a similar point in section 10: "In the Agencies' experience, efficiencies are most likely to make a difference in merger analysis when the likely adverse competitive effects, absent the efficiencies, are not great. Efficiencies almost never justify a merger to monopoly or near-monopoly."

91. The Dutch hospital case summarised in Box 2 below, however, represents a notable exception. In particular, the decision of the Dutch competition authority (NMa) is interesting because: first of all, it is one of the first cases in Europe concerning a horizontal merger where efficiency defence has made a difference; and, secondly, efficiency considerations played an important role even if the criteria for submitting such claims were not (at least initially) fully met.

92. In fact, this was not the first time that the NMa had examined efficiencies. Notably, in August 2008 the Dutch authority unconditionally cleared a transaction between the only two national, door-to-door distributed directories in the Netherlands, thereby allowing European Directories to acquire Gouden Gids.⁴¹

93. The transaction at first sight looked like a two-to-one merger because the only two nationwide print directories were planning to merge. However, the parties asserted that such view did not reflect market reality as the growth of internet search and advertising was profoundly altering the directories market.

94. The NMa decided to clear the transaction mostly on the basis of demand-side efficiencies. According to the parties, the transaction would bring benefits to both non-overlap and overlap advertisers.⁴² The non-overlap advertisers would be able to increase their penetration and the 'price per eyeball' would fall. The overlap advertisers, on the other hand, would benefit mostly from the fact that they would only need to advertise in one directory, which would also allow them to benefit from lower prices. Overall, the transaction would improve a price-quality ratio for both groups of advertisers.

95. Having examined the claims put forward by the merging parties, the competition authority concluded that they satisfied the three-criteria test. The pass on to consumers would be immediate, while a

should be put on a qualitative judgement on the likelihood that such less-measurable efficiencies will effectively take place."

⁴¹ Decision No. 6246 of the Board of the Netherland Competition Authority, *European Directories – Truvo Nederland*, available at: <u>http://www.nma.nl/en/images/6246BCV_ENG23-153892.pdf</u>

⁴² Users of directories tend to consult only one directory. Since both Gouden Gids and de Telefoongids (published by European Directories) account for a significant share of the market, many firms that use directories to increase their visibility advertise in both directories (overlap advertisers).

demonstrable and merger specific effect of the mergers was that it would allow the advertisers to reach a larger audience.

96. Efficiencies must also be timely, since the later they are expected to occur in the future, the less weight they are given. This is because efficiencies occurring in a more distant future are unlikely to be capable to offset any consumer harm which materialises in the short-term and are more difficult to verify.⁴³

Box 2: Efficiencies in a merger to near-monopoly in the Netherlands⁴⁴

In 2009 the NMa cleared (after a phase-II investigation) a merger between two hospitals in the Netherlands. The merger initially raised serious competition concerns, namely: i) after the merger the new entity would hold a nearmonopolist position with 84 per cent and 88 per cent in the markets for clinical general and non-clinical general hospital care, respectively; and, ii) as a result of that position, the choice for patients in the affected region would be reduced. However, the merging parties stressed that the merger would bring about efficiency gains and the NMa, having accepted such claims (to some extent), ultimately cleared the merger (subject to substantial remedies).

The criteria in the Netherlands competition law to allow efficiencies in merger proceedings are similar to those of most jurisdictions, *i.e.* efficiencies can be accepted only if they fulfil three cumulative conditions: i) efficiencies must be passed on to consumers; ii) they must be merger-specific and iii) verifiable.

In the case at hand, the NMa accepted that the efficiencies claimed were merger-specific, but the parties had to offer remedies to satisfy the remaining two criteria.

In particular, with respect to the pass-on of benefits to consumers, the merging parties argued that after the merger the quality of care provided in the hospitals would increase, which in turn would directly benefit consumers. The NMa, however, was not convinced that the increase in quality would offset a possible price increase. The parties then proposed to: i) set maximum prices, on the basis of a national price cap, for specialist medical care (which was not included in the basic compulsory healthcare insurance); ii) establish a higher-level intensive and emergency care unit within three years; and, iii) comply with a requirement concerning the minimal size of departments and treatments offered per specialist.

To meet the verifiability criterion, the merging hospitals had to facilitate the entrance of potential new suppliers of specialist medical care with a view to create more competition. Such a remedy effectively implied that specialists would be allowed to work at the parties' hospitals as well as at other places.

In this case, then, not all three conditions to allow efficiencies in a merger were initially satisfied. However, the remedies imposed by the NMa served to make sure that the claimed efficiencies would materialise. While the outcome of the case may have been significantly affected by public considerations⁴⁵, the case nonetheless illustrates the link between the remedies and efficiencies.

⁴³ Neither the U.S. nor the European Commission's Horizontal Guidelines set out a specific time frame during which efficiencies can be admitted. Kocmut (2005, p. 33) writes that "one has to highly commend the [European] Commission for not placing an absolute bar on the timeframe in which the efficiencies are to be achieved, despite proposals by some scholars that a four-year time period should count as relevant."

⁴⁴ Case no. 6424/427, *Ziekenhuis Walcheren/Oosterscheldeziekenhuizen*, 25 March 2009.

⁴⁵ Renckens (2009), for example, points out that it was probably a combination of factors that have led the NMa to clear the merger with far-reaching remedies that would likely not have been accepted in other cases. First, the Health Inspectorate (IGZ) played a key role in the case. It argued that in the absence of the merger there was a risk that one or both hospitals would go bankrupt. Second, the IGZ also stressed the public good characteristic of basic healthcare services which, according to Renckens, may have helped the merging parties in convincing the NMa that the merger had to be cleared if the service provision in the relevant market was to be guaranteed.

- b) Efficiencies must *in principle* benefit consumers in the same relevant (product and geographic) markets where consumers are likely to suffer harm as a result of the proposed merger.
- c) Efficiencies leading to a reduction in variable or marginal costs are more easily admitted than those leading to a reduction in fixed costs, since the former are more likely to be passed on to consumers in the form of lower prices.^{46, 47, 48}

2.5.2 Burden of proof and evidence relevant to assess efficiency claims

97. The assessment of efficiency claims by competition authorities in merger cases is difficult for two main reasons. The first reason is that there is usually an informational asymmetry, *i.e.* the information which can be used to verify those claims is solely held by the merging parties.⁴⁹ The consequence of this is that the burden of proof is put squarely on the merging firms, as is explicitly stated by the European Commission (Horizontal Guidelines, paragraph 87):^{50, 51}

⁴⁶ As is well known, firms maximise profits when deciding how much output to produce and in this exercise fixed costs (*i.e.* those which do not vary with output) play no role, at least in the short run. The question becomes more complicated in the long run (because all costs then become variable) and in the assessment of dynamic efficiencies, where a reduction in fixed costs (deriving, for example, from a combining together different inputs or eliminating duplications) can lead to more R&D activity and innovation capable of benefitting consumers.

⁴⁷ Estimating the extent to which a reduction in variable or marginal costs is passed on to consumers is a difficult task and may require the use of sophisticated quantitative techniques. Röller, Stennek and Verboven (2001, section 3) provide an overview using examples from the empirical literature on tax incidence, intermediate goods price transmission (*e.g.* in agriculture and energy economics) and exchange rate pass-through. They also draw a distinction between industry-wide pass-on (which results from a shock affecting all firms in the industry) and firm-specific pass-on (which only affects selected firms, *e.g.* cost savings realised by the merging firms).

⁴⁸ On the other hand, cost reductions resulting from an anti-competitive reduction in output cannot be counted as efficiencies for the benefit of consumers (European Commission's Guidelines on the assessment of horizontal mergers, paragraph 80). Likewise, cost reductions in the form of lower input costs (obtained because, say, the merger increases the merged entity's bargaining position vis-à-vis its suppliers) cannot be admitted because they merely represent a transfer of wealth from suppliers to the merged entity (de la Mano, 2002, p. 44).

⁴⁹ Competition authorities may also find it difficult to verify the merging firms' efficiency claims with third parties, *e.g.* rivals suppliers. These either are not in a position to comment or (even worse) have an incentive to undermine the merging firms' claims if they think the merger will make them worse off.

⁵⁰ This is also the position of many economists, including Fisher (1987, p. 36): "*The burden of proof as to* cost savings or other offsetting efficiencies, however, should rest squarely on the proponents of a merger, and here I would require a very high standard. Such claims are easily made and, I think, often too easily believed."

⁵¹ Competition authorities also have to discharge their burden of proof in relation to proving the anticompetitive effects of a merger, so there is a delicate balance between the authorities and the parties. In some cases a tension may arise. In the Canadian case Commissioner of Competition v. CCS Corporation, of 2012, for example, CCS argued that it had been precluded from being able to meet its own burden of proof in relation to efficiencies to the extent that the Commissioner had failed to properly discharge her own burden of proof in respect of the anti-competitive effects of the merger. Ultimately, the Competition Tribunal found that, despite the Commissioner's failure, CCS was not prejudiced, but the case clearly shows the importance for a competition authority of diligently discharging its burden of proof.

Most of the information, allowing the Commission to assess whether the merger will bring about the sort of efficiencies that would enable it to clear a merger, is solely in the possession of the merging parties. It is, therefore, incumbent upon the notifying parties to provide in due time all the relevant information necessary to demonstrate that the claimed efficiencies are mergerspecific and likely to be realised. Similarly, it is for the notifying parties to show to what extent the efficiencies are likely to counteract any adverse effects on competition that might otherwise result from the merger, and therefore benefit consumers.

