



Post-Chicago  
Developments in  
Antitrust Law.....

Edited by  
ANTONIO CUCINOTTA  
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New Horizons in Law and Economics

# Post-Chicago Developments in Antitrust Law

## NEW HORIZONS IN LAW AND ECONOMICS

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Post-Chicago Developments in Antitrust Law

*Edited by Antonio Cucinotta, Robert Pardolesi and Roger Van den Bergh*

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NEW HORIZONS IN LAW AND ECONOMICS

**Edward Elgar**

Cheltenham, UK • Northampton, MA, USA

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Chapter 6 © Rudolph J.R. Peritz

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Published by  
Edward Elgar Publishing Limited  
Glensanda House  
Montpellier Parade  
Cheltenham  
Glos GL50 1UA  
UK

Edward Elgar Publishing, Inc.  
136 West Street  
Suite 202  
Northampton  
Massachusetts 01060  
USA

A catalogue record for this book  
is available from the British Library

### **Library of Congress Cataloguing in Publication Data**

Post-Chicago developments in antitrust law/edited by Antonio Cucinotta, Roberto Pardolesi, Roger Van den Bergh.

p. cm. – (New horizons in law and economics)

Includes index.

1. Antitrust law—Economic aspects. 2. Restraint of trade—Economic aspects.
3. Competition. I. Cucinotta, Antonio, 1962—II. Pardolesi, Roberto.
- III. Bergh, Roger Van den. IV. Series.

K3850 .P67 2002  
343'.0721—dc21

2002021257

ISBN 1 84376 001 0

Typeset by Cambrian Typesetters, Frimley, Surrey  
Printed and bound in Great Britain by MPG Books Ltd, Bodmin, Cornwall

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## Preface

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Competition law has formed an important area of European law since the establishment of the Community. The EEC Treaty of 1957 introduced prohibitions of cartel agreements and abuse of a dominant position, which since 1962 onwards have been directly binding on firms. Since 1989 the Merger Control Regulation subjects all large concentrations to antitrust scrutiny, in order to prevent effective competition in the internal market being impeded. In recent years economics has assumed greater prominence in EC competition law analysis. On many occasions, the EC Commission has stated that an economics-based approach is to be preferred to strictly legalistic methods of decision making. Clear examples are the Notice on the definition of the relevant market and the Guidelines on vertical restraints. In addition, recent merger decisions show an increasing degree of economic sophistication, including econometric techniques to establish dominance.

In spite of this recent change of perspective, it is fair to say that up to now economic considerations have played a more important role in the United States than in Europe. From the 1970s onwards, the Chicago School had a profound impact on American antitrust law. Chicagoans argue that economic efficiency is to be considered as the sole goal of competition law. Obviously, confining antitrust to efficiency goals permits regulators and courts to employ the teachings of economic analysis to a much broader extent than would be possible if the opposite view, that non-economic goals are equally important, is accepted. In Europe, the political goal of market integration has impeded a full reception of the relevant economic insights. Clear examples are the ban on absolute territorial protection for dealers and the prohibition of third-degree price discrimination by dominant firms.

Confronting different views on controversial issues of competition law is always a challenging invitation for academics on both sides of the Atlantic Ocean. The University of Messina offered a great opportunity for such an intellectually stimulating meeting by organizing a conference in Taormina in October 2000. The timing of the conference was excellent. More than 20 years had passed since the initial successes of the Chicago School in the United States, hence, the time seemed ripe for a critical evaluation of the Chicago approach to antitrust. Recent judgments of the US Supreme Court (such as *Kodak*) and the debate surrounding the *Microsoft* case have led to the view that antitrust has entered the post-Chicago era, in which previous immoderations

are tempered and more refined and accurate analyses take precedence. This claim is made exactly at the time when European competition policy opens the door for an economics-based approach. The conference in Taormina created optimal scope for a discussion of the economic foundations of competition policy and the different ways in which both American and European competition law do – or do not – take account of these economic insights.

Most of the papers presented at Taormina have been collected in this book, which obviously gives no final answer to the host of questions arising from the complexities of antitrust, but does offer a definite contribution to a better understanding of the many ‘interfaces’ between economic thinking and sound legal policy.

*Antonio Cucinotta, Roberto Pardolesi and Roger Van den Bergh*

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# 1. The reckoning of post-Chicago antitrust

**Herbert Hovenkamp**

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## INTRODUCTION: THE LONG HISTORY OF ECONOMICS IN ANTITRUST

Antitrust in the United States has seldom suffered from a shortage of economic theories suggesting why certain behavior should be unlawful. Beginning in the decade that the Sherman Act was passed, litigants began to rely on prevailing economic theories to explain why a particular act was or was not anticompetitive. In the 1890s, economists struggling with the first marginalist models in economics – models that incorporated such conceptions as marginal cost and marginal revenue – had difficulty explaining how a competitive enterprise could ever recover its fixed costs. Finding no adequate explanation, several economists argued that firms with significant fixed costs would be driven to ‘ruinous competition’ that would invariably yield low returns, bankruptcy and harmful destruction of assets.<sup>1</sup> John Bates Clark, who was perhaps the most important American economist of his generation, argued in 1887 that certain industries subject to high fixed costs and economies of scale were so prone to overproduction that the firms in them must either collude or face ‘widespread ruin’.<sup>2</sup>

The defendants in the earliest Sherman Act cases involving mainly railroad cartels quickly appropriated these theories, arguing that unregulated railroads would face ruinous competition unless given permission to fix their rates. Justice Rufus Peckham, who wrote for the Supreme Court in both the *Trans-Missouri* and *Joint Traffic* cases, did not cite any of the economic literature, but he was completely familiar with the argument.<sup>3</sup> Nevertheless, he could not find a ‘ruinous competition’ defense in the language of the Sherman Act, which condemned ‘every’ agreement in restraint of trade, whether economically justified or not.<sup>4</sup>

The economic debate over the possibility of ruinous competition continued into the 1920s and 1930s and had a significant influence on antitrust policy making, such as the important United States Steel merger decision in 1920.<sup>5</sup> The theory also played a significant role in the trade association movement of the 1920s<sup>6</sup> and the movement for voluntary cooperation among firms in the 1930s.<sup>7</sup>

Antitrust's subsequent hostility toward vertical integration<sup>8</sup> was also the product of prevailing economic theory. Arthur R. Burns' influential 1930s book *The Decline of Competition* was a full-scale attack on vertical integration.<sup>9</sup> Burns conceded that 'Integration may result from attempts to secure economies in production and marketing'. Nevertheless, he argued, the anti-competitive theories were much more persuasive and robust than the competitive ones. 'Where little vertical integration occurs the efficiency of producers is checked at a great many points along the chain of operations . . . ; costs of production are separated for each stage and the market facilitates the frequent comparison of costs and utilities.' However, if the firms in an industry tend to be vertically integrated, 'the market affords opportunity for comparing only the aggregate cost of all stages of production'. As a result, inefficiencies would be disguised and firms slower to adopt more efficient procedures. Further, 'vertical integration may diminish the responsiveness of the firm to changes in knowledge of methods of production'.

And in their 1933 watershed book, *The Modern Corporation and Private Property*, Arthur Berle and Gardiner Means concluded that, far from being efficient, vertical integration made firms too large and unresponsive.<sup>10</sup> Vertically integrated firms were actually less efficient than small firms, but the integrated firms were too big and unresponsive to be disciplined by ordinary competitive processes. Thus it was hardly a coincidence that antitrust policy developed a hostility toward vertical integration that was unmatched either before or after.<sup>11</sup>

Already in the early 1950s Judge Wyzanski hired an economist, Carl Kaysen, as an assistant to help him deal with a complex antitrust case.<sup>12</sup> Kaysen was a member of the Harvard School of industrial economics, which at the time placed a strong emphasis on 'case studies'.<sup>13</sup> While Kaysen's report to Judge Wyzanski contained a great deal of economic analysis, as well as citations from numerous books and articles, Judge Wyzanski did not cite any of them or even refer to the report itself.

In sum, one who observed the relative lack of economic citation in antitrust literature before 1980 and its significant increase thereafter would be seriously misled to believe that antitrust first developed an 'economic approach' this late. The Chicago School, which came to dominate antitrust in the 1980s, was important and had significant and lasting consequences for antitrust. But it was hardly antitrust's 'discovery' of economics. Rather, it represented the adoption of a different economic model, coupled with more explicit recognition of economics in the judicial literature than judges were accustomed to using. This fact hardly distinguishes antitrust from other legal disciplines. For example, the influence of classical political economy on both English and American judges is documented in a large historical literature.<sup>14</sup> But while the influence itself is beyond controversy, in the entire nineteenth-century body of case law

there are only a few instances of citations to the writing of classical political economists, and these are mainly to Adam Smith's *Wealth of Nations*, a book that was read by many non-economists, including lawyers and judges.<sup>15</sup>

## THE CHICAGO SCHOOL

The Chicago School offered an elegant, pro-market and largely anti-government vision of antitrust policy.<sup>16</sup> To oversimplify, its advocates believed that markets were far more robust than people had previously imagined, and nearly always worked themselves toward the competitive solution. Further, effective competition requires many fewer firms than once believed – in most cases three is sufficient. Even when competition is not sufficient, any attempt at monopoly pricing will be undermined by new entry, and in an efficient capital market such entry will almost always occur. Finally, while markets work themselves pure, government intervention can hardly make that claim. More often than not court-ordered antitrust fixes actually make markets less rather than more competitive, or injure consumers for the benefit of competitors. As a result, the best antitrust policy is one of doing as little as possible, confined to blatant practices such as naked price fixing or market division.

By contrast, 'post-Chicago' antitrust, as developed later in this chapter, has relatively less confidence in markets as such, is more fearful of strategic anti-competitive behavior by dominant firms, and has a significantly restored faith in the efficacy of government intervention. But anyone who takes the long view should see that 'post-Chicago' antitrust policy represents little more than another swing in antitrust's ideological pendulum. This long view is critical if antitrust is to maintain its integrity. Just as the 'ruinous competition' arguments of the early part of the twentieth century and the strategic vertical integration arguments of the 1930s and 1940s, the Chicago School contribution to antitrust did two things. First, it gave us much that was useful. Second, it was oversold.

First, Chicago School economic writings about antitrust gave us some lasting contributions, often by pointing out the economic nonsense upon which many antitrust decisions were based. Among these were the so-called leverage theory of tying arrangements and antitrust's more general hostility toward vertical integration;<sup>17</sup> deep pocket theories about mergers that often ended up condemning pro-consumer, efficient mergers simply because rivals were injured;<sup>18</sup> exaggerated notions of market dominance and monopolization that too often failed to ask whether the defendant monopolized anything that was even capable of being monopolized; and a failure to appreciate that many forms of joint activity other than naked price and market allocation agreements are socially beneficial.<sup>19</sup>



Second, however, Chicago antitrust economics was oversold. If markets are not as elegant as Chicago economists assume, if information and switching costs are in fact quite high, if proportions can be varied, if products are durably differentiated, then markets can in fact be anticompetitive over a variety of circumstances that Chicago economists generally disallowed.<sup>20</sup>

The Chicago School was vulnerable on all these points, and the critiques are quite correct. Importantly, however, just as Chicago School antitrust policy became oversold, post-Chicago policy is in danger of becoming oversold as well. The real value of post-Chicago economics is its renewed recognition of the fact that markets are much more varied and complex than Chicago theorists were willing to admit. As a result the number and variety of anticompetitive practices is unknown and open ended, particularly in relatively new markets, such as the Internet and software licensing, where the opportunities for collusion and strategic behavior by dominant firms may prove to be quite manifold.

The biggest danger presented by post-Chicago antitrust economics is not that the variety and likelihood of anticompetitive practices will be exaggerated, although that has happened and will very likely continue to happen as well. Rather, the biggest danger is that antitrust tribunals will be confronted with antitrust problems that they are not capable of administering. Indeed, the major shortcoming of post-Chicago antitrust analysis is its failure to take seriously problems of judicial or agency administration.

Antitrust is a defensible enterprise only if it can make markets more competitive; that is, if antitrust intervention tends to produce higher prices, larger outputs or improved product quality. Antitrust is no good at transferring wealth away from rich to poor, or from large firms to small ones, and cannot be defended on that basis in any event.<sup>21</sup> But this constraint places a premium on administrability. It may be relatively easy to see that a big damage award transfers wealth away from a big firm and toward a smaller firm or a group of customers. It is typically not so easy to see whether such a reward has the short- or long-run effect of making the economy bigger by increasing the value of its goods and services.

Whatever one might think of its ideological or economic consequences, the Chicago School offered antitrust a purity of vision that few legal disciplines ever attain. Its foundational principles were two: first, that markets are extremely robust and competitive outcomes highly likely to emerge without any significant governmental intervention other those contained in ordinary contract and property rights; second, that government tribunals and agencies are frail and imperfect decision makers.<sup>22</sup> Building on an imposing foundation of neoclassical economics, Chicago School antitrust writers developed well-reasoned arguments that in the long run markets tend to correct their own imperfections,<sup>23</sup> that the history of aggressive judicial intervention has

produced many indefensible results,<sup>24</sup> and that tribunals would be well advised to study practices much more thoroughly before deciding that intervention is appropriate.<sup>25</sup>

By contrast, under post-Chicago antitrust analysis, the market has become a far messier place. The post-Chicago economic literature has produced impressive arguments that certain market structures and certain types of collaborative activity are much more likely to have anticompetitive consequences than Chicago School antitrust writers imagined. For example, when the proportions of inputs can be varied, vertical integration can be socially harmful.<sup>26</sup> When information is not evenly balanced, anticompetitive strategic behavior is possible.<sup>27</sup> In the presence of specialized assets and economies of scale, strategic pricing even at prices significantly above cost can be anticompetitive.<sup>28</sup> Network externalities in some markets, such as for computer operating systems or telephone or other networks, can give dominant firms decisive advantages that enable them to defeat even superior technologies.<sup>29</sup> Mergers in product differentiated markets pose unique threats to competition that are not captured by the traditional collusion model.<sup>30</sup>

In sum, it now seems quite clear that Chicago School economic orthodoxy is no longer the best, or certainly not the only, analytic tool for evaluating markets. But the sad fact is that judges have not come close to developing antitrust rules that takes this messier, more complex economics into account. Even sadder, in many instances they may not be able to do so. As a result the rather benign Chicago School rule may be the best one for policy purposes even though it does not do the best job of expressing what we know about economic theory.

Indeed, the problem runs deeper than that – a constant complaint about post-Chicago economic theories is that they are not testable in the conventional positivist sense. That is, often all that economists can do is produce data that are minimally consistent with the theory, but often they cannot rule out alternative explanations.<sup>31</sup> Where this critique applies it can prove fatal to the formation of antitrust policy based on post-Chicago rules. When economists do academic work they select markets on the basis of simplicity and susceptibility to conducting the relevant tests. But antitrust plaintiffs select markets based on much different criteria. Further, the fact finding powers of the antitrust tribunal are considerably less than of the academic economist and her graduate students, particularly when the relevant fact finder is an American jury. There is no reason to think that, if economists doing academic work cannot rule out alternative explanations, antitrust tribunals will do any better. They are likely to do far worse.

## JURY TRIALS AND SUMMARY JUDGMENT

One impact of post-Chicago enthusiasm is an increased willingness by American judges to let issues go once again to the jury. At the grossest level, juries determine facts while the judge determines the law. In reality, the discretion of juries to find facts has been severely limited by an expanding conception of summary judgment. The watershed American antitrust case is the 1986 *Matsushita* decision, which held that there was insufficient evidence in a record for a jury to conclude that one particular conspiracy essential to the plaintiff's case had occurred.<sup>32</sup>

Prior to *Matsushita*, courts often said that summary judgment must be used sparingly in antitrust cases, emphasizing that such cases often depended on intent, and intent needs to be discerned from the often conflicting testimony of witnesses.<sup>33</sup> The *Matsushita* decision itself is sometimes presented as a kind of Chicago School victory, largely because the impact of more expansive summary judgment in antitrust cases is to minimize the role of intent and expand the use of purely objective market factors.<sup>34</sup> Whether or not this is true, a clear hallmark of the late 1980s and 1990s is that a much higher percentage of antitrust cases were decided by some form of abbreviated review.<sup>35</sup> In sum, pre-Chicago antitrust cases tended to emphasize intent over structure and objective plausibility, and juries had a relatively broad rule. Under the Chicago regime the trend is in the reverse direction.

But accompanying the rise of post-Chicago law and economics one also sees a discernible trend toward letting the jury once again decide more issues. Here, of course, the most significant case is the Supreme Court's 1992 *Kodak* decision, which held that summary judgment should not have been granted on the existing record based on the defendant's claim that a firm who lacks significant market power in its primary market (photocopiers) as a matter of law cannot have significant market power in aftermarket parts or service.<sup>36</sup>

This trend toward broadening the jury's role is misconceived. The hallmark of post-Chicago economics is increased complexity, and the worst way to deal with complexity is to throw the issue to the jury. If anything, summary judgment should be even more important in a post-Chicago world than it was under Chicago School analysis. The basis of the pre-*Matsushita* rule that summary judgment should be used sparingly in antitrust litigation was that intent was a sufficient substitute for structural evidence, and of course discerning intent has generally been considered to be an important part of the jury's role.<sup>37</sup>

Critics of the Chicago School have often observed that Chicago-style theories of competitive robustness were based on overly simplistic market assumptions, including fixed proportions, good information and relatively easy entry. Anticompetitive strategic behavior becomes much more plausible when these assumptions are relaxed.<sup>38</sup> But this argument has a flip side: while

many post-Chicago School theories admit a greater range of anticompetitive strategic behaviors, most of these occur only under strictly defined circumstances. If these circumstances do not obtain, then the contemplated strategy will not work. In sum, the principal difference between Chicago and post-Chicago economic analysis is *not* that subjective intent once again becomes central; rather, it is that, under a more complex set of assumptions about how a market works, anticompetitive outcomes seem more plausible. But if this is the case, then adjudication of post-Chicago antitrust claims hardly calls for more intervention by the jury. On the contrary, it calls for more careful sifting by the judge to determine whether there is a reasonable basis for thinking that the preconditions for anticompetitive outcomes are present. The jury should be held to its traditional technical role of resolving bona fide disputes of fact.

## POST-CHICAGO SUCCESSES AND FAILURES

This section surveys the most prominent post-Chicago antitrust theories, briefly examines their record in litigation and suggests how application of the theory could be improved, or considers whether it is worth preserving. The most important conclusion is that the Supreme Court's controversial *Kodak* decision has done more harm than good and should be overruled.

## INSTALLED BASE OPPORTUNISM

### **The failure of *Kodak***

The Supreme Court's 1992 *Kodak* decision<sup>39</sup> has become a rallying cry for post-Chicago antitrust.<sup>40</sup> The Supreme Court held that the district court should not have granted summary judgment on a claim that a photocopier manufacturer with a nondominant share in the primary market could nevertheless have significant market power in the market for its aftermarket parts. Kodak was thought to be able to charge high aftermarket prices for replacement parts because people who had already purchased Kodak photocopiers were 'locked in' to their machines and thus could avoid purchasing Kodak's aftermarket parts only by enduring the high 'switching costs' of changing to a different brand of photocopier. Even if customers obtained information about long-term costs of ownership, including subsequent repair costs, Kodak might have changed its pricing policies subsequent to their purchase.<sup>41</sup> In an imperfectly competitive market Kodak would not lose all sales in response to an aftermarket price increase.<sup>42</sup> Rather, it would sell fewer new photocopiers, and would have to trade the loss of new sales (from customers who refused to purchase after considering the higher repairs costs) from the gains resulting from higher

priced parts sold to the installed base of customers. Whether this tradeoff would be profitable was a fact question, thus making summary judgment impossible on the state of the *Kodak* record at that time.<sup>43</sup> Alternatively, the Court held, there might be some customers who experience very short time horizons, making it impossible for them to calculate long-run ownership costs. Aftermarket monopoly pricing might be possible as to these customers even without a change in parts policy.<sup>44</sup>

These conclusions were regarded as a rejection of the Chicago School principle that customers are sufficiently well informed to attribute high aftermarket prices to the cost of ownership, thus making it impossible for a nonmonopolist to earn overall monopoly profits by charging high aftermarket prices. The phenomenon of primary market competitors who can charge monopoly aftermarket prices is called ‘installed base opportunism’.<sup>45</sup>

The *Kodak* decision will soon be a decade old. Notwithstanding thousands of pages of law review articles and hundreds of millions of dollars in litigation costs, there has not been a single defensible plaintiff’s victory in a case where the defendant’s market power depended on a *Kodak*-style lock-in theory.<sup>46</sup> Indeed, the lower courts have bent over backwards to construe *Kodak* as narrowly as possible.<sup>47</sup>

In 1997, the Ninth Circuit after remand issued a judgment for the plaintiff in the *Kodak* case itself.<sup>48</sup> But that decision confused substitutes and complements and held that a group of complements was a relevant market because the buyer needed all of them.<sup>49</sup> That is to say, the flat glass plate, the patented ‘image loop’ that captures the image being photocopied, the small electric motor that moves the loop under the glass, and the thousands of nuts, bolts, washers and rubber extenders were all in a single ‘relevant market’ simply because a user or a repairer of a Kodak photocopier needed all of them. In fact, the court got the relationship between goods in a relevant market precisely backwards. For example, the reason we say that four different brands of televisions are in a single relevant market is precisely because the consumer does *not* need to purchase all four of them. Rather, the consumer will choose one, and as a result the manufacturers must compete on price, quality or other terms in order to win that consumer’s trade.<sup>50</sup>

Even on this irrational market definition Kodak manufactured only 30 per cent of the parts in question, but the court also attributed to Kodak’s market share parts made for it by others, which created a total of 55 per cent, which the Ninth Circuit found sufficient.<sup>51</sup> At this writing no decision, even in the Ninth Circuit, has endorsed that panel’s approach to the market power question.<sup>52</sup>

To be sure, there are situations in which a firm that is a primary market competitor has monopoly power in an aftermarket part. Suppose that BMW, which is a competitor in the market for its automobiles, invents, patents and markets a superior antilock braking system. The twin propositions that BMW

lacks significant market power in automobiles but has significant market power in the antilock braking system are certainly consistent. Significantly, to the extent that is true, BMW (1) would be able to charge a monopoly price for the antilock system when installed on its own vehicles; and (2) would also be able to sell or license the system to other automobile manufacturers or owners at a monopoly price. That is, BMW's market power in its antilock system would not depend on customers being 'locked in' by virtue of a prior purchase of a BMW automobile. The all important distinction between this hypothetical and the *Kodak* case was that the only people who were willing to pay a monopoly price for a Kodak aftermarket part were people who already owned a Kodak photocopier (or service technicians who fixed such copiers and passed on their higher costs).<sup>53</sup>

Nearly a decade of post-*Kodak* antitrust litigation indicates that the lock-in rule as formulated in that case was improperly conceived. For several reasons of administrability and principle, it should be overruled.

