Oxera

Agenda

Advancing economics in business

When two become one: efficiency analysis in merger and competition investigations

What is the role of quantitative efficiency analysis in competition cases, in particular those involving mergers, state aid and market investigations? This article outlines how efficiency analysis can be used to provide objective supporting evidence to strengthen a case and support qualitative arguments

Quantitative techniques are increasingly being used to provide empirical evidence in competition investigations—for example, to assess levels of competition in market investigations, to evaluate merger transactions and cases of state aid, and to estimate antitrust damages.[1] The potential value of quantitative analysis in competition investigations has been recognised by the European Commission, which has issued guidance on the submission of quantitative and economic evidence.[2] The UK Competition Commission (CC) has also produced its own best-practice guidance, in which it welcomes the use of quantitative evidence: 'We believe the use of empirical and quantitative methods can help us reach more informed decisions'.[3]

This article discusses the use of quantitative techniques for efficiency analysis in competition cases. Efficiency analysis often involves considerations of whether it is feasible for a firm to reduce its costs or inputs (eg, labour and materials) without a similar reduction in outputs or quality, or to increase outputs or quality without a proportionate increase in costs or inputs. This type of analysis can be used to support industry and operational knowledge, and to provide an objective assessment of efficiency. As such, it has the potential to significantly change the outcome of a competition investigation. Efficiency techniques can also be used to examine whether any 'abnormal' profits or revenues earned by a firm are a result of their relatively efficient operations, or whether there is a market failure.

To illustrate the insights offered by efficiency analysis in competition investigations, and their importance to competition analysis, the focus here is on the use of quantitative efficiency approaches in the context of mergers, cases of state aid and market investigations.

Mergers

Merger guidelines from competition authorities have highlighted the importance of considering the efficiencies arising from mergers when assessing the overall impact on consumers of the merger, yet relatively little clarity exists on how one can actually identify and measure these efficiencies.

Mergers can lead to efficiency savings due to cost reductions from a number of sources. These include the rationalisation of production activities (such as improved capacity utilisation), reductions in the fixed costs per unit as production increases (ie, economies of scale, as argued successfully in the *AmeriSource Health/Bergen Brunswig* wholesale drug merger—see box below), and reductions in transaction costs (for example, if consumers are able to benefit from one-stop shopping—see box below for discussion of the *Global Radio/GCap Media* merger). Efficiency savings may also result from the diffusion of knowledge, and increased or improved R&D. Consumers potentially benefit from efficiency savings through lower prices, increased quality and improved choice. Note that efficiencies from the merger may also be seen as a negative outcome if other firms can no longer compete with the merged entity (although the 'efficiency offence' theory of harm has recently become less fashionable).

In order to provide a convincing efficiency defence, it must be demonstrated that the efficiencies outweigh the potential harm to competition. According to the 2010 joint guidelines from the UK Office of Fair Trading (OFT) and the CC, mergers must be 'timely, likely and sufficient to prevent [a substantial lessening of competition] from arising (having regard to the effect on rivalry that would otherwise result from the merger); and the efficiencies must be merger specific, ie a direct consequence of the merger, judged relative to what would happen without it.'[4]

Likewise, the European Commission's 2004 horizontal merger guidelines state that, for the Commission to take account of efficiency gains, 'the efficiencies have to benefit consumers, be merger-specific and be verifiable'.[5] Where possible, this includes quantifying efficiencies and the resulting benefit to consumers using, for instance, historical examples of efficiencies, statements from financial markets about the expected efficiency savings, and pre-merger external experts' studies on the type and size of efficiency gains. The US Department of Justice and Federal Trade Commission (FTC) horizontal merger guidelines state that 'it is incumbent upon the merging firms to substantiate efficiency claims so that the Agencies can verify by reasonable means the likelihood and magnitude of each asserted efficiency [...]. Efficiency claims will not be considered if they are vague, speculative, or otherwise cannot be verified by reasonable means.'[6]