98. The second problem is that, while competition authorities require evidence if not to quantify, at least to *qualitatively* assess possible efficiencies, such evidence may be incomplete or not available at all. In this respect, it should be noted that the merging parties – when making their case for efficiencies – are subject to a standard of proof which is not higher than the one used for other elements of the competitive assessment, such as the price effects of the merger or possibility of entry. In addition, as is the case in merger analysis, the evidence relevant to assess efficiency claims can come from a variety of sources. The European Commission, for example, lists:

- Internal documents that were used by the management to decide on the merger;
- Statements from the management to the owners and financial markets about the expected efficiencies;
- Historical examples of efficiencies and consumer benefit; and,
- Pre-merger external experts' studies on the type and size of efficiency gains, and on the extent to which consumers are likely to benefit.⁵²

2.6 *Efficiencies as a rebuttal or a defence?*

99. An important procedural question in merger analysis is how to frame efficiency claims, namely whether they should be treated as a defence or a rebuttal.

100. In the former case, the efficiency defence is part of a formal two-stage process, where first a merger is deemed to be anti-competitive and then is justified on efficiency grounds. In the latter case (efficiencies as a rebuttal), evidence on efficiency claims is taken into account as a part of a holistic analysis of competitive effects, together with other "exculpatory" elements, *e.g.* evidence on entry.

101. There is also a link with the choice of welfare standard that is applied. Notably, an efficiency defence is invoked to justify a merger which would harm consumers, *i.e.* this approach allows competition authorities to offset consumers' losses against producers' gains and is coherent with the application of a total welfare standard. Instead, an efficiency rebuttal is consistent with the application of a consumer welfare standard because the gains resulting from the merger must be sufficient to ensure that consumers are not harmed, *i.e.* prices must not rise after the merger.

102. A related procedural question is how efficiency considerations are incorporated into merger analysis. In summary, three different approaches have been proposed in the literature (see Röller *et al.*, 2001):

- The general-presumption approach;
- The case-by-case approach; and.
- The sequential approach.

⁵²

Paragraph 88 of the European Commission's Guidelines on the assessment of horizontal mergers.

103. Under the first approach, if a merger is not problematic (*e.g.* because the parties have low market shares), no specific, explicit consideration is given to efficiencies (although it is somehow presumed that they offset any negative effect resulting from the merger). In the second method, efficiencies can be fully integrated into the overall analysis in each and every case.

104. The first approach saves scarce resources and reduces the informational burden on the parties. However, because it relies on indirect, structural indicators (such as market shares or concentration indices), it entails the risk of reaching the wrong conclusions. On the other hand, the analysis under a case-by-case approach is likely to be more accurate, but it requires a considerable amount of information which may not always be available.

105. In light of the shortcomings of the first two approaches, it is not surprising that many competition authorities apply (and many authors recommend) the sequential approach.⁵³ Under this method, competition authorities first use general presumptions to differentiate between problematic and unproblematic mergers. Only when a given merger is flagged as problematic, it is subject to further investigation, during which efficiencies can be examined. Naturally, it remains the question of whether efficiencies should be considered simultaneously with other factors (*e.g.* entry) or a more limited investigation should take place. This obviously depends on a number of factors, including the time available for each investigation, the quality of the evidence on efficiency claims and the seriousness of competition concerns. Competition authorities are therefore required to strike a delicate balance between the accuracy and correctness of their analysis and these constraints.

2.7 Conclusions on efficiency claims in mergers

106. The article that the eventual Nobel-laureate Oliver Williamson published in 1968 paved the way for a greater consideration of efficiencies in merger analysis. Nowadays, most jurisdictions at least mention efficiencies in their competition laws or in the competition authorities' merger guidelines. In some cases, *e.g.* the United States and the European Union, the treatment of efficiencies in the guidelines has become more and more refined over time.

107. In parallel with these developments, the merging parties have gained more confidence in presenting efficiency claims to competition authorities. Accordingly, the number of mergers where efficiencies have played a significant role (sometimes in combination with a remedy package) has grown, as some recent mergers approved by the European Commission and the Dutch competition authority show.

108. However, it is fair to say that the number of mergers where efficiencies are decisive or are even discussed is still small at present. This may certainly reflect the fact that most mergers do not raise competition concerns and in any event antitrust agencies prefer to employ their scarce resources in tasks other than the assessment of efficiency claims.

109. There may also be some other – and more substantial– obstacles to the assessment of efficiency claims in mergers. It would be interesting, for example, to discuss whether the application of a consumer welfare standard (which is used in many jurisdictions) makes it inherently more difficult to accept efficiency claims. Related to this, there is also the question of whether competition authorities have set too stringent criteria for accepting efficiency claims. And – from a more procedural viewpoint – of whether efficiency claims are more appropriately examined as a defence (after a merger has been found to be anticompetitive) or a rebuttal (*i.e.* as an integral part of the overall competition assessment).

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Sequential approach is, for example followed in the European Union, Australia and the United Kingdom.

3. Do efficiency gains ever materialise in mergers? A review of *ex-post* assessments

110. As noted in the previous Chapter, the assessment of efficiency claims by antitrust agencies during the investigation of a specific merger is a challenging exercise, not least because the relevant evidence is solely held by the merging parties and difficult to verify, or it is incomplete or not available at all.

111. With time, however, it is possible to conduct an *ex-post* review of whether the claimed efficiencies have actually materialised. In this context, this Chapter summarises some of the methods which have been used in the empirical literature and the corresponding conclusions. To a large extent, the focus is on studies which aim at verifying whether efficiencies materialised and, if so, measuring them. The large empirical literature on whether prices decline after a merger takes place – which can also be interpreted as a test of efficiency claims – is therefore not surveyed.⁵⁴

112. By way of introduction, section 3.1 below presents the evidence drawn from event studies about whether mergers create value for the shareholders of the companies involved. The following section discusses a strand of the literature which uses the same approach, but seeks to respond to the specific question of whether mergers generate efficiencies. After that, studies which look at a variety of variables (such as profits, sales, market shares, costs, R&D inputs and outputs, and productivity levels) are presented in sequence.

113. This Chapter is also related to other material published by the Competition Division on *ex-post* assessment of competition policy interventions. This is a strategic theme of the OECD's Competition Committee and it will be discussed at future roundtables as well.

3.1 Mergers, shareholder value and efficiency gains

114. There is abundant evidence – based on short-term event studies which look at changes in share prices around the time when the transaction is announced – that overall mergers create value for shareholders of the participating firms.⁵⁵

⁵⁴ Many studies have looked at the price effects of mergers in a variety of sectors. Among others, see: Ashenfelter, Hosken and Weinberg (2011), Ashenfelter and Hosken (2010), Barton and Sherman (1984), Borenstein (1990), Hastings and Gilbert (2005), McCabe (2002), Prager and Hannan (1998), Taylor and Hosken (2007), and Vita and Sacher (2001). Weinberg (2007), Whinston (2007) and Pautler (2001) are valuable surveys of this literature, which overall points towards the conclusion that prices rise after a merger.

Generally, this literature looks at the short-run price effects of a merger. One exception is Focarelli and Panetta (2003), who consider the impact of mergers in the Italian banking industry both in the short and long run. The reason is that improvements in efficiency (such as those resulting from cost reductions and merging disparate workforces with different cultures) may emerge only after some time. They find that the deposit rates (*i.e.* the remuneration that the bank pays to retails depositors for borrowing their money) of the merging banks falls in the short run, but increases in the long run, compared to a control group of non-merging banks. This is consistent with the notion that mergers benefit consumers in the long run.

⁵⁵ See Andrade, Mitchell and Stafford (2001), who use data for the United States for the period from 1973 to 1998, and Betton, Eckbo and Thorburn (2008), for an update to 2005. These results are consistent with those presented in early papers by Jensen and Ruback (1983) and Jarrell, Brickley and Netter (1988); see also the survey by Caves (1989). Malmendier, Opp and Saidi (2012), however, argue that there may be no such thing as value creation from mergers. Using data on unsuccessful merger bids in the United States between 1980 and 2008, they show that, when the bid is financed with cash, the value of target companies remains significantly above its pre-announcement level (net of market-wide share price movements) by the time a merger bid fails, whereas that does not happen when the bid is financed with equity. Moreover, they

115. The split of the gains between acquirers and targets is, however, not uniform. In particular, shareholders of the target company receive most of the gains, with the merger premium (*i.e.* the excess return relative to the benchmark of the whole market) ranging between 16 per cent and almost 24 per cent. Shareholders of the acquiring company, instead, may expect to lose as much as 4 per cent of the value of their shares (compared to non-participating firms) and it could be said that they "*appear to come dangerously close to actually subsidizing these transactions*" (Andrade, Mitchell and Stafford, 2001, p. 111).⁵⁶ Finally, for the target and acquirer combined, the average abnormal return in the announcement period is reliably positive and equal to about 2 per cent, which suggests that on average mergers do create net value for shareholders.

116. The way a specific merger is financed is also important for value creation, especially for shareholders of acquiring companies. Indeed, on average, they obtain a negative abnormal return when their company finances a merger (even partially) through the issue of additional equity, as opposed to, for example, financing the merger with cash. Instead, shareholders of acquiring companies can expect a small and positive abnormal return (although not statistically different from zero) when no equity at all is used to finance the merger.⁵⁷ Shareholders of target companies also receive higher returns when cash is used instead of equity. Lastly, mergers which are financed with equity are found not to increase aggregate shareholder value at all. In contrast, when there is no equity financing, the combined (*i.e.* target and acquirer) return is positive and statistically significant.

3.2 Changes in share prices of rivals, customers and suppliers

117. The finding in the literature based on event studies that mergers increase shareholder value is reassuring, but it does not identify the source of such gains. In particular, it does not provide evidence that mergers improve the efficiency of participating firms; *i.e.*, that the additional shareholder value created by a merger is the result (on balance) of efficiency gains rather than of greater market power. In order to respond to this question, a more refined approach is needed, as explained below.

