WHAT DO WE CONCLUDE FROM THE SUCCESS AND FAILURE OF MERGERS? COMMENT ON TICHY

by

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This paper is written as a response to a review of the evidence from empirical merger studies which is to be published in the same issue of the journal. The review is written by Gunther Tichy and titled "What do we know about the success and failure of mergers?".

Abstract

Tichy's review of the evidence presents at best a very mixed picture of the 'success' of mergers as a corporate strategy. However, care should be taken not to interpret this as a case for crudely prohibitive competition policy. A simple framework is developed to show that mergers anticipating market changes might not be inappropriate, even when *ex post* results will appear disappointing. We argue that the role of a competition authority should be to protect consumers, and not to provide management consultancy on behalf of shareholders. We suggest a more limited reform of the EC Merger Regulation than that proposed by Tichy.

Keywords: antitrust policy; mergers; endogenous market structure

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How Should We Respond To The Success And Failure Of Mergers?

Comment on Tichy

Gunter Tichy has provided a very thorough review of a vast literature, and he has done a particular service in uniting the empirical literatures from both industrial organisation and finance. He has reminded us that mergers are more often than not associated with a decline in profits, and that we must still be particularly wary of mergers that might enhance market power.

I have a few gripes with the empirical review, but they are relatively minor. I will limit myself to three broad comments. First, all studies are presented as if they were equally valuable, which they are not. It would have been better to give greater weight to those studies, which use the most accurate and representative data, and which conduct the most appropriate analysis. Second, stylised facts about mergers are inevitably crude, but some are cruder than others. While the reader needs some conclusions to take away so he or she is not lost in the detail, some of the 'stylised facts' and paradoxes listed at the end of section 1 have much greater empirical support than others. Third, it is not appropriate to use a wide cross-section of merger events to test a particular theory if that theory purports only to apply to a subset of cases. Given the variety of motives for mergers, it is unlikely that one motive dominates, even at one period of time.

Nevertheless, it is difficult to sift through the evidence without concluding, along with Tichy, that many firms are hopelessly overoptimistic about mergers, that those who make a living by promoting mergers may have been unduly influential, and that hubris is a major cause of mergers.

However, I am more circumspect in drawing conclusions for competition policy. My intention in this short paper is to provide a broader theoretical setting so that appropriate policy implications can be better drawn out. When the main social welfare problems relate to the creation and enhancement of market power and how markets adjust to changing conditions, there is a limit to what can be achieved by interpreting the evidence from the perspective of individual firms. A market perspective is appropriate, and section 1 provides a simple framework for understanding why horizontal mergers may be associated with profit decreases due to an exogenous increase in the degree of competition. Section 2 returns briefly to the firm level, to consider why it is impossible to come up with a general rule as to whether or not merger is the most appropriate vehicle for industry adjustment or for the achievement of efficiencies. Section 3 draws the implication that the competition authorities should protect consumers, and not provide management consultancy on behalf of shareholders. It also provides some detailed recommendations for a limited reform of the EC Merger Regulation. Section 4 concludes.

1. Mergers in an Endogenous Market Structure

Horizontal market structures evolve over time as a result of changes in fundamental forces. These can be summarised into two categories: entry/survival; and price and other forms of competition. Economies of scale relative to market size and barriers to entry, broadly defined, are the most important determinants of how many firms can enter and survive profitably in a market at a given price. The actual price in a market depends on the mode of competitive behaviour adopted by firms, and the number and size distribution of those firms.

Non-price competition often involves spending on endogenous fixed costs such as R&D and advertising. Such forms of non-price competition impact directly on economies of scale, as well as affecting pricing through product differentiation. A simple diagram can summarise how the cost and entry conditions combine with pricing behaviour to determine long-run market structure. It also allows a 'first brush' attempt to understand how mergers affect pricing and market structure.[1]