*Technical and logical problems* The technical and logical problems of *Kodak* are significant. Not the least is explaining the relationship between installed base opportunism and the refusal to sell parts to others. The *Kodak* case was brought by independent service organizations (ISOs) who wanted to force Kodak to sell them aftermarket parts. But the presumed antitrust evil of installed base opportunism is not a refusal to sell parts. Rather, it is high aftermarket parts prices.<sup>54</sup> The logic of the *Kodak* case is that in an imperfectly competitive primary market (for example, photocopiers) Kodak might be able to exploit its installed base by raising the price of aftermarket parts. It could do this either by charging its customers a high price for parts that its own service technicians install, or else by charging high prices to ISOs wishing to install these parts. That is to say, the refusal to sell parts to ISOs has nothing to do with Kodak's ability to profit by charging monopoly prices for aftermarket parts. It could do this whether or not it sold to ISOs.

To be sure, the ISOs may have charged lower service prices than Kodak's own service technicians or they may have done a better job, or they may have been free-riding on Kodak's investment in technician training. Any one of these facts might explain Kodak's reluctance to sell parts to the ISOs. But they have nothing to do with installed base opportunism. Assuming that Kodak was in a position to profit from charging monopoly prices for aftermarket parts, it could do so by selling the parts to its users directly via its own technicians or else by charging ISOs a very high price. If the ISOs charged lower prices for labor or did better work, it could profit even more by capturing these gains in the form of yet higher parts prices. In sum, the link between the ability to charge monopolistic aftermarket prices and the refusal to sell parts to ISOs was never established.

A related logical problem concerns the relationship between installed base opportunism and a firm's overall pricing strategy. A likely explanation of most instances of supracompetitive aftermarket part prices is either price discrimination or other forms of cost shifting – that is, the manufacturer sells the primary good at less than the price that would reflect its short-run market position, but then makes up the difference with higher aftermarket prices. In some cases this may simply be a way of competing in a product-differentiated market, with some firms following a policy of higher upfront prices but lower aftermarket prices, while others follow a policy of lower upfront prices but higher aftermarket prices. For example, one maker of vacuum sweepers might sell the cleaner at a low price but charge relatively more for the disposable bags. Another may charge a higher price for the cleaners but sell the bags at the competitive price. The former firm might accordingly refuse to license others to manufacture its bags or charge them a high license fee, while the latter might not care.

In many cases where use of aftermarket parts varies with customer valuation, high aftermarket prices facilitate price discrimination. When a higher return is allocated to the aftermarket parts more intense users, who require more frequent replacement parts, end up producing higher returns.<sup>55</sup> While these phenomena are a consequence of imperfect competition – namely, product differentiation – neither is anticompetitive, and strong arguments can be made that both are procompetitive. They very likely increase overall output and give consumers a choice of pricing options.

Next is the problem of market definition. A *Kodak*-style claim generally depends on a finding that there is a relevant market for aftermarket parts or servicing of the antitrust defendant's own brand. For example, the claim in *Kodak* was that the defendant was using its dominant position in the Kodak parts market to leverage, or create, a monopoly position in the Kodak service market as well.<sup>56</sup> Importantly, a relevant market is a grouping for which *both* supply and demand substitution are sufficiently low that the defendant could profit from charging prices above the competitive level. In *Kodak*, however, no one ever bothered to ask whether the plaintiff ISOs serviced both Kodak and non-Kodak photocopiers. If they did – perhaps using the same trucks, some of the same equipment and the same technicians to service Kodak, Xerox and other brands of photocopiers or even other types of equipment – then there could not be a relevant market for servicing Kodak machines.

This is particularly relevant because the basis of a tying claim is foreclosure, but what are competing ISOs foreclosed from? If an ISO services six copier brands and is foreclosed by exclusivity agreements from one of them, it has hardly been foreclosed from the market. The *Kodak* decision neglected the eminently sensible principle that foreclosure in a tying case must be measured against the array of opportunities from which a rival firm is foreclosed. For

example, in an exclusive dealing case the buyer under a long-term requirements contract is 'locked in' by the contract to purchasing all of its needs from the seller, perhaps even at a monopoly price. But the courts uniformly require that foreclosure of competing sellers be measured against the entire market in which they do or can make sales.<sup>57</sup> In the *Kodak* case, no one ever considered whether the ISOs serviced (or were capable of servicing) both Kodak and non-Kodak photocopiers, or even other types of office equipment.

*Problems of adjudication and administration; perverse incentives* Problems of fact finding and implementation under a *Kodak*-style rule are completely unmanageable. Whether the case is a tying claim or a simple section 2 claim, aftermarket situations always involve either a refusal to deal or the setting of a high price for aftermarket goods.<sup>58</sup> In fashioning relief the court must not merely force the firm to sell its aftermarket parts, diagnostics or other goods, it must also set the price at which these things are to be sold, and perhaps other terms as well.<sup>59</sup>

Coming up with the right price is a completely intractable problem for several reasons. If the parts have no substitutes then there is no established market for them. As a result there is no reference point for computing the price directly. Judicially administered public utility-style regulation of aftermarket prices is not merely administratively impossible, it is also not an 'antitrust solution' to the problem at hand, which is to make markets competitive. By contrast, if the parts do have adequate substitutes – for example, if several firms manufacture air filters that will fit in Chrysler automobiles – then coming up with a price will be easy, but there is no monopoly in the first place, for the buyer has adequate alternatives.

Even if we were to come up with a 'competitive price' for an aftermarket part, it would very likely be the wrong price. Just as knowledgeable consumers set price by looking at total ownership costs, knowledgeable producers set prices by looking at total ownership revenues. Quite often they charge a fore-market price which is considerably less than the short-run profit-maximizing price and make up the difference on high aftermarket prices. In most cases this is an efficient form of price discrimination that captures higher returns from higher intensity users and also serves to increase total market output. Alternatively, they charge high hourly rates for service but then provide parts at a low price or perhaps less expensive parts at no charge. This can be an important way of reducing transaction costs; otherwise, each small part has to be accounted for and billed. In sum, in order to come up with the right aftermarket price the court would not only have to compute the cost of the part itself, but would also have to adjust for differences in the primary market price or the price charged for service, so that the firm's overall rate of return is competitive.



Finally, a *Kodak*-style right to purchase aftermarket parts at a judicially determined price creates a perverse incentive *not* to locate or develop alternative sources of parts. In many markets with large installed bases, such as automobiles or computers, a robustly competitive market has emerged for aftermarket parts. Such a market not only gives owners the option of lower-priced alternatives, it also forces the manufacturer of the primary good to lower its own parts prices. For example, an automobile owner can generally purchase ‘original equipment’ brake pads made by the auto manufacturer, or brake pads produced by independent firms that might be either better or cheaper. The presence of the latter serves to restrain the price of the original equipment pads. *Kodak*-style injunctions effectively take a ‘public utility’ rather than an ‘antitrust’ approach to the problem of aftermarket monopolies: that is, rather than forcing competition, they turn the putative monopolist into a price-regulated common carrier or public utility.

*Conflict with intellectual property laws* The United States patent laws contain no provision for compulsory licensing. Further, Article 271(d) of the Patent Act expressly authorizes firms to refuse to license their intellectual property rights.<sup>60</sup> The copyright laws have been similarly interpreted.<sup>61</sup> In cases involving aftermarket goods the truly unique and innovative parts tend to be patented, while generic parts or those that are readily capable of duplication tend not to be. As a result, remedies in *Kodak*-style cases tend to be ineffectual unless the court is willing to order compulsory licensing of intellectual property rights.

The policy problems this poses are significant. First, a *Kodak*-style ‘refusal to deal’ case is not one that involves blatantly anticompetitive conduct of the type that has traditionally earned compulsory licensing remedies, such as patent pooling or explicit tying.<sup>62</sup> Indeed, these cases come about as close to ‘no fault’ monopolization as the Sherman Act permits, assessing liability for the simple act of refusing to sell to rivals, or selling only at very high prices.<sup>63</sup> The mere fact that a refusal to license enables a firm to obtain high profits on its patented goods should never be a sufficient justification for compulsory licensing, unless we are willing to make an a priori judgment that certain returns are excessive – a judgment, incidentally, that was never made in the *Kodak* case itself.

Furthermore, in *Kodak*, compulsory licensing was not merely the remedy for conduct not typically regarded as seriously anticompetitive. It was also assessed on the basis of a controversial and deeply flawed theory about Kodak’s market power. It is one thing to impose compulsory licensing on an undoubted monopolist whose sales dominate a properly defined relevant market. It is quite another to assess such a remedy in cases involving nondominant firms whose power rests on a ‘lock-in’ theory where the extent of any power is highly debatable and, in all events, impossible to measure.

Finally, the Ninth Circuit's determination of the duty to license was made to rest on the defendant's state of mind, or intent – a rule calculated to force every patentee's refusal to license into litigation. The court held that if the defendant merely intended to refuse to license in order to protect its intellectual property rights, then its refusal was legitimate; however, if it intended to create a service market monopoly then its refusal was unlawful. As a matter of logic, one is hard pressed to see any distinction between these two sets of intentions: every wish to protect one's intellectual property rights is inherently a wish to exclude others. As a matter of administration, the Ninth Circuit's rule would subject a refusal to license to litigation and discovery so that a fact finder could determine the state of mind that governed the refusal.<sup>64</sup>

*Loss of credibility* Antitrust as an institution loses its credibility when market power is found too readily. Antitrust remedies are draconian, ranging from highly punitive treble damages and attorney fees in private actions to divestiture or dissolution in some suits, typically brought by the government. These remedies do not distinguish between the firm that is truly a monopolist of something and the one that has nothing more than the ability to capture some rents from locked-in customers.

Treble damages are particularly draconian and economically harmful in a case like *Kodak*, where the Ninth Circuit not only found monopoly power improperly, but then fashioned a new rule condemning a unilateral refusal to license intellectual property where (a) every court that had previously spoken on the issue had denied that such a duty existed under either the patent or copyright laws,<sup>65</sup> and (b) the court's conclusion conflicted with the express language of a recently passed amendment to the Patent Act.<sup>66</sup> When prospective law making departs so significantly from existing and unambiguous precedent, awarding treble damages virtually instructs firms that they cannot compete aggressively even in areas where the case law and relevant statutes seem clearly to be on their side.

Unfortunately, the courts do not have the option of awarding treble damages only where circumstances warrant, and lesser forms of relief in other circumstances. The treble damages language of Section 4 of the Clayton Act is mandatory, leaving no discretion to the judge.<sup>67</sup> The courts have instead used narrow rules of standing and injury to restrict recoveries to a relatively low percentage of those who suffer injury-in-fact as a result of an antitrust violation.<sup>68</sup> These rules are arguably well designed to rationalize the damages system in the case of undoubted antitrust injuries.<sup>69</sup> But they are not useful in cases where the courts want to use the broad common law-like powers that the antitrust courts give them to condemn conduct that could not be reasonably foreseen to be unlawful.

The difficulties of *Kodak* are numerous, systemic, incapable of correction,

and have wasted untold amounts of litigation and judicial resources. As a result, the Kodak decision should be overruled and antitrust tribunals re-focused on those situations involving unilateral conduct where market power is significant and durable.

### **Microsoft**<sup>70</sup>

Although considered by some as an example of the ‘new’ antitrust,<sup>71</sup> the government’s case against Microsoft is in fact based on very old-fashioned and rather orthodox antitrust principles. Only the industry in which it arises is new. Further, market power is not based on any *Kodak*-style lock-in theory but rather on well developed traditional principles: a dominant and durable share of a well defined relevant market.

Computer operating systems are subject to very significant positive network externalities, which means that they become more valuable to a particular user as the system has a larger number of other users. The classic example of the positive network externality is the telephone system. Even the highest tech telephone is worthless as long as it cannot be connected to anyone else. As soon as the phone can be connected to at least one other subscriber it acquires value, and the value to each user increases as the number of other subscribers increases. As a result, a system with a large number of subscribers is always more desirable to a new subscriber than a system with few subscribers, assuming that the two systems cannot be hooked together.

The sources of network externalities for Windows are mainly users’ needs for compatibility and interchange with other users, and software developers’ need to develop for a large number of users. An operating system with a large installed base will always be more attractive to both users and software developers than an equally good or even superior operating system with a smaller installed base.

Netscape and Sun Microsystems’ Java threatened to take out Microsoft’s advantage by interconnecting multiple operating systems with each other, thus eliminating the network advantage. One way to think of the problem is by imagining a country with two telephone systems that cannot be connected together. One system has older technology but has been around longer and has 1 000 000 subscribers. The newer system has superior technology but only 1000 subscribers. Notwithstanding its inferior technology, the large installed base gives the older firm a very significant advantage over the new firm, because consumers place a very high value on being interconnected with as many other people as possible. Because of this advantage the dominant firm can charge higher prices and it feels less competitive pressure to innovate.

But now suppose that someone develops a switch that enables the two systems to be connected together, so that a subscriber to one system can readily talk to people on the other system, and vice versa. The network advantages

have now been aggregated across the two systems and there is no unique advantage to being on one system or the other. Consumers will be able to choose a telephone on the basis of factors such as technology, price or service.

Netscape, enhanced by Java, threatened to produce the 'switch' that would connect multiple operating systems, thus destroying Microsoft's significant network advantage over rival systems and permitting people to base their purchasing decisions on factors such as price or quality. In particular, Java's 'write once, run anywhere'<sup>72</sup> strategy threatened to make different operating systems completely compatible on both the user end and the software writing end. The result would be the emergence of a traditional product-differentiated market in which one could choose a Microsoft or non-Microsoft operating system based entirely on price, features, speed, support and so on. Compatibility with other users would not be a major factor.

The theory of the *Microsoft* case is that the defendant did everything in its power to keep this switch from being deployed, and thus to preserve the inability of the different systems to become interconnected. From that point the Microsoft story is rather old-fashioned. Not a single allegation in the government's complaint is a challenge to Microsoft's innovation. Rather the challenged practices included such things as tying or exclusive dealing or contractual terms requiring others to disfavor the systems of rivals. The legal elements of these claims are rather orthodox.<sup>73</sup>

The claim most subject to judicial interpretation in the *Microsoft* case is the substantive monopolization claim itself, where the courts have always had difficulty fashioning an appropriate standard. The given formulations generally emphasize conduct by a dominant firm that injures rivals and thus the degree of competitiveness in the market, and that is unsupported by an adequate business justification.<sup>74</sup> This includes 'conduct which does not benefit consumers by making a better product or service available – or in other ways – and instead has the effect of impairing competition'.<sup>75</sup>

While these definitions can be very difficult to interpret in marginal cases, *Microsoft* is not a marginal case. Beginning with its per processor licensing requirement in the early 1990s,<sup>76</sup> Microsoft has consistently engaged in practices best explained as efforts to prevent the deployment of competing operating systems, or of technologies that would make alternative operating systems compatible with each other.<sup>77</sup> It did this even when the short-run result was to limit its own markets, and the source of its gains lay entirely in the suppression of alternative technologies.<sup>78</sup>

In sum, while *Microsoft* was a well brought case, relatively little about it is 'post-Chicago'. Rather, the district court applied basic and noncontroversial antitrust principles in a new market.

## **Vertical Practices and Raising Rivals' Costs (RRC)**

### **RRC and foreclosure**

The academic literature on raising rivals' costs was a significant contribution to the post-Chicago literature because it shifted the focus of competitive injury away from the destruction of rivals.<sup>79</sup> The overly aggressive antitrust policies of the 1970s and earlier typically feared the destruction of competitors. Pre-Chicago School theories of predatory pricing, exclusive dealing, improperly brought patent infringement suits and other exclusionary practices typically assumed that the goal of the anticompetitive strategy was the destruction of rivals. The Chicago School response took that assumption at face value and correctly concluded that rivals were much more tenacious and markets far more robust than antitrust had assumed. As a result, many of these strategies would never work, or at least would work only under very strictly defined conditions.

The gist of the raising rivals' costs argument is that many anticompetitive strategies are far more plausible if regarded as schemes to raise the costs of competitors rather than to drive them out of business altogether.<sup>80</sup> Equilibria in which rivals stay in the market but their costs increase are both more likely to occur and exist in a wider variety than equilibria in which rivals are destroyed. Further, cost-raising strategies might be less detectable and less likely to invite prosecution. Indeed, a strategy of raising rivals' costs need not injure a rival at all if the dominant firm increases its own prices to permit smaller firms a price hike that compensates them for their cost increase. As a result, RRC operates as a kind of substitute for the older antitrust theories of 'foreclosure', except that the RRC theories are economically speaking far more plausible. Raising rivals' costs has been discussed as the underlying rationale for an anticompetitive practice in a number of antitrust cases.<sup>81</sup>

Members of the Chicago School had argued that virtually all vertical practices were nonmonopolistic, economically efficient and should be legal *per se*.<sup>82</sup> The foundation for this argument was the explosion of the 'leverage' theory that a monopolist of one market could expand its power or increase prices even more by monopolizing a vertically related market as well.<sup>83</sup> Critics illustrated that for any given distribution chain there is only one optimal monopoly markup, and a firm does not ordinarily get a larger markup simply by monopolizing a downstream or upstream market as well. To the contrary, if there is any amount of pre-existing market power in the vertically related market, double marginalization is likely occurring, which means that the price is even higher and output lower than it would be under single monopoly; in that case vertical integration even by the monopolist would yield lower rather than higher prices.<sup>84</sup> This conclusion was further buttressed by the development of theories of vertical integration emphasizing its use in reducing transaction

costs, in addition to the more visible production costs. The rise of transaction costs economics was largely facilitated by Ronald Coase's 1937 article on 'The Nature of the Firm', which argued that vertical integration enabled firms to avoid the costs of using the market, and that these costs savings could be substantial even if vertical integration produced no obvious savings in production costs.<sup>85</sup>

The rationale for theories of RRC is that certain practices, but particularly concerted refusals to deal, tying and exclusive dealing, are more readily explained not as devices for destroying a rival but rather for making their production or distribution more costly. The practice may deny them scale economies, or it may relegate them to less satisfactory inputs. These higher costs limit rivals' ability to compete and thus create a price 'umbrella' under which the strategizing firm can raise its own prices.

The substitution of RRC for the older foreclosure theories has improved antitrust analysis significantly, aligning it much more closely with formal economic theories of strategic behavior. Nevertheless, using RRC theories in litigation can still confront significant problems of administrability. To be sure, not every case is a hard one. A naked agreement among rivals to deny another rival access to an input or force it to pay higher prices is and should be unlawful *per se*.<sup>86</sup> But many practices thought to raise rivals' costs are far subtler and require courts to offset claimed efficiencies in some fashion. Exclusive dealing provides an example. Exclusive dealing or output contracts can be used by a dominant firm to deny rivals access to the most desirable outlets or inputs. For example, Andrew Norton's output agreements requiring the makers of can making machinery to sell all of their machinery to Norton's American Can Company apparently relegated rival can makers to inferior technology and higher costs.<sup>87</sup> When a case involves a clearly dominant firm and clear foreclosure raising rivals' costs, the court needs to inquire into business justifications, and non-marginal cases should be well within the judicial capacity. Marginal cases are another matter. When the foreclosure is small, alternatives to the foreclosed input can be developed, or if offsetting efficiencies are substantial, then the best resolution is nonliability rather than an attempt to balance pro- and anticompetitive effects.

Other RRC theories are not much better than the foreclosure theories that preceded them. For example, one theory posits that a supplier enters into exclusive dealing contracts with many dealers, with the result that the market for distribution services available to rivals becomes far more concentrated. As a result, the remaining dealers are much more likely to collude. Krattenmaker and Salop are willing to condemn such a strategy without proof that such collusion is actually occurring, but only that the market structure facilitates it.<sup>88</sup>

But an equilibrium that effectively raises rivals' costs seems highly

unlikely. If the remaining independent dealers collude it will be more profitable for a dealer to be independent than to be committed to an exclusive dealing agreement with the dominant firm. The collusion gives the independent dealers higher profits than the committed dealers are earning. Indeed, the strategy is profitable only if the independent dealers exact a higher markup than do the committed dealers. One would therefore expect that the tied up dealers would look for every opportunity to evade their exclusive dealing contracts, which is usually easy to do, particularly in dealership markets.<sup>89</sup>

In sum, the theory of raising rivals' costs adds considerable robustness to antitrust economics and at least some of its applications are susceptible to effect judicial management. This makes it one of the most important and worthwhile developments in the post-Chicago antitrust literature.

### **Vertical mergers**

The post-Chicago critique of vertical mergers begins with the observation that anticompetitive outcomes are possible if the market into which vertical integration is occurring is not competitive.<sup>90</sup> This post-Chicago approach is similar to the traditional 'foreclosure' theory of vertical mergers, except for refinements that control the excesses of the traditional foreclosure approach. Vertical mergers were traditionally condemned on foreclosure grounds because it was thought that, by tying up an input<sup>91</sup> or a set of customers,<sup>92</sup> the integrating entity could deny rivals access to those inputs or customers. The problem with the traditional foreclosure analysis was that it was overly aggressive. First, it condemned mergers where the percentage foreclosure was far too small, often less than 10 per cent.<sup>93</sup> Second, it had very little theory about how foreclosure could yield reduced output and higher prices. Foreclosure was largely thought of as an evil for its own sake.

The post-Chicago analysis refines this older approach by insisting on significant foreclosure and supplying a set of criteria for determining whether a particular foreclosure is likely to produce competitive harm. Further, in the post-Chicago literature 'foreclosure' generally means raising rivals' costs, not outright market exclusion. Rivals are simply placed in a position where their profit-maximizing price is higher after the merger than it was before. The integrating firm can then raise its own prices as well.

This result can obtain if the upstream division of a vertically integrated firm charges a higher price for its product when it is sold to rivals. For example, if Ford acquires Autolite, a manufacturer of spark plugs, Autolite might increase spark plug prices to all buyers. The higher profits that result show up on Ford's ledger sheet, whether or not Ford is charged the higher transfer price, but become an increased cost to Ford's unintegrated rivals.<sup>94</sup> Whether this conduct injures competition depends first and foremost on Autolite's market position. If Autolite is one of many spark plug competitors, no competitive harm will result because

the attempted price increase will fail. But if Autolite is a spark plug monopolist, or if it is very large and enjoys significant scale economies, then post-acquisition Autolite may be in a position to impose higher prices on rivals. Before this will happen, however, the rivals must be unable to substitute alternative, equally efficient technologies or enter the spark plug business for themselves.

