

**COMMENTS ON THE COMPETITION BUREAU'S DRAFT
A PRACTICAL GUIDE TO EFFICIENCIES ANALYSIS IN MERGER REVIEWS**

Richard Elliott

Thank you for the opportunity to comment on the Bureau's draft document *A practical guide to efficiencies analysis in merger reviews* ("Guide").

Rather than address specific parts of the Guide in detail, these comments are concerned with an overarching threshold issue, which has implications that may permeate various aspects of the analysis of merger efficiencies under the *Competition Act*. It is submitted that the lack of a coherent working definition of efficiency may lead to unnecessarily distorted analyses and outcomes. In particular, under the prevailing approach to section 96, a merger that lowers output, reduces economies of scale and increases average unit cost may nonetheless be found to improve productive efficiency.

These comments suggest a straightforward working definition of efficiency, including the measurement of efficiency. This suggested approach is intended foremost as a practical tool to aid in assessing merger efficiency claims. It does not preclude pursuing other analyses under section 96, such as calculating the impact on total surplus by setting cost savings against deadweight loss.

It is acknowledged that existing jurisprudence may place constraints on how section 96 is applied before the Tribunal and Courts. Nonetheless, given that the vast majority of merger outcomes are determined within the Bureau, it is hoped that this submission may assist with internal Bureau analysis, including the exercise of enforcement discretion. Where issues may reach the Tribunal or Courts, it is further hoped that this submission may contribute to developing a more realistic and pragmatic approach to understanding and assessing merger efficiency claims.

These comments are in two parts. The main part (Part 1) deals with the definition and measurement of efficiency under section 96. This is followed by brief discussion (Part 2) of consideration of efficiencies under section 92.

PART 1: DEFINING AND MEASURING EFFICIENCY

A. Introduction

The prevailing approach to evaluating efficiency claims under section 96 is to consider that merger cost savings constitute "gains in efficiency", provided that they survive various screens to ensure that the savings are properly attributable to the merger. However, this approach risks distorting the meaning of efficiency and skewing the assessment of efficiency claims. Before applying this approach, it may be worth asking a threshold question: Do cost savings associated with a merger necessarily equate to gains in efficiency?

As a preliminary observation, it is noted that cost savings will indeed equate to gains in efficiency in the vast majority of mergers. As such, these comments are narrowly directed at the very small subset of mergers that are anticompetitive and result not only in cost savings, but also reduced output. Efficiency is a relative concept concerned with the relationship between cost and output. It is impossible to assess a merger's impact on efficiency by looking at cost reduction in isolation from output reduction.

To help frame the issue, consider a hypothetical merger to monopoly that results in a 10% price increase and a 10% output reduction. The merged firm requires fewer staff and reduces overall staffing costs by 10%. Do these staffing cost reductions constitute gains in efficiency?

Consider two different ways in which these staffing cost reductions may result from the merger.

First, staffing costs may be reduced because fewer staff are required in light of the reduced output of the merged firm. Such cost savings would not occur without the output reduction. These savings will be referred to here as “output cost savings”.

Second, the merged firm may eliminate duplicative staffing overhead, with such cost savings arising irrespective of whether output is reduced. In other words, these cost savings would occur if output is reduced by 10% (as in this example), by some larger or smaller percentage, or not at all. These savings will be referred to here as “integration cost savings”.

Whether the outcome in this example emerges from output cost savings or integration cost savings (or a combination of the two), the merged entity is operating at the same level of efficiency, producing the same amount of output from the same amount of inputs, and the merger has resulted in the same amount of savings in staffing costs. Moreover, the merged firm may not even know how much of the staffing cost savings are due to output reduction versus integration, since such decisions in the real world are often dynamic and based simultaneously on multiple factors.

Yet, the current approach to the efficiency exception creates an anomaly: the output cost savings are not treated as gains in efficiency (they are regarded as marginal costs no longer incurred due to reduced output), whereas the integration cost savings are. This inconsistent outcome stems from the lack of a coherent definition of efficiency in applying section 96.

To assess whether the integration cost savings in this example equate to gains in efficiency, it is worth examining how efficiency is defined and measured.

B. The Concept of Efficiency

The Guide, like the MEGs, states that “efficiencies must be productive, dynamic or allocative”.