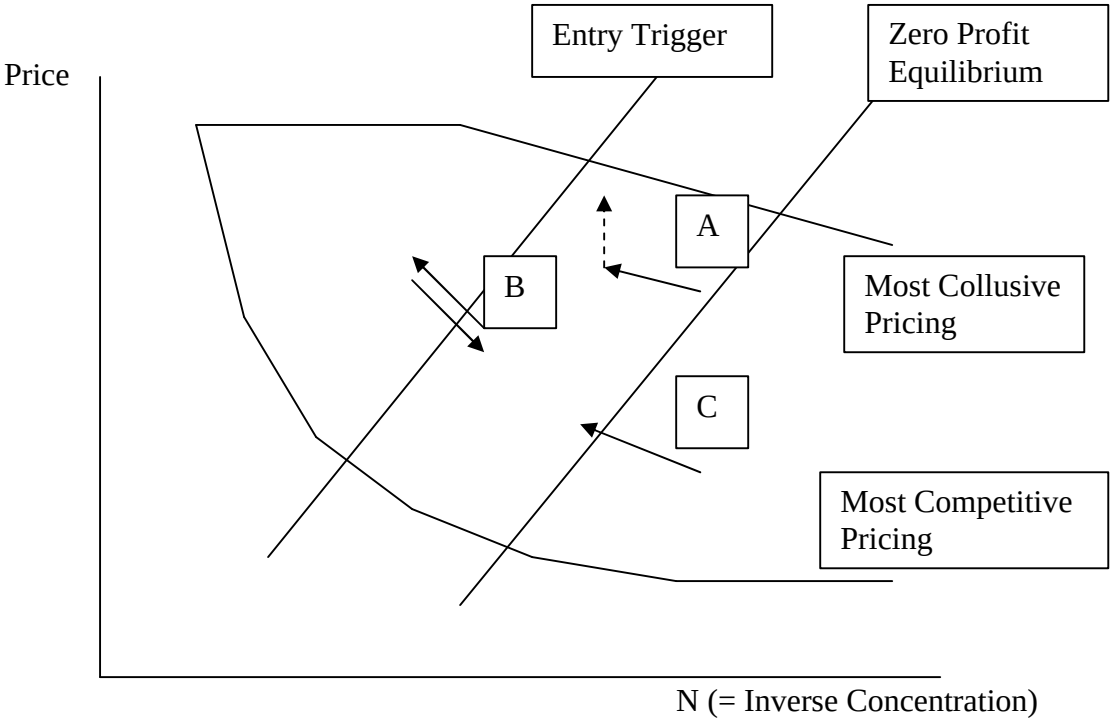
The endogenous horizontal market structure framework is summarised by Figure 1.[2] Different industries at different points in time will have different modes of price competition. Sometimes, this will be very tough ('cut-throat'), but even so the price will be higher if the market is less concentrated.[3] This gives the 'most competitive pricing' line, which relates prices to market structure. In the other extreme case, pricing will be collusive, though the highest sustainable price will eventually fall below the monopoly price as concentration in the relevant market falls (the 'most competitive pricing' line). Downward sloping lines between these two extremes would represent intermediate forms of price competition. Which pricing line is relevant for a particular industry at a particular moment in time is not directly relevant at this stage – what matters is that a mode of pricing behaviour exists, that it lies between these two bounds, and it is very difficult for an external observer to identify.

[1] This analysis skirts round some difficult theoretical issues relating to the incentives for merger and the consequent full merger equilibrium market structure; see e.g. Kamien and Zhang, 1990; Horn and Persson, 2001.

[2] This analysis is based on Lyons and Matraves (1996), which in turn is based on Sutton (1991).

[3] With homogeneous products and no capacity constraints, the famous Bertrand outcome is monopoly pricing with a dramatic drop to marginal cost (of the second highest cost firm) as soon as there are two or more firms in the market. More generally, with differentiated products, the result illustrated in the figures will hold.

Figure 1: Mergers in an Endogenous Market Structure



The constraints on an endogenous horizontal market structure equilibrium are given by the two upward sloping lines. The 'zero profit equilibrium' line shows that, given a degree of economies of scale, the more firms there are in a market, the higher must be the break-even price. This follows straightforwardly because there are fewer sales over which fixed costs can be spread. Points below and to the right of this line represents combinations of price and market structure that result in below normal profits, and must eventually induce exit (unless firms are somehow able to switch to a more collusive form of pricing). In the absence of entry barriers, the endogenous market structure would always rest on this line. However, in the presence of entry barriers, expected price would have to be higher at any given market structure before entry would be induced (e.g. N firms can make positive profits, while N+1 firms would make losses even at the same price, because each has a discretely smaller

market). Prices above and to the left of the 'entry trigger' line would induce entry into the industry.