118. Eckbo (1983), for example, looked at a sample of 55 horizontal mergers challenged by the Federal Trade Commission or the Department of Justice in the United States between 1963 and 1978 and showed that the estimation of abnormal stock returns to the merging firms' *rivals* can be useful to shed light on the question of whether mergers enhance market power more than efficiency.

119. In particular, he carried out such estimation around the time of two important public events, namely: i) the announcement of the merger proposal; and, ii) the subsequent announcement that competition authorities challenged the merger under Section 7 of the Clayton Act. The proposition which is tested is then the following: If the merger enhances market power more than efficiency, rivals of the

⁵⁷ See Table 4 in Andrade, Mitchell and Stafford (2001).

find that post-failure cash acquirers return to their pre-announcement level, whereas stock acquirers trade at lower prices. They argue that, taken together, these findings suggest that cash bids are "all about the target" and indicative that the target company was undervalued before the merger bid, whereas stock bids are "all about the acquirer" and reveal prior acquirer overvaluation. In other words, since arguably there is no merger effect (as the sample only includes failed bids), the revaluation of the target company in case of cash bids is explained by the revision of beliefs about its stand-alone value.

⁵⁶ Moeller, Schlingemann and Stulz (2005), however, report that shareholders of acquiring firms suffered much larger losses (around US\$ 240 billion) in the period from 1998 to 2001 than during the entire merger wave of the 1980s (when the loss amounted to US\$ 4 billion in total). These large losses are not due to a transfer of value to shareholders of target companies. Instead, they are the result of a small number of acquisitions with extremely large losses. In contrast, in the same period the average acquisition still creates positive value for shareholders of acquiring firms.

merging firms should earn *positive* abnormal returns around the time when the merger proposal is announced, because the merger is likely to increase prices and rivals are also expected to benefit from such merger-induced monopoly rents.⁵⁸ In addition, if this assumption is correct, rival firms should earn *negative* abnormal returns in response to the subsequent news that the merger is challenged by the competition authorities, because the prospect of monopoly rents becomes uncertain.

120. The results for the observed sequence of abnormal returns around the time a merger is announced and then challenged appear to contradict the proposition that the net effect of mergers is to increase market power. In particular, Eckbo (1983) finds that on average rivals earn small but positive (and statistically significant from zero) abnormal returns around the merger proposal announcement, followed by zero or positive abnormal returns in response to subsequent news of the agencies' complaint. According to Eckbo (1983), this pattern is consistent with the hypothesis that a typical merger in his sample likely increases efficiency.

121. The same conclusion is also reached by Eckbo and Wier (1985), who look at a sample of cases challenged by the U.S. antitrust agencies after the introduction of the Hart-Scott-Rodino Act in 1978, and Stillman (1983). In particular, Stillman (1983) rejects the market-power hypothesis by examining a small sample of 11 horizontal challenged mergers for the period 1964 to 1972 and finding that direct competitors of the merging firms earn zero average abnormal returns in response to both merger announcements and antitrust complaints.

122. These early papers by Eckbo (1983), Eckbo and Wier (1985) and Stillman (1983) have spurred a large literature using the same methodology. For example, Eckbo (1992) and Atkas, de Bodt and Roll (2007) find significantly negative abnormal returns to rival firms in response to the announcement of horizontal mergers in the case of Canada and the European Union, respectively. On this basis, these results also reject the market-power hypothesis.⁵⁹

123. An interesting variation is proposed by Fee and Thomas (2004), who calculate abnormal returns to upstream suppliers and downstream (corporate) customers (as well as to rivals) of the merging firms, following merger announcement.⁶⁰ The intuition in the case of customers is the following: If a merger increases market power, customers should earn negative abnormal returns because they are likely to pay higher prices after the merger. In this respect, Fee and Thomas (2004) find no systematic evidence of

⁵⁸ Note that Eckbo (1983) frames his analysis around the "collusion" hypothesis, *i.e.* that a horizontal merger may reduce the costs of enforcing a tacit collusive agreement among rivals within the same industry, rather than around the possibility of harm to consumers resulting from unilateral conduct. This was in line with the practice of U.S. antitrust agencies at the time.

⁵⁹ For a sceptical view on this methodology, however, see Schumann (1993). He reviews a sample of 37 cases from the period 1981 to 1987 (when mergers in the United States were less likely to be challenged than in the past) and, although reporting a pattern of abnormal returns identical to those found in earlier studies, notes that the size distribution of firms within the industry, the extent to which efficiencies generated by the merger are firm-specific and the effect of the merger on competition all have an impact on the pattern of rivals' abnormal returns. His conclusion is then that "*practically any pattern of rivals' abnormal returns can be consistent with some story of predominately precompetitive or anticompetitive mergers. To the extent this is the case, we are left to conclude that the examination of the patterns of rivals' stock returns may not be an effective method for determining how horizontal mergers might affect product prices" (Schumann, 1993, p. 694).*

⁶⁰ Shahrur (2005) also examines the impact of a merger announcement on the stock prices of suppliers and customers, although using a different selection methodology from Fee and Thomas (2004). His conclusion is that on average mergers are driven by efficiency considerations, rather than by the desire to increase market power or buyer power.

customer losses, even for customers that are particularly reliant on the merging firms. Moreover, there is evidence that the mergers with the largest gains to the merging firms also produce gains to customers.

124. In respect of suppliers, Fee and Thomas (2004) distinguish between suppliers who retain a relationship with the merged entity after the merger and those whose relationship is terminated, perhaps following a bidding competition to sell to the merged entity. Specifically, Fee and Thomas (2004) show that only the suppliers that are terminated experience negative abnormal returns around the merger announcement and significant negative cash-flow changes post-merger. In contrast, suppliers that are retained increase their market share, but do not experience significant abnormal returns or changes in operating performance, *i.e.* it would appear that retained suppliers sell more units at a lower price. Fee and Thomas (2004) interpret this asymmetric impact of mergers on suppliers' stock returns and their operating performance as evidence that mergers are indeed capable of increasing the buyer power of the merging firms and force upstream suppliers to be more efficient.

3.3 Analysis of pre- and post-merger firms' profits

125. Another way of determining whether mergers generate efficiencies is to compare firms' profits before and after the merger and then understand the source of any difference. An example of this approach is provided by Healy, Palepu and Ruback (1992), who use a sample of the 50 largest acquisitions in the United States during the period from 1979 to 1984 to examine the merging firms' performance (measured in terms of operating cash flows) during the five years before the merger and the five years after the merger, compared to an industry benchmark.

126. They find that the merging firms' cash-flow returns significantly improve after the merger and seek to understand the source of this improvement, in particular whether it is the result of managerial focus on short-term performance which may threaten the long-term viability of the merged entity.

127. In contrast with this hypothesis, however, Healy, Palepu and Ruback (1992) show that the postmerger improvement in cash-flow returns for the merging firms derives from an increase in asset productivity rather than an increase in operating margins. Moreover, they find no evidence that the improvement in cash-flow returns comes at the expense of long-term performance, since after the merger the merging firms maintain their capital expenditure and R&D intensity relative to other firms in their industries.⁶¹

128. This result, however, differs from the one reached earlier by Ravenscraft and Scherer (1989), who examine earnings performance during the period from 1974 to 1977 for target firms acquired between 1950 and 1977. They find that profitability of acquired firms declined after the merger, which contradicts not only the results in Healy, Palepu and Ruback (1992), but also the conclusions drawn in the several papers based on stock market reaction summarised in section 3.2.

3.4 Joint analysis of firms' profits and sales

129. Rather than looking at profits only, Gugler *et al.* (2003) suggest a *joint* analysis of profits and sales to assess the net effect of a merger, *i.e.* whether efficiency gains after a merger takes place turn out to be greater than increases in market power, or *vice versa*. In particular, the test which Gugler *et al.* (2003) carry out is the following: If a merger increases market power more than efficiency, the merging firms'

⁶¹ In addition, Healy, Palepu and Ruback (1992) show that the improvement in cash flow returns explains a significant portion of the increase in equity value of the merging firms when the merger is announced. This would suggest that the stock price reaction to mergers is driven by the anticipation of economic gains after the merger.

profits should increase, whereas their sales should fall (because the price increases by more than the reduction in marginal cost, if there is any such reduction). In contrast, if the overall effect of the merger is to increase the efficiency of the merging firms, then *both* profits and sales should go up.⁶²

130. There is also the question of the counterfactual, *i.e.* how to estimate what would have happened to profits and sales if the merger had not taken place and thus establish whether a merger increased profits and sales. To solve this problem, Gugler *et al.* (2003) calculate the level of profits reported by a benchmark group of firms operating in the same industry as that of the merging firms and compare it with the actual profits made by the merging firms. The same methodology is applied in the case of sales. In addition, the comparison between predicted and actual values is done for each of the five years following the year in which the merger takes place. The sample used in the study includes up to 3,000 mergers in each year of observation, from all major jurisdictions.

131. Gugler *et al.* (2003) find that in a majority of mergers actual profits of the merging firms were higher than those reported by their rivals. However, the opposite was true for sales. It would then be difficult to judge whether a merger was successful by using just one of these two variables. As noted above, Gugler *et al.* (2003) are able to resolve this ambiguity and determine the welfare effect of mergers by looking at changes in *both* profits and sales. They report that, on average, *profitable* mergers in their sample appear to increase market power (*i.e.* that the market-power effect dominates any efficiency gains). Overall, only about 29 per cent of the total number of mergers included in the study was found to result in increases in both sales and profits, *i.e.* to be efficiency-enhancing. These results appear to be consistent across different jurisdictions, *i.e.* the effect of a merger in terms of efficiency and market power do not seem to depend on the country of origin of the merging firms.