The strict criteria have meant that there are few examples to date of cases where the efficiency defence has been successfully used (see box below).[7]

Quantitative efficiency techniques can be helpful in establishing a merger defence, and addressing the merger criteria specified by the competition authorities. For example, statistical cost models can estimate the extent of economies of scale or scope in the industry, and the merging parties in particular (and thus demonstrate the benefits from increasing the size of the operator through a merger).[8] Analysis of this type might have been beneficial to the Dutch hospital merger case (see box below) in providing evidence of the size of the efficiency savings. In the pre-merger stage, efficiency analysis can measure the current

Merger case studies

Commercial radio (2008)

The OFT cleared the merger of Global Radio and GCap media in the UK, in part based on the benefit to consumers from t he expected significant efficiency savings generated by the merger. The parties claimed that the merger would allow them to price advertising bundles for their complementary radio stations more efficiently than they would by pricing independently. Past examples of multi-station discounts were provided as evidence of these efficiency savings and of the benefits passed to consumers. Since these discounts are possible only when additional stations are taken into ownership, the efficiency savings were also deemed to be merger-specific.[1]

Hospital merger (2009)

The Dutch competition authority (NMa) approved the merger of two hospitals, in part due to the efficiency savings (measured as improvements in quality and the number of services offered). While the NMa agreed that the efficiency savings were merger-specific, the policy and strategy documents submitted by the hospitals to support the merger were not deemed to provide sufficient evidence of the size or likelihood of efficiency savings, or the benefits to consumers. In order to meet the criteria of the merger defence, the merged parties were required to deliver minimum quality standards and provide specific services. The benefits from these quality improvements arising from the efficiency savings were deemed to outweigh the reduction in competition.[2]

Drug wholesaling industry (2001)

The FTC approved the merger of AmeriSource Health Corporation and Bergen Brunswig Corporation, the third- and fourth-largest drug wholesaling firms in the industry. The FTC concluded that the transaction would provide the merged firm with sufficient scale economies to become cost-competitive with the two leading firms, and to invest in services for consumers that would increase choice. The merger would allow the combined firms to achieve these improvements more quickly than if they remained separated, and this efficiency saving was therefore deemed to be merger-specific. The FTC found no evidence to suggest competitive harm arising from the merger, since there was insufficient evidence to indicate that either of the merging firms had contributed to the ongoing downward trend in wholesale drug prices, or that the industry structure resulting from the merger would lead to price increases or prevent future price reductions. The FTC also concluded that, without the merger, only the two largest firms would have survived.[3]

Local bus services (1996)

In the Stagecoach/Chesterfield bus merger inquiry, the UK Monopolies and Mergers Commission (MMC—now the CC) concluded that the merger would be beneficial to the public because it would increase the efficiency of Chesterfield Transport Limited through the disposal of depots, through synergy savings, and through Stagecoach's reputation for efficiency. These efficiencies would help to prevent fare increases. The MMC also found that Chesterfield was a failing business prior to the merger, and that more cost savings were available to Stagecoach as a result of the merger than would have been open to any alternative purchaser. It concluded that there were sufficient numbers of sizeable operators in and around the area to ensure that the potential loss of competition from the merger would be small.[4]

Note: [1] Office of Fair Trading (2008), 'Completed Acquisition by Global Radio UK Limited of GCap Media Plc', August 27th. [2] Netherlands Competition Authority (2009), 'Decision of the Board of the Netherlands Competition Authority, within the Meaning of Section 41 of the Competition Act, Case 6424/Walcheren Hospital - Oosterschelde Hospitals', March. [3] Federal Trade Commission (2001), 'Statement of the Federal Trade Commission: AmeriSource Health Corporation/Bergen Brunswig Corporation', File No. 011-0122, August 24th, pp. 2–3. [4] Monopolies and Mergers Commission (1996), 'Stagecoach Holdings Plc and Chesterfield Transport (1989) Limited: A Report on the Merger Situation', January 18th.