Any market structure in the area bounded by these four curves is an equilibrium for some pricing line. No market structure outside these bounds can survive in the market – it is not sustainable because unprofitable firms must eventually go bankrupt, or a new entrant will take a profitable opportunity. Equilibria near the zero profit line are as low profit as is feasible in a market economy. High profit equilibria lie near the entry trigger line. The lowest price equilibrium lies at the intersection of the competitive pricing and zero profit lines (i.e. monopolistic competition). Note, however, that this is not the least concentrated market because more collusive prices allow more firms to enter and remain in the market. We are now ready to consider mergers in the context of an endogenous market structure.

Starting at A, merging firms might hope to move in the direction of the arrow to raise price. If a 'maverick' competitor can be eliminated, it may also allow a shift to a more collusive mode of pricing (the dotted line). This is the classic case of merger for market power, and it is the case that is bubbling under most of Tichy's interpretation of the empirical literature. It may represent a merger to achieve some economies at the expense of an increase in market power, but it is also the case of an arbitrary merger promoted by bored, greedy or power hungry chief executives, bankers or other advisers. This case can be privately unprofitable for two types of reason. First, independent rivals may raise production in response to output restriction by the merging firms, and so reduce their joint market share.[4] Second, there may be transaction costs associated with welding two companies together, especially where they have different corporate cultures. However, case A is not the only possible background to a

[4] See Salant et al (1983), Perry and Porter (1985), Davidson and Deneckere (1985) and Farrell and Shapiro (1990).

merger. In B, any attempt to merge for market power will induce entry, and so would not be profitable. In case C, the industry starts with the same market structure as A, but for historic or other reasons engages in more vigorous price competition, which results in negative profits. In such a case, a merger may simply return the industry to normal profits. This could be a preferable outcome for consumers to the alternative of firms finding a way round the cartel laws to re-establish collusion, or the assets of a bankrupt firm being scrapped or otherwise exiting the industry.[5] Thus, there are good reasons why mergers may be associated with either high or low profits. In A, merged firm profits may rise or fall, while consumers are worse off (this is Tichy's interpretation of the evidence). In B, the merger does little to harm consumers, while the firms may (or may not) gain efficiencies. In C, merger is a natural mode of 'workably competitive' market adjustment.

Figures 2-4 take a step further back to see what underlying changes might induce a merger, other than of type A. Figure 2 illustrates how an exogenous change in the toughness of price competition can result in a natural change in market structure. Starting at D, a more vigorous anti-cartel policy can make an existing structure unprofitable, and the industry responds by merger to achieve normal profits. Consumers still benefit from lower prices. While a merger is the natural response to *tougher* price competition, this is not true if the industry has become *less* price competitive. This is illustrated by case E, where there is no structural response. Thus, when there is an exogenous change in the nature of competition, mergers can be associated with low profits and overall benefits to consumers.

[5] See section 2.