Assessing the overall competitive impact of a vertical merger on these grounds strains the fact-finding abilities of a court, although perhaps not to the breaking point.<sup>95</sup> Problematically, competitive harm is most likely to occur in markets where the gains from vertical integration are likely to be significant as well. If both the upstream and downstream market are subject to monopoly or a significant degree of oligopoly, the pre-merger market is probably experiencing double marginalization. This occurs when successive firms with market power each set their own profit-maximizing output level. The result is higher prices and lower output than would obtain if only one firm with market power were in the distribution chain.<sup>96</sup> The gains from eliminating double marginalization can be significant,<sup>97</sup> and Riordan and Salop acknowledge that the antitrust tribunal will very likely have to balance these efficiency gains against likely anticompetitive effects.<sup>98</sup> By and large recent vertical challenges have occurred in markets where the post-merger firm has a dominant or near-dominant share in one market, and at least a significant share of the vertically related market.<sup>99</sup> The result is that such mergers can result in significant efficiency gains resulting from elimination of double marginalization.

### **Unilateral Effects from Horizontal Mergers**

The most significant post-Chicago development in the field of horizontal mergers is the rise of so-called ‘unilateral effects’ theories. Briefly, the theories predict that in product differentiated markets firms that make relatively similar variations of the product may be able to increase their price following a merger, even though the rest of the firms in the market are unable to do so, or are able to manage only a much smaller increase. The amount of this increase is larger as the output of the two merging firms is more similar, and as their output is more dissimilar from the output of other firms in the market.<sup>100</sup> This theory is quite different from the traditional theory that mergers facilitate collusion or oligopoly.<sup>101</sup> Under the traditional theory any price increase that occurs following a merger is enjoyed by all of the firms in the market and not merely the merging partners. The unilateral effects theory is not at odds with the traditional theory, however; rather, it supplies an alternative explanation of how mergers can result in increased prices. Some mergers, particularly in undifferentiated markets, are harmful because of the increased threat of marketwide collusion or oligopoly. Others are harmful because they are likely to have anticompetitive unilateral effects.



Unilateral effects theories have proved to be among the most useable and robust contributions of the post-Chicago revolution in antitrust economics. The theory is useable because, thanks to electronic transaction records, we have better data on demand substitution than ever before. Briefly, in order to predict the size of a unilateral price increase following a merger we need information about the cross-price elasticity of demand as between the products of the two merging firms, and the cross-price elasticity between the merging firms and other firms in the market.<sup>102</sup> These data might indicate that, while a significant price increase by Firm A would be unprofitable when A is in competition with B, the same price increase after an AB merger would be profitable, because the remaining independent firms in the market will not divert enough output away from the post-merger firm.

For example, suppose that transaction data show that in response to a 10 per cent price increase Firm A will experience a 15 per cent decrease in output, which is sufficient to make this price increase unprofitable. However, the market is differentiated and not all firms in the market benefit equally from A's output loss. Of the 15 per cent in lost sales, 10 per cent goes to firm B, who make a product quite similar to A's; 3 per cent goes to firm C, which makes a somewhat less similar product. The remaining 2 per cent goes more or less evenly to another half-dozen firms who make more readily distinguishable products. These data suggest that a merger between A and B is a significantly greater cause for concern than a merger between A and any other firm. In response to firm AB's 15 per cent price increase, product A would still suffer a 15 per cent price reduction, but this would be offset by the fact that two-thirds of these sales would simply go to the firm's product B division.<sup>103</sup>

Unilateral effects methodologies for analyzing mergers must be regarded as, if anything, more reliable than the methodologies used for evaluating mergers under the traditional concerns about increased concentration. Under the conventional orthodoxy we predict the consequences of a merger by imagining what the market will be like after it goes from ten firms to nine, from four firms to three, or some other increase in concentration. While the Herfindahl–Hirschman Index that we use for making these predictions<sup>104</sup> creates an appearance of precision, in fact our merger analysis involves a great many assumptions that are difficult to defend. For example, the Herfindahl's assumption is that the firms will behave as pure Cournot oligopolists, with each firm taking the aggregate output of other firms as a given, and computing its own profit-maximizing price over the remaining, or residual, demand curve.<sup>105</sup> But the true behavior of firms could vary considerably from this assumption. First, the firms might collude. Second, they may behave competitively and quite aggressively. Third, they may lapse in and out of Cournot oligopoly or some other oligopoly strategy. Fourth, as a result of information inequalities, product differentiation, differential costs or scale economies the

resulting equilibrium might be quite different from the one that the pure Cournot model predicts. The impact of a particular merger in a particular market can vary greatly depending on which behavioral assumption one makes, and the pure Cournot assumption is only one of many.<sup>106</sup>

By contrast, when the proper data are available, the methodologies for assessing unilateral effects permit examination of the actual historical behavior of the firms prior to the merger. To be sure, the theory is not perfect: firms will not necessarily behave the same way following a merger as previously. Second, adequate data for a fully informed prediction may not be available. Nevertheless, a priori, one could certainly not say that the unilateral effects methodology is more speculative or less reliable than the ordinary concentration increasing/Herfindahl methodology; and there are several reasons for thinking that it is significantly more reliable. As a result, the unilateral effects methodology must be regarded as one of the most significant contributions of post-Chicago analysis.

## CONCLUSION

The Chicago School gave antitrust an elegant and simple set of economic models that emphasized the robustness of markets and the frequent futility of government intervention. But the models themselves were often an overreaction to equally strong and sometimes even silly theories of anticompetitive behavior that were prevalent in the 1970s and earlier.

By contrast, post-Chicago methodologies are necessarily more complex, reflecting the greater complexity of observed markets. While they sometimes produce robust economic conclusions, testing them has proved difficult. Further, they are messier and more difficult to use and too often strain the fact-finding power of courts beyond the breaking point. This is a serious problem for antitrust, which cannot be justified unless it makes markets work better than they would work in the absence of intervention. A more accurate model whose increased complexity increases the rate of error may be a poorer choice than a less accurate model which is nevertheless simple and easy to use.

So the test for a post-Chicago economic model is not merely whether it discovers an anticompetitive strategy that Chicago School theory had not. Policy makers must also be able to devise rules that will recognize such strategies without an unacceptably high incidence of false positives, and then produce remedies that are not more socially costly than the evils that they correct. Measured by this test, post-Chicago antitrust economics has had only limited success. Perhaps its biggest failure has been the Supreme Court's *Kodak*<sup>107</sup> decision and its aftermath. When that decision was first handed down it threatened to turn many competitive firms with unique aftermarket

parts or service into ‘monopolists’ for antitrust purposes. In reality, it has not had that effect, but it has burdened the courts with much unnecessary and costly litigation. That experiment should be proclaimed a failure and *Kodak* itself overruled.

But post-Chicago antitrust has also had some successes that are likely to endure. The theory of raising rivals’ costs (RRC) provides a much more robust and convincing explanation of certain exclusionary practices than do the older ‘foreclosure’ theories that provoked so much wrath from the Chicago School. The so-called unilateral effects theory of horizontal mergers has also proved to be a significant litigation success. What is common to both RRC and unilateral effects theories is that they are capable of providing courts with administrable rules for distinguishing anticompetitive behavior from that which is beneficial or merely harmless.

## NOTES

1. The debate began with Henry Carter Adams, ‘Relation of the State to Industrial Action’, 1 *Pub. Am. Econ. Assn.* 7, 52, 59–64 (1887) (arguing that in the case of industries with high fixed costs, ‘no law can make them compete’; further, for industries subject to economies of scale, ‘the only question at issue is whether society shall support an irresponsible, extralegal monopoly, or a monopoly established by law and managed in the interest of the public’).
2. John Bates Clark, ‘The Limits of Competition’, 2 *Pol. Sci. Q.* 45, 55 (1887). Accord Arthur Twining Hadley, ‘Private Monopolies and Public Rights’, 1 *Q.J. Econ.* 28 (1886) (under high fixed costs ‘more goods are produced than the community can pay for at prices which cover the expense to the producers’, resulting in ruinous competition); Carroll D. Wright, ‘The Relation of Production to Productive Capacity’, 24 *The Forum* 290 (Nov. 1897); 671 (Feb. 1898). Accord U.H. Crocker, *The Depression in Trade and Wages of Labor* (1886).
3. For example, *United States v. Trans-Missouri Freight Assn.*, 166 U.S. 290, 329–330 (1897) (discussing ruinous competition); *United States v. Joint Traffic Assn.*, 171 U.S. 505, 576–577 (1898) (same).
4. The ruinous competition controversy is discussed more fully in H. Hovenkamp, *Enterprise and American Law, 1836–1937*, Ch. 23 (1991).
5. *United States v. United States Steel Corp.*, 223 F. 55 (D. N. J. 1915), aff’d, 251 U.S. 417 (1920) (approving merger, inter alia, because of excess production capacity in a distressed industry). Contemporary literature includes Oswald Knauth, ‘Competition and Capital’, 30 *Pol. Sci. Q.* 578 (1915) (competition wasteful in industries with high fixed costs and specialized assets); Spurgeon Bell, ‘Fixed Costs and Market Price’, 32 *Q.J. Econ.* 507, 517 (1918) (defending late nineteenth-century mergers as necessitated by ruinous competition brought on by high fixed costs).
6. See Arthur J. Eddy, *The New Competition* 121, 82 (1912) (arguing from premise of high fixed costs for the wisdom of trade associations to keep production in check; firms should compete under conditions that enable each to know and fairly judge what the others are doing). Accord M.N. Nelson, *Open Price Associations* 45 (1922). Making the same arguments is the National Industrial Conference Board monograph, *Trade Associations: Their Economic Significance and Legal Status* 17–25 (1925); F.D. Jones, *Trade Association Activities and the Law* 30–31 (1922); E.H. Naylor, *Trade Associations* (1921). And see *Maple Flooring Manufacturers Assn. v. United States*, 268 U.S. 563 (1925) (approving trade association activities including price information exchanges).

7. In the 1920s, the theory became much less general, and was applied to natural monopoly industries rather than industries that merely had significant fixed costs. See, for example, Eliot Jones, 'Is Competition in Industry Ruinous?', 34 *Q.J. Econ.* 473, 491 (1920) (ruinous competition argument applied to cases of extreme fixed costs, such as railroads, but not to manufacturing generally); Myron Watkins, *Industrial Combinations and Public Policy* 107 (1927) (similar; 'ruinous competition' theory applies to railroads and natural monopolies, but not to manufacturing generally).  
The work that largely brought the controversy to an end was John Maurice Clark, 'A Contribution to the Theory of Competitive Price', 28 *Q.J. Econ.* 747 (1914), which argued that manufacturing industries could attain a competitive equilibrium even in the presence of high fixed costs. This work culminated in J.M. Clark's now classic *Studies in the Economics of Overhead Costs* (1923). John Maurice Clark was John Bates Clark's son.
8. Vertical integration occurs when a firm develops or acquires some input that it formerly purchased from others. For example, an automobile manufacturer might acquire its own steel making resources, an oil refiner its own railroad for making shipments, or a clothing manufacturer its own chain of branded retail stores.
9. A. Burns, *The Decline of Competition*, Ch.10 (1936).
10. A. Berle and G. Means, *The Modern Corporation and Private Property* 350–51 (1933). To the same effect is Willis J. Ballinger's TNEC monograph, with Myron Watkins and Frank A. Fetter as principal contributors, *Relative Efficiency of Large, Medium-Sized and Small Business* (TNEC Monograph # 13, 1939). The authors concluded that big business is generally less efficient than small and medium-sized business. *Ibid.*, at 10.
11. A few of the most important decisions are *United States v. Yellow Cab Co.*, 332 U.S. 218 (1947) (vertical merger might be unlawful if upstream firm (taxicab manufacturer) forced downstream firms (taxi companies) to purchase from it at higher prices); *United States v. Paramount Pictures*, 334 U.S. 131, 174 (1948) (vertical merger of movie production house and movie theater chains unlawful if its purpose is to gain control of 'appreciable segment' of downstream market); *Standard Oil Co. of California v. United States (Standard Stations)*, 337 U.S. 293 (1949) (harsh rule condemning apparently efficient exclusive dealing; nondominant refiner forbade its dealers from selling two different brands of gasoline from the same station); *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586 (1957) (vertical merger unlawful if it gave upstream firm advantage over others in supplying inputs to downstream firm); *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962) (prohibiting vertical merger because it would permit post-merger firm to undersell its non-integrated rivals); *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967) (vertical nonprice restraints unlawful per se).
12. The case was *United States v. United Shoe Machinery Corp.*, 110 F.Supp. 295 (D.Mass.1953), aff'd per curiam, 347 U.S. 521 (1954). The episode is discussed in Carl Kaysen, 'In Memoriam: Charles E. Wyzanski, Jr.', 100 *Harv.L.Rev.* 713, 713–715 (1987); and Carl Kaysen, 'An Economist as the Judge's Law Clerk in Sherman Act Cases', 12 *ABA Antitrust Law Proc.* 43, 45–46 (1958).
13. Kaysen's own book, which resulted from his work on this case, is a good example: Carl Kaysen, *United States v. United Shoe Machinery Corporation: an Economic Analysis of an Antitrust Case* (1956). On the 'case study' approach to the economics of industrial organization, see Hovenkamp, *Enterprise*, supra note 4 at Ch. 22. The case study approach to economics at Harvard is represented in the series of 'Harvard Economic Studies', which were largely doctoral dissertations published by Harvard University Press. See, for example, Harvard Economic Studies No. 1: William H. Price, *The English Patents of Monopoly* (1906); No. 8: Melvin T. Copeland, *The Cotton Manufacturing Industry of the United States* (1909); no. 10: Arthur S. Dewing, *Corporate Promotions and Reorganizations* (1914) (containing case studies of several business firms). Perhaps the best known was No. 11: Eliot Jones' *The Anthracite Coal Combination in the United States* (1914).
14. For example, P.S. Atiyah, *The Rise and Fall of Liberty of Contract* (1979); Morton J. Horwitz, *The Transformation of American Law: 1780–1869* (1978).
15. On the citation practices of nineteenth-century judges that excluded citations to economists, see Herbert Hovenkamp, 'The Political Economy of Substantive Due Process', 40

- Stanford L. Rev.* 379 (1988). See also Herbert Hovenkamp, 'The First Great Law & Economics Movement', 42 *Stan. L. Rev.* 993 (1990).
16. For fully developed statements of the various propositions asserted in this paragraph, see the summary in Herbert Hovenkamp, *Federal Antitrust Policy: the Law of Competition and its Practice* 2.2b (2d edn, 1999); and Frank Easterbrook, 'Ignorance and Antitrust' 119, in *Antitrust, Innovation, and Competitiveness* (T. Jorde & D. Teece, eds., 1992); Frank Easterbrook, 'The Limits of Antitrust', 63 *Texas L. Rev.* 1, 2 (1984); William Landes, 'Optimal Sanctions for Antitrust Violations', 50 *U.Chi.L.Rev.* 652 (1983); Edward Kitch, 'The Fire of Truth: A Remembrance of Law and Economics at Chicago', 1932/70, 26 *J.L. & Econ.* 163 (1983); Richard A. Posner, 'The Chicago School of Antitrust Analysis', 127 *U.Pa.L.Rev.* 925 (1979); Robert H. Bork, *The Antitrust Paradox: A Policy at War with Itself* (1978; rev. edn 1993); Harold Demsetz, 'Barriers to Entry', 72 *Am. Econ. Rev.* 47 (1982).
  17. For example, W. Bowman, 'Tying Arrangements and the Leverage Problem', 67 *Yale L.J.* 19 (1957); L. Telsner, 'Why Should Manufacturers Want Fair Trade?', 3 *J.L. & Econ.* 86 (1960). The leverage theory condemned tying arrangements on the assumption that a firm with a single monopoly, in the tying product, could use tying to create a second monopoly in the tied product, and thus earn two monopoly profits instead of one, while destroying competition in the tied product. See, for example, *Carbice Corp. v. American Patents Development Corp.*, 283 U.S. 27 (1931). The theory is false because there is only a single monopoly profit to be earned in any distribution chain. See Hovenkamp, *Federal Antitrust Policy*, 10.6a.
  18. For example, *Brown Shoe Co. v. United States*, 179 F.Supp. 721, 738 (E.D.Mo.1959), aff'd, 370 U.S. 294, 344 (1962) (condemning merger because post-merger firm would be able to make better shoes for the same price as rivals, or else undersell them). For the critiques, see, for example, H. Demsetz, 'Industry Structure, Market Rivalry, and Public Policy', 16 *J. L. & Econ.* 1 (1973); Y. Brozen, *Concentration, Mergers, and Public Policy* (1983). Other literature is summarized in Posner, 'Chicago School', note 16.
  19. For example, *United States v. Topco Associates*, 405 U.S. 596 (1972) (condemning efficient joint venture by grocers who lacked market power). See Robert H. Bork, 'The Rule of Reason and the Per Se Concept: Price Fixing and Market Division' (part 2), 75 *Yale L.J.* 373 (1966).
  20. For a more general discussion, including references, see Herbert Hovenkamp, *Federal Antitrust Policy*, 2.2b.e.
  21. See P. Areeda and H. Hovenkamp, *Antitrust Law* 100b (2d edn, 2000).
  22. On both propositions, see Herbert Hovenkamp, 'Antitrust Policy After Chicago', 84 *Mich.L.Rev.* 213 (1985).
  23. For example, Easterbrook, 'Limits', note 16 at 2; Ronald Coase, 'The Problem of Social Cost', 3 *J.L. & Econ.* 1 (1960).
  24. For example, Bork, *The Antitrust Paradox*, note 16.
  25. Easterbrook, 'Ignorance and Antitrust', note 16 at 119.
  26. For example, Michael A. Salinger, 'Vertical Mergers and Market Foreclosure', 103 *Q.J.Econ.* 345 (May, 1988); Michael Waterson, 'Vertical Integration, Variable Proportions and Oligopoly', 92 *Econ. J.* 129 (Mar. 1982). See also Roger D. Blair and David Kaserman, *Law and Economics of Vertical Integration and Control* (1983); Michael Katz, 'Vertical Contractual Relations', in *Handbook of Industrial Organization*, chs 4 & 11 (Richard Schmalensee and Robert Willig, eds, 1989).
  27. For example, Jean Tirole, *The Theory of Industrial Organization* 367–74 (1988).
  28. For example, Tirole, *ibid.*; Oliver E. Williamson, 'Predatory Pricing: A Strategic and Welfare Analysis', 87 *Yale L.J.* 284 (1977); see also Patrick Bolton, Joseph F. Brodley and Michael H. Riordan, 'Predatory Pricing: Strategic Theory and Legal Policy', *Georgetown L.J.* (2000) (in press).
  29. See Carl Shapiro, 'Exclusivity in Network Industries', 7 *Geo. Mason L. Rev.* 673 (1999); Herbert Hovenkamp, 'Exclusive Joint Ventures and Antitrust Policy', 1995 *Columbia Bus.L.Rev.* 1.
  30. See, for example, Jonathan B. Baker, 'Contemporary Empirical Merger Analysis', 5 *Geo. Mason L. Rev.* 347 (1997); Jonathan B. Baker, 'Unilateral Competitive Effects Theories in Merger Analysis', 11 *Antitrust* 21 (Spring 1997); Carl Shapiro, 'Mergers with

- Differentiated Products', 10 *Antitrust* 23, 24 (Spring, 1996); see also Christopher A. Velturo, 'Evaluating Mergers with Differentiated Products', 11 *Antitrust* 16 (Spring, 1997); Jonathan B. Baker and Timothy F. Bresnahan, 'The Gains from Merger or Collusion in Product-Differentiated Industries', 33 *J. Indus. Econ.* 427, 429 (1985).
31. See, for example, Bruce H. Kobayashi, 'Game Theory and Antitrust: a Post-Mortem', 5 *Geo. Mason L. Rev.* 411 (1997); Sam Peltzman, 'The Handbook of Industrial Organization: a Review Article', 99 *J. Pol. Econ.* 201 (1991). The criticism is not unique to post-Chicago antitrust economics, but has been generalized to all of economics. See, for example, Ronald H. Coase, 'How Should Economists Choose?', 16 (Warren Nutter Memorial Lecture, Am. Enterprise Institute, 1982), reprinted in R. Coase, *Essays on Economics and Economists* 15 (1994); Deborah A. Redman, *Economics and the Philosophy of Science*, esp. ch. 9 (N.Y.: Oxford Univ. Press, 1991); Diedre McCloskey, *The Rhetoric of Economics* (1985); Alfred S. Eichner, ed., *Why Economics is Not Yet a Science* (Armonk, N.Y.: M. E. Sharpe, 1983). See also the essays collected in *Foundations of the Economic Approach to Law* (Avery Weiner Katz, ed., Foundation Press, 1998).
  32. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986). In brief, the theory of the case was that the defendant's conspiracy to set high prices in Japan produced profits needed to fund conspiratorial predatory pricing in the United States against the plaintiffs; there was ample evidence of the first conspiracy, but not of the second. See 2 *Antitrust Law* 308c2.
  33. *Poller v. CBS*, 368 U.S. 464, 473 (1962): 'We believe that summary procedures should be used sparingly in complex antitrust litigation where motive and intent play leading roles, the proof is largely in the hands of the alleged conspirators, and hostile witnesses thicken the plot. It is only when the witnesses are present and subject to cross-examination that their credibility and the weight to be given their testimony can be appraised.'
  34. See, for example, David E.M. Sappington and J. Gregory Sidak, 'Are Public Enterprises the Only Credible Predators?', 67 *Univ. Chi.L.Rev.* 271, 275 (2000); Michael S. Jacobs, 'An Essay on the Normative Foundations of Antitrust Economics', 74 *N.C.L. Rev.* 219, 266 (1995); Michael S. Jacobs, 'The New Sophistication in Antitrust', 79 *Minn. L. Rev.* 1, 24 (1994); William H. Page, 'The Chicago School and the Evolution of Antitrust: Characterization, Antitrust Injury, and Evidentiary Sufficiency', 75 *Va.L.Rev.* 1221 (1989).
  35. This term refers not only to summary judgment, but also to judgment as a matter of law, which is typically given after trial, and also to motions to dismiss, where *Matsushita* also has had an effect. See generally 2 *Antitrust Law* 307.
  36. *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451 (1992). Other cases permitting 'post-Chicago' claims to go to trial are *Concord Boat Corp. v. Brunswick Corp.*, 21 F.Supp.2d 923 (W.D.Ark. 1998), rev'd, 207 F.3d 1039 (8th Cir. 2000), cert. pet. pending; *C.R. Bard v. M3 Systems*, 157 F.3d 1340 (Fed.Cir. 1998), cert. denied, 526 U.S. 1131 (1999); *Collins v. Dairy Queen*, 59 F.Supp.2d 1312 (M.D.Ga. 1999); *Red Lion Medical Safety v. Ohmeda*, 63 F.Supp.2d 1218 (E.D.Ca. 1999).
  37. See, for example, *Poller v. CBS*, 368 U.S. 464, 473 (1962) ('summary procedures should be used sparingly in complex antitrust litigation where motive and intent play leading roles').
  38. For example, Steven C. Salop and R. Craig Romaine, 'Preserving Monopoly: Economic Analysis, Legal Standards, and Microsoft', 7 *Geo. Mason L. Rev.* 617 (1999); Lawrence A. Sullivan, 'Post-Chicago Economics: Economists, Lawyers, Judges, and Enforcement in a Less Determinate Theoretical World', 63 *Antitrust L.J.* 669 (1995); Michael H. Riordan and Steven C. Salop, 'Evaluating Vertical Mergers: A Post-Chicago Approach', 63 *Antitrust L.J.* 513, 515 (1995); Jonathan B. Baker, 'Recent Developments in Economics That Challenge Chicago School Views', 58 *Antitrust L.J.* 645, 655 (1989); Eleanor M. Fox and Lawrence A. Sullivan, 'Antitrust—Retrospective and Prospective: Where Are We Coming From? Where Are We Going?', 62 *N.Y.U. L. Rev.* 936 (1987); Thomas Krattenmaker and Steven Salop, 'Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price', 96 *Yale L.J.* 209, 235–62 (1986); Patrick Rey and Jean Tirole, 'The Logic of Vertical Restraints', 76 *American Econ. Rev.* 921 (1986); Louis Kaplow, 'Extension of Monopoly Power through Leverage', 85 *Colum. L. Rev.* 515 (1985).