State aid case study

Postbus (2008)

In 2008 the European Commission investigated state aid granted by a public body in Austria to a local bus service provider, Postbus, for providing a public service contract. As part of its investigation, the Commission assessed whether the agreement contravened the third and fourth *Altmark* criteria: that the compensation awarded did not exceed the costs of providing the service, and that the costs incurred by Postbus were those of an average well-run undertaking. To address these criteria, the costs of Postbus were compared with average costs from across the industry to demonstrate that the compensation awarded lay within the range of average costs.

The Commission concluded that the third criterion was met, since the compensation paid to Postbus was fair and adequate given the industry-average costs. However, with regard to the fourth criterion, it concluded that there was insufficient evidence that Postbus was a well-run operator, since the average cost in the industry was not the same as the average cost that would be expected of a well-managed operator. Furthermore, other contracts had resulted in significantly lower costs per kilometre than Postbus received. The fourth *Altmark*

Note: [1] European Commission (2008), 'Commission Decision of 26 November 2008 on State Aid Granted by Austria to the Company Postbus in the Lienz District C 16/07 (ex NN 55/06)', 2009/845/EC.

scope for operators to improve their efficiency if best practice is revealed by the merger (eg, examples of efficient operations and insight into how these were achieved), and thus the likely efficiency savings. Pre-merger, efficiency techniques can also be used to model the likely level of efficiency in the merged parties following the merger, and compare this with the observed efficiency of the separate operators.[9] Efficiency analysis has also been used to assess the impact of consolidation following a merger, and is discussed in more detail in a previous *Agenda* article.[10] Analysis of fixed and variable costs may address the question of whether the efficiency savings will be passed on to consumers: reductions in variable costs are more important than fixed costs in short-term price-setting behaviour, and are therefore more likely to be passed on to consumers.[11]

State aid cases

In state aid cases, the fourth criterion of *Altmark* (the leading European judgment on services of general economic interest, or SGEIs) states that where the undertaking offering the SGEI is not chosen in a public procurement procedure, the level of compensation awarded to that undertaking should be based on the analysis of costs that would be incurred by a typical, well-run (ie, efficient) operator, and which would allow the operator to meet the necessary public service requirements.[12]

A discussion of the use of efficiency analysis in state aid can be found in a May 2010 *Agenda* article,[13] which outlines how efficiency approaches such as internal benchmarking, functional benchmarking, comparisons with similar firms in the industry, and comparisons with firms that have won competitive tenders in the sector, can be, and have been, used to address the fourth *Altmark* criterion. This type of efficiency analysis can offer valuable insights into cases of state aid and when drafting contracts, and help to ensure that they comply with state aid guidelines (see the box above for details of how it was used in the 2008 *Postbus* case).

Market investigations

In mergers and cases of state aid, efficiency analysis can be used to provide evidence of the countervailing effects of efficiency savings against the potential harm to competition. In market investigations, efficiency analysis may be used as an indicator of market harm. For example, the CC's ongoing investigation into local bus markets has examined whether economies of scale and scope are present in the industry, and whether these act as a barrier to entry. This analysis uses a statistical model of costs and outputs, while also taking into account other factors such as local demographics and road density that might affect the costs incurred by a bus operator.[14] Similar analysis was also undertaken by the CC during the 2000 supermarket inquiry (see box below). This approach can be insightful because it can measure the degree of economies of scale and scope as an average across the industry, as well as for individual companies or business units.[15] It is also able to consider other factors that affect costs which, if not accounted for, may lead to an inaccurate assessment of the extent of economies of scale and scope.