Figure 2: Structural Response to a Change in Price Competition

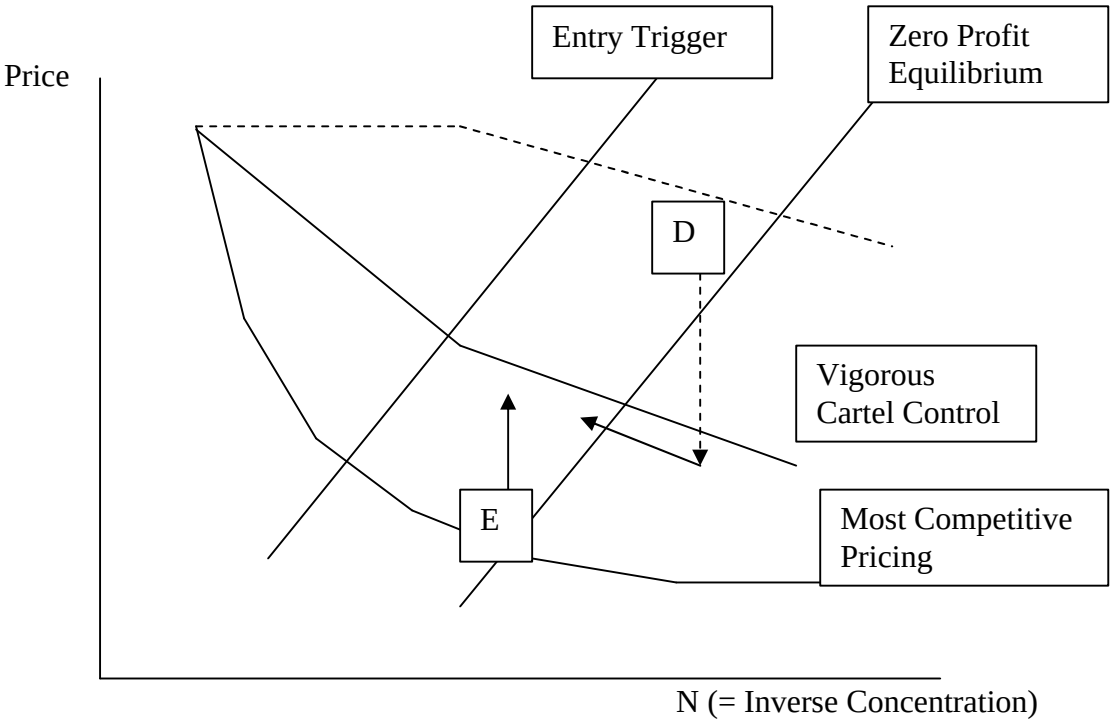


Figure 3: Structural Response to Increase in Opportunities for R&D or Advertising Competition