39. *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451 (1992).
40. See, for example, S. Salop, 'The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium', 68 *Antitrust L.J.* 187 (2000); Robert H. Lande, 'Chicago Takes it on the Chin: Imperfect Information Could Play a Crucial Role in the Post-Kodak World', 62 *Antitrust L.J.* 193 (1993).

Recent decisions applying *Kodak* include *SMS Systems Maintenance Service v. Digital Equip. Corp.*, 188 F.3d 11 (1st Cir. 1999) (not unlawful under *Kodak* for computer maker to bundle 3-year warranty with new computer; purchaser bought the computer and warranty at the same time and was thus not 'locked in' to anything); *Alcatel USA v. DGI Technologies*, 166 F.3d 772, 781–783 (5th Cir. 1999) (no relevant market for the defendant's 'switch expansion devices'; customers were not unfairly locked in because most engaged in lifecycle pricing; also, no evidence that defendants' prices were higher than rivals' prices in any event; finally, no evidence of an adverse change in pricing policies after underlying product was sold to buyers, thereby locking them in to adverse policies); *Brokerage Concepts v. U.S. Healthcare*, 140 F.3d 494, 513–516 (3d Cir. 1998) (insufficient evidence that HMO patients were 'locked in' to a particular HMO by their employers' choice; employers could switch easily and quickly in response to an announcement of a non-cost-justified price increase).

See *Mitel Corp. v. A&A Connections*, 1998–1 Trade Cas. 72120 (E.D.Pa.) (refusing to dismiss ISO complaint that its termination for making unauthorized sales was unlawful monopolization injuring consumers by denying them an independent supplier). See also *Digital Equipment*, 73 F.3d 756 at 763. And see *United States v. IBM Corp.*, 163 F.3d 737 (2d Cir. 1998) (approving termination of 1954 consent decree requiring IBM to sell parts to rival service organizations, notwithstanding intervenor's argument that *Kodak* style lock-in still served to give IBM substantial market power).

41. Several decisions require such a change. See *Metzler v. Bear Automotive Service Equip. Co.*, 19 F.Supp.2d 1345, 1353 (S.D.Fla. 1998):

In accordance with the holdings of the First, Third, Sixth, and Seventh Circuits, as well as numerous federal courts and commentators,[Referring to *Queen City Pizza v. Domino's Pizza*, 124 F.3d 430 (3d Cir.1997); *PSI Repair Services v. Honeywell*, 104 F.3d 811 (6th Cir.1997); *Digital Equip. Corp. v. Uniq Digital Tech.*, 73 F.3d 756 (7th Cir.1996); *Lee v. Life Ins. Co. of N. Am.*, 23 F.3d 14 (1st Cir. 1994).] this Court finds that an antitrust plaintiff cannot succeed on a *Kodak*-type theory where the defendant has not, within the applicable statute of limitations period, exacted supracompetitive prices by implementing a restrictive anticompetitive change of policy that locked in customers, or used other coercive anticompetitive methods to deceive customers about the prices they would have to pay for parts and service.

Contra *Red Lion Medical Safety v. Ohmeda*, 63 F.Supp.2d 1218 (E.D.Ca. 1999) (defendant could have monopoly power in its aftermarket service even though it had never changed its parts policy).

42. This premise of imperfect competition in the primary market is essential. If primary market competition were perfect *Kodak*, which did not have a monopoly in the primary market, would not sell any photocopiers after it made a significant non-cost-justified price increase.
43. *Kodak*, 504 U.S. at 473.
44. *Ibid.* at 475 (noting peculiarities of government agency budgeting that separated capital costs from operating costs).
45. See, for example, Steve Salop, 'First Principles', note 40; David McGowan, 'Free Contracting, Fair Competition, and Article 2B; some Reflections on Federal Competition Policy, Information Transactions, and "Aggressive Neutrality"', 13 *Berkeley Tech. L.J.* 1173 (1998). See also Jeffrey K. MacKie-Mason and John Metzler, 'Links Between Vertically Related Markets: Kodak, in *The Antitrust Revolution: Economics, Competition, and Policy*' 386 (John E. Kwoka, Jr. and Lawrence J. White, eds, 3d edn. 1999); Joseph Kattan, 'Market Power in the Presence of an Installed Base', 62 *Antitrust L.J.* 1 (1993).
46. Even Steve Salop, one of *Kodak*'s most rigorous defenders, concedes that perhaps it was

not properly brought as an antitrust case but may rather have been some kind of contract claim. See Salop, 'First Principles', supra note 40, at 188.

47. Examples include *SMS Systems Maintenance Service v. Digital Equipment Corp.*, 11 F.Supp. 2d 166 (D.Mass. 1998), aff'd, 188 F.3d 11 (1st Cir. 1999), cert. denied, 120 S.Ct. 1241 (2000) (*Kodak* does not apply when primary good and 'aftermarket' good, are sold at the same time); *PSI Repair Servs. v. Honeywell*, 104 F.3d 811, 821 (6th Cir.), cert. denied, 520 U.S. 1265 (1997) (similar); *Digital Equip. Corp. v. Uniq Digital Techs.*, 73 F.3d 756, 763 (7th Cir. 1996) (similar); *Lee v. Life Ins. Co. of N. Am.*, 23 F.3d 14, 20 (1st Cir.), cert. denied, 513 U.S. 964 (1994) (similar); *Metzler v. Bear Automotive Service Equip. Co.*, 19 F.Supp.2d 1345 (S.D.Fla. 1998) (requiring subsequent change in aftermarket pricing policies); *Tarrant Service Agency v. American Standard*, 12 F.3d 609 (6th Cir. 1993), cert. denied, 512 U.S. 1221 (1994) (*Kodak* does not apply when aftermarket parts can be obtained from sources other than the defendant); *Godix Equipment Export Corp. v. Caterpillar*, 948 F.Supp. 1570 (S.D.Fla. 1997) (similar).
48. *Image Technical Services v. Eastman Kodak Co.*, 125 F.3d 1195 (9th Cir. 1997), cert. denied, 523 U.S. 1094 (1998).
49. *Kodak*, 125 F.3d at 1203:

The 'commercial reality' faced by service providers and equipment owners is that a service provider must have ready access to all parts to compete in the service market. As the relevant market for service 'from the Kodak equipment owner's perspective is composed of only those companies that service Kodak machines', id., the relevant market for parts from the equipment owners' and service providers' perspective is composed of 'all parts' that are designed to meet Kodak photocopier and micrographics equipment specifications.

For an explanation of why complements cannot constitute a relevant market, see Phillip E. Areeda and Herbert Hovenkamp, *Antitrust Law* 566 (2000 Supp.).

50. The court also concluded that a relevant market consisted of any grouping of parts such that, if a cartel controlled the grouping, it would be able to raise the price of all. For example, if firms A, B and C collectively produce 90 per cent of the world's tires and also 80 per cent of the world's cameras, they would be able to fix the price of both; so there must be a tire/camera market (*Kodak*, 125 F.3d at 1203, citing the proposition, which is correct in context, that a grouping of goods is a relevant market if the producers of those goods, 'if unified by a monopolist or a hypothetical cartel, would have market power in dealing with ISOs and end users'. The quoted phrase means that a grouping of goods is a market if a firm controlling that grouping is able to raise price without loss through competition to goods that are outside the grouping. See also 1992 Horizontal Merger Guidelines, 1.11; and *Antitrust Law* 530 (2000 Supp.).
51. The court permitted significant market power to be inferred from:
  - (1) [the defendant's] own manufacture of Kodak parts (30%); (2) its control of original-equipment manufacturers' sale of Kodak parts to ISOs through tooling clauses (20–25%) engineering clauses and other proprietary arrangements (exact percentage unknown); and (3) its discouragement of self-servicing and resale of parts by end users. (125 F.3d 1195, 1206)

A 'tooling clause' or 'engineering clause' was a clause stating that, if Kodak provided the dies or the schematics and other specifications for a particular part, copies of the part made with those dies or specifications could be sold only to Kodak.

52. But some courts have disagreed with *Kodak* and hold that there cannot be a relevant market for a firm's own parts when numerous other firms manufacture interchangeable parts or generic parts are available: *Tarrant Service Agency v. American Standard*, 12 F.3d 609 (6th Cir. 1993), cert. denied, 512 U.S. 1221 (1994); *Godix Equipment Export Corp. v. Caterpillar*, 948 F.Supp. 1570 (S.D.Fla. 1997) (similar; other firms made parts that fit Caterpillar tractors).
53. See Herbert Hovenkamp, 'Market Power in Aftermarkets: Antitrust Policy and the Kodak Case', 40 *UCLA L. Rev.* 1447 (1993).



54. See, for example, Salop, 'First Principles', note 40.
55. This is a likely explanation of the facts of *Kentmaster Mfg. Co. v. Jarvis Products Corp.*, 146 F.3d 691 (9th Cir. 1998), where the defendant gave away its durable commercial meat cutting equipment, but required users to purchase all their aftermarket parts from it. More intense users would have more frequent need for parts, and at any monopoly overcharge would provide the seller with a higher overall rate of return.
56. 125 F.3d at 1208.
57. For example, *Tampa Elect. Co. v. Nashville Coal Co.*, 365 U.S. 320 (1961) (competitive effects of long-term exclusive dealing contract to be tested in the relevant market for the product being sold, not in the grouping of sales covered by that particular contract); *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984) (exclusive contract between anesthesiologist and hospital to be tested in overall market for patient admissions, and antitrust claim failed because defendant hospital accounted for only 30 per cent of these).
58. For example, in *Kodak* the defendant refused to sell parts to the ISOs; by contrast, in the closely similar *Xerox* litigation, the defendant sold parts, but charged ISOs much higher prices than it charged its own users; *Independent Service Organizations Antitrust Litigation*, 203 F.3d 1322, 1324 (Fed. Cir. 2000), cert. pet. pending.
59. For example, *Kodak*, 125 F.3d at 1226 and n. 20, suggesting that the price of parts be the same as the price to Danka and Canon. Danka Office Imaging Company had taken over all of Kodak's copier business, which was unprofitable notwithstanding the charge of monopolization. This solution to the price problem is completely indefensible because the court ignored the other portions of the deal, under which it transferred all servicing and distribution to Danka, but continued to manufacture some photocopiers under the 'Danka' name. See 'Kodak Cuts Workers at Copier Plant', *Buffalo News*, 11–11–1998, 1998 WL 6052853 (describing sale to Danka of money-losing copier division, which occurred in 1996); 'Financial Digest', *The Washington Post*, Jan. 3, 1997, 1997 WL 2244315 (similar).
60. 35 U.S.C. 271(d): 'No patent owner otherwise entitled to relief for infringement . . . of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of . . . (4) [the patent owner's] refus[all] to license or use any rights to the patent.' See *Independent Service Organizations (ISO) Antitrust Litigation*, 203 F.3d 1322 (Fed. Cir. 2000), cert. pet. pending; and *Independent Service Organizations Antitrust Litigation*, 85 F.Supp.2d 1130 (D.Kan. 2000), a case nearly identical to *Kodak*, but holding that the defendant had no duty to sell patented parts or provide copyrighted diagnostics software to ISOs.
61. On copyright, see 17 U.S.C. 106; and see *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932) (copyright owner 'may refrain from vending or licensing and content himself with simply exercising the right to exclude others from using his property'); *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147 (1st Cir. 1994) (rejecting request for compulsory licensing); *Triad Systems Corp. v. Southeastern Express Co.*, 64 F.3d 1330 (9th Cir. 1995), cert. denied, 516 U.S. 1145 (1996) (similar); *Service & Training v. Data General Corp.*, 963 F.2d 680, 686 (4th Cir. 1992) (similar).
62. For example, *United States v. General Electric Co.*, 115 F.Supp. 835 (D.N.J. 1953) (compulsory licensing for monopolization and conspiracy to monopolize).
63. See Phillip E. Areeda and Herbert Hovenkamp, *Antitrust Law* 720 (rev. edn, 1996), which notes the basic antitrust rule that a firm, even a monopolist, is free to charge any nonpredatory price it pleases for its product.
64. The district court in the *Xerox* litigation accurately perceived the flaw in the Ninth Circuit's reasoning: the Ninth Circuit apparently believed that a patentee had a right to exclude in one market but not in two. Thus a patent on an aftermarket part permitted Kodak to exclude others from making that part, but it did not permit Kodak to create a service monopoly by refusing to sell the part to other people who wanted to install it. As the *Xerox* court pointed out:

We believe that the Ninth Circuit in *Kodak*, in reaching its conclusion, implicitly assumed that a single patent can create at most a single 'inherent' economic monopoly.

The Supreme Court in *Kodak* certainly did not reach this issue. In *Kodak*, the Supreme Court stated that it ‘has held many times that power gained through some natural and legal advantage such as a patent, copyright, or business acumen can give rise to [antitrust] liability if ‘a seller exploits his dominant position in one market to expand his empire into the next [market].’ The Court’s statement simply is not applicable where a patent holder, exercising his unilateral right to refuse to license or use his invention, acquires a monopoly in two separate relevant antitrust markets. There is no unlawful leveraging of monopoly power when a patent holder merely exercises its rights inherent in the patent grant. In other words, to the extent Xerox gained its monopoly power in any market by unilaterally refusing to license its patents, such conduct is permissible under the antitrust laws. Xerox’s legal right to exclude ISOs in the service markets from using Xerox’s patented inventions arose from its patents, not from an unlawful leveraging of its monopoly power in the parts market.

Patents only claim inventions. Because each use of that invention may be prevented by the patent holder, the patent may have some anticompetitive effect in each market in which it is used or not used. The patent statute expressly grants patent holders the right to exclude others from manufacturing, selling, or using their inventions. Manufacturing, retail, and service markets all fall within this statutory grant of power to patent holders. Thus, Congress, by enacting the patent statute, apparently contemplated that a single patent could implicate more than one market. . . .

The reward for a patented invention is the right to exploit the entire field of the ‘invention,’ not the right to exploit the single most analogous antitrust market. (Independent Service Organizations Antitrust Litigation, 989 F.Supp. 1131, 1138 (D.Kan. 1997).)

65. The Ninth Circuit itself acknowledged this fact. See 125 F.3d at 1216 (could ‘find no reported case in which a court has imposed antitrust liability for a unilateral refusal to sell or license a patent or copyright’).
66. 35 U.S.C. 271(d), amended in 1988.
67. See 15 U.S.C. 15: ‘Any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue . . . and shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney’s fee.’
68. See, for example, 2 *Antitrust Law* 335 (plaintiff standing), 337 (‘antitrust injury’ requirement) and 346 (indirect purchaser rule).
69. However, some of them, such as the indirect purchaser rule, are very difficult to harmonize with Clayton 4’s mandate that people who suffer actual antitrust injury as a result of an antitrust violation are entitled to recover; and that the measurement of the injury be compensatory – that is, the damages ‘by him [the plaintiff] sustained’ see 2 *Antitrust Law* 390–396).
70. Mainly *United States v. Microsoft*, 87 F.Supp.2d 30 (D.D.C. 2000) (conclusions of law); and 65 F.Supp.2d 1 (D.D.C. 1999) (findings of fact).
71. For example, Ronald A. Cass and Keith N. Hylton, ‘Preserving Competition: Economic Analysis, Legal Standards and Microsoft’, 8 *Geo. Mason L. Rev.* 1 (1999); Ashutosh Bhagwat, ‘Unnatural Competition: Applying the New Antitrust Learning to Foster Competition in the Local Exchange’, 50 *Hastings L.J.* 1479 (1999); Robin Cooper Feldman, ‘Defensive Leveraging in Antitrust’, 87 *Geo.L.J.* 2079 (1999); Steven C. Salop and R. Craig Romaine, ‘Preserving Monopoly: Economic Analysis, Legal Standards, and Microsoft’, 7 *Geo. Mason L. Rev.* 617 (1999).
72. *United States v. Microsoft*, 65 F.Supp.2d 1, 21 (D.D.C. 1999) (findings of fact 74–77).
73. The one exception is the requirement of tying law that there be separate tying and tied products. See, for example, *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594 (1953) (advertising in morning and evening newspapers were a single product); *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984) (hospital admission and anesthesiological services were separate products). In a decision interpreting a 1995 consent decree the D.C. Circuit had held that the Windows operating system and the Internet Explorer browser were a single product, focusing on the degree of integration between the two – namely, that the code for IE was completely interspersed with the code for Windows. See *United States v. Microsoft*, 147 F.3d 935 (D.C.Cir.1998). However, that decision was interpreting a

consent decree rather than the Sherman Act. Further, the language of that decree did not track the Sherman Act closely and even contained a provision permitting Microsoft to develop ‘integrated’ products. Neither the language of the antitrust laws nor the tying case law contains such an exception. In any event, there are particularly good reasons for finding separate products in the Microsoft case, where the goods in question are often sold separately, and where the tied product is in many ways an imperfect substitute for the tying product. See *Microsoft* conclusions of law, 87 F.Supp.2d at 47–51, citing P. Areeda and H. Hovenkamp, *Antitrust law* 1746.1d at 495 (Supp.1999).

74. Older decisions used formulations focusing on intent, such as this one from *United States v. Grinnell Corp.*, 384 U.S. 563, 570–571 (1966):

The offense of monopoly . . . has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.

More recent decisions are conduct-oriented, such as the definition from *Aspen Skiing* that exclusionary conduct by a dominant firm is unlawful when it ‘unnecessarily excludes or handicaps competitors’ (*Aspen Skiing Co. v. Aspen Highlands Skiing Co.*, 472 U.S. 585, 597 (1985)).

75. *Advanced Health-Care Servs. v. Radford Community Hosp.*, 910 F.2d 139, 148 (4th Cir. 1990); *Instructional Sys. Dev. Corp. v. Aetna Cas. & Sur. Co.*, 817 F.2d 639, 649 (10th Cir. 1987). Cf. *Multistate Legal Studies v. Harcourt Brace Jovanovich*, 63 F.3d 1540, 1550 (10th Cir. 1995) (conduct not unlawful unless it lacks a ‘legitimate business justification’); *General Indus. Corp. v. Hartz Mountain Corp.*, 810 F.2d 795, 804 (8th Cir. 1987) (equating conduct ‘without a legitimate business purpose’ with conduct ‘that makes sense only because it eliminates competition’). Other courts sometimes distinguish conduct that merely injures competitors from conduct that harms the ‘competitive process’ (*Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 21 (1st Cir. 1990), cert. denied, 499 U.S. 931 (1991)). Other decisions are discussed in 3 *Antitrust Law* 651.
76. Under per processor licensing a computer maker (OEM) who licensed Windows for its machines had to pay the license fee for each computer it sold, whether or not Windows was actually installed. As a result, anyone who wanted an alternative operating system, such as IBM’s OS/2, had to pay for two operating systems. The result imposed significantly higher costs (100%, assuming that different operating systems had the same costs) on rival sellers of operating systems. That practice, which the 1995 consent decree terminated, was not a part of the Microsoft case that went to trial in 1999. See *United States v. Microsoft Corp.*, 1995 W.L. 505998 (D.D.C., Aug. 21, 1995) (consent decree).
77. For example, *Microsoft*, 87 F.Supp.2d at 39 (attempt to divide market with Netscape, so that the leading browsers would work only on mutually exclusive sets of operating systems; referring to findings of fact 79–80, 93–132); *ibid.* at 43–4 (alterations of licensed Java technology so as to make it compatible only with Windows, thus eliminating Java’s ‘write once, run anywhere’ promise, referring to findings of fact 387–406); *ibid.* at 39–41 (summarizing various efforts to relegate Netscape to inferior and more costly methods of distribution; referring to findings of fact 133, 143, 359–61).
78. Speaking of the Java actions, Judge Jackson wrote:

These actions cannot be described as competition on the merits, and they did not benefit consumers. In fact, Microsoft’s actions did not even benefit Microsoft in the short run, for the firm’s efforts to create incompatibility between its JVM for Windows and others’ JVMs for Windows resulted in fewer total applications being able to run on Windows than otherwise would have been written. Microsoft was willing nevertheless to obstruct the development of Windows-compatible applications if they would be easy to port to other platforms and would thus diminish the applications barrier to entry (87 F.Supp.2d at 44).