3.5 Using market shares to assess efficiency gains: The case of the semiconductor industry

132. Gugler and Siebert (2007) use a test based on market shares to assess efficiency gains in the semiconductor industry. Semiconductors (*i.e.* memory chips, microcomponents, and other components such as logic, discrete, and optical devices) are mainly used as inputs for the computer industry, consumer electronics and communications equipment. It is a capital-intensive and highly innovative industry. For example, the ratio of R&D expenditure to sales is 13 per cent, which is higher than in the pharmaceutical and computer industries (Gugler and Siebert, 2007, p. 647).

133. The Herfindahl-Hirschman Index for the whole industry was around 400 in the period from 1989 to 1998 (which is the period considered by Gugler and Siebert (2007)), although it was considerably larger in the microcomponents (more than 2,000 in 1998 and 1999) than in the memory segment. This is consistent with the view that in the memory segment products are less differentiated and price competition is more intense, whereas the microcomponents segment has oligopolistic features.

134. To study whether mergers and research joint ventures (RJVs) on balance generate efficiencies in this industry, Gugler and Siebert (2007) apply a simple and intuitive test based on pre- and post-merger market shares. They note that, under a variety of assumptions about firm behaviour and market characteristics, economic theory consistently predicts that after a merger the merging firms' combined market share will drop if the market-power effect (which is due to the potential loss of rivalry) outweighs

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It is of course possible that post-merger both profits and sales go down if the merger reduces efficiency and such reduction outweighs any increase in market power. In their paper Gugler et al. (2003) also assume that in a merger all efficiency gains derive from a reduction in marginal costs which translates into lower prices and thus leads to an increase in both sales and profits. They do not test separately for efficiency gains deriving from a reduction in fixed costs (which would lead to an increase in profits and no change in sales).

the efficiency gains. In contrast, if the efficiencies generated by the merger are sufficient to outweigh the market-power effect, the merging firms' combined market share will increase.

135. Their results indicate that at industry level mergers and RJVs increase the market share of participating firms, which provides evidence that efficiency gains dominate any potential anti-competitive effects for both types of co-operation. The same is true at a more disaggregate level, although the efficiency effects were found to be larger in the microcomponents than in the memory segment. Gugler and Siebert (2007, p. 656) explain this finding in terms of the different characteristics of the two segments: "More differentiation in the microcomponents market imposes lower market power gains following from mergers, and fewer efficiency gains are necessary to overcompensate any market power effects. Moreover, more net entry in the microcomponents market results in a higher response by outsiders, resulting in a higher industry output and lower prices. Therefore, we find more net efficiency-enhancing mergers/RJVs in the microcomponents industry relative to mergers/RJVs in the memory market."

136. This study found that mergers and RJVs enhance efficiency in the semiconductor industry. However, it does not shed light on whether the efficiency gains are merger-specific, and it might in fact appear that RJVs are as well suited as mergers for this purpose, at least in this industry. Furthermore, data limitations do not allow identifying the source of efficiency gains, and in particular whether dynamic efficiencies are more prevalent than static ones. This issue is relevant in the pharmaceutical industry as well, as is explained below.

3.6 The impact of mergers on R&D activity: The case of the pharmaceutical industry

137. One way of testing whether mergers are capable of generating dynamic efficiencies and greater innovation is to examine their impact on R&D inputs and outputs. Ornaghi (2009) does just that for the pharmaceutical industry during the period from 1998 to 2004. In particular, he studies the impact of 27 mergers among the largest manufacturers of pharmaceutical products on the merging firms' ability and incentives to innovate.

138. Ornaghi (2009) shows that, compared to a control group made of non-merging firms⁶³, the merging firms' research inputs and outputs (measured by R&D expenditure and number of important patents filed in a year, respectively) decline in the year of the merger as well as in the three years following the merger. Mergers are also found to have a negative impact on research productivity, measured by the ratio of the number of patents to R&D expenditure. Overall, then, Ornaghi (2009)'s results cast doubts on the view that mergers deliver significant dynamic efficiencies capable to offset possible anti-competitive effects.⁶⁴

⁶³ Ornaghi (2009) tries to account for the possibility that the firms' decision to merge and their research activities are correlated (*i.e.* for the possibility that merger decisions are endogenous) in two ways. First, he compares the merging firms' innovation outcomes with those of a control group of non-merging firms which have pre-existing observable characteristics similar to those of the merging firms. This should make it possible to attribute changes in the performance of the two groups solely to the merger. Secondly, to check the robustness of his results, he forms an additional and more restricted control group by including only non-merging firms which carry out technological activities very close to those of the merging firms.

⁶⁴ This result contrasts with the one found by Hall (1987), who looks at a dataset on all publicly traded U.S. manufacturing firms acquired between 1976 and 1986 and reports no evidence that mergers and acquisitions cause a reduction in R&D spending in merging firms compared to non-merging firms. This result holds for the aggregate sample, however; at the individual industry level, the results are too imprecisely measured to draw firm conclusions.

139. While Ornaghi (2009) focuses on full integration between firms by way of mergers or acquisitions, Danzon, Nicholson and Sousa Pereira (2003) explore instead the role of development alliances in determining the success of R&D activity in the pharmaceutical industry.

140. Development alliances are usually formed between small, discovery-focused bio-technology firms and large pharmaceutical firms. Small firms develop drug leads and then out-license these leads to the large firms, which subsequently take responsibility for drug lead optimisation, development through clinical trials⁶⁵ and ultimately regulatory approval. These alliances then allow each type of firms to focus on their respective comparative advantages, *i.e.* discovery of new molecules for small firms and drug development and licensing in the case of larger firms, so that they both gain from collaboration as well as from risk- and cost-sharing. This is confirmed by the pattern reported in Danzon, Nicholson and Sousa Pereira (2003) that there is a greater extent of co-development in phases II and III than in phase I, sought especially by small and medium firms. In other words, it seems that small firms often have the skills and resources necessary to carry out the relatively small Phase-I trials, but tend to seek a large partner for the more complex and expensive Phase-III and Phase-III trials.

141. The results in Danzon, Nicholson and Sousa Pereira (2003) (who use data on over 900 firms for the period 1988 to 2000) show that alliances with large firms increase the probability of success (*i.e.* of advancing from one phase to the following one in clinical trials) for drugs originated by small firms which are in Phase II and III (*i.e.* the most complex and expensive ones), but not for those drugs in Phase I. The previous experience of both in- and out-licensing companies (measured by the number of compounds a firm has developed over time) also seems to play a role in determining the success rate of drugs under development in Phase II and III, but again not in Phase I. On the basis of these results, Danzon, Nicholson and Sousa Pereira (2003, p. 29) argue that alliances work well as "*a source of both funding and expertise for small firms and a source of products for large firms.*"

142. The extent to which prior to the merger the merging firms overlap in R&D and product markets also seem to matter for assessing the impact of a merger. In particular, Cassiman *et al.* (2005) find that, when firms operate in complementary technological fields before the merger, they increase their R&D efforts and also report better R&D performance after the merger, because they are able to realise synergies and economies of scope in the R&D process. In contrast, when firms are active in the same technological fields, the merger decreases both their R&D activity and performance⁶⁶, *i.e.* there are no R&D economies of scale (arising, for example, from elimination of duplication) in such cases. Moreover, within the group of firms active in the same technological fields, merging firms which are also rivals in product markets experience a worse R&D performance than non-rivals.

3.7 Measuring X-efficiency before and after a merger in the banking, electricity and paper industries

143. An obvious (but subject to availability of data) way to assess whether mergers can benefit consumers is to calculate a measure of X- (or technical) efficiency for both a group of merging firms and a control group of non-merging firms, and then see how this measure changes as a result of a merger.

⁶⁵ During the development phase, new chemical entities undergo three clinical trials: Phase-I trials test whether the new drug is safe in healthy subjects; phase-II and phase-III trials test whether the drug is effective in small and large samples of patients with the target disease, respectively. After the drug completes Phase-III trials successfully, the originator company can submit a request for regulatory and marketing approval (Danzon, Nicholson and Sousa Pereira (2003, p. 2)).

⁶⁶ Cassiman et al. (2005) are also able to explain why in such cases R&D performance worsens after the merger: Key employees tend to leave the merged entity, its R&D portfolio becomes more focused, the R&D horizon becomes shorter and internal funds available to R&D decrease.

144. This can be done in various ways. Peristiani (1997), for example, estimates a flexible cost function (the "translog" one) using data for all bank mergers (about 4,900 individual transactions) in the United States from 1980 to 1990. His results suggest that acquiring banks experienced a small (but significant) decline in X-efficiency after the merger, compared to the control group, although post-merger performance varied considerably among merger participants. The key determinants of this performance appeared to be post-merger increases in the bank's credit risk (measured by changes in the loan-to-asset ratio), the number of employees and total amount of deposits.

145. Kaur and Kaur (2010) use a different technique (Data Envelopment Analysis – DEA) to study the impact of mergers on the cost efficiency of Indian commercial banks during the period from 1990 to 2008. They find that on average mergers improve cost efficiency, although with one important exception, *i.e.* the case of strong, healthy banks acquiring smaller distressed rivals. While these mergers – usually encouraged by the government – help protecting the interests of retail depositors of weak banks, they do not contribute to making the merged entity more cost-efficient.