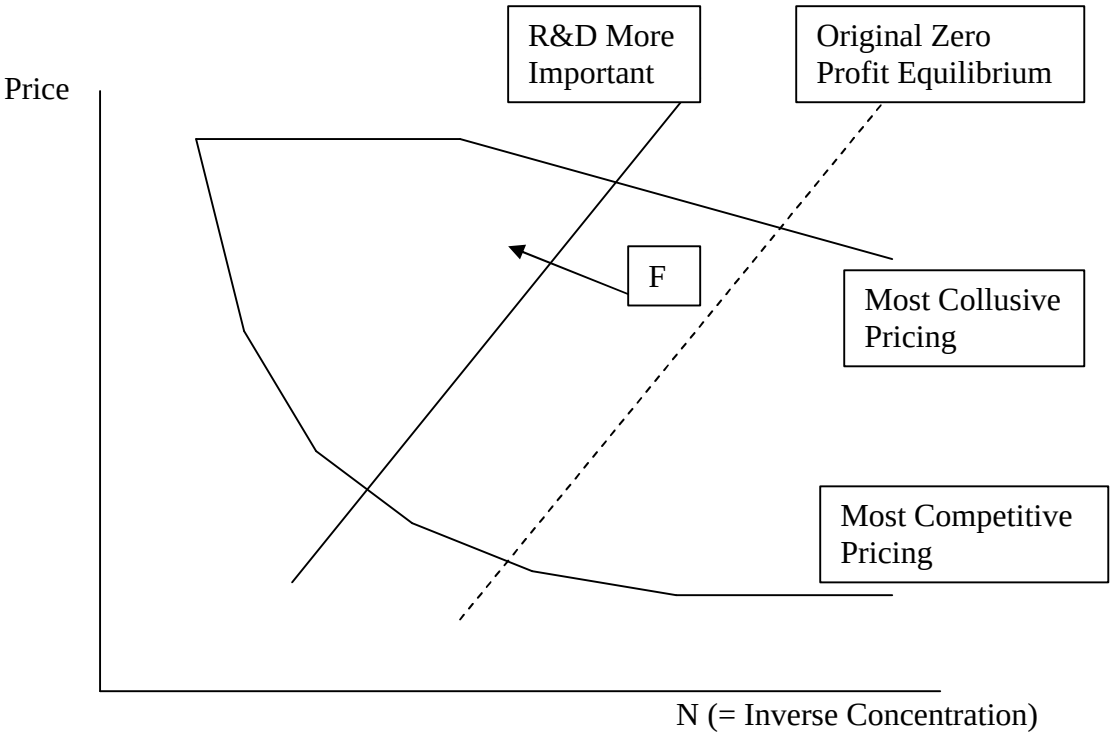
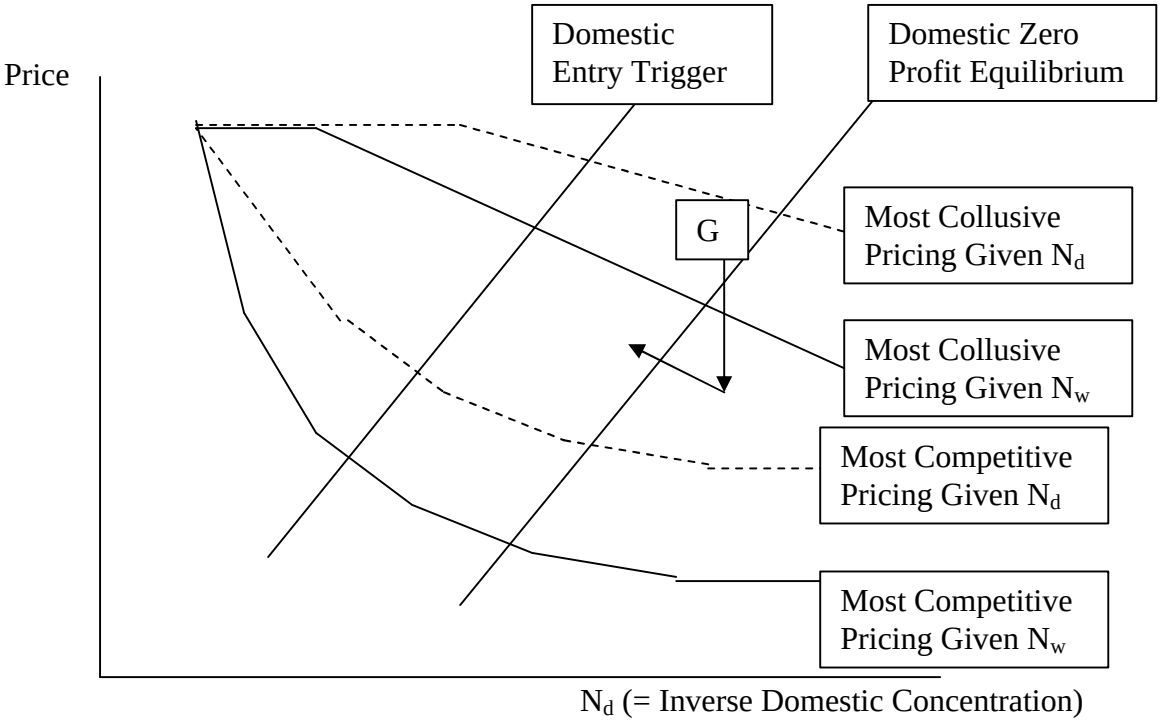


Figure 4: Structural Response to International Integration



If new technological opportunities increase the potential for innovation, so that firms escalate their R&D budgets, this has the effect of increasing overhead expenses and so the degree of economies of scale. In the absence of a structural response, this R&D battle would erode profits. If a given number of firms is to cover its costs, either a higher price is necessary, or larger market shares at a given price. Merger F in Figure 3 (which omits the entry trigger lines) might achieve this. A similar argument can be applied to advertising or any other form of competition in endogenous fixed costs. In contrast, an industry which has reached maturity, such that R&D opportunities have become more limited, is more likely to induce entry, not merger, as the natural response, though continuing patents may protect incumbents

against entry for some time. Thus, merger can be associated with higher R&D, lower profits, and consumer benefits.[6]

Care must be taken in illustrating international integration in this simple diagram. In Figure 4, it is assumed that the number of domestic firms N_d is proportional to the number of global firms N_w in competition in an integrated market. Integration does not then change the price necessary for a given number of domestic firms to be profitable. However, since N_w is, say, twice N_d, and N_w determines price in an integrated market, the pricing lines in the figure become steeper – for any mode of price competition, price is lower at each N_d. Merger G may therefore become necessary to return to normal profits in a domestic industry that becomes open to international competition (to the benefit of consumers). Once again, merger might be a natural response to an adverse profits shock due to an exogenous increase in the degree of competition.[7]

This is the main lesson from an industry perspective. Inasmuch as mergers are an endogenous response to market shocks, they are likely to be associated with low profits. This can contrast with the exogenous merger theory (case A) where mergers might be an attempt to achieve market power.[8] The evidence reviewed by Tichy is unable to make this distinction. Furthermore, in an endogenous market structure, a merger may be either responsive to a past change in underlying market conditions, or it may be in anticipation of an expected future event. For example, firms may merge in anticipation of international

[6] In the longer term, there may be an increase in price competition and scale economies of mass production as mature products become more standardised, and both such forces will encourage mergers.