Allocative and dynamic efficiency are unlikely to be relevant in most cases, just as they were not relevant to finding gains in efficiency in *Propane* or *Tervita*. Anticompetitive mergers result in a loss, not gain, in allocative efficiency. Dynamic efficiency may be important, but it has proven elusive to define and measure.

Thus, if there are any gains in efficiency in the above example, they must be gains in productive efficiency. Indeed, the Guide states that “the majority of efficiencies raised by merging parties are productive”. But how is productive efficiency to be defined and measured?

The concept of productive efficiency is often expressed as a function of average cost. A firm achieves productive efficiency at the minimum point on its average (total) cost curve. This suggests that a merger’s impact on productive efficiency may be assessed in relation to its effect on average cost – i.e., cost relative to output.

Consistent with that understanding, the Guide refers to productive efficiencies as “those that lower the cost of producing a given level of output”. Similarly, the MEGs indicate that productive efficiencies can result from economies of scale due to “reductions in the average unit cost of a product through increased production”.

While these brief statements from the Guide and MEGs are straightforward, they focus on situations where output is maintained or even expanded, rather than the scenario of concern in an anticompetitive merger – i.e., where output is curtailed. Where a merger reduces not only costs, but also output, productive efficiency

may or may not improve, since the impact on average cost will depend on the combined effects of the output and cost reductions.

In the example above, it is clear that: (i) the merged entity operates at the same level of efficiency, producing the same amount of output from the same amount of inputs, whether this level is achieved through output cost savings or integration cost savings; and (ii) the output cost savings do not result in a gain in efficiency. Therefore, the integration cost savings in this example do not result in a gain in efficiency. Nonetheless, the prevailing approach under section 96 is to treat such integration cost savings as gains in efficiency, particularly productive efficiency, notwithstanding a lack of analysis of the impact on cost relative to output.

One response to this apparent conundrum is to say that it does not matter if integration cost savings actually improve productive efficiency in this example, since the savings in staffing costs still represent a benefit to society that should nonetheless count in a broader welfare calculation. However, it is not clear how this is relevant to determining whether the merger has improved productive efficiency – i.e., whether it has brought about a gain in efficiency for purposes of section 96. The same overall savings to society in staffing costs occur in the output cost savings scenario, where there is no suggestion that there is a gain in efficiency.

C. Subsection 96(2)

In interpreting “gains in efficiency”, it may be instructive to consider subsection 96(2), which is the only part of section 96 that expressly discusses the meaning of gains in efficiency. Subsection 96(2) directs the Tribunal to consider whether gains will result in a “significant increase in the real value of exports” or a “significant substitution of domestic products for imported products”.

A significant increase in exports or substitution of domestic for imported products will most typically result from lower prices.¹ Efficiency in this context is understood in terms of mergers that result in lower, not higher, prices and increased output. Thus, the ability to achieve economies of scale and lower per unit cost levels may be important in construing efficiency under section 96.

D. A Suggested Approach to Defining and Measuring Efficiency

In order to give “efficiency” coherent legal meaning for purposes of section 96, it is suggested that efficiency be defined in relation to average (total) cost. Under this approach, a merger would result in a gain in efficiency where it lowers average cost. Quantitatively, this gain in efficiency would be measured as the decline in the average cost level multiplied by the post-merger output.

This approach is not intended to be comprehensive or to exclude the possibility of other gains in efficiency, such as associated with dynamic efficiency or qualitative considerations. This is simply to suggest a workable way of understanding and quantifying the most typical efficiency claims.

This approach is independent of any particular policy standard for assessing the overall impact of a merger. For example, it is compatible with a balancing weights standard (the official approach from *Propane*), a total surplus standard (the likely *de facto* standard in most cases following *Tervita*), or a consumer surplus or price standard.

For instance, the impact on total surplus can be assessed by setting the gain in efficiency (measured as described above – i.e., the decline in average cost across the post-merger output) against the foregone

¹ “Price” is used here as a proxy for consumer value. For example, efficiency gains could also lead to improved quality such that sales increases could result from better products, rather than better prices. This would still equate to more competitive prices on a quality-adjusted basis. Note also that although the value of exports might increase as a result of increased prices on exported products, such wealth transfers would not be included as gains in efficiency – see subsection 96(3).

consumer surplus due to the output reduction (area under the demand curve above pre-merger price, across the output reduction) and foregone producer surplus equivalent to the pre-merger average profit margin (pre-merger price minus average cost) multiplied by the output reduction.²

E. Practical Considerations

Construing efficiency in terms of average cost levels may, in addition to providing a coherent legal definition of efficiency under section 96, offer some practical benefits.