146. Kwoka and Pollitt (2007) also use DEA to understand how mergers among electricity distribution companies in the United States during the period 1994 – 2003 affected cost efficiency. A crucial point in their analysis is that, while mergers brought different companies under common ownership, the reporting obligations imposed by the regulatory authorities remained unchanged and thus allowed to identify buyers and sellers separately even after the merger had taken place. Kwoka and Pollit (2007) find results which are somewhat surprising. First, they show that, in the years prior to the merger, acquirers were not more efficient than target firms (the sellers). In fact, sellers were more efficient than both acquirers and other distribution companies not involved in any merger. More notably, sellers' efficiency (as measured by their operating expenses) declined after the merger, while acquirers recorded little or no gain to offset such losses. Mergers in the U.S. electricity distribution sector, then, do not appear to increase cost efficiency.

147. Yet another approach to estimate cost efficiency is illustrated by Pesendorfer (2003) in the context of the U.S. paper industry during the mid-1980s. In particular, Pesendorfer (2003) estimates firms' marginal costs from data on their investment decisions, existing capacity levels and number of plants. He then observes how such cost estimates vary with a merger for both acquiring and acquired companies. His results show that both buyers and sellers were relatively efficient compared to the group of non-merging firms; in addition, a majority of buyers becomes even more efficient after the merger as a result of additional capacity and a greater number of plants.

148. Pesendorfer (2003) is also able to estimate the total welfare effects from the wave of horizontal mergers occurred in the mid-1980s in the paper industry. Aggregating across various product categories, he calculates that total welfare increased by almost US\$ 900 million per year, with the majority of these gains accruing to consumers (US\$ 600 million) rather than to producers (who saved slightly less than US\$ 300 million per year).

3.8 The impact of ownership changes on productivity in the U.S. manufacturing sector

149. Two different studies – Lichtenberg and Siegel (1987) and McGuckin and Nguyen (1995) – have examined how firm productivity changes after an ownership change in the U.S. manufacturing sector.

150. In particular, Lichtenberg and Siegel (1987) use the Census Bureau's Longitudinal Establishment Data (LED) on more than 20,000 relatively large manufacturing plants for the period 1972 to 1981. They report that about 21 per cent of the plants in this sample changed owners at least once during the ten-year period considered.

151. Their study focuses on the impact (at the level of the individual plant) of ownership changes on total factor productivity (TFP), which is estimated as the residual growth rate in output after accounting for changes in the quantity of inputs (*i.e.* capital, labour and raw materials) used. The authors find that acquired plants were less productive than industry averages prior to acquisition, but their productivity increased after an ownership change. In particular, plants which experienced an ownership change experienced a 0.58 per cent higher TFP growth than plants in the same industry that did not changed owners.

152. The LED database used by Lichtenberg and Siegel (1987), however, contains primarily large plants. Approximately 82 per cent of the plants included in the LED file employed 250 or more workers and almost 53 per cent of the plants included in the sample had more than 500 workers. This is not representative of the population of U.S. manufacturing plants, since the corresponding figures (as reported by Lichtenberg and Siegel (1987)) are only 4 per cent and 1.7 per cent, respectively. In addition, Lichtenberg and Siegel (1987) used a "balanced" panel of plants, because their sample included plants operating throughout the period, excluding those which were opened or closed at some point between 1972 and 1981. Given these features, there is a possibility that their results may be invalid because of a "selection bias".

153. This prompted McGuckin and Nguyen (1995) to address the same question – the effect of ownership changes on firm productivity – using a different dataset. Notably, these authors use the Census Bureau's Longitudinal Research Database (LRD) and study establishments which were transferred in the period 1977 to 1982. Their approach is to compare plant productivity in 1987 with the initial level in 1977 for both plants which at some point were sold and those which did not change ownership.

154. In addition, McGuckin and Nguyen (1995) only focus on plants in the food manufacturing industry (a sector which experienced substantial merger activity in the period considered) and use an "unbalanced panel", *i.e.* a sample which also includes plants that only operated during part of the period. As a result, many more small plants are included in McGuckin and Nguyen (1995)'s study than in Lichtenberg and Siegel (1987)'s analysis.

155. Another significant difference between the two studies is that, to measure firm productivity, McGuckin and Nguyen (1995) mostly use labour productivity (in particular, the ratio of plant labour productivity to the average industry labour productivity) rather than TFP, because of data limitations.

156. McGuckin and Nguyen (1995) then show that acquired plants have above-average productivity prior to acquisition, although this does not apply to large plants (those having 250 workers or more, the size mostly considered by Lichtenberg and Siegel (1987)). In addition, McGuckin and Nguyen (1995) show that plants experiencing ownership changes had higher productivity growth rates than plants which did not change owner – a finding which is robust to a variety of checks and consistent with what Lichtenberg and Siegel (1987) found.

157. Overall, then, these two studies suggest that synergies and related efficiencies are important motives for a change in ownership. This is reassuring, although some caveats – like the fact that neither of the two studies deals with endogeneity when estimating productivity – are in order when interpreting the results.

3.9 Conclusions on ex-post assessments

158. This Chapter has summarised several *ex-post* assessments addressing the question of whether mergers enhance efficiency or not. In short, the answer to that question is equivocal. Some mergers (or joint ventures) enhance efficiency, some do not. This should not be surprising, because there are many

case- and sector-specific factors which influence the outcome. In fact, in the case of the U.S. manufacturing sector (see the previous sub-section) the answer seems to depend on the dataset and variables examined.

159. This finding should not, however, be necessarily disheartening. First of all, the reviews in this Chapter have also shown that it is not impossible to *quantitatively* assess whether the claimed efficiencies – even dynamic ones – materialised or not after a merger.

160. On the contrary, there is a variety of methods – and of variables – which competition authorities can use for this task. Some methods are more sophisticated and data-intensive, others are easier to implement. And some, *e.g.* the estimation of a suitable cost function, could even be used by the merging parties to validate their claims during an investigation.

4. Efficiency claims and objective justification in dominance and monopolisation cases

4.1 The legal treatment of the efficiency defence in dominance cases

4.1.1 National competition laws and statutes

161. In many jurisdictions the legal provisions in respect of an abuse of a dominant position and monopolisation seem to make no allowance for a justification based on efficiency gains. This is the case, for example, of Section 2 of the U.S. Sherman Act, which says that "every person who shall monopolize [...] any part of the trade or commerce among the several States [...] shall be deemed guilty of a felony." Similarly, Article 102 of the TFEU appears to establish an absolute prohibition of an abuse of dominance, thereby depriving dominant firms of a possibility to justify their conduct.

162. This contrasts with other areas of competition law, where an efficiency defence is nowadays clearly available. In the European Union, for example, anti-competitive agreements, decisions of associations of undertakings and concerted practices that would be prohibited under Article 101(1) of the TFEU may nonetheless be lawful if they satisfy the conditions laid down in Article 101(3). In addition, as noted in Chapter 2, recital 29 of the Regulation 139/2004 clearly states that a merger that could otherwise be prohibited can proceed if the efficiencies it brings about counteract the effects on competition and in particular the potential harm to consumers.

163. A similar situation arises in Canada. Section 96 of Canada's Competition Act explicitly provides that a merger shall not be blocked if it brings or is likely to bring efficiencies that will be greater than, and will offset, the effects of any prevention or lessening of competition. In contrast, Section 79 prohibiting an abuse of a dominant position does not foresee an efficiency exception in the assessment of whether the conduct is anti-competitive.

164. This is not to say that provisions allowing the justification of an alleged abuse do not exist. South Africa's Competition Act, for example, explicitly provides that dominant firms can bring forward efficiency claims to justify their otherwise potentially anti-competitive conduct. In particular, in accordance with Section 8 of the Act, a dominant firm cannot engage in exclusionary conduct unless it can show technological efficiency or other pro-competitive gains which outweigh the anti-competitive effects of its conduct.

165. In France, Article 420-4 of the Commercial Code (which applies to both agreements as well as abuse of dominance) provides that a given conduct is lawful if the undertakings involved can prove that their conduct satisfies a number of criteria, namely: i) the conduct ensures economic progress, *e.g.* by creating or maintaining jobs; ii) it does not eliminate competition in a substantial part of relevant market; and, iii) a fair share of the resulting profit is transferred to consumers.

166. A similar provision can also be found in Article 10 of the recently reformed Mexican Competition Act, which requires the Mexican Competition Commission to examine whether the efficiency gains resulting from the conduct favourably affect the competitive process.

4.1.2 *Courts and guidelines*

167. Even if the majority of national competition laws and statutes do not explicitly provide for a possibility to justify potentially anti-competitive conduct on any grounds (including efficiency ones), this possibility has nonetheless been recognised in practice by the courts and in soft-law instruments, such as guidelines.

168. In Canada, for example, the Competition Bureau and courts admit that dominant firms may have a valid business justification for engaging in a specific conduct. Such a justification may prevail if the firm can prove that the reasonably foreseeable anticompetitive effects were not in fact the predominant purpose of the conduct at hand. According to the Federal Court of Appeal, "a business justification must be a credible efficiency or pro-competitive rationale for the conduct in question, attributable to the respondent, which relates to and counterbalances the anti-competitive effects and/or subjective intent of the acts".⁶⁷ This approach is now also clearly endorsed in the recently released Enforcement Guidelines on the Abuse of Dominance Provision. In the document the Bureau explained that it "will examine the credibility of any efficiency or pro-competitive claims raised by the allegedly dominant firm(s), their link to the alleged anti-competitive practice, and the likelihood of these claims being achieved" when examining the overriding purpose of an alleged anti-competitive practice.⁶⁸

169. In the United States, it has long been recognised that monopolisation cases do not preclude the assessment of efficiencies, despite the wording of Section 2 of the Sherman Act. For example, as explained in section 4.5 below, efficiencies (or lack thereof) were repeatedly mentioned by the U.S. Supreme Court in its landmark refusal-to-deal decision, *Aspen Skiing*.⁶⁹ Moreover, efficiency considerations featured prominently in the later withdrawn U.S. Department of Justice Report on Single-Firm Conduct under section 2 of the Sherman Act. The Report explicitly acknowledged that "*legal and economic scholarship has revealed that many single-firm practices once presumed to violate section 2 can create efficiencies and benefit consumers*."⁷⁰

170. In Europe, both the European Commission and Community Courts were initially reluctant to acknowledge efficiency justifications in dominance cases. With time, however, this restrictive approach has started to gradually relax.