[7] Tichy may be wrong in arguing that markets are now so integrated that this no longer provides a competitive counter-balance to lenient merger policy. Even in Europe, the international integration of market structures is not as far advanced as is sometimes thought (e.g. Lyons, et al, 2001).

[8] The theory of endogenous mergers, as distinct from the theory of endogenous market structure discussed here, investigates how the profit motive limits a sequence of mergers for market power in the absence of an entry threat. See the literature in footnotes 1 and 4.

integration, or wait until the anticipated reduction in profits actually arrives. Obviously, the extent to which changing circumstances are anticipated or unanticipated is important for interpreting empirical work (e.g. an anticipatory merger may initially generate higher profits, but these will inevitably decline).

I must stress that I do not wish to claim that all horizontal mergers are part of a necessary adjustment to a new industrial structure. Indeed, I am sure that many merger proposals are exogenous events, and many of these may be socially undesirable. Unfortunately, because most of the studies reviewed by Tichy do not distinguish whether there were any changes in market conditions that stimulated the merger, they cannot provide an appropriate ante monde against which to judge 'success'. A sensible merger policy should recognise that a competition authority has to appraise mergers that might fall into either category, and without close investigation there is no simple rule to distinguish which is relevant.

2. Merger As An Efficient Vehicle For Industry Adjustment Or To Achieve Efficiencies

Tichy (# 3.1) too easily dismisses the importance of (often unobservable) transaction costs. In this section, I want to sketch some of the relevant issues in relation first to horizontal mergers and potential efficiencies, then to vertical and conglomerate mergers. I also consider a behavioural view of mergers as strategic experiments. There is no space for a complete analysis, but the aim is to highlight some further difficulties of making broad generalisations. It is this somewhat negative conclusion that I want to carry through to the analysis of competition policy.

The section 1 analysis highlights that mergers can be a form of exit from an industry that has an unprofitable current or expected structure. Why might a merger be preferable to other forms of 'exit', such as asset scrapping ('downsizing') or the independent closure of one firm? Exit can take the form of a 'war of attrition', with each incumbent trying to scrap the least, or to be one of those left in the market once the new market structure develops. This can, of course, be a highly competitive period, which benefits consumers. However, it can also lead to great uncertainty, and this can result in the postponement of productive new investment and delay the optimal reallocation of resources. If firms hang on until bankruptcy, it may result in more productive resources leaving the industry than would be the case following a merger. There are no simple rules as to what form of exit would be best, but a merger will not always be the worst option even when dealing with a situation that has not reached as far as a firm on the brink of bankruptcy.

A merger to combine research inputs may experience problems in merging two labs with different cultures, or it may facilitate useful synergies that would not be possible with market transactions (though, in practice, these may be very difficult to achieve). A merger is a swift and sure way of increasing sales, and this larger sales base of a merged firm can be an more important influence on the incentive to invest in R&D, as it allows a larger initial market over which to spread the benefits of innovation, without the difficulties of a licensing strategy. On the other hand, a small, flexible, entrepreneurial firm might be best at some types of innovation.[9] Similar comments could be made about other sources of efficiency claimed by firms when proposing a merger. It is far from clear that a merger is a necessary condition for attaining efficiency savings, but the ability of the market as an alternative will depend on significant transaction costs.

[9] There is another huge empirical literature on R&D, with equally mixed results to that on merger performance.