In particular, it may provide a simple threshold screen for vetting efficiency claims: Does average cost go down? Moreover, since a decline in average cost is a prerequisite to improving total welfare, this screen may offer a pragmatic route to ascertaining whether total welfare can improve.³

That said, whereas a lack of decline in average cost implies no improvement in total welfare, it is equally important to recognize, conversely, that only a modest decline in average cost may be needed to improve total welfare, given that such a decline is spread across the entire post-merger output.⁴

It is understandable that merging parties present efficiency claims in terms of cost savings, rather than average cost levels. To ascertain a merger's impact on average cost would require knowing the output reduction. Beyond the fact that the merging parties may genuinely expect that the merger will not reduce output (or will reduce it less than alleged by the Commissioner), a determination of the actual output reduction requires completing the analysis of competitive effects. This is a legitimate practical consideration; however, it should also be recognized that similar practical challenges may arise in any event, such as where parties cannot establish efficiencies until the scope of the section 92 order has been determined. In any case, ascertaining output reduction is not novel and is necessary under any likely approach to section 96, including that mandated in *Propane* and *Tervita*.

Focussing on average cost may allow for a principled assessment of whether a merger generates gains in efficiency. By comparison, the current approach of evaluating efficiency claims by looking at cost savings in isolation, while disregarding output effects, may yield untenable outcomes. For instance, an output-lowering merger that reduces economies of scale and increases the average unit cost may nonetheless be found to improve productive efficiency, which simply cannot be correct. Similarly, under the prevailing approach to section 96 (which assumes no change in output), it is impossible for a merger to result in a loss in productive efficiency, which is not accurate. Just as mergers may improve economies of scale (and lower average cost), anticompetitive output-reducing mergers also have the potential to reduce economies of scale (and raise average cost).

It may be instructive to consider how focussing on the merger's impact on average cost may have assisted in *Propane* and *Tervita*.

In *Propane*, the Tribunal found that the welfare trade-off (largely total surplus, although with modest wealth transfer effects included under a balancing weights standard) overwhelmingly favoured the merging parties. However, it has subsequently become recognized that this welfare trade-off should have been much closer (to the point that it is unclear which side should have prevailed) had the impact of pre-existing market power been taken into account. If the focus from the outset had been on whether average cost decreased (based on the available assessments of both output reduction and cost savings), it would have been readily apparent that any welfare calculation was a much closer call than was found by the Tribunal.

² See Appendix.

³ See Appendix.

⁴ In his seminal work on merger welfare effects, Oliver Williamson showed that a small decline in average cost may be sufficient to improve total welfare in an anticompetitive merger. See Oliver Williamson, "Economies as an Antitrust Defense: The Welfare Tradeoffs", *American Economic Review*, Vol. 58, No. 1 (March 1968), pp. 18–36.

In *Tervita*, the Supreme Court held that the Commissioner did not quantify the quantifiable anticompetitive effects, which would include the effect of the merger on output. Nonetheless, for illustrative purposes, consider how an average cost screen might have helped if an output effect had been established. Assume, for simplicity, an output effect of 10%, based on the Tribunal's finding of a price effect of at least 10% and the fact that a profit-maximizing monopolist (the merger in *Tervita* was found to preserve a monopoly) will not operate along the inelastic portion of the demand curve. From this output effect and the minimal "overhead savings" found by the Tribunal, it would likely be easy in this case to ascertain whether average cost would decline, which is a prerequisite to increasing total welfare. Furthermore, framing the inquiry in terms of average cost would likely have compelled from the outset a quantification of the output effect, which may have proved adequate to assess welfare impacts in this case, while sidestepping more onerous quantification challenges associated with full-blown attempts to measure marginal costs and deadweight loss.