79. See Krattenmaker and Salop, ‘Anticompetitive Exclusion’, *supra* note 38 at 235–262; Richard S. Markovits, ‘The Limits to Simplifying Antitrust’, 63 *Tex.L.Rev.* 41, 58–60

- (1984); Steven C. Salop and David T. Scheffman, 'Raising Rivals' Costs', 73 *Am.Econ.Rev.* 267 (1983); Riordan and Salop, 'Evaluating Vertical Mergers', note 38.
80. The argument was developed in different contexts by Oliver Williamson and Salop and Scheffman. See Oliver Williamson, 'Wage Rates as a Barrier to Entry: the Pennington Case in Perspective', 82 *Q.J.Econ.* 85 (1968); Salop and Scheffman, 'Raising Rivals' Costs', supra note 79.
  81. For example, *JTC Petroleum Co. v. Piasa Motor Fuels, Inc.*, 190 F.3d 775, 778–779 (7th Cir.1999) (Posner, J) (citing evidence that members of cartel may have paid off suppliers to charge cartel rivals significantly higher prices, thus creating a price umbrella under which the cartel could operate); *In re Brand Name Prescription Drugs Antitrust Litigation*, 123 F.3d 599, 614 (7th Cir. 1997), cert. denied, 522 U.S. 1123 (1998) (similar to above, but suggesting possibility that cartel might be employing a customer to police the cartel). See also *Forsyth v. Humana, Inc.*, 114 F.3d 1467, 1478 (9th Cir. 1997), aff'd on nonantitrust grounds, 525 U.S. 299 (1999) (health care provider's policy of shifting indigent patients to rivals could have effect of raising their costs); *Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal and Professional Publications, Inc.*, 63 F.3d 1540, 1553 (10th Cir.1995) (dominant firm's practice of scheduling its own full slate of classes so as to conflict with rival's specialized classes could have had effect of raising the rival's cost of distributing its own product); *Premier Elec. Const. Co. v. National Elec. Contractors Ass'n, Inc.*, 814 F.2d 358 (7th 1987) (alleged agreement between union and contractors' association under which union would obtain fee from all employers without whom it had collective bargaining agreements, whether or not they were association members, to be paid to the association, probably intended to raise the costs of non-member contractors). Cf. *Ball Memorial Hosp., Inc. v. Mutual Hosp. Ins., Inc.*, 784 F.2d 1325, 1340 (7th Cir. 1986) (rejecting RRC claim that Blue Cross forced hospitals to submit lower bids for taking care of BC patients, with result that it had to impose higher charges on non-BC patients).
  82. For example, W. Bowman, 'Tying Arrangements and the Leverage Problem', 67 *Yale L.J.* 19 (1957). See also Richard A. Posner, 'Exclusionary Practices and the Antitrust Laws', 41 *U.Chi.L.Rev.* 506 (1974). However, see John E. Lopatka, 'Exclusion Now and in the Future: Examining Chicago School Orthodoxy', 17 *Miss. C. L. Rev.* 27, 30 (1996) (arguing that many RRC strategies were at least implicit in Chicago School antitrust scholarship).
- From criticism of the theory, see David Reiffen and Andrew N. Kleit, 'Terminal Railroad Revisited: Foreclosure of an Essential Facility or Simple Horizontal Monopoly?', 33 *J.L. & Econ.* 419 (1990); John E. Lopatka and Paul E. Godek, 'Another Look at Alcoa: Raising Rivals' Costs Does Not Improve the View', 35 *J.L. & Econ.* 311 (1992); Scott E. Masten and Edward A. Snyder, 'United States v. United Shoe Machinery Corporation: On the Merits', 36 *J.L. & Econ.* 33 (1993); John E. Lopatka and Andrew N. Kleit, 'The Mystery of Lorain Journal and the Quest for Foreclosure in Antitrust', 73 *Tex. L. Rev.* 1255 (1995); Timothy J. Brennan, 'Understanding "Raising Rivals' Costs"', 33 *Antitrust Bull.* 95 (1988); Wesley J. Liebler, 'Exclusion and Efficiency', 11 *Regulation* 34 (1987); Frank H. Easterbrook, 'Allocating Antitrust Decisionmaking Tasks', 76 *Geo. L.J.* 305 (1987).
83. For example, *Carbice Corp. of Amer. v. American Patents Development Corp.*, 283 U.S. 27, 31–32 (1931); *Fortner Enterp. v. U.S. Steel*, 394 U.S. 495, 49899 (1969).
  84. The literature is summarized and the arguments developed in Hovenkamp, *Federal Antitrust Policy*, 9.2c. Double marginalization occurs when one firm with market power sells to a second firm with market power, and each sets its optimal monopoly price independently. The result is higher prices and lower output than would result when a single monopolist controls both distribution levels. In general, the greater the monopoly position of the vertically related firms, the greater the efficiency gains from elimination of double marginalization. For a further explication, see 3A *Antitrust Law* 758 (rev. edn, 1996); and 4A *Antitrust Law* 1002 (rev. edn, 1998).
  85. Ronald N. Coase, 'The Nature of the Firm', 4 *Economica* (n.s.) 386 (1937).
  86. For example, *JTC Petroleum*, supra, note 81.
  87. *United States v. American Can Co.*, 230 F. 859, 874 (D. Md. 1916), appeal dismissed, 256 U.S. 706 (1921); and see *ibid.* at 875:

for a year or two after defendant's formation it was practically impossible for any competitor to obtain the most modern, up-to-date, automatic machinery, and . . . the difficulties in the way of getting such machinery were not altogether removed until the expiration of the six years for which the defendant had bound up the leading manufacturers of such machinery.

- See 11 *Antitrust Law* 1801a (1998).
88. See Krattenmaker and Salop, 'Anticompetitive Exclusion', 96 *Yale L.J.* at 240–42.
  89. For further development, see Herbert Hovenkamp, 'Antitrust Policy, Restricted Distribution, and the Market for Exclusionary Rights', 71 *Minn.L.Rev.* 1293, 1307–1308 (1987).
  90. Riordan and Salop, 'Evaluating Vertical Mergers', note 38 at 517.
  91. This is the principal threat of upstream integration: for example, if GM purchases a manufacturer of automobile bodies.
  92. This is the principal threat of downstream integration: for example, if GM acquires a chain of scarce and irreplaceable automobile dealerships.
  93. For example, *Brown Shoe Co. v. United States*, 370 U.S. 294, 303–304 (1962) (upstream firm accounts for about 4 per cent of production; downstream firm for about 1.8 per cent of distribution; see 4A *Antitrust Law* 1004e1); *United States v. Bethlehem Steel Corp.*, 168 F. Supp. 576, 611–613 (S.D.N.Y.1958) (condemning vertical merger on foreclosure of less than 2 per cent).
  94. See *Ford Motor Co. v. United States*, 286 F. Supp. 407 (E.D. Mich. 1968), aff'd, 405 U.S. 562 (1972).
  95. For the relevant economic analysis, see Riordan and Salop, note 38, at 530–44.
  96. For a more detailed explanation and graphic illustrations, see 4 P. Areeda, H. Hovenkamp and J. Solow, *Antitrust Law* 1022 (rev. edn, 1998).
  97. See Riordan and Salop, note 3, at 526–7, ultimately conceding that cost saving from eliminating double marginalization can be substantial.
  98. See *ibid.*: 'In some circumstances, the combination of eliminating a double markup and foreclosure may lead to the need to balance price reductions by the integrated firm against cost and price increases by unintegrated competitors.' However, Riordan and Salop observe that high concentration does not necessarily produce high prices; as a result, some mergers in concentrated markets could serve to foreclose rivals and raise their costs, without producing significant gains from elimination of double marginalization. See Michael H. Riordan and Steven C. Salop, 'Evaluating Vertical Mergers: Reply to Reiffen and Vita Comment', 63 *Antitrust L.J.* 943, 947–948 (1995) (responding to David Reiffen and Michael Vita, 'Is There New Thinking on Vertical Mergers? A Comment', 63 *Antitrust L.J.* 917 (1995)).
  99. See, for example, *Cadence Design Systems, Inc.*, 5 Trade Reg. Rep. (CCH) 24,264 (Aug. 7, 1997); *Time Warner Inc.*, 5 Trade Reg. Rep. (CCH) 24,104 (Feb. 3, 1997); *Telecommunications, Inc.*, 5 Trade Reg. Rep. (CCH) 23,497 (Nov. 15, 1993) (proposed consent order); and *United States v. MCI Communicat.*, 59 Fed. Reg. 33,009, 33,015 (D.D.C. June 15, 1994) (Competitive Impact Statement); *United States v. AT&T Corp.*, 59 Fed. Reg. 44,158, 44,166 (D.D.C. Aug. 26, 1994) (Competitive Impact Statement). See also 4A *Antitrust Law* 1032.
  100. For example, if Mercedes and BMW were the only two makers of 'luxury' cars, while everyone else made either 'standard' or 'economy' cars, a merger of Mercedes and BMW would facilitate a larger price increase by the post-merger firm than a merger of, say, BMW and Chrysler, or of Mercedes and Nissan.
  101. See, for example, the 1992 Merger Guidelines 2.1, reprinted at 57 Fed. Reg. 41552 (Sep. 10, 1992); 4 Trade Reg. Rep. (CCH) ? 13,104; and as Appendix A in *Antitrust Law* (2000 supp.). See also P. Areeda, H. Hovenkamp and J. Solow, *Antitrust Law* 916–918, 932 (rev. edn, 1998).
  102. The cross-price-elasticity of demand between two products is a ratio describing how demand for one product responds to a price change in the other product.
  103. See the citations in note 30; the literature is developed briefly and nontechnically in Herbert Hovenkamp, *Federal Antitrust Policy* 12.3; and 4 *Antitrust Law* 913–915.

104. The Herfindahl–Hirschman Index, or HHI, measures market concentration by summing the squares of the market shares of every firm in the market. Thus a market where the firms have shares of 30 + 20 + 20 + 20 + 10 has an HHI of  $30^2 + 20^2 + 20^2 + 20^2 + 10^2$ , or 2200. If the first and last firms in this market should merge, the resulting HHI would be  $40^2 + 20^2 + 20^2 + 20^2$ , or 2800. On concentration indexes, including the HHI, and their use to evaluate horizontal mergers, see 4 *Antitrust Law* 930–931.
105. On the relationship between Cournot theories of oligopoly and the HHI, see 4 *Antitrust Law* 931d.
106. See *ibid.*
107. *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451 (1992).

## 2. The difficult reception of economic analysis in European competition law

**Roger Van den Bergh**

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### INTRODUCTION

European law seems to be a field ‘par excellence’ for the integration of the legal and the economic discipline, since the EC Treaty itself regards legal rules as instruments to achieve economic ends.<sup>1</sup> Therefore the criticisms voiced against Law and Economics because of its instrumentalist character cannot be adhered to in the context of European law. However, traditional lawyers still have a preponderant influence on the formulation of European legal rules and their interpretation and enforcement. This is also the case in the field of competition law, which is based upon economic foundations so that the importance of economic analysis should be obvious. Productive and allocative efficiency, as defined in welfare economics, are not the only thing European regulators have in mind when they pass competition laws and implement them in practice. Obviously, confining antitrust to efficiency goals<sup>2</sup> permits regulators and courts to employ the teachings of economic analysis to a much broader extent than if the opposite view that other goals (such as distribution of wealth or protection of small competitors) are equally important is accepted.

In recent years, the European Commission has attested an increasing willingness to take into account economic insights when interpreting and applying rules of competition law.<sup>3</sup> The European Court of Justice had already cleared the way for a more economically inspired reasoning decades ago.<sup>4</sup> It is now generally acknowledged that a lack of precise economic analysis threatens to undermine the foundations of competition law. However, traditional lawyers remain reluctant to economic analysis since it may make the outcome of real-life cases less predictable and thus fly in the face of legal certainty. Even though the European Commission has on many occasions expressed the wish to improve decision making in cases of competition law in such a way that it better coincides with economic insights, it has at the same time asserted that economic approaches must be reconciled with legal certainty. Making an increased use of economics without jeopardizing legal certainty has turned out to be a very difficult exercise. Some rules have acquired the status of a legal

dogma, which is hard to set aside for reasons of economic efficiency. The trade-offs to be made are not always explicitly acknowledged so that the overall quality of the competition law is endangered.<sup>5</sup>

In this chapter, the remaining barriers to the full acceptance of economic insights in European competition law are discussed. After this introduction, in the first section, attention is paid to goals of competition law that may require an adaptation of economic analysis or even impede its use totally. In Europe, it is not universally accepted that curing the possible inefficiencies of market power is the sole aim of competition policy. A prominent objective of European competition law is the achievement of market integration, which eventually may come at the expense of inefficiencies in the organization of production and distribution. Along with the market integration goal, the emphasis on consumer welfare adds an additional layer of complexity to the analysis: judgments based on allocative efficiency are incomplete if competition law is supposed to pursue the distributive goal of improving consumer welfare. Finally, the fear of private 'bigness' and the wish to protect small competitors may impede a full use of economic insights. The second section of the chapter will show how pleas for legal certainty, seen as a goal in itself, are a further obstacle to a full reception of economic analysis. The lack of flexibility resulting from the use of traditional legal concepts makes it impossible to profit fully from important economic insights. In the third section of the chapter, attention will be paid to problems of proof. In competition cases, quantitative evidence has gained importance thanks to the increased availability of data and the development of new econometric techniques. Empirical proof may contribute substantially to the quality of the decision making, provided that relevant and reliable quantitative techniques are used. Traditional competition lawyers face difficulties when they have to deal with empirical evidence. Since this continues to be an additional impediment to the reception of economic analysis in competition law, it equally deserves attention in this introductory chapter. Obviously, the limited scope of the chapter does not allow for a full discussion of the most controversial issues of competition law. However, to make the message of the chapter more concrete, a limited number of examples will be given: the definition of the relevant market, the approach towards vertical restraints, and predatory pricing.

## 'NON-ECONOMIC' GOALS OF EC COMPETITION LAW

### **Efficiency: Not the Only Goal**

The difficult reception of economic analysis in areas of civil law (property, contracts and torts) has been widely documented by European scholars.<sup>6</sup> There



is resistance to the idea that in interpreting the law judges can make use of economic analysis, since the latter is said to incorporate values that are external to the legal system. At most, economic insights can be used at the legislative level if the legislator decides to achieve economic ends by passing new laws. Still, if other values are dominant on the legislative level, no judge is able to disregard a statutory rule for reasons of economic efficiency. One might expect similar difficulties not to exist in the area of competition law. Reality is different, however. There has never been a comprehensive discussion on the goals of EC competition law, which came into existence mainly for political reasons: the establishment of a common (internal) market. In addition, lawyers continue to stress that economic concepts must be translated into a stable system of competition rules. Hence pure economic analysis is not commonly used as a tool to interpret rules of competition law, if at all.

For a long time, the achievement of market integration has been the most prominent goal of European competition law. The competition rules of the EC Treaty must be understood in the context of the need to break down the national boundaries between the member states of the Community. Ever since the European Court of Justice's *Grundig* case,<sup>7</sup> the coherence between the ultimate Community task of creating an internal market in accordance with the principle of an open market economy with free competition (as contained in Art. 2 *juncto* 4 EC Treaty) and the policy means thereto of market integration (as contained in Art. 3 (1, c) EC Treaty), has been clearly established. Neither member states nor private enterprises may engage in practices that are in conflict with or undermine the unification of the internal market. The removal of public barriers (deregulation) may not be made ineffective by the creation of private barriers (cartel agreements, mergers). Today, most public barriers have been abolished and private barriers may be largely ineffective in the absence of supporting state regulation. One could thus expect that efficiency would be advanced as the sole goal of competition law in an integrated market. However, the Commission continues to argue that, in the light of enlargement of the Community, market integration remains a 'second important objective', next to 'the protection of competition, which is the primary objective'.<sup>8</sup> American antitrust law has developed in a different context. In Europe, territorial market partitioning and parallel imports clearly dominated law enforcement until the accomplishment of the programme to create an internal market by the end of 1992. In contrast, in the USA, the need to curtail the power of large trusts was the main issue in the first decades of antitrust enforcement.<sup>9</sup> It is important to keep this different background in mind when comparisons between EC and US competition law are made.

It is not always fully acknowledged that the goal of market integration may conflict with the promotion of efficiency. Its underlying philosophy is deceptively simple: private barriers resulting from agreements between enterprises

to divide markets among them may not replace public barriers to inter-state competition resulting from state regulations. However, market partitioning may stimulate competition in the internal market. The ensuing risk of inconsistency is exacerbated when the underlying tradeoff between market integration and efficiency is not clearly stated, while the quality of competition law is mainly judged from a technical legal perspective. When interpreting rules of competition law, the European judges (Court of First Instance and Court of Justice) do not make a direct use of economic concepts, but rather try to provide an interpretation which best fits into the overall legal system. Technical legal arguments may impede a full use of economic insights, thus adding to the costs caused by a narrow market integration view. As a consequence, in European competition law, rules that are at odds with mainstream insights from industrial economics continue to exist and the scope for economic analysis remains restricted. The resulting inconsistency is further illustrated below, by using the example of vertical restraints.

### **Efficiency versus Market Integration: Policy Swings in the Approach towards Vertical Restraints**

The goal of market integration continues to put a heavy mortgage on European competition law; in terms of quality, the price to pay is inconsistencies and possibly even perverse effects. The new rules on vertical restraints may serve as an illustration. For a long time, technical legal distinctions, rather than economic analysis, dominated competition policy towards vertical restraints. In the view of the Commission, the aim of the revision was to bring about a new balance between a ‘more economics-based approach’ and a reasonable level of legal certainty.<sup>10</sup> The new Regulation introduces a presumption of legality (‘safe harbor’) to the benefit of firms with a market share not exceeding 30 per cent. However, the block exemption does not apply to certain ‘hard-core’ restraints, such as minimum resale price maintenance and market partitioning by territory. It should also be noted that the Commission has the power to disapply or withdraw the benefit of the group exemption, for instance where similar vertical restraints cover more than 50 per cent of the relevant market.

### **Reasons for cautious optimism**

When judging the new legal regime for vertical restraints, it should be stressed from the beginning that, because of the ambiguous effects of these restrictions, the design of an optimal legal regime for vertical restraints is not an easy task. Vertical restraints may have both beneficial and harmful effects (Rey and Caballero-Sanz, 1996). Competition law should not hinder the achievement of efficiencies; only if there is a serious risk of anticompetitive consequences

should antitrust authorities and judges intervene. Judgments about the best choice of legal rules depend fundamentally on the frequency of the various uses of vertical restraints. If vertical restraints were used mainly to improve distribution efficiency, rather than to support collusion or erect entry barriers, they could be held simply legal. The difficult task of competition policy is to distinguish between both hypotheses and to enable a tradeoff if vertical restraints at the same time produce anticompetitive effects and achieve efficiencies. In spite of these difficulties, the following two lessons may be derived from the economic analysis. First, the economic consequences of vertical restraints and not their legal form should be decisive in judging their conformity with the competition rules. Second, economic analysis does not provide a justification for the different treatment of different types of vertical restraints, since they are substitutes for each other. As will be shown below, neither of these lessons is fully accepted by the European Commission.

Compared to the previous legal regime, the new rules that entered into force on 1 June 2000 contain a substantial number of improvements. The old block exemptions were form-based instead of effect-based and as a result were too legalistic. For example, restraints considered legal in a franchised network were outlawed when inserted in an exclusive distribution agreement. A limitation of the number of dealers was not allowed in a selective distribution network, whereas a limited territorial protection for franchisees was deemed necessary to protect the investments to be made (Van den Bergh, 1996, pp. 75–87). Under the new rules, exclusive distribution, selective distribution and franchising are all covered by the same Regulation. Since each of these distribution systems causes similar concerns about their impact on competition and, at the same time, shares a potential to generate efficiency improvements, there is indeed no reason for a separate legal treatment. If legal categories are the legislator's crucial concern, parties will be given an incentive to change the legal form of the transaction in order to escape from antitrust liability. The increased popularity of franchising, compared to exclusive or selective distribution, might also be attributed to the more favorable antitrust treatment of the former distribution formula. It is to be welcomed that the schizophrenic distinction between the illegal quantitative selective distribution and the legal limitation of the number of franchisees is no longer part of the list of inconsistencies in European competition law. It would be premature, however, to characterize the new rules as a complete victory of economics and effects-based lawmaking.

### **Remaining technical legal distinctions**

Technical legal distinctions continue to be a part of the 'more economics-based approach'. Two peculiarities deserve attention: the distinction between agents and distributors is kept intact and full vertical integration is not explicitly

subject to a legal assessment equal to that of vertical restrictions in long-term contracts. Both agency agreements and vertical integration have been used in the past to circumvent burdensome provisions of the old Regulations. In some sectors (such as leather products) European traders make use of agency agreements, rather than distributorships. Under the old legal regime, firms also had an incentive to integrate vertically, rather than to appoint distributors. It was (and still is) not unusual for a brand owner to have a wholly owned subsidiary operating as distributor for each member state (Horspool and Korah, 1992, p. 342). Distorted business decisions may follow if a legal form is chosen because of the more lenient treatment of a less efficient alternative.<sup>11</sup> Changes of the legal form benefit above all specialized competition lawyers and add significantly to the indirect costs of the cartel prohibition. Unfortunately, the new Regulation has not entirely homogenized the legal approach towards vertical relations (restrictions in vertical agreements and vertical mergers).

First, agency agreements fall outside the cartel prohibition of Article 81(1) EC Treaty if the agents do not bear any, or only insignificant, financial and commercial risks. In the opposite situation, agents will be treated as independent dealers who must remain free in determining their marketing strategy. The Commission considers that Article 81 (1) will generally not be applicable when property in the contract goods bought or sold does not vest in the agent and the latter does not incur commercial risks or costs.<sup>12</sup> This distinction, based on the transfer of the property title, is remarkably close to the old-fashioned American *Schwinn* rule.<sup>13</sup> Before the 1977 *Sylvania* judgment of the US Supreme Court,<sup>14</sup> which introduced an effects-based analysis of vertical restraints, restrictions imposed on independent dealers were seen as illegal per se, whereas restrictions in agency agreements were judged under the *rule of reason*. Under current US antitrust law, the distinction between distributors and agents is no longer relevant for the assessment of customer and territorial restrictions. The European regulator missed the opportunity to get rid of this old-fashioned peculiarity.

A second remaining inconsistency is the lack of an explicit uniform treatment of vertical restraints imposed upon distributors and full vertical integration. Both devices aim at saving transaction costs and curing principal-agent problems. In the case of full vertical integration, a hierarchical structure is set up to minimize exactly the same costs vertical restraints are aiming to reduce.<sup>15</sup> Control of opportunistic behavior by dealers is possible either by inserting clauses in long-term contracts or by substituting an employer-employee dependence for the contractual relationship. Full vertical integration falls outside the scope of the cartel prohibition<sup>16</sup> and is to be judged under the Merger Regulation. In a full economics-based approach, the treatment of vertical restraints in long-term contracts and vertical mergers should be the same. At present, there is no explicit presumption of legality of

vertical mergers leading to a market share not exceeding 30 per cent.<sup>17</sup> In addition, there are no Guidelines for assessing vertical mergers above that threshold. Compared to the old Regulations, the ‘safe harbour’ created by the new block exemption has reduced the risk of inefficiencies. As long as the market share of the supplier or the buyer does not exceed the threshold of 30 per cent, vertical integration does not bring any legal benefit if the contracts do not contain blacklisted clauses. However, parties who consider hardcore restraints essential for the viability of their commercial relationship may decide in favor of a vertical merger if the costs of vertical integration are lower than the benefits of the blacklisted vertical restraints. For this reason, the trend to change the legal form of the transactions may continue to exist. This is worrisome if distribution through employees (full vertical integration) is less efficient than the appointment of independent distributors.