171. In 1988, for example, in *Tetra Pak I*,⁷¹ the Commission implicitly confirmed that dynamic efficiencies could represent an objective justification. In 1999, the Court of First Instance (nowadays the General Court) for the first time invoked efficiency considerations in *Irish Sugar*, stating that the

⁶⁷ Commissioner of Competition v. Canada Pipe Company Ltd./Tuyauteries Canada Ltée, 2006 FCA.

⁶⁸ Competition Bureau [2012], Enforcement Guidelines: The Abuse of Dominance Provisions – Sections 78 and 79 of the Competition Act, available at: <u>http://www.competitionbureau.gc.ca/eic/site/cb-</u> bc.nsf/vwapj/cb-abuse-of-dominance-provisions-e.pdf/\$FILE/cb-abuse-of-dominance-provisions-e.pdf

⁶⁹ Aspen Highlands Skiing Corp. v. Aspen Skiing Co., 738 F.2d 1509, 1513 (10th Cir. 1984).

⁷⁰ U.S. Department of Justice (2008), 'Competition and Monopoly: Single-Firm Conduct under Section 2 of the Sherman Act', available at: <u>http://www.justice.gov/atr/public/reports/236681.pdf</u>

⁷¹ Commission Decision of July 26, 1988 - *Tetra Pak I*, O.J. [1988] L 272/27.

lawfulness of the conduct is to be based "on criteria of economic efficiency that were consistent with the interests of consumers." ⁷²

172. There have been some decisions suggesting the contrary, though. In *Atlantic Container*, the European Court of Justice (ECJ) disapproved the idea that a dominant firm could justify its conduct on the grounds of the benefits it produced. Specifically, it stated that "*it must be noted at the outset that there is no exception to the principle in Community law prohibiting abuse of a dominant position. Unlike Article 101 TFEU, Article 102 does not allow undertakings in a dominant position to seek to obtain exemption for their abusive practices.* [...] Consequently, there can be no excuses to the prohibition of abuse by dominant undertakings." In other words, "because Article [102] of the Treaty does not provide for any exemption, abusive practices are prohibited regardless of the advantages which may accrue to the perpetrators of such practices or to third parties."¹³

173. Despite this rejection, over subsequent years the Community Courts have nonetheless explicitly recognised admissibility of efficiency defence under Article 102.

174. The General Court showed its readiness to accept efficiency claims in *British Airways*⁷⁴ and *Michelin II*,⁷⁵ but in the end the claims were rejected in both cases. Still, on appeal in *British Airways*, the ECJ ruled that "*it has to be determined whether the exclusionary effect* [...] *may be counterbalanced, or outweighed, by advantages in terms of efficiency which also benefit the consumer*", thereby unequivocally confirming that there is a place for efficiency considerations in dominance cases.⁷⁶

175. More recently, the ECJ confirmed admissibility of efficiency claims in *Post Danmark* case, holding that a dominant firm may demonstrate that "*its conduct is objectively necessary, or that the exclusionary effect produced may be counterbalanced, outweighed even, by advantages in terms of efficiency that also benefit consumers*."⁷⁷

176. The European Commission's Guidance of 2009 on its enforcement priorities in applying Article 102 also recognises efficiencies as a possible defence, stating that "the Commission considers that a dominant undertaking may also justify conduct leading to foreclosure of competitors on the ground of efficiencies that are sufficient to guarantee that no net harm to consumers is likely to arise." ⁷⁸ To be admitted, however, this defence must satisfy certain conditions, as is explained in the next section.

4.2 Standard and burden of proof

177. Having established that efficiency claims are admissible in the assessment of dominance and monopolisation cases, there is a question of when such claims should be allowed and how they should be assessed in practice.

⁷² Case T-228/97, [1999] ECR II-2969.

⁷³ Joined Cases T-191/98 and T-212/98 to T-214/98, *Atlantic Container Line AB and Others v Commission* [2003] ECR II-3275, para. 1112.

⁷⁴ Case T-219/99, British Airways plc v. Commission [2003], ECR II-5917.

⁷⁵ Case T-203/01, *Manufacture Française des Pneumatiques Michelin v. Commission* (Michelin II) [2003] ECR II-4071.

⁷⁶ Case C-95/04 P, British Airways plc v. Commission [2007], ECR I-2331.

⁷⁷ Case C-209/10, *Post Danmark A/S v. Konkurrencerådet* [2012], not yet reported.

⁷⁸ Paragraph 30, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 045, 24/02/2009, pp. 7 – 20.

178. The European Commission adopts a set of relatively strict requirements. In particular, similarly to the requirements of Article 101(3) TFEU, an efficiency defence in dominance cases is admissible when the following conditions are cumulatively satisfied:

- Efficiencies have been, or are likely to be, realised as a result of the conduct;
- The allegedly abusive conduct is indispensable to the realisation of those efficiencies, *i.e.* there must be no less anti-competitive alternatives to the conduct that are capable of producing the same efficiencies;
- The likely efficiencies brought about by the conduct outweigh any likely negative effects on competition and consumer welfare in the affected markets; and,
- The conduct does not eliminate effective competition, by removing all or most existing sources of actual or potential competition.⁷⁹

179. Some commentators, notably Ahlborn and Padilla (2008), have suggested that these conditions are likely to be too demanding to be satisfied. Arguably, however, the Discussion Paper which was published by the Commission to stimulate the debate about the enforcement of Article 102 included an additional criterion, namely that efficiency gains have to be passed on to consumers. This criterion now appears to be to some extent subsumed into criteria 3 and especially 4 above, since the Commission explains that, in the absence of rivalry between undertakings, "*the dominant undertaking will lack adequate incentives to continue to create and pass on efficiency gains*."⁸⁰

180. When it comes to procedural considerations, efficiencies can be considered either as a defence or as a factor in the overall analysis of the competitive impact of a conduct in question. The first scenario entails a two-stage analysis, in which an applicant (either the competition authority or a private plaintiff) first establishes the existence of the abuse and then it is assessed (by a court, for example) whether claimed efficiencies outweigh potential anti-competitive effects. The second approach implies that a competition authority considers efficiencies as an integral factor of its overall assessment. In its aftermath, the provision on the abuse of dominant position becomes inapplicable where efficiencies outweigh anti-competitive effects.⁸¹

181. Either way, the burden of proving the existence of outweighing efficiencies falls squarely on the dominant firm. This is clearly stated in the European Commission's Guidance on the enforcement priorities in applying article 102 (paragraph 31):

It is incumbent upon the dominant undertaking to provide all the evidence necessary to demonstrate that the conduct concerned is objectively justified. It then falls to the Commission to make the ultimate assessment of whether the conduct concerned is not objectively necessary and, based on a weighing-up of any apparent anti-competitive effects against any advanced and substantiated efficiencies, is likely to result in consumer harm.

⁷⁹ Paragraph 30, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 045, 24/02/2009, pp. 7 – 20.

⁸⁰ *Ibidem*. See also Bellis and Kasten (2010).

⁸¹ One could argue that the latter approach is more consistent with the wording of those provisions which do not explicitly foresee the need or the possibility to justify the conduct once a competition authority has determined that dominant position has been effectively abused.

182. This is consistent with the relevant jurisprudence. In Microsoft, for example, the General Court ruled that "although the burden of proof of the existence of the circumstances that constitute an infringement of Article 82 EC is borne by the Commission, it is for the dominant undertaking concerned, and not for the Commission, before the end of the administrative procedure, to raise any pleas of objective justification and to support it with arguments and evidence. It then falls to the Commission, where it proposes to make a finding of an abuse of a dominant position, to show that the arguments and evidence relied on by the undertaking cannot prevail and, accordingly, that the justification put forward cannot be accepted."

183. It is also worth noting, however, that some authorities cannot ignore any available evidence of pro-competitive efficiencies, even if it is not directly brought forward by the undertaking concerned.⁸²

184. Practical difficulties may be the main reason why competition authorities may be tempted to consider efficiencies as a defence rather than one of the factors in an overall assessment of abuse itself. This, however, should not lead them to postpone the assessment of efficiencies if they want to avoid the risk of substantially underestimating the role of efficiencies in abuse of dominance cases.

4.3 *Are efficiencies an objective justification?*

185. As noted earlier, in *Aspen Skiing*, the U.S. Supreme Court admitted (at least in principle) that a dominant firm's conduct can be justified and referred to efficiency and legitimate business reasons.

186. This raises the question of the relationship between the various concepts that national legislations, statutes and case-law can refer to when discussing grounds on which dominant firms can justify their conducts. In particular, while the relationship between objective justification and efficiencies is likely to vary across jurisdictions, the question is whether efficiencies fall within the more broadly defined category of objective justification.

187. In the European Union, for example, the European Commission foresees that, in its enforcement of Article 102 cases, a dominant undertaking may seek to justify its conduct "by demonstrating that its conduct is objectively necessary or by demonstrating that its conduct produces substantial efficiencies which outweigh any anti-competitive effects on consumers."⁸³ Such statement would seem to endorse, at least in the case of the European Commission, the view that efficiencies and objective justification are two distinct grounds on which a dominant firm may seek to justify its potentially anti-competitive conduct.