Finally, it is worth reiterating that focusing on average cost to assess a merger's impact on efficiency has no bearing on whether other types of analyses may be pursued, such as calculating the overall impact on total surplus by setting cost savings against deadweight loss. Rather, looking at the impact on average cost may simply provide an alternative, pragmatic way of vetting efficiency claims by directly addressing the threshold question under section 96 of whether the merger is likely to bring about gains in efficiency.

PART 2: EFFICIENCIES SHOULD BE RELEVANT UNDER SECTION 92

While the above discussion has examined how not taking into account anticompetitive output reductions may risk overstating efficiencies under section 96, a corollary observation is that not considering efficiencies under section 92 may risk distorting and potentially overstating harm to competition under section 92.

For example, it is noted that merger simulation models designed to measure competitive effects may incorporate consideration of efficiencies and their impact on cost structure. In particular, some econometric models measuring upward pricing pressure may require factoring in the downward pricing pressure from merger efficiencies to avoid inaccurate conclusions of harm to competition.

Similarly, reductions in per unit cost may give a merged entity a cost advantage on competitors in an oligopoly and, consequently, decrease incentives for coordinated interaction.

The Guide appears to indicate that Parliament has confined efficiency considerations to section 96, although the actual wording of sections 92 and 96 would not seem to preclude taking efficiencies into account under section 92 where relevant. That said, it is acknowledged that existing jurisprudence places constraints on the consideration of efficiency in section 92 before the Tribunal and Courts. Nonetheless, insofar as the Commissioner exercises enforcement discretion, it is hoped that merger efficiencies may be given appropriate consideration under section 92 in the Bureau's merger reviews.

CONCLUSION

For the foregoing reasons, it is suggested that the Bureau consider two recommendations:

1. As a threshold screen of whether a merger results in gains in efficiency, it is suggested that a simple question be asked up front: Will the merger reduce average cost? While this will not eliminate the potential complexity associated with full-blown assessments under section 96, it may allow for a practical, common sense initial screen of efficiency claims and reduce the prospect of analytical distortions, such as arose in assessing efficiencies in *Propane* and *Tervita*.
2. The Bureau should give due consideration to efficiencies in section 92, since reductions in per unit costs may have important implications for competition.

Appendix

Total Welfare Calculation

Note: There are various ways to calculate an anticompetitive merger's impact on total welfare. The particular calculation below is formulated in terms that allow measuring if there is a gain in efficiency as defined in the preceding comments (decline in average cost across the post-merger output).

Assume a merger to monopoly that results in a price increase from P_1 to P_2 and an output reduction from Q_1 to Q_2 . The pre-merger average (total) cost is AC_1 and the post-merger average cost is AC_2 .

The change in total welfare (ΔTW) equals the loss in consumer surplus plus the gain in producer surplus.

Consumer surplus declines both from the wealth transfer $[(P_2 - P_1)Q_2]$ and the portion (D) of deadweight loss due to foregone consumer surplus to the extent that the demand curve exceeds pre-merger price across the range of output reduction.

Producer surplus increases to the extent profits increase, which equals the change in revenue ($P_2Q_2 - P_1Q_1$) plus the reduction in total cost ($AC_1Q_1 - AC_2Q_2$).

Thus:

$$\begin{aligned}\Delta TW &= -[(P_2 - P_1)Q_2] - D + (P_2Q_2 - P_1Q_1) + (AC_1Q_1 - AC_2Q_2) \\ &= P_1Q_2 - D - P_1Q_1 + AC_1Q_1 - AC_2Q_2 + [AC_1Q_2 - AC_1Q_2] \\ &= [(AC_1 - AC_2)Q_2] - D - [(P_1 - AC_1)(Q_1 - Q_2)]\end{aligned}$$

Therefore, the change in total welfare equals {the change in producer surplus due to the change in productive efficiency $[(AC_1 - AC_2)Q_2]$ } minus {the portion (D) of deadweight loss due to foregone consumer surplus (to the extent that the demand curve exceeds pre-merger price across the output reduction)} minus {the pre-merger average profit margin multiplied by the output reduction $[(P_1 - AC_1)(Q_1 - Q_2)]$ }.

Thus, assuming that the merging firms are profitable ($P_1 \geq AC_1$, which is a reasonable assumption in mergers raising competition concerns), a decline in average cost ($AC_2 < AC_1$) is a prerequisite to increasing total welfare.