### **Two mortal sins of European competition law: market partitioning and minimum resale price maintenance**

Even though the Commission has introduced a more tolerant approach towards vertical restraints, market partitioning by territory or by customer and minimum resale price maintenance will continue to be seen as very serious infringements of the EC competition rules.<sup>18</sup> Both clauses are put on the ‘black list’ with practically no chance of being exempted from the prohibition of Article 81 (1). The price to be paid for the stubborn unwillingness to revise these strict prohibitions is high. It excludes the design of a legal regime for vertical restraints, which is consistent with economic theory. In a passage of the Guidelines, the Commission states that it is not required to assess the actual effects on the market of the hardcore restrictions.<sup>19</sup> This amounts to a formulation of per se prohibitions, which is not hospitable to economic analysis. In addition, the Commission’s policy may be counterproductive in that it interferes with the goal of promoting competition in the internal market. Prohibiting vertical restraints that partition the market can lead to perverse effects.

The strict prohibition of *market partitioning by territory* is understandable only from an ex post perspective. If distributors are already active in various EC member states, consumers will profit if they can shop around and buy the products in the member state where prices are lowest. Prohibiting parallel imports then seems to interfere with market integration, causing substantial losses for consumers. The picture changes, however, if an ex ante perspective is adopted. In order to persuade a local distributor to make investments to establish a brand in a new geographical market, it may be necessary to provide territorial protection to the distributor so that those investments can be recouped by charging a higher price. It is easy to see how the distributor’s incentives to make those efforts would be undermined if distributors in other

member states where the brand has already been introduced could free-ride on those efforts by entering the new market that has just been created by someone else's efforts. To avoid free-riding, distributors active in other markets should then be restrained from selling in the new market. The Commission is aware of the problem,<sup>20</sup> but remains reluctant to accept its consequences to their full extent. According to the Guidelines it is not anti-competitive to impose restrictions on active and passive sales on the direct buyers of the supplier located in other markets to intermediaries in the new market.<sup>21</sup> Hence an absolute territorial protection excluding equally active and passive sales to consumers in the new market cannot be organized. Given the growth of Internet trading and website marketing, direct orders by consumers may gain in importance. If the protection from free-riding is not watertight, distributors may be discouraged from launching products in new geographic markets. It is to be deplored that the existence of a tradeoff between market integration and competition is not acknowledged in the Guidelines.

In the past decades competition lawyers have become so much accustomed to the ban on *vertical price fixing* that it has achieved the status of a legal dogma, even though there are powerful efficiency arguments for allowing vertical price fixing in individual cases. Both price and non-price restraints appear to have positive as well as negative impacts on economic efficiency, depending on the context and their purposes. Great parts of the economic analysis apply, word for word, to both types of restraints. Several efficiency justifications for vertical price fixing may be found in the literature. It has been suggested by several economic commentators that resale price maintenance is useful to fight problems of double marginalization arising under conditions of successive monopoly (Spengler, 1950). Since the elimination of double monopoly markups benefits consumers as well as firms, the antitrust prohibition should not be applied to price ceilings used to fight double marginalization problems. The double monopoly markup is particularly relevant in exclusive distribution agreements. Distributors who have been granted an exclusive territory will enjoy market power, which may enable them to increase prices above competitive levels. Efficiency arguments may also be advanced to support minimum prices fixed by manufacturers. It is well known from the economic literature that resale price maintenance in the form of price floors is desirable if the risk of free-riding is important and inter-brand competition is strong (Telser, 1960). As far as vertical restraints are used to protect dealers from free-riding, there is no economic reason to distinguish resale price maintenance from other types of vertical restraints. Other explanations for minimum resale prices include a quality certification for goods (Marvel and McCafferty, 1984) and an improvement of risk distribution in cases where dealers are more risk-averse than manufacturers (Rey and Tirole, 1986). It must also be repeated that the strict ban on specific types of vertical restraints,

such as minimum vertical price fixing, induces manufacturers and traders to change the legal form of the distribution agreement.

Antitrust law remains reluctant to absorb this economic wisdom to its full extent. In the USA, since the 1997 *State Oil v. Khan* judgment,<sup>22</sup> the rule of reason applies with respect to maximum vertical price fixing. Minimum resale price maintenance, however, remains subject to a per se prohibition, without exception (Hovenkamp, 1999, p. 441). Until 1 June 2000, European competition rules did not distinguish between minimum resale prices and maximum resale prices. With respect to the latter, the rule was changed explicitly. The new block exemption allows maximum resale prices or recommended resale prices, provided that they do not amount to a fixed or minimum sale price.<sup>23</sup> Minimum resale prices must be individually exempted, but the Guidelines state that such a decision is unlikely.<sup>24</sup> There is no sign that the policy regarding minimum resale price maintenance will change in the near future (Montangie, 2000). Since the impact of price restraints is similar to that of non-price restraints, European competition law is left with a non-economically justified distinction. The fear that minimum resale prices can be used to partition markets (so that consumers will pay different prices in each member state) may be a politically strong motive to justify their illegality. However, an overall welfare assessment should also take the costs of the per se prohibition into account. This tradeoff is not acknowledged in current European competition law.

### **Efficiency versus Distributive Goals**

So far the discussion of European law has made clear that productive and allocative efficiency are not the major goals of the competition rules. In the past, the creation of an internal market was the dominant objective; it remains an onerous enterprise to undo the inefficiencies resulting from the market integration goal. In addition to this burden, further inefficiencies may flow from the pursuance of distributive goals. The next paragraphs will illustrate how increasing consumer welfare or protecting small competitors may conflict with efficiency goals.

### **Consumer welfare**

In recent years, European competition policy has increasingly put emphasis on consumer welfare, rather than on global economic welfare measured by the sum of producer surplus and consumer surplus. Article 81 (3) EC Treaty makes clear that European Community competition policy does not serve the narrow goal of maximizing the sum of consumer and producer surplus, since cartel agreements that contribute to improving production or distribution of goods must allow consumers a fair share of the resulting benefit. Even if total

welfare increases, there is still a restriction of competition if the agreement reduces consumer surplus. Hence European competition law does not allow balancing efficiency savings and distributive effects on consumers. To the European legislator, one Euro of consumer surplus is not equivalent to one Euro of producer surplus. This view is not in harmony with the economists' definition of allocative efficiency. Nevertheless, an economic interpretation of the cartel prohibition remains possible; it is only required to broaden the traditional theorems of welfare economics with a full consideration of the consequences of efficiency savings for consumers, which adds an additional layer of complexity to the analysis.

Similar to the wording of the cartel prohibition, the Merger Regulation states that, in analysing the effects of a merger, account should be taken of 'the development of technical and economic progress provided that it is to consumers' advantage and does not form an obstacle to competition'.<sup>25</sup> This wording excludes a Williamsonian tradeoff, which compares the costs and benefits of a proposed merger and allows it to proceed if the gains to producers (productive efficiencies) outweigh the losses to consumers (reduction of consumer surplus). If an 'enhanced consumer welfare' standard is to be adopted and the requirement is made that efficiency gains should be passed on to consumers, the latter will have to be of impressive quantity. Williamson concluded that, in a market with average elasticities of demand and supply, a merger that produced 'nontrivial' economies of 1.2 per cent would be efficient, even if it resulted in a price increase of 10 per cent (Williamson, 1968, pp. 22–3). By contrast, if competition law is not indifferent to whether the efficiency gains are passed on to consumers as lower prices or retained by the merging firms as increased profits, the scope for an 'efficiency defence' will be severely limited. In recent papers it was calculated how large cost reductions must be to prevent mergers from raising price. Froeb and Werden (1998) found that implausibly large cost reductions are necessary to prevent very large mergers from raising prices in homogeneous product markets. For example, a merger between two firms having market shares of 35 per cent and 20 per cent respectively should generate cost savings of no less than 40 per cent at a price elasticity of demand equalling 1. Most real world markets tend to cover differentiated goods, however. On the latter markets, when demand is elastic and pre-merger competition lively, synergies of 25 to 60 per cent would be necessary to prevent prices rising (Werden, 1996). The paradox is that an 'efficiency defence', which requires that cost savings are passed on to consumers, seems valid only if competition is not restricted. In other words, the 'enhanced consumer welfare' standard restricts the scope of the 'efficiency defence' to cases in which there is no need for it.

Contrary to American antitrust law, European competition law does not explicitly recognize an 'efficiency defence' after the merger has been found



anticompetitive. Article 2 (3) of the Merger Regulation leaves the Commission no choice but to declare a merger under scrutiny incompatible with the internal market once it is found that the concentration creates or strengthens a dominant position. Hence efficiencies can be taken into account only before the prohibitive conclusion that a dominant position is created is drawn. As a consequence, efficiency arguments are used behind the scenes, taking advantage of the broad room for negotiation. Commission practice has created the impression that the showing of efficiency gains might lead to an increased regulatory willingness to accept remedies proposed on behalf of the firms in absolving the transaction. Clearly, worries about transparency are justified; they could be remedied by the issuance of a Notice on the efficiency matter (Camesasca, 2000). Guidelines could greatly increase the transparency of the process of merger review and thus reduce the uncertainties faced by firms.

### **Protecting competitors from competition**

European competition law is not insensitive to the view that powers of large firms should be curtailed for reasons of economic democracy. Besides economic goals (allocative and productive efficiency), current competition policy embodies rules that aim to decentralize power, protect freedom of decision of independent firms and maintain equal opportunities to compete for small businesses. The latter goals are political, rather than economic. Examples of a 'small is beautiful' approach may also be found on the other side of the Atlantic Ocean. The American Robinson–Patman Act, as well as older American case law,<sup>26</sup> clearly expresses a wish to restrict the power of big firms in favor of smaller firms. This power-sharing objective may be pursued in spite of the noticeable inefficiencies which ensue. It should be added that the Federal Trade Commission no longer actively enforces the Robinson–Patman Act, even though private suits continue to be filed. Similarly, some rules of European competition law and regulations of competitive processes in a number of EC member states are clearly influenced by fairness considerations. Cooperation between small and medium-sized enterprises, which can often only compete effectively with larger enterprises by means of this sort of cooperation, is exempted from the ban on cartels.<sup>27</sup> In some member states, laws on 'unfair competition' prohibit specific forms of competition, such as sales with low profit margins or joint offers, which may endanger the viability of small competitors. Obviously, protecting competitors from competition is not consistent with an efficiency-oriented competition policy.

A typical claim of small businesses is that large firms may engage in price wars with the aim of driving smaller competitors out of the market. In a number of European countries this has led legislators or courts to consider sales at loss prices or with a low profit margin as 'unfair'.<sup>28</sup> In the antitrust

literature, the problem is extensively discussed under the heading 'predatory pricing'. In spite of great differences in economists' opinion on the feasibility of predatory pricing and the contents of an optimal legal rule on this matter, all will agree that there is only reason for concern about the functioning of competition if the firm engaging in predatory pricing enjoys market power. The rules of the so-called 'unfair trade laws', which apply irrespective of the market power of the traders involved, are not consistent with an efficiency-oriented competition policy. Unfortunately, the same conclusion holds with respect to the treatment of predatory pricing under Article 82 EC Treaty. The relevant case law of the European Court of Justice will be briefly discussed below.

In the *AKZO* case,<sup>29</sup> the Court of Justice accepted a price–cost comparison as the yardstick by which to establish the permissibility of price undercutting. Abuse of dominant position must be deemed to be present once prices fall below the level of average variable costs. Furthermore, prices that are higher than average variable costs but lower than average total costs must be considered as unlawful to the extent that the fixing of prices at that level forms part of a strategy of excluding competitors. Evidence for the latter includes making threats, asking 'unreasonably low' prices, maintaining artificially low prices over long periods and granting fidelity rebates. In a later case (*Tetra Pak II*),<sup>30</sup> the European Court of First Instance had an opportunity to reconsider its rule on predatory pricing, for the Commission's finding that Tetra Pak had practiced predatory pricing was specifically challenged by reference to the economic theory accepted in American case law.<sup>31</sup> Tetra Pak argued that, even if it had priced its products under cost, it could not have been indulging in predatory pricing because it had no reasonable hope of recouping its losses in the long term. The Court, however, upheld the Commission's finding without any serious examination of this argument, holding that, where a producer charged AKZO-type loss-making prices, a breach of Article 86 EC Treaty (now Art. 82) was established *ipso facto*, without any need to consider specifically whether the company concerned had any reasonable prospect of recouping the losses, which it had incurred. By contrast, in the *Brooke* case, the American Supreme Court required pricing below cost and a sufficiently high probability of recoupment.

Compared with its American counterpart, the European rule on predatory pricing is outrageous. One may be hostile to the Chicago argument that predatory pricing is not a profitable strategy. The correct answer to this skepticism, however, is to require proof that predatory pricing may be rational and not to consider proof of recoupment unnecessary. Modern economics has developed new, more sophisticated game theoretical approaches that show how recoupment may be achieved. It thus identifies the economic conditions under which a predatory pricing strategy is plausible. By requiring proof of recoupment, the

*Brooke* rule has opened the door for modern game theoretic insights. Even though American courts have so far failed to incorporate fully the new economic approach into judicial decisions (Bolton *et al.*, 2000), integration of the legal doctrine and modern economic theory remains possible. Such integration is ruled out in Europe, since the *Tetra Pak* judgment has rejected the requirement of recoupment and thus closed the door for modern game theoretical analyses. A cost test, which heavily relies on subjective evidence of the intention to exclude competitors, may be easy to use by European competition lawyers and might benefit small competitors in individual cases. However, such a rule is not consistent with a welfare economics-based approach and may, moreover, cause perverse effects. Given the market integration goal, too strict a rule on predatory pricing may deter large firms from using price cuts to enter new markets. This may harm rather than further market integration.

## THE MYTH OF LEGAL CERTAINTY

### **The Magic of Market Shares**

To mitigate the lawyers' concern for legal certainty, policy makers often recur to 'simple' rules, which seem easy to apply. Unfortunately, these rules are only simple at first sight and the legal certainty they are supposed to generate is a myth, rather than reality. Market shares are an obvious example. In European competition law, increasing use is made of market shares to create 'safe harbors', thus providing presumptions of legality to businesses. It is remarkable that this expansion of the 'market share' approach is accompanied by policy statements in favor of a 'more economics-based' approach. This development was initiated with the issuance of the Green Paper on vertical restraints and it recently reached a new climax in the Guidelines on horizontal cooperation.<sup>32</sup> If the nature of the agreement points towards a potential competitive worry, then the second component of the proposed test for deliberating whether the effect of a cooperation may serve as to restricting competition (by raising prices, restricting output, hampering innovation or limiting the quality or variety of goods and services available) will assess the market power of the parties involved. Thereto, the market share of the firms is considered determinative. The Guidelines create a broad range of relatively safe harbors, depending in scope on the nature of the agreement: 25 per cent for agreements on R&D, 20 per cent for production and specialization agreements, 15 per cent for purchasing agreements and commercialization agreements.<sup>33</sup> If the parties together hold a market share lower than the mentioned thresholds, a restrictive effect of the cooperation is considered to be unlikely. Together with the 30 per cent market share for vertical restraints, the above list

represents a motley mix of easy-to-understand rules creating false impressions of legal certainty.

Market shares can only be calculated on a 'relevant market'. It is clear that, the greater the range of products included as substitutes and the larger the number of localities, the smaller will be the market share of the allegedly dominant firm. Hence defendants in antitrust actions may therefore argue strongly in favor of more products (and localities) being included in the correct identification of the market, rather than fewer. Conversely, competition authorities wishing to ban certain types of conduct may use very narrow market definitions in order to establish dominance. It is difficult to delineate the relevant market in a way that is totally immune to criticisms. In spite of the obvious danger of biased conclusions, competition lawyers generally consider decisions based on market shares as economically sound. At the same time, they favor market share-based approaches because they would contribute to a higher degree of legal certainty. In the remainder of this section, it is shown that the current approach, as contained in the Commission's Notice on market definition, is the result of an awkward mix of old-fashioned legal rules and modern economic insights. The benefits in terms of legal certainty, if any, may be outweighed by the costs flowing from the Notice's inherent inconsistencies. In the conclusion, it is shown how quantitative techniques may aid in defining relevant markets. From these analyses it will become apparent that the definition of a relevant market is an exercise involving many uncertainties.

### **The Certainty Suggested by the Notice on Market Definition: More Costs than Benefits?**

For a long time, the EC Commission has adopted a pragmatic approach to the formidably difficult task of defining the relevant market. This has led to allegations that the outcome of the market definition exercise had been predetermined by a desire to prohibit, or, the other way around, allow business behavior. Rather than measuring the relevant elasticities by means of sophisticated econometric techniques, in defining product markets the focus has been on the question of which products may be regarded as substitutes by a sufficiently large group of buyers. Products which are interchangeable, taking into account their characteristics, intended use and price, are seen as belonging to the same relevant product market. Geographic markets have been defined by looking at the homogeneity of competitive conditions: when conditions of competition are appreciably different in two areas, both territories are seen as distinct geographic markets. In most cases, on appeal the European Court of Justice has accepted the market definitions given by the Commission. A notable exception is the *Continental Can* case,<sup>34</sup> in which the Commission was criticized for not having taken into account supply substitution. At the end

of 1997, the European Commission published a Notice on market definition, which is more receptive to the economic learning on this issue.<sup>35</sup>

From an economic point of view, the 'old approach' must be criticized. Even though the exercise of market power through (collusive) price increases is the evil to which competition law is addressed, the criterion of reasonable interchangeability does not tie the market definition standard to that end. The focus on the product's peculiar characteristics and uses and the preferences of distinct groups of customers may indicate whether the public recognizes a separate entity as a 'market'. However, in such an approach the notion of a market is misleading. By looking at the way (part of) the public perceives product characteristics, it becomes possible to discover whether some entities are considered to be 'industries' in the public opinion.<sup>36</sup> A relevant antitrust market is a market where market power may be exercised and the ability of firms to have an impact on market prices and quantities is not generally dependent on the public recognition of a market as a separate economic entity or the product's peculiar characteristics and uses.

The 1997 Notice on market definition is a somewhat peculiar document. New economic theory is injected into the existing orthodox legal system. First, the European Commission repeats the traditional legal definition. Number 7 of the Notice reads as follows: 'A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use.' Thereafter, the Commission states that firms are subject to three main sources of competitive constraints: demand substitutability, supply substitutability and potential competition. The Commission then continues by saying that one way of determining demand substitution is postulating a hypothetical small, lasting change in relative prices (in the range of 5 to 10 per cent) and evaluating the likely reactions of customers to that increase. In the words of the Commission: 'Conceptually, this approach means that, starting from the type of products that the undertakings involved sell and the area in which they sell them, additional products and areas will be included in, or excluded from, the market definition depending on whether competition from these other products and areas affect or restrain sufficiently the pricing of the parties' products in the short term.'<sup>37</sup> If substitution is enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas must be included in the relevant market until the set of products and geographical areas is such that small, permanent increases in relative prices would be profitable.

By explicitly adopting the test of a small but significant and non-transitory increase in price (SSNIP), the Commission has in fact changed the law. Old-style functional interchangeability and modern hypothetical monopolization

are two fundamentally different approaches. The reluctance to recognize this explicitly is remarkable, but could be explained by the wish to avoid criticisms about jeopardizing legal certainty among lawyers. Keeping the old definitions and introducing new approaches creates disharmonies, however. It must be questioned how the SSNIP and the old-fashioned definition may fit together. The problem with the old-fashioned legal definition is that the ultimate goal of market definition, namely an evaluation of the degree of present or future market power, is not the central concern of the exercise. The crucial insight that the degree of competition between products and locations determines the boundaries of the relevant market should be apparent from the definition used in antitrust practice. It is, therefore, deplorable that the Court's definition is not replaced by a formulation which explicitly endorses the conceptual procedure of the hypothetical price increase. Additionally, the problem remains that the old-fashioned definition is not sufficiently objective, in that it provides no clear indication as to the degree of substitutability which is needed to decide whether products or localities belong to the same market.

Product characteristics, price differences and the intended use of products do not allow any conclusion with respect to market definition. A few examples seem appropriate to illustrate the differences between the old-fashioned definition and the modern economic approach. In the *United Brands* case, it was decided that bananas formed a separate market, to be distinguished from the wider market of fresh fruit. The European Court of Justice stated that: 'The banana has certain characteristics, appearance, taste, softness, seedlessness, easy handling, a constant level of production which enable it to satisfy the constant needs of an important section of the population consisting of the very young, the old and the sick.'<sup>38</sup> Taking this case as an example, the relevant question under the SSNIP test is not whether (a group of) consumers perceive differences in product characteristics when comparing bananas, peaches, pears and other types of fresh fruit, but whether a sufficient proportion of consumers would switch a sufficiently large share of their purchases from bananas to other fruit in response to a small but significant and lasting increase in price. Similarly, the issue is not whether some groups (in the Court's vision of things: the very young, the old and the sick) have strong preferences for the product in question but whether, for a 5 or 10 per cent price increase above the competitive price, significant inter-product substitution as a whole would take place (Utton, 1995, p. 75).

In *Orkla Volvo*,<sup>39</sup> the Commission argued that there is a separate market for beer, since beer is 40 per cent more expensive than an equivalent volume of carbonated soft drinks and price differences between wine and beer are equally substantial (an equivalent volume of beer is one-quarter of the price of a bottle of wine). This decision must equally be revised if the new approach is taken

seriously. The relevant exercise is whether a substantial number of consumers will switch to other products in the case of a 5 (or 10) per cent price increase over competitive levels. If so many consumers switch from beer to wine that the price increase becomes unprofitable, products, such as beer and wine, for which there are significant price differences, belong to the same relevant product market.

A last example may be useful. There exist significant price differences between trains and coach services, but this does not imply that there are two separate markets. A price increase for trains amounting to 10 per cent above competitive levels may make people unwilling to pay additional money for the time saved. The appropriate question for market definition is not whether the products are priced comparably. Rather, the proper inquiry is whether customers would switch to the alternative in the face of a price increase. The same reasoning applies with respect to the criterion of intended use. In cases of small but significant and non-transitory price increases, demand substitution towards products which in earlier periods were used for different purposes cannot be excluded. In sum, when new insights are bottled in old definitions, there is clearly a risk of leaks in the overall consistency.