4.4 Internal consistency and treatment of efficiencies in dominance cases

188. The admissibility of efficiency claims in dominance cases is also linked to what goals national legislations and statutes assign to competition law.

189. Were undertakings allowed to rebut presumptions and justify their behaviour in their proceedings concerning mergers and agreements (but not in dominance cases), then the exclusion of such a possibility in dominance cases would put into question the internal coherence of the competition system as a whole.

According to the ICN Report on the Analysis of Loyalty Discounts and Rebates Under Unilateral Conduct Laws the burden of proving efficiencies falls on the firm, inter alia in Czech Republic, Denmark, European Union, France, Germany, Korean, the Netherlands, Turkey and United States. In Italy, however, the competition authority has to factor in efficiencies even if the firm has not mentioned them, as long as necessary evidence is available.

⁸³ Paragraph 28, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 045, 24/02/2009, pp. 7 – 20.

This is not just a speculative risk. In *Continental Can*, for example, the European Court of Justice held that, because Article 101 and 102 TFEU pursue the same goals, they cannot be interpreted in a way that would lead to contradictory conclusions.⁸⁴

190. Moreover, the assessment of efficiencies in dominance cases may be jeopardised when competition authorities are required to pursue more than just one objective (*e.g.* in addition to maximising efficiency). Again, this risk may be real. South Africa's Competition Act, for example, explicitly foresees economic efficiency and the provision to consumers of competitive prices and product choices as two of the objectives pursued by the Act. However, the purpose of the Act is also to promote employment and advance the social and economic welfare of South Africans; [...]; to ensure that small and medium-sized enterprises have an equitable opportunity to participate in the economy; and, to promote a greater spread of ownership, in particular to increase the ownership of historically disadvantaged persons" (Article 2 of Act 89, 1998).

4.5 *Efficiency claims in practice: An overview of selected dominance cases*

191. To date efficiencies have not played a decisive role in any dominance case. Some evolution can nonetheless be observed, at least in the European Union, where (just as in merger proceedings) dominant firms increasingly more often submit efficiency claims to escape liability under Article 102 TFEU; and, such claims are reviewed by the Commission and Community Courts.

192. While not successfully, efficiency claims have been put forward, for example, in *Wanadoo*,⁸⁵ *Telefónica*,⁸⁶ *Microsoft*,⁸⁷ and *Intel*.⁸⁸ In *Wanadoo*, the General Court stated that "an undertaking that charges predatory prices may enjoy economies of scale and learning effects on account of increased production precisely because of such pricing. The economies of scale and learning effects cannot therefore exempt that undertaking from liability under Art. 82."⁸⁹

193. In addition to certain distrust towards efficiency claims, the lack of evidence substantiating the existence of the claimed efficiencies can also be a problem with an efficiency defence in dominance cases.⁹⁰ For example, in *Intel* the company asserted that the exclusivity requirements of its rebates allowed it to attain four different types of efficiencies: lower prices, economies of scale, other cost savings and production efficiencies as well as risk sharing and marketing efficiencies.⁹¹ These, according to Intel, would not have been achieved without the implementation of conditional rebates. However, the Commission rejected all four efficiencies because Intel failed to show what the precise efficiencies would be or why would exclusivity conditions create such efficiencies.

⁸⁵ Commission Decision, COMP/38.233, *Wanadoo Interactive*.

- ⁸⁷ Commission Decision, COMP/C-3/37.792, *Microsoft v. Commission*.
- ⁸⁸ Commission Decision, COMP/37.990, Intel.

⁸⁴ Case 6/72, Continental Can v. Commission [1973] ECR 215, paragraph 25.

⁸⁶ Commission Decision, COMP/38.784, Wanadoo España v. Telefónica.

⁸⁹ Case 340/03, France Télécom v. Commission [2007] ECR 00107, paragraph 217.

⁹⁰ See, for example, Tosza (2009) who points out that "the mere reproduction of arguments often-cited in economic literature is not sufficient and the dominant undertaking needs to link them to its individual situation and support with evidence."

⁹¹ Commission Decision, COMP/37.990, *Intel*, paras. 1632-1639.

194. While in this case Intel failed to provide sufficient and convincing evidence, it may also be the case that it is difficult for the dominant firm to meet the test laid down by the Commission.⁹² Geradin (2009), for example, points out that a dominant firm may find it difficult to demonstrate, often several years after it implemented commercial practice subject to investigation, that "*no equally effective alternative* [...] *with a less restrictive or less exclusionary effect*" were available.

195. In the United States, the courts have acknowledged long time ago that there is a room for efficiencies in monopolisation cases. In *Aspen Skiing*, in its analysis of whether Aspen Skiing's refusal to deal with its long-standing commercial partner and competitor, Aspen Highlands, violated Section 2 of the Sherman Act, the Supreme Court approvingly quoted Judge Bork and Professors Areeda and Turner who all agreed that, as long as a firm competes on merits, its conduct should be allowed. In particular, quoting Judge Bork, the Court held that *"if a firm has been attempting to exclude rivals on some basis other than efficiency, it is fair to characterize its behaviour as predatory."* ⁹³ Having reiterated that the defendant's conduct was neither *"motivated by efficiency concerns"* nor justified by *"legitimate business reasons"*, the Supreme Court confirmed that a defendant will not violate Section 2 as long as they can justify their conduct.

196. Efficiencies, for example, were quite extensively discussed in the *Microsoft case* which arose pursuant to separate complaints filed by the United States and by individual states. First, in 2000, the District Court ruled that Microsoft violated Sections 1 and 2 of the Sherman Act. In particular, the firm had illegally maintained a monopoly in the market for Intel-compatible PC operating systems, attempted to gain a monopoly in the market for internet browsers and tied two separate products.⁹⁴ Microsoft appealed the District Court's judgment arguing that integration of Internet Explorer into Windows was both beneficial and innovative and that it moreover required the non-removal of the web browser. The Court of Appeal, however, ruled that the firm failed to specify and substantiate those claims.

197. With respect to tying, U.S. courts generally considered such conduct as *per se* invalid.⁹⁵ In the *Microsoft* case, however, the Court of Appeal altered that rule and adopted a rule of reason approach to take into account alleged efficiency effects of tying.⁹⁶ The Court, in particular, pointed out that "because of the pervasively innovative character of platform software markets, tying in such markets may produce efficiencies that courts have not previously encountered". In the Court's view, such efficiencies could result, for example, from savings in distribution and consumer transaction costs as well as potential economies of scope.

198. In addition to expressly stating that Section 2 Sherman Act requires a rule-of-reason approach, the Court of Appeals laid down a four-stage test for determining whether Section 2 has been violated. First, the alleged behaviour must have an 'anti-competitive effect', meaning harm to the competitive process and thereby harm to consumers. Second, the plaintiff has to demonstrate that the monopolist's conduct indeed

⁹² In its decision (paragraph 1624), the Commission explained that "in order to objectively justify its conditional rebates, Intel would have to show that there is an efficiency [...], that the conduct is capable of achieving the legitimate goal, that it had not equally effective alternative in achieving the legitimate goal with a less restrictive or less exclusionary effect and finally that the conduct is 'proportionate', in the sense that the legitimate objective pursued by Intel should be outweighed by the exclusionary effect."

⁹³ Ibidem, quoting Robert Bork [1978], The Antitrust Paradox.

⁹⁴ United States v. Microsoft Corporation, 87 F. Supp. 2d 30 (2000).

⁹⁵ See, for example, *Jefferson Parish Hospital, Dist. No. 2 v. Hyde,* 466 U.S. 2, 15-18 (1984).

⁹⁶ The Court considered the per se rule's direct consumer demand laid down in Jefferson Parish and indirect custom inquiries to be "*a poor proxy for net efficiency from newly integrated products*" as they were generally backward-looking. *United States v. Microsoft Corporation*, 253 F.3d 34 (2001).

has the requisite anti-competitive effect. Third, if the plaintiff successfully establishes anti-competitive effect, the defendant can put forward "a pro-competitive justification – a non-pretextual claim that its conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal".⁹⁷ Lastly, if the justification itself is not rebutted, then the plaintiff must demonstrate that anti-competitive harm of the conduct outweighs the pro-competitive benefit.

5. Conclusions

199. Efficiency considerations have been playing a progressively more significant role in competition analysis since Oliver Williamson published his seminal article in 1968. Even if to date efficiency claims have turned out to be decisive only in a relatively small number of cases, merging firms and also dominant undertakings have gained more confidence in presenting them to competition authorities.

200. This in turn implies that competition authorities are required to develop and update their expertise in evaluating efficiency claims.

201. The assessment by competition authorities of efficiency claims is however not easy and several issues need to be addressed. One is to what extent an agency may balance potential efficiency gains (including those in terms of fixed-cost savings, as opposed to marginal-cost reductions) against any anticompetitive effects resulting from a specific transaction or conduct – a question which is inherently linked to the welfare standard that the agency applies. The standard of proof which is required of efficiency claims may also be another controversial issue, especially in the case of dynamic efficiencies, which are more speculative and therefore more difficult to verify. From a procedural viewpoint, it is also important to establish whether efficiency considerations are an integral part of the overall competition assessment or rather a defence against the finding that a specific transaction or conduct is anti-competitive.

202. If possible, these questions are even more important in dominance cases, because there is less guidance available from case law and guidelines. In addition, bearing in mind differences between competition analysis in mergers and unilateral conduct cases, the agencies should consider whether the same or different criteria as to the standard and burden of proof should guide the assessment of efficiency claims.