This paper has focused on horizontal mergers, but many mergers are vertical or conglomerate. The economic analysis of vertical mergers is not as settled as the analysis of horizontals. Vertical mergers are much less likely to harm competition, yet the early years of merger regulation failed to distinguish vertical from horizontal. There was an academic backlash in the form of the 'Chicago view', which argued that market power can only be taken once so vertical mergers are competitively neutral. Furthermore, transaction cost theory has shown how vertical mergers can encourage productive specific investments. More recently, economists have re-explored the basis for foreclosure theories (in which vertical integration can either eliminate horizontal competition or allow the monopolist to preserve her selling power against downstream buyers), and the modern wisdom is that under certain circumstances vertical integration can allow a more fulsome exploitation of market power than in a vertically separate market structure. Nevertheless, the issues are much more complex than is suggested by Tichy's conclusion 10 at the end of section 4 (that, for example, vertical mergers in network industries should be prohibited *per se*).

Moving away from a rational, complete information, deterministic world, into one of bounded rationality where learning comes only by doing something, mergers might be a form of strategic experimentation. For example, it may not be possible to predict whether conglomerate mergers are a good strategy, but someone thinks they are worth trying, if only to find out. In evolutionary terms, merger strategies might act as mutations, most of which fail, but some of which succeed to provide long-term benefits. Less randomly, some merger strategies may have been appropriate at some point in time, even though properly functioning markets would be better; e.g. internal capital markets may be valuable until external capital markets become sufficiently sophisticated, after which the internal capital market is revealed

as too limiting. The benefits of some merger strategies may be economy specific; e.g. more suitable to a small economy than a large integrated economy, or to mature industries than high tech. It is very difficult to predict *ex ante* whether a particular merger strategy will be productive, and which might just be a fad. For example, the 1990s saw numerous mergers in the broadly defined media industries. It is difficult to believe that many of these have much justification, but perhaps we would never know without someone experimenting.

Tichy also draws our attention to the fact that advertising intensive industries have seen the largest recent increase in EU concentration (#3.4). This is consistent with R&D intensive industries already operating at the international level, and advertised brands now becoming exploited internationally. I do not know if this will be a fad, like excessive diversification, or if it will be a boost to quality product development, like international technology transfer within corporations. However, in the absence of likely harm to consumers, I would rather leave that judgement to shareholders.

3. Appropriate Competition Policy Towards Mergers

Tichy is right that it is far better to impose a structural remedy at the merger assessment stage than it is to try to regulate or unpick things later when the market is not working well. However, he is too draconian in his concluding recommendations on the reform of competition policy (e.g. the prohibition of whole classes of merger). The evidence he reviews simply does not justify them. An appropriate policy must take account of the mixture of circumstances discussed in sections 1 and 2 of this commentary.

First, I want to dismiss one claim derived from the empirical result of predominantly unprofitable mergers. Boardroom merger fetishes that do not affect consumers are affairs between consenting adults, and should not be the concern of a competition authority. If shareholders need protection from senior managers, this should be addressed by corporate governance policy, the reform of which may help in getting a stronger shareholder voice into the boardroom. However, it is not the role of a competition authority to provide management consultancy from the public purse.

The ultimate objective for competition policy should be the long-term welfare of consumers. Despite Tichy's claims that policy is too lenient, the EC merger regulation (ECMR) already does focus on the protection of consumers (and sometimes misguidedly also on the protection of third party firms).[10] It allows 'the development of technical and economic progress [only] *provided that it is to consumers' advantage* and does not form an obstacle to competition' (italics added). To many economists, this is too limiting in ruling out efficiency enhancing mergers that would harm consumers only marginally. Less controversially, the ECMR has also been hampered by the dominance test. Although this has been usefully modified by the evolving doctrine of collective dominance, it remains as an impediment to good practice. I conclude with two relatively modest suggestions to improve the working of the ECMR.

Article 2(3) of the ECMR prohibits the creation or strengthening of 'a dominant position as a result of which effective competition would be significantly impeded'. Thus, there are two elements: a) a dominant position; *and* b) significant impediment to effective competition (SIEC). There are two problems created by this. First, it can be 'too generous' to merging

[10] There is no space to detail practice as distinct from legislation, but see Neven et al (1993). In what follows, I focus on the EU Merger Regulation partly because of its importance to Europe (and even to US mergers), and partly because at the time of writing (March 2002) it is under review. The following recommendations are based on the author's submission to this review (full submission available on request).