The next problem is that the SSNIP test is not applied to determine supply substitution. Even though the Commission recognizes supply substitution as a relevant competitive constraint, the exercise of the hypothetical monopolist is not made when assessing which producers belong to the relevant market. The Commission provides the following practical example of its approach to supply-side substitutability. Paper is supplied in different qualities, including standard writing paper and high-quality paper. From a demand point of view, different qualities of paper are not substitutes, but paper plants may adjust production with negligible costs and in a short time frame manufacture the different qualities. Hence, so the Commission concludes, the various qualities of paper should be included in the same relevant product market.<sup>40</sup> However, if one asked whether it would be profitable for producers of low-quality paper (such as for newspapers) to increase prices by 5 per cent for the foreseeable future, the answer could be positive. Producers of high-quality paper (such as for art books) may have different good reasons for not modifying their production plans: high profits achieved in the sale of high-quality paper may make the other market segment less interesting; the market for high-quality paper may grow more rapidly than the neighboring market of standard writing paper; or long-run contracts with buyers may be put at a risk if production facilities must be adjusted. Hence the different types of paper can each constitute a relevant product market. Since the Commission does not tie the analysis of supply substitutability to the exercise of market power, flawed conclusions may be reached.

## PROBLEMS OF PROOF AND EMPIRICAL EVIDENCE

### **Who is Afraid of Econometrics?**

Competition law is an obvious example of a field of law where empirical approaches may be extremely helpful in solving real-life cases. In American antitrust cases, quantitative evidence has gained importance thanks to the increased availability of data and the development of new econometric techniques. The application of quantitative techniques may answer the central questions of antitrust analysis, such as market definition, measurement of market concentration and entry and exit conditions, predatory pricing (are price–cost relationships consistent with an anticompetitive price war?), efficiencies generated by vertical integration or contracting, and effects of mergers on pricing behavior (either lessening competition or promoting efficiency). It is an understatement to say that European competition authorities make a modest use of quantitative analysis in reaching their decisions. While Commission officials are obviously well aware of the developments in the field of econometrics (Veljanovski and Darcey, 1992), it is quite difficult to come across explicit referrals in the case law. Apart from a limited number of exceptions,<sup>41</sup> matters are predominantly decided on the basis of qualitative arguments. In heterogeneous product markets, computations of market shares do not allow firm conclusions about the effects of the merger on the competitive behaviour of the parties concerned. Crucial to assessing those mergers' real-world competitive effects are estimates of own-price and cross-price elasticities of demand, placed in the context of the test of the hypothetical monopolist (SSNIP). Competition lawyers will remain reluctant to a widespread use of quantitative techniques because of their inherent complexity and the ensuing conclusion that the creation of 'safe harbors' based on market shares is not an economically sound approach towards mergers in differentiated product markets.

The crucial question is how a better integration of industrial economics, in particular its quantitative techniques, and competition law can be achieved. In our view, insights from industrial economics should figure prominently in Guidelines of antitrust authorities. Guidance should be offered to lawyers as to how they should deal with econometric techniques used to prove the existence of market power and its abuse. An optimal integration of law and economics will at the same time increase the quality of decision making from an economic perspective and contribute to legal certainty. The lawyers' concern for legal certainty may be mitigated by the development of an integrated, step-by-step approach for decision making. Empirical proof may contribute substantially to the quality of the decision making, provided that relevant and reliable econometric techniques are used. The proposed Guidelines should



include an overview of the different quantitative techniques that are available and comment on their relative strengths and weaknesses in solving real-world cases. This will enable lawyers to distinguish relevant from irrelevant and good from bad econometrics. The implication of a better integration is not that quantitative analysis alone will decide the outcome of cases. Quantitative analysis interacts with qualitative analysis in complex ways.<sup>42</sup> In addition, quantitative evidence will not always be available. However, even if the relevant data are lacking, it should be stressed that the weighing and sifting of qualitative evidence may be substantially improved upon by insights from econometrics.

### **The Notice on Market Definition Revisited**

Using the example of market definition, it will be shown below how the economics profession can offer guidance to lawyers in solving hardcore competition cases. In the well-known *United Brands* case, the Court of Justice referred to cross-elasticities of demand between bananas and other fruit (peaches, grapes and so on) to conclude that there is a separate market for bananas. Cross-elasticities of demand allow for a ranking of substitutes, but do not provide sufficient information to define the boundaries of the relevant market. The SSNIP test implicitly endorses critical residual demand elasticity as the relevant econometric tool. Information about cross-price elasticities makes it possible to identify the next best substitute. However, information about the critical residual demand elasticity, below which the collusive price increase would be profitable, is needed to define the relevant antitrust market. Residual demand analysis is also preferable to price correlation tests or information about trade flows that both provide indirect evidence only. These points merit some further elaboration.

Having put forward three basic sources of competitive constraint on a party (demand substitution, supply substitution and potential competition), the Commission indicates the type of evidence considered to be relevant to assess whether two products are demand substitutes: evidence of substitution in the recent past (events or shocks indicating substitution, changes in relative prices in the past and reactions in quantities demanded, launches of new products and resultant lost sales to established products<sup>43</sup>) quantitative tests, views of customers and competitors, consumer preferences revealed by marketing studies (for example, data from consumers' purchasing patterns), barriers and costs associated with switching demand to potential substitutes and the feasibility of price discrimination. As relevant quantitative tests the Commission suggests estimates of price elasticities of demand and cross-price elasticities for the demand of a product, tests based on similarity of price movements over time, the analysis of causality between price series and similarity of price levels

and/or their convergence.<sup>44</sup> With respect to geographic market definition, the type of evidence considered relevant by the Commission includes past evidence of diversion of orders to other areas, basic demand characteristics (such as preferences for national brands, language, culture and life style), views of customers and competitors, the current geographic pattern of purchases, trade flows and barriers as well as switching costs associated with diverting orders to companies located in other areas.<sup>45</sup> The factors mentioned by the Commission all may provide useful insights and information to define markets, but neither of them will, taken on its own, be sufficient to reach a conclusion in all cases. For many of the types of evidence mentioned, the Commission seems to be well aware of this limitation. Regarding views of customers and competitors, the Notice stresses that they must be sufficiently backed by factual evidence.<sup>46</sup> Ad hoc marketing studies prepared to rebut antitrust challenges and not in the normal course of business are regarded with skepticism.<sup>47</sup> The Commission's doubts are justified not only with respect to surveys prepared by marketing bureaus. As will be explained below, none of the types of quantitative evidence mentioned makes it possible on its own to decide whether a small but significant and non-transitory increase in price by a hypothetical monopolist selling the product(s) of the merging (or allegedly dominant) firm(s) will be profitable.

Price elasticities of demand, which indicate the sensitivity of the quantity demanded of a product to the price of that product, may provide useful information in a limited number of cases. If a product is price-inelastic, that is, with price elasticity higher than  $-1$ , this indicates that there is little substitutability between it and other products. By contrast, if a product is price-elastic, this indicates that there are substitutes, but it is not an aid to identifying those substitutes. However, such a result is useful since it may be concluded that the product does not form a separate market. For example, an estimated own-price elasticity for branded consumer products of about  $-2$  seems too large to infer a relevant market, absent other credible information to the contrary (Scheffmann and Spiller, 1996).

Another useful econometric tool is cross-price elasticities of demand which allow for a ranking of substitutes (not necessarily all substitutes). Cross-price elasticity of demand is the percentage change in the quantity of product A demanded divided by the corresponding change in the price of product B. If the cross-price elasticity of product A with respect to product B is positive, both products are regarded as possible substitutes. It must be added that there is no absolute figure which indicates that two products are effective substitutes; the only rule is that the figure must be positive and of a value of one or greater.<sup>48</sup> Conversely, when the cross-price elasticity is negative, the two products are complements. Figures on cross-price elasticity of different products with respect to product B will allow for a ranking of substitutes indicating a

decreasing degree of substitutability. For the exercise of market definition, however, two important shortcomings that hinder a certain conclusion remain. First, cross-price elasticities are only useful to confirm or not that products are substitutes. The products have first to be identified using other methods. Competition authorities and judges may be tempted to limit the analysis to those products for which figures about cross-price elasticities are available, excluding other possible substitutes. The *United Brands* case illustrates this danger. The Court looked at cross-price elasticities of grapes and peaches, but there was no convincing reason to exclude other summer fruit (melons, strawberries, plums, and so on). Second, figures about cross-price elasticities do not make it possible to define the boundaries of the relevant market. The reason is that they give no information about the profitability of a ‘small but significant and non-transitory price increase’. Cross-price elasticities are directly significant for determining the next best substitute. The relevant market will not include all products with positive cross-price elasticities of a value of one or greater, but only a subset of these products. To bound the market, another device must be used. According to the SSNIP test, the cutoff point lies where the price increase becomes profitable. Therefore one needs information about the magnitude of the demand elasticity faced by the allegedly dominant firm. In other words, it is necessary to know the *critical* residual demand elasticity, which measures the percentage change in the quantity demanded resulting from a small percentage change in the price charged by the hypothetical monopolist. For each product there will be a critical residual demand elasticity that determines whether a specified price increase will be profitable. Products with decreasing cross-price elasticities must continually be added to the candidate market until the price increase becomes profitable.

It follows from the above that only figures on critical residual demand elasticities allow us to define the boundaries of the relevant market. The SSNIP test implicitly endorses the econometric tool of the critical residual demand elasticity. Hence an economic observer will find it rather odd that the Commission’s Notice offers no guidance on how to determine whether the SSNIP test is met and that indirect methods of market definition receive disproportionate attention. In this respect, it must be emphasized that methods for determining critical residual demand elasticities have been developed in recent decades. For example, critical residual demand elasticities may be associated with different price increases and price–cost or contribution margins (for an overview, see Simons and Williams, 1993, pp. 838–44).

The Commission mentions price movements over time as one of the possible empirical methods to define relevant markets. While looking at prices of goods over time may have obvious advantages over investigating demand elasticities because of higher availability of information, the causality between price movements and the relevant market as presupposed may be unrelated.

The risk of spurious correlations must be overcome: parallel prices are neither a necessary nor a sufficient condition for products being substitutes. For example, a high correlation between price series may arise because of a common input, so that price decreases or increases reflect changing input costs rather than competitive interaction between products or regions. Likewise, low correlations need not always indicate that two products are not in the same market. It is regrettable that the Notice does not provide guidance on how to avoid spurious correlations (see on this issue: Bishop and Walker, 1999, pp. 235–8).

Some final remarks concern the use of information on trade flows as relevant evidence for defining geographic markets. In the economic literature, a method has been suggested which is based on two criteria: LIFO (little in from outside) and LOFI (little out from inside). If both 75 per cent of the consumption of a specified product is produced in geographical area A (LIFO) and 75 per cent of the production of area A is also consumed in area A (LOFI), then this area may be considered as a separate relevant market. Conversely, if more than 25 per cent of the goods purchased within the area come from outside, the market must be expanded (Elzinga and Hogarty, 1973, pp. 74–5). It has thus been argued that trade statistics, indicating extensive movements of goods between two geographical areas, may indicate that both markets, considered separately, are irrelevant for antitrust purposes. Even though information about physical trade flows may be helpful in delineating markets and the absence of substantial movements of goods provides important preliminary indications, this method is not conclusive. The most important criticism relates to the fact that potential competition is not taken into account. The absence of trade flows does not allow us to conclude that producers possess market power; the relevant question is whether an exercise of market power by raising prices above competitive levels would cause an increase in trade.

## CONCLUSIONS

In spite of an increased willingness to profit from economic insights, European competition law is not in perfect harmony with modern industrial economics. Two main reasons continue to inhibit a full use of the economic approach: the goal of market integration and the wish to guarantee legal certainty. Tradeoffs between achieving market integration and the promotion of competition as a means to reach efficiency are not always recognized. The bans on absolute territorial protection and minimum resale price maintenance are examples of politically biased principles, rather than economics-based rules. Legal certainty may be rephrased in the economic jargon as a device to save on information costs and thus as a benefit in a full cost–benefit analysis.

However, if changes to the law are acceptable only to the extent that they bring about a new balance between economic approaches and legal certainty, decisions may be biased in favor of the latter goal. The increased use of market shares to create ‘safe harbors’, offering misleading certainty to businesses, prominently illustrates how ‘simple’ rules are preferred to complete economic analysis.

In the field of competition law, the old-fashioned legal approach cannot be grounded on modern industrial economics. Lawyers taking economic insights seriously will have to adapt their old definitions to the newest economic learning. In addition, they should be cautious unless outdated economic concepts, such as the Chicago theory on predatory pricing, survive as law in action. Problems of proof should be alleviated by using the right econometric tools that may improve overly subjective valuations. Political goals of competition law may impede a full use of economic insights. However, if some of these rules turn out to be ineffective instruments to reach the ‘non-economic’ goals, they may be changed and the scope for economic analysis can thus be broadened. Finally, competition lawyers should fully realize that ‘legal certainty’ is not a goal in itself and that ‘simple’ rules may damage the overall consistency of European competition law.

## NOTES

1. Articles 2–3 EC Treaty.
2. Scholars working in the Chicago tradition have rejected the propriety of any other goals than allocative and productive efficiency. See, for an orthodox Chicago view, Bork (1978).
3. In particular, the Commission’s practice in merger control is illustrative of this development. Reference can also be made to the Notice on market definition and the new policy towards vertical restraints. See the discussion below.
4. *Société Technique Minière (L.T.M.) v. Maschinenbau Ulm GmbH (M.B.U.)*, (Case 56/65), *E.C.R.*, 1966, p. 235, §§ 3 and 8. See more recently the *Kali and Salz* judgment: *French Republic and Société Commerciale des Potasses et de l’Azote (SCPA) and Entreprise Minière et Chimique (EMC) v. Commission* (Joint Cases C-68/94 and 30/95), *E.C.R.*, 1998, I, p. 1375.
5. The problem is exacerbated when legal certainty is seen as a goal in itself. Reducing information costs is also an economic goal, which, however, may interfere with other goals, such as improving productive efficiency. Legal rules that are clear may be inefficient if the costs of legal certainty outweigh the benefits.
6. See Kirchner (1991, pp. 277–92), but compare Mattei and Pardolesi (1991, pp. 265–75).
7. *Consten Sarl and Grundig-Verkaufs GmbH v. Commission* (Joint Cases 56 and 58/64), *E.C.R.*, 1966 p. 299.
8. Communication from the Commission on the application of the Community competition rules to vertical restraints (follow-up to the Green Paper on Vertical Restraints), *O.J.*, November 26, 1998, C 365/3, at 365/4.
9. There has been an intense debate on the goals of American antitrust law. Some commentators have argued that efficiency is the only goal, whereas others have advanced alternative views: protection of consumers from high monopoly prices, ‘fairness’, or protection of small businesses. See the collection of articles in Sullivan (1991). Market integration, however, has never been an issue since American antitrust law has evolved in an already existing common market.

10. Communication from the Commission, cited above, note 8, C 365/3–C 365/4. In its earlier Green Paper, the Commission had already stated that ‘economic theory can not be the only factor in the design of policy. (. . .) Strict economic theory must take place in the context of existing legal texts and jurisprudence’ (Green Paper on Vertical Restraints in EC Competition Policy, COM (96) 721 final, adopted by the Commission on 22.01.1997).
11. The latter distribution structure causes efficiency losses if independent distributors are better aware of local market conditions, the costs to control and monitor the employees are high, and distributors have better incentives to promote the products since they themselves bear the risk of the transactions.
12. Guidelines on Vertical Restraints, no. 15.
13. *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967).
14. *Continental T.V. Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977).
15. This basic insight is derived from R.H. Coase’s seminal work. See Coase (1937). Coase’s ideas have been further elaborated upon in Williamson (1975).
16. Agreements within a group are free from attack as long as they aim merely at an internal distribution of tasks. See *Beguelin v. SAGL* (Case 27/71), *E.C.R.*, 1971, p. 949.
17. A recent Communication mentions a factual *de minimis* rule benefiting vertical mergers achieving a market share of not more than 25 per cent (*O.J.*, July 29, 2000, C 217/32). This market share is lower than the one used in the new block exemption on vertical restraints. It should be added that a Communication has not the binding character of a Regulation.
18. Communication from the Commission, cited above, note 8.
19. Guidelines on Vertical Restraints, no. 7.
20. Guidelines on Vertical Restraints, no. 116, 2.
21. Guidelines on Vertical Restraints, no. 119, 10.
22. *State Oil Co. v. Khan*, 522 U.S. 3 (1997).
23. Art. 4, a Reg. 2790/1999, *O.J.*, December 29, 1999, L 336/21.
24. Guidelines on Vertical Restraints, no. 46.
25. Art. 2 (1, b, *in fine*) Reg. No. 4064/89.
26. Illustrative of the goal of protecting small businesses are the following quotations: ‘It is possible, because of its indirect social or moral effect, to prefer a system of small producers, each dependent for his success upon his own skill and character, to one in which the great mass of those engaged must accept the direction of a few’ (*United States v. Aluminum Company of America*, 148 F. 2d 416 (1945)); ‘Of course, some of the results of large integrated or chain operations are beneficial to consumers. . . . But we cannot fail to recognize Congress’ desire to promote competition through the protection of viable, small, locally owned business. Congress appreciated that occasional higher costs and prices might result from the maintenance of fragmented industries and markets. It resolved these competing considerations in favor of decentralization’ (*Brown Shoe Co. v. United States*, 370 U.S. 294 (1962)).
27. Commission Notice concerning agreements, decisions and concerted practices in the field of cooperation between enterprises, *O.J.*, 1968, C 75/3. See also Commission Notice on agreements of minor importance which do not fall under Art. 81 (1) of the Treaty establishing the European Community (*de minimis* Notice), *O.J.*, 1997, C 372/13.
28. See, for example, Art. 40 of the Belgian law on trade practices and the protection and information of the consumer (for a comment, see Van den Bergh, 1986, pp. 189–90, 195–6) and the German case law based on §1 of the Unfair Practices Act (*Gesetz gegen den unlauteren Wettbewerb*; for a comment, see Baumbach and Hefermehl, *Wettbewerbsrecht*, Munich: Beck).
29. *AKZO v. Commission* (Case 62/86), *E.C.R.*, 1991, p. 3359.
30. *Tetra Pak International Sa v. Commission* (Case T-83/91), *E.C.R.*, 1994, II-762.
31. *Brooke Group v. Brown & Williamson Tobacco*, 509 U.S. 209 (1993).
32. Guidelines on the Applicability of Article 81 to Horizontal Cooperation, *O.J.*, 2001, C 3/2.
33. EC Horizontal Guidelines, at paras 27, 59, 87, 122 and 142.
34. Case 6/72, *E.C.R.*, 1973, 247.
35. Commission Notice on the definition of relevant market for the purposes of Community competition law, *O.J.*, December 9, 1997, C 372/5 (hereafter: Notice on market definition).

36. At this point it is worth mentioning that the definition in European law was borrowed from early American case law which, in turn, relied on the then existing economic literature. The traditional definition of the relevant product market resembles the definition of an industry in outdated economic textbooks. In 1953, Bain defined an industry as a group of products among which there are high cross-elasticities of demand but which have very low cross-elasticities of demand with all other products. The American Supreme Court referred to Bain in the famous *Cellophane* decision. Bain's discussion of the industry is so remarkably close to the Supreme Court's definition of the relevant market that the similarity between the two concepts cannot be ignored. Nowadays, it is better understood that the concept of relevant market must be related to the objectives pursued under competition policy and will thus differ from the notion of a market referring broadly to the industry where companies belong. For a more complete discussion, see Camesasca and Van den Bergh (2001).
37. Notice on market definition, no. 16.
38. *United Brands v. Commission* (Case 26/76), *E.C.R.*, 1978, p. 275.
39. *Orkla Volvo* (Case IV/M582), *O.J.*, 1996, L 66/4.
40. Notice on market definition, no. 22.
41. A high-profile exception is *Kimberley-Clark/Scott Paper* (Case IV/M 623), January 16, 1996, *O.J.*, July 23, 1996, L 183, p. 1, at paras 172–7. The Commission made extensive use of toilet tissue market studies focusing on whether prices of branded products are constrained by prices of private label products, drawing direct inference from price quantity data. Compare *United States and State of Texas v. Kimberley-Clark Corp. and Scott Paper Co.*, Civil No. 3:95 CV 3055-P (D.C. Texas). See the US case's discussion by its expert witness in Hausman and Leonard (1997, pp. 335–6. In Europe, see also *Procter & Gamble/ VP Schickedanz II* (Case IV/M 430), February 17, 1994, *O.J.*, December 31, 1994, L 354, p. 32.
42. See also Office of Fair Trading (1999).
43. For a critical view on this type of probative evidence, see Desai (1997, p. 474).
44. Notice on market definition, no. 39.
45. Notice on market definition, nos 44–50.
46. Notice on market definition, nos 40 and 47.
47. Notice on market definition, no. 41.
48. Between zero and less than one, it can be demonstrated that a 5–10 per cent increase in the price of product A results in a smaller percentage reduction in volume sold of product B. Therefore, where both products are supplied by the same supplier, such a rise in price will actually increase the supplier's revenue.

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### 3. A preface to post-Chicago antitrust

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The US antitrust laws are written in general terms. The primary antitrust statutes provide little guidance to firms trying to comply with them or to courts attempting to interpret them. To paraphrase their main substantive provisions, the Sherman Act bars agreements in restraints of trade (§1) and monopolization (or its attempt) (§2); the Federal Trade Commission (FTC) Act §5 prohibits unfair practices; and Clayton Act §7 objects to acquisitions likely to lessen competition substantially or to tend to create a monopoly. In consequence, these statutes sometimes appear to resemble a social Rorschach test, on which courts and commentators can project a variety of perspectives and goals.

To be sure, the federal courts have implemented these broad statutory mandates through the creation of more specific doctrinal rules that shape the analysis of the range of business conduct reviewed under the competition laws. After a century of judicial elaboration, the familiar categories include horizontal agreements concerning price, group boycotts, resale price maintenance, exclusive distribution territories, predatory pricing and many others. Yet the doctrinal rules themselves, established through statutory interpretation, evolve much as does a common law field – through judicial elaboration on a case-by-case basis.

Three broad eras of antitrust interpretation can be discerned through the judicial response to the statutory inkblots: a classical era around the end of the nineteenth century, a structural era around the middle of the twentieth century, and a Chicago School perspective characterizing the last quarter of the twentieth century.<sup>2</sup> This chapter examines that history, asks why antitrust doctrine changes over time and suggests some doctrinal possibilities for a new, post-Chicago era of antitrust interpretation that may be emerging.

#### ANTITRUST'S CLASSICAL ERA

The Sherman Act was enacted in 1890, at a time when many leading scholars of jurisprudence maintained that common law rules could be deduced logically from first principles about the nature of society and law.<sup>3</sup> A similar spirit

animated antitrust law, where deductions would proceed from the dominant economic and political theories of the time.