203. Finally, as competition authorities gain more experience in assessing efficiency claims, they might consider conducting *ex-post* assessment of efficiency claims. For this, there is a variety of tools and techniques to quantitatively assess whether the claimed efficiencies – even dynamic ones – materialised or not after the merger. This knowledge would allow the agencies to validate the accuracy of their analysis and to improve their treatment of efficiency claims in future cases.

⁹⁷ Ibidem.

APPENDIX.

SOURCES OF EFFICIENCY GAINS

1. Efficiencies – be they static, dynamic or transactional – can arise in a variety of ways. This Appendix provides a brief (and non exhaustive) list of such sources, and their relevance in competition policy. In general, the discussion refers to efficiencies arising from mergers, but this by no means implies that efficiencies cannot also result from an agreement among competitors or a dominant firm's conduct.

1. Rationalisation of production across plants

2. When plants (or firms) have different marginal costs, cost savings may be realised by shifting production from one plant with high marginal costs to another plant with lower costs, while maintaining the same aggregate level of output. These savings result from the rationalisation of production across plants (see Röller, Stennek and Verboven, 2001, p. 43).

3. Rationalisation is fully achieved when the marginal cost of production is the same in all plants, *i.e.* there are no further benefits which can be exploited by shifting production between plants. There may also be an extreme case when the plant with the lowest marginal cost has no capacity constraint, in which case it is efficient to move all the production to such plant and close all the other ones. In this case, additional savings would come from avoiding duplication of fixed costs altogether.

4. In a merger, rationalisation of production can also occur when the merging firms produce differentiated products, for example by concentrating production of each good in one of the plants (de la Mano, 2002, p. 65). Rationalisation of production capacity can be of particular importance in mergers involving declining industries (Dutz, 1989).

2. Economies of scale

5. In simple terms, economies of scale exist when average costs decline with output, *i.e.* the more output is produced, the lower unit costs are. In general, in the short term economies of scale exist only up to a certain level of output (defined as "minimum efficient scale" – MES – in the economic literature). Beyond this level, average costs start rising again, *e.g.* because some inputs (such as plant capacity, physical capital, and managerial resources) are available in fixed quantity and constrain further output expansion.⁹⁸

6. In a merger, typical sources of short-run economies of scale are the combination of a larger output in a single firm or plant, which lowers variable or incremental costs and helps firms to achieve a more efficient scale.

⁹⁸ The average cost curve is then U-shaped. Estimating the level at which economies of scale are exhausted, *i.e.* the minimum efficient scale of an industry, may be complicated, and the MES is likely to change over time and vary from one industry to another. An industry where average costs decline over the entire range of relevant output levels is called a "natural monopoly", because it is efficient that only a single firm supplies the entire market.

7. Another possible source is the avoidance of duplication of fixed costs, such as back-office resources, marketing expenditure, rental of facilities and other overheads. In other words, after a merger the merging parties avoid paying the same fixed costs twice. Moreover, by combining the output of the two firms within a single entity, the merger allows these fixed costs to be spread over a larger amount of output. In practice, however, competition authorities tend to give little consideration to reduction in fixed costs because, even if these cost savings are merger-specific, verifiable and often quantifiable, they are unlikely to be passed on to consumers in the form of lower prices (de la Mano, 2002, p. 63). For example, the Irish Merger Guidelines explicitly mention, among the efficiencies that are generally not considered, *"efficiencies related to economies of scale and scope that do not involve marginal cost reductions."*⁹⁹ This issue, however, is linked to which welfare standard a competition authority applies. In particular, where a total welfare standard is used, fixed-cost savings are generally taken into account.

8. This approach may need to be reconsidered in the context of dynamic efficiencies where lower fixed costs "may motivate firms to undertake R&D projects that they previously considered too expensive or too risky",¹⁰⁰ which may in turn benefit consumers. The U.S. Antitrust Modernization Commission has expressly recognised this possibility saying that "the agencies and courts should give greater credit for certain-fixed cost efficiencies, such as research and development expenses, in dynamic, innovation-driven industries."¹⁰¹ Katz and Shelanski (2004) also noted that "it is important that fixed costs not be summarily excluded from the efficiencies analysis when innovation is at issue."

9. In the long run, economies of scale can arise from specialisation (as employees become more and more specialised in a small number of tasks) and learning by doing (unit costs decline as more output is produced over time). Apart from production, economies of scale can also exist in other functions, such as marketing, distribution and R&D.

3. Synergies

10. Farrell and Shapiro (2001) take a more sceptical view about economies of scale noting that: i) at least in principle, economies of scale can be achieved unilaterally, *i.e.* without a merger (for example, through internal growth); and, ii) they may not benefit consumers (*e.g.* if such gains are not large enough or not passed on).

11. Farrell and Shapiro (2001) then go on to define "synergies" as genuine, merger-specific efficiencies based upon the close integration of specific, core and hard-to-trade assets owned by the merging parties. In contrast with broader efficiencies, these synergies would then "*require co-operation and co-ordination of the two firms' assets that allow production on a superior production function, as distinct from causing different choices (such as scale) on a fixed production function. In other words, synergies allow output / cost configurations that would not be feasible otherwise*".¹⁰² According to Farrell and Shapiro (2001), synergies associated with horizontal mergers would include: co-ordination of joint operations *e.g.* in an oil field; sharing complementary skills in manufacturing and distribution; improved interoperability between related products; and, improved configuration of a railroad network.

⁹⁹ Notice in respect of Guidelines for Merger Analysis (2002), paragraph 5.10.

¹⁰⁰ See OECD (2007a), p. 30.

¹⁰¹ Antitrust Modernization Committee (2007), Report and Recommendations, Chapter I.B, p. 49. Available at: <u>http://govinfo.library.unt.edu/amc/report_recommendation/chapter1.pdf</u>

¹⁰² Farrell and Shapiro (2001), p. 673. Farrell and Shapiro (2001) is linked to their previous article (Farrell and Shapiro, 1990), where, using a Cournot model in which firms compete by setting quantities, they prove that – for price to decrease after a merger – the merged entity must achieve a significantly lower marginal cost than either of the merging parties had before the merger.

4. Economies of scope

12. Economies of scope exist when it is cheaper to produce two or more products jointly than to produce each product separately. If that is the case, there is then an incentive to have multi-product plants rather than plants specialising in producing individual products. A refinery producing petrol and other refined oil products is a possible example. Economies of scope can be derived from the more efficient use of common raw inputs as well as technical knowledge which can be applied to produce and sell multiple products.

5. Technological progress

13. A merger may also allow two firms to combine complementary technological and managerial skills and assets, from which greater innovation can follow. The same is true for R&D expenditure. In particular, pooling of R&D resources may lead to greater economies of scale (as the corresponding fixed costs are spread over a larger output), but also to faster innovation and dynamic efficiencies.

6. Reduction of slack

14. A firm's internal efficiency can be increased when, for example, a merger replaces less capable management with a more effective one, although there is little empirical evidence to support a "management discipline" effect provided by mergers (de la Mano, 2002, p. 68).

7. Savings in procurement costs

15. Mergers may allow merging firms to achieve savings in procurement costs (or purchasing economies; see Röller, Stennek and Verboven, 2001, pp. 46 – 47), *e.g.* because they obtain better terms and conditions from suppliers as a result of greater bargaining power. These savings, however, are generally considered as transfers of wealth from suppliers to the merging firms, *i.e.* they are pecuniary in nature, and are therefore not accepted as efficiencies.

16. There are cases, however, where savings in procurement costs represent genuine economies. This happens, for example, when the merging firms pay a two-part tariff, *i.e.* a fixed fee which does not vary with the amount purchased plus a variable part which does depend on the amount purchased. In this case, the greater the volume of inputs purchased, the lower the unit price paid by the merging firms.

8. Financial and tax savings

17. A merger may allow the combined entity to have access to more and better sources of financing, or to reduce its risk profile, which may in turn result in lower capital costs. These savings have the potential of being verifiable and passed on to consumers.

18. In addition, there may be cases where firms decide to merge because the combined entity will benefit from tax savings. For example, the acquirer may offset its tax liabilities against the acquired company's credits and losses. These would, however, only be pecuniary and not real cost savings. As such, they would hardly count as efficiencies.

9. Demand-side efficiencies

19. Some products exhibit network effects, *i.e.* for consumers their value increases with the number of people using such a product over a network or a platform. This is the case, for example, of telephones and e-mail. In these cases, a merger combining the customer bases of different firms may create a larger network and thus benefit consumers. In particular, this could be the case when a firm is already relatively

larger than its rivals and the merger just speed up the "tilting" of the whole market towards the dominant firm. Where two or more firms are still competing to emerge as the leading company in the market, a merger might not however be beneficial for consumers.

20. When products are complements (*e.g.* in the case of a conglomerate merger), demand-side efficiencies may also arise because "*lowering the price of one product increases demand for it and for other products that are used with it*" (United Kingdom's Merger Assessment Guidelines, 2010, paragraph. 5.7.17), an outcome which is made possible by common ownership of the complementary products. An example of this effect from a recent merger in the United Kingdom is provided in Box 1 in the main body of this Note.

21. In addition, when products are not substitutes and customers have an incentive to buy a range of products from a single supplier, there may be efficiencies arising from "one-stop shopping", *e.g.* because purchasing from a single supplier reduces transaction costs or, where products are complementary, ensures improved product compatibility or quality assurance (see the United Kingdom's Merger Assessment Guidelines, 2010, paragraph 5.7.18). These benefits could, however, well be labelled as economies of scope in purchasing (rather than in production).

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