Market investigation case study

Supermarket inquiry (2000)

During the 2000 supermarket inquiry, the CC constructed an econometric model to estimate the impact of the size of a store and its sales density on staff costs, using data from the five main supermarket chains. Its analysis showed that four of the chains benefited from economies of scale and sales density, and that the benefits of scale were greater at smaller stores than at larger stores. The CC concluded that these economies of scale could act as a barrier to entry, but also as an exit barrier (due to high sunk costs).[1]

Note: [1] Competition Commission (2000), 'Supermarkets: A Report on the Supply of Groceries from Multiple Stores in the United Kingdom', October.

Techniques for assessing efficiency can also be used to determine whether an operator is earning excess profits (an indicator of the level of competition), and whether this is driven by the operator's superior efficiency, or other factors such as lack of competitors or a dynamic market. The techniques available are able to take into account firm-specific characteristics and other factors that may explain why costs and profits differ by firm, or are higher than expected.

Conclusions

This article has demonstrated how quantitative efficiency analysis may be used for competition investigations, and the importance of efficiency analysis as part of the empirical toolkit in mergers, cases of state aid, and market investigations. Such quantitative analysis can be used to support operational insight, and to provide an objective insight into the efficiency of operators and the scope for efficiency savings. As demonstrated by the, as yet limited, case studies in this area, quantitative efficiency analysis has the potential to be used more frequently, and may well determine the outcome of a case.

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[1] For more details on the use of quantitative techniques in damages estimation, see Oxera and a multi-jurisdictional team of lawyers led by Dr Assimakis Komninos (2009), 'Quantifying Antitrust Damages: Towards Non-binding Guidance for Courts', study prepared for the European Commission Directorate General for Competition, December.
[2] European Commission DG Competition (2010), 'Best Practices for the Submission of Economic Evidence and Data Collection in Cases Concerning the Application of Articles 101 and 102 TFEU and in Merger Cases'.
[3] Competition Commission (2010), 'Suggested Best Practice for Submissions of Technical Economic Analysis from Parties to the Competition Commission', para 1.
[4] Office of Fair Trading and Competition Commission (2010), 'Merger Assessment Guidelines', September, para 5.7.4.
[5] European Commission (2004), 'Guidelines on the Assessment of Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings', *OJ* 2004/C 31/03, para 78.
[6] US Department of Justice/Federal Trade Commission (2010), 'Horizontal Merger Guidelines', August 19th, section 4.
[7] Also, the EU merger regulation did not explicitly allow for an efficiency defence until 2004.
[8] Economies of scale occur when an increase in output reduces the unit cost of producing each output. Economies of scope occur when an increase in the range of outputs produced (eg, a new product is provided) reduces the unit cost of producing each output.
[9] See, for example, Bogetoft, P. and Wang, D. (2005), 'Estimating the Potential Gains from Mergers', *Journal of Productivity Analysis*, **23**:2, pp. 145–71, which examines the likely efficiency savings from merging agricultural advisory offices in close proximity to each other.
[10] Oxera (2008), 'Who's Cashing In on Mergers? Measuring the Benefits of Consolidation', *Agenda*, May. Qualitative and quantitative post-merger reviews in particular are also discussed in another article in this issue. See Hosken, D. (2011), 'Ex Post Merger Review: What Is It and Why Do We Need It?' *Agenda*, March.
[11] Office of Fair Trading and Competition Commission (2010), op. cit., para 5.7.9.
[12] Oxera (2010), 'Who's Over-compensated and Who's Not? Implementing State Aid Regulation in Practice', *Agenda*, May. See also Altmark, case C-280)/00, judgment of 24 July 2003'.
[13] Oxera (2010), 'Who's Over-compensated and Who's Not? Implementing State Aid Regulation in Practice', *Agenda*, May.
[14] Competition Commission (2010), 'Local Bus Services Market Investigation: Econometric Analysis of Bus Operator Costs', December.
[15] Potentially, although there may be economies of scale on average across the industry, a firm within the industry may experience diseconomies of scale.

If you have any questions regarding the issues raised in this article, please contact the editor, Dr Gunnar Niels: tel +44 (0) 1865 253 000 or email g_niels@oxera.com

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