firms because there is a theoretical double hurdle for the competition authorities that might allow an undesirable merger (e.g. of the second and third ranked firms who might still have a smaller market share than the leading firm and so not be considered dominant). It is not certain that the emerging doctrine of collective dominance is sufficiently robust to prevent this whenever it might enhance market power. Second, it can be 'too harsh' on merging firms that would create an efficient new enterprise with an incentive to cut price or improve quality to such an extent that this might make an existing rival unprofitable (or at least reduce its market share). This would 'create dominance' only by *increasing* competition, but it still might fall foul of a crude interpretation of the ECMR dominance test because of the reduced number of competitors. It would be relatively straightforward to eliminate all mention of 'a dominant position' and replace Art.2(3) with the *SIEC Test*: 'A concentration which significantly impedes effective competition in the common market or a substantial part of it shall be declared incompatible with the common market.'[11]

Although competition policy should not be concerned by mergers that fail and harm only shareholders, there is still an important debate to be had concerning mergers which might raise prices a little, but improve efficiencies a lot – the Williamson (1968) trade-off. Note that current EU legislation does *not* allow any such trade-off, much to the chagrin of many economists who have articulate reasons to support total welfare as the appropriate policy objective.[12] There is no space to get into this issue in depth, except to note that there may be

[11] This proposal is, of course, very close to the 'substantial lessening of competition' test used in the USA, Japan, Canada and Australia, and shortly to be used in the UK. However, my proposal has the advantage that its wording is closely modelled on the current ECMR, and so allows maximum use of good case law, signals continuity, and minimises any problems in transition.

[12] Consumers are individuals who also hold shares in firms, possibly indirectly through pension funds, etc. Furthermore, any undesirable income distributions can be dealt with by the tax system, independent of a particular merger decision.

strategic advantages in a government delegating a more consumer-oriented policy to a competition authority.[13]

Pending the resolution of the continuing debate about an efficiencies trade-off, the current system would be greatly improved if the Commission were to issue a Notice on the appropriate interpretation of merger-specific efficiencies under the current ECMR. Given that the evidence on mergers justifies a sceptical view of the claims by firms, this should endeavour to create the right incentives for firms to be as truthful as possible in their assessment of potential efficiencies. To this end, firms should be advised that: efficiencies are a very desirable outcome of a merger; the burden of reasonable expectation in relation to efficiencies lies with the firms (this is appropriate, just as the burden with respect to competition effects lies with the competition authority); the published record should be explicit if a significant impediment to effective competition would be expected in the absence of efficiencies; the sources of expected efficiencies should be published, as much as reasonable commercial confidentiality will allow (possibly with a delay of some months if this facilitates their implementation).[14]

4. Conclusion

The Tichy review provides a very useful summary of the empirical merger literature, and he has highlighted some empirical patterns that help to inform the policy debate. My commentary has tried to draw attention to some of the limitations of trying to draw too many policy conclusions from this literature.

[13] See e.g. Besanko and Spulber (1993), Neven and Roller (2000) and Lyons (2002).
[14] To an extent, this is the Australian practice, and it is interesting to note that business does not very often pick up the challenge of publicly making what they call a 'public benefit' defence.

Most studies compare pre- and post-merger values of profits, stock prices, and/or sales; with the more sophisticated studies attempting a comparison with other firms in similar industries.[15] We have probably got as much as we can out of large cross-section work like this, because it cannot identify either the types of merger situation discussed in section 1, or the transaction cost issues sketched in section 2. What we really need is more detailed case studies of the price and cost consequences of individual mergers set against the context of what motivated the merger in the first place. Such studies could usefully use the new quantitative tools being applied to *ex ante* merger evaluation in the USA and Europe. A good start for such studies would be those mergers that have passed detailed antitrust scrutiny. Although there will always be a severe problem of commercial confidentiality in getting hold of appropriate data, the payoff would be great.

Meanwhile, the most effective policy recommendations are likely to be those which focus the limited resources of competition authorities on mergers that might create the most harm, and which allow the authorities to deal with any pockets of market power they find. Despite the quantity of the evidence on mergers, its quality is still not sufficient to support Tichy's recommendation of *per se* prohibitions on particular classes of merger.

[15] Such comparisons are fraught with problems; e.g. these studies work with consolidated profits and no two large firms operate across exactly the same range of markets.

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