The framers of the Sherman Act and the justices who decided early US cases under that statute viewed classical economic values and libertarian political values as closely connected. Justice Peckham's majority opinions in two key formative Sherman Act decisions suggest such a world view. Peckham distinguishes between ordinary contracts – 'a lease or purchase by a farmer, manufacturer, or merchant of an additional farm, manufactory or shop . . . the sale of a good will of a business with an accompanying agreement not to engage in a similar business . . . [or an] agreement entered into for the purpose of promoting the legitimate business of an individual or corporation' – and agreements in restraint of trade under the Sherman Act.<sup>4</sup> After all 'ordinary freedom of contract . . . [does not give firms] the right to combine as one consolidated and powerful association for the purpose of stifling competition among themselves, and of thus keeping their rates and charges higher than they might otherwise be under the laws of competition'.<sup>5</sup> But interference with the competitive process is harmful for more than simply efficiency reasons, according to Peckham. The 'corporate aggrandizement' of trusts and combinations is 'against the public interest' even if it generates cost reductions that lower price, because 'it is in the power of the combination to raise [price]' and the trust may 'driv[e] out of business the small dealers and worthy men whose lives have been spent [in that line of commerce]'.<sup>6</sup>

As these quotations suggest, antitrust's founding generation understood the Sherman Act as a way to protect natural rights to economic liberty, security of property and the process of competitive, free exchange from artificial interference.<sup>7</sup> Doing so would tend at once to secure a maximum of individual business opportunity, economic efficiency, national prosperity, justice, social harmony and personal freedom. Students of US constitutional law will also recognize this world view in the *Lochner* era of constitutional interpretation, around the end of the nineteenth century, during which the Supreme Court exhibited hostility to special interest legislation and other forms of state action that seemed to interfere with natural rights to economic liberty. In short, the same economic and political perspective that stood behind *Lochner* also grounded the 1890 Sherman Act's hostility to private action that similarly restrained free trade, and was apparent in early Supreme Court decisions interpreting the antitrust statute.<sup>8</sup>

Turn-of-the-century critics of the antitrust laws recognized that the economy was changing. Industrialization led to new technologies that allowed the production of many manufactured products for less – if the firms were able to operate on a large enough scale to justify the substantial 'up front' capital investments. In addition, the railroad and other new forms of transportation expanded geographic markets, permitting manufacturers to obtain large quantities of

inputs inexpensively and allowing producers and distributors of consumer products to develop regional or nationwide reputations and reduce costs further by achieving scale economies in distribution.<sup>9</sup>

To many observers, the rise of the large corporation meant that more antitrust enforcement was called for. Market concentration was arising unnaturally, through anticompetitive conduct, and a stronger response was necessary to tame the large corporation. During the Progressive era, those who still sought to implement the classical world view found common ground with those who saw large enterprises as inevitable but sought to regulate them in the public interest.<sup>10</sup> ‘Trustbusting’ was promoted by President Theodore Roosevelt and the Federal Trade Commission (FTC) was created in 1914. The importance of antitrust was later reinforced by the academic writing of economist Edward Chamberlin, which suggested that oligopolies (industries with a small number of firms) would not behave competitively.<sup>11</sup>

Others drew a different lesson from the evolution of industry structures. To them, the antitrust laws stood in the way of progress by impeding the growth of large, low-cost producers and distributors. Antitrust also accommodated this criticism. Indeed, the 1911 *Standard Oil* decision synthesized these divergent perspectives.<sup>12</sup> In support of antitrust, the Supreme Court upheld the use of the Sherman Act to break up the oil industry monopolist, and did so through an analysis rooted in the classical vision of antitrust. The Court found that Standard Oil’s conduct had evidenced a ‘purpose to maintain the dominancy over the oil industry, not as a result of normal methods of industrial combination, but by new means of combination which were resorted to in order that greater power might be added had normal methods been followed’.<sup>13</sup> However, the legal standard famously announced in that case, the rule of reason, actually benefited large-scale industrial enterprise. By making clear that only unreasonable restraints of trade were prohibited by the Sherman Act, the Supreme Court ensured that large firms need not automatically run afoul of the prohibitions of the antitrust laws, even if their growth resulted in the displacement of some ‘small dealers and worthy men’.

The *Standard Oil* case by no means ended the political debate. Criticism of that decision by antitrust enthusiasts, who viewed it as weakening the law, helped create the climate in which the FTC was created and the anti-merger Clayton Act was enacted in 1914. On the other hand, during the prosperity that followed the First World War, many accepted high concentration and inter-firm cooperation as benign industrial self-government; this perspective was reflected in the Department of Commerce’s enthusiasm for industry trade associations.<sup>14</sup>

During the Great Depression, the classical world view came under further

pressure from hard times, which undermined the faith of many that unregulated marketplace interactions would serve the public welfare. The planning impulse was evident in a Supreme Court decision early in the New Deal, which allowed 137 coal producers in Appalachia to appoint an exclusive selling agent in response to so-called ‘destructive trade practices’ that drove down prices.<sup>15</sup> (This decision and its endorsement of inter-firm cooperation to keep prices high never amounted to more than a footnote in antitrust history, however. Seven years later, around the start of the structural era, the Supreme Court effectively overruled it.<sup>16</sup>) Similar concerns led to what was effectively a suspension of the antitrust laws for a time by the National Industrial Recovery Act, although that statute was quickly declared unconstitutional.<sup>17</sup> The NIRA permitted industries to develop and enforce codes of ‘fair competition’, which were often effectively price-fixing cartels.<sup>18</sup> Some codes provided for setting minimum prices, either as a matter of course or when an ‘emergency’ was declared by virtue of ‘destructive’ pricing. Other codes prohibited sales below cost, typically in combination with a standardized accounting system that defined ‘cost’ as average cost. Also industries had to accept labor unions in order to take advantage of the NIRA.

Throughout the New Deal, advocates of the classical perspective on antitrust had fought bitter multisided political battles, both with those who saw the classical view as standing in the way of modern industrial enterprise and economic stability and with those who accepted the large firm while seeking to control it.<sup>19</sup> Thurman Arnold demonstrated a way to move beyond that debate after his appointment in 1938 to head the Justice Department’s Antitrust Division. Arnold sought to increase the impact of the Sherman Act by combining a wave of new investigations and prosecutions against firms in concentrated markets with an increased willingness to resolve cases through consent settlements. Such settlements almost invariably proscribed anticompetitive conduct, aimed at removing economic ‘bottlenecks’ limiting the exposure of business to market forces, without altering market structure.<sup>20</sup> In this way, Arnold’s enforcement approach exhibited hostility to market concentration while simultaneously preferring antitrust to regulation and acquiescing in the presence of large-scale firms and the efficiencies they generate. It accepted the modern large-scale enterprise without accepting the view that the antitrust laws were either ineffective or obsolete.

## ANTITRUST’S STRUCTURAL ERA

The development of antitrust law in the courts from the Second World War through much of the 1970s can be understood as working out the implications of Thurman Arnold’s antitrust enforcement approach. Though Arnold by no

means ended the political debate about the role of the antitrust laws, his program suggested a way for antitrust jurisprudence to move forward.

Antitrust during the postwar decades rested on the suspicion that large firms were not acting in the public interest. As an economic theory, the then dominant structural perspective took the view that, when only a few firms competed in an industry, those firms would readily find a way to mute their rivalry and exercise market power, harming buyers.<sup>21</sup> Large firms were not just seen as threats to consumers and other buyers. They were also considered a menace to small business, limiting its freedom to compete. This perspective had some appeal to defenders of the classical era, who sympathized with the suspicion that large firms were not acting in the public interest. Concerns about the structure of industrial markets were pressed during the late 1930s, in the public debate fostered by the hearings and deliberations of the Temporary National Economic Committee (TNEC), which was established to study industrial concentration. But the structural perspective was not a reprise of turn-of-the-century thinking, because it largely accepted the modern industrial enterprise as a central feature of economic life.

Congress codified concerns about concentration in amending the anti-merger statute in 1950,<sup>22</sup> confirming the Supreme Court on a path it had already begun to take. During this period, for example, antitrust law adopted a near-conclusive presumption that mergers among rivals harmed competition;<sup>23</sup> saw anticompetitive potential when national appliance manufacturers disfavored one neighborhood retail outlet among many;<sup>24</sup> declared exclusive distribution territories illegal per se;<sup>25</sup> found a threat of monopolization in a price war over the sale of frozen pies;<sup>26</sup> and barred large dairies from selling milk at a discount to grocery store chains but not independently owned groceries, absent rigorous proof that it cost less to serve the chains.<sup>27</sup> In 1968, the Department of Justice, under the leadership of lawyer–economist Donald Turner, issued Merger Guidelines rooted in a concern about the harmful effects of high and increasing market concentration. Toward the end of this era, over the course of the 1970s and early 1980s, the federal antitrust enforcement agencies filed major monopolization cases against IBM, AT&T, Xerox, the breakfast cereal industry, the rubber industry and the oil industry.<sup>28</sup> Antitrust’s hostility to concentration of economic power also reflected a concern that the political power of large firms could imperil our democracy.<sup>29</sup> Even current events could be read to prove the point: a major conglomerate, the International Telephone and Telegraph Corp., lobbied the Nixon White House to discourage the Justice Department from pursuing an antitrust challenge to an acquisition, and set in motion a chain of events that led to one of the Watergate-related impeachment counts against President Nixon and the conviction of Attorney General Kleindeinst for false testimony before a congressional committee.<sup>30</sup>

## ANTITRUST'S CHICAGO SCHOOL ERA

The Chicago School supplanted the reigning antitrust orthodoxy in an antitrust revolution led from the top – mainly by the Supreme Court – beginning in the mid-1970s. The triumph of the Chicago School was a revolution in ideas, developed and spread by a remarkable collection of thinkers and writers, economists and lawyers, associated with the University of Chicago, including such luminaries as Robert Bork, Aaron Director, Frank Easterbrook, Richard Posner and George Stigler.<sup>31</sup>

Stigler, a future winner of the Nobel Prize in economics, took on the structural story in the most fundamental way. In an article published in 1964, he explained why it was not appropriate to presume that the firms in any market, even when they are few in number, would find a way to raise price above the competitive level.<sup>32</sup> There are two key ‘cartel problems’ that colluding firms must solve, and success in doing so is not assured. First, the sellers must reach a consensus on the price to charge and firm market shares. This may not be easy, as the firms will invariably have divergent interests. All may wish to see the market price rise, but, even if they are similar, each would surely prefer a high market share for itself (and thus a low share for its rivals) at that high price. Second, even if the firms are able to reach a consensus, notwithstanding their divergent interests, they must deter cheating on that consensus. Cheating is always a threat; if the market price is high, each firm has an incentive to shade the price to steal business from its rivals. Unless the sellers find a way to hold each other to the consensus price and market shares – by detecting cheating rapidly and punishing it with sufficient speed and severity – any effort to raise price above competitive levels would be unavailing. For these reasons, economists writing after Stigler could no longer assume that coordination on a supracompetitive price was inevitable in oligopoly. Chicago-oriented scholars similarly questioned whether a single firm with a high market share necessarily exercised market power, emphasizing particularly the possibility that the threat of expansion by fringe sellers and potential competition from prospective entrants keeps prices low.<sup>33</sup> And they emphasized the efficiency benefits of vertical agreements, between firms and their suppliers or customers, particularly in aligning incentives to avoid free-riding. It was only a matter of time – roughly 15 years – before antitrust began to change to assimilate these Chicago School insights.

As an academic field, the Chicago School research program was deceptively simple. One antitrust decision or doctrine after another was closely scrutinized for its economic logic (through the prism of price theory) and found wanting. Exclusive vertical distribution territories were not harmful market allocations or anticompetitive restrictions on inter-brand competition; they were instead efficiency-enhancing means of preventing dealer free-riding on

the marketing investments of manufacturers.<sup>34</sup> Price cutting was not dangerous monopolization, but the essence of competition.<sup>35</sup> Most agreements among firms, even among rivals, were efficiency-enhancing methods of lowering costs or improving products. Antitrust concern should kick in only when a firm had a dominant market share in a market protected by entry barriers, and entry itself could be relied upon to solve most competitive problems, except when government action protected incumbents. The thoroughgoing nature of this critique and its focus on economic logic infuse Robert Bork's *The Antitrust Paradox*, the book that comes as close as any to codifying the Chicago world view and contrasting it with prior understandings of antitrust.

Beginning in the mid-1970s, the circuit courts and Supreme Court embarked upon a Chicago School revolution.<sup>36</sup> Over the next two decades, one doctrinal area after another in antitrust was transformed, more or less in the manner suggested by Judge Bork. Bork personally played an important role in this effort, as he, along with other Chicago-oriented antitrust scholars (including Frank Easterbrook and Richard Posner) became federal appellate judges. One key doctrinal problem was to harmonize the new economic focus with the pre-existing legal rules that relied on concentration. The courts responded by continuing to pay attention to concentration, while allowing other factors like efficiencies and entry to undermine the inference of harm to competition that might be suggested by concentration.

This dynamic is perhaps most clear in horizontal merger analysis. Since the rise of the Chicago School, the presumption of harm from the increased concentration resulting from an acquisition has declined dramatically. Once nearly conclusive, that presumption is now no more than 'a convenient starting point' for a 'totality of the circumstances analysis' of the proposed transaction's competitive effects.<sup>37</sup> Accordingly, the 1982 Merger Guidelines, issued by Assistant Attorney General William Baxter, moved away from the 1968 Guidelines by incorporating a range of factors beyond market concentration into the analysis of a transaction's likely competitive effects.

The transformation of other doctrinal rules was equally dramatic. Strict per se rules against agreements among rivals concerning price or allocating markets have shrunk; now they are limited to 'naked' agreements that lack even a facially plausible efficiency justification.<sup>38</sup> The possibility that new competition – supply substitution and entry – would prevent the exercise of market power was incorporated into the analysis of whether business conduct harms competition.<sup>39</sup> The per se prohibition on exclusive distribution territories was overruled,<sup>40</sup> as was, more recently, the per se rule barring maximum resale price maintenance.<sup>41</sup> The prohibition against monopolization through predatory pricing was circumscribed by the requirement that plaintiff prove that defendant could reasonably expect to recoup its losses resulting from below-cost pricing, and by a Chicago-influenced economic analysis of recoupment from

the Supreme Court that called into question whether any plaintiff could successfully make that showing.<sup>42</sup> The legal analysis of exclusive dealing shifted from an exclusive focus on the degree of foreclosure to a broader inquiry into whether the exclusionary conduct would likely harm competition.<sup>43</sup> The disfavored doctrine of minimum resale price maintenance was hemmed in by requiring terminated distributors to show more than that they were discounters cut off after complaints by full price distributors.<sup>44</sup> Access to courts was also reduced for another set of disfavored plaintiffs, firms claiming that they were harmed by the exclusionary practices of their rivals, through the development of the doctrine of antitrust injury.<sup>45</sup> Through these doctrinal developments, antitrust has adopted a thoroughgoing and exclusive economic focus; older concerns about protecting small business and preventing concentrations of political power have been discarded.

By 1988, as the Reagan administration came to a close, the Chicago revolution was largely complete. Few areas of antitrust doctrine and practice had not been reconstructed. One exception was tying. By a narrow margin, the Supreme Court had refused to abandon the traditional *per se* prohibition against tying in favor of the rule of reason;<sup>46</sup> one suspects, however, that, given another opportunity, the Court would restrict the application of the *per se* rule to naked ties, on the model of the reformulated *per se* prohibitions against horizontal agreements.<sup>47</sup> The *per se* rule against maximum resale price maintenance did not fall until 1997,<sup>48</sup> and the longstanding *per se* ban on minimum resale price maintenance still survives. But little else remains untouched from the doctrinal landscape of the 1960s.<sup>49</sup> The federal enforcement agencies also greatly changed during the 1980s. Enforcement activity was refocused on criminal price-fixing conspiracies and horizontal mergers creating very high levels of concentration. For all practical purposes, the government stopped enforcing the Robinson–Patman Act and the ban on resale price maintenance. The agencies exhibited little concern about the anticompetitive potential of vertical agreements (between firms and their suppliers and customers); in particular, the possibility that a firm could harm competition through conduct excluding its rivals was largely dismissed.<sup>50</sup>

## IS THE CHICAGO SCHOOL ERA ENDING?

Why has antitrust doctrine changed so dramatically over time? Why does one era end and another begin? Such questions are particularly interesting because antitrust rules are primarily made by courts, not the legislature. (During the structural era, Congress pushed forward changes already underway in the courts by amending merger law, but Congress played much less of a role when that era ended and the Chicago School revolution began.)



The previous discussion suggests three reasons for antitrust eras having changed. First, developments in the economy, like industrialization and the Depression, have led to new forms of business organization, raising distinctive questions that must be addressed under the antitrust laws or have otherwise forced antitrust to confront urgent public policy issues. Something similar may be happening today, as the antitrust laws come to grips with the information revolution. It is no coincidence, for example, that much of the existing case law shaping the review of allegations that firms could harm competition through new product design arose in disputes involving IBM, the leading producer of computer hardware during the 1960s and 1970s,<sup>51</sup> and that the issue has again become prominent in current litigation involving Microsoft, the leading producer of computer software in the 1980s and 1990s.<sup>52</sup>

Second, the political system must be receptive to a new approach. The Great Depression undermined the faith of many in the *Lochner* era world view that underlay antitrust's classical era, allowing the New Deal to experiment with a range of alternatives for addressing the economic crisis. Similarly, the Chicago School became influential as part of a more general social and political reaction in the USA to the role of government, at roughly the same time that neoconservatism and deregulation became familiar words. When, as with the Chicago School revolution, antitrust policy is affected by a once-in-a-generation shift in social thought and values, the new perspective is likely to strike appealing chords for the judges deciding antitrust cases and new judges sympathetic to that perspective are likely to be appointed (as occurred with Judges Bork, Easterbrook and Posner).<sup>53</sup>

Third, developments in economic thinking have altered antitrust's understanding of the economic consequences of business practices.<sup>54</sup> For example, Edward Chamberlin's work on monopolistic competition helped shape antitrust's structural era. Furthermore, the successful Chicago School challenge to the structural model shows how an across-the-board shift in perspective among industrial organization economists carries with it the promise of a concomitant transformation of antitrust doctrine. While lawyers including judges are in control of prosecutorial choices and judicial decisions from case to case, it is fair to say that, from a longer term perspective, decade-to-decade or era-to-era, antitrust law has been shaped more importantly by the arguments made by economists. However, this process – the diffusion of new ideas – takes time. As John Maynard Keynes recognized, the common sense of one generation is often the economic theory of a previous generation.<sup>55</sup>

Economics has not stood still since George Stigler wrote about oligopoly. During the 1970s and 1980s, the decades in which the courts were adopting, chapter and verse, the Chicago Bible, economists were developing new theoretical insights and empirical tools that are now presenting a challenge to those received doctrines. The key developments in the academy were the

mathematical reconstruction of industrial organization theory using game-theoretic arguments, and the creation of new empirical (econometric) tools promising more precise measurement of incentives, conduct and effects.<sup>56</sup>

These developments began to influence antitrust policy in the 1990s, at the very moment that the judicial program of translating the 'Antitrust Paradox' into doctrine had reached into virtually all corners of the antitrust landscape. The 1992 Horizontal Merger Guidelines, issued jointly by the Justice Department and FTC during the Bush administration, marked a major milestone. They modified the Chicago-oriented framework of the 1982 and 1984 merger guidelines, bequeathed by the Reagan administration, by adding discussions of the competitive effects of mergers and the likelihood (profitability) of entry heavily influenced by the new economic literature of the previous decade. New antitrust possibilities are also suggested by the Supreme Court's openness to economic arguments outside Chicago School price theory in *Kodak*, particularly through that decision's focus on the implications of customer lock-in and the consequences of imperfect information;<sup>57</sup> by recent appellate decisions that take seriously the possibility of harm from vertical, exclusionary practices;<sup>58</sup> and by cases that consider but question the plausibility of efficiencies from joint ventures.<sup>59</sup>

The pace of change accelerated during the Clinton administration, for example in the pre-eminent role of empirical evidence on pricing in the FTC's successful challenge to Staples' proposed acquisition of another office supply superstore chain,<sup>60</sup> and in the run of major government and private challenges to the alleged exclusionary conduct of dominant firms: Intel, Toys 'R' Us, Coca-Cola, Visa and Master Card, and, most prominently, Microsoft.<sup>61</sup> Moreover, the large criminal price-fixing conspiracies recently uncovered in international markets involving vitamins, lysine and citric acid appear to give credence to post-Stigler developments in economic theory that suggest ways that firms can solve the 'cartel problems' of reaching a consensus and deterring deviation.<sup>62</sup>

The relationship between economic developments and legal change is not a simple one. It is hard to defend what might be called a Whig theory of antitrust evolution, by which economic progress is reported in the *American Economic Review* one year and assimilated by the courts into antitrust doctrine the next. Moreover, when economic perspectives are changing, some legal doctrines will respond before others, creating tensions in the law that may be recognized and accounted for by judges. This is made clear by the interplay between the antitrust treatment of two doctrinal categories, exclusive distribution territories and resale price maintenance, in the wake of a 1967 Supreme Court decision declaring exclusive distribution territories illegal per se (unless the manufacturer retained title).<sup>63</sup> That decision was overruled in *GTE Sylvia*,<sup>64</sup> the first substantive Supreme Court antitrust decision shaped by

the Chicago School (and, for that reason, perhaps the most important antitrust decision of the modern era). Justice White, concurring, recognized that resale price maintenance could be justified on similar efficiency grounds as exclusive distribution territories and other vertical non-price restraints, and observed that ‘The effect, if not the intention, of the Court’s opinion is necessarily to call into question the firmly established per se rule against price restraints.’<sup>65</sup> From then on, the Court made it more difficult to prove resale price maintenance, in part in order to prevent erosion of *GTE Sylvania*. Thus, in explaining why a vertical agreement on price could not be inferred merely from a manufacturer’s termination of a discounting dealer upon complaints by non-discounting dealers, Justice Powell pointed to the ‘considerable danger’ that otherwise *GTE Sylvania* ‘will be seriously eroded’.<sup>66</sup>

The complex relationship between economic ideas and legal doctrine makes it difficult to predict how post-Chicago economic developments will affect the evolution of legal doctrines. Some possibilities have been explored recently by the federal antitrust enforcement agencies and the courts, or suggested in commentary. On the whole, these developments tend to point antitrust in a more interventionist direction relative to Judge Bork’s views (though by no means suggesting a return to the interventionist doctrines of the structural era). With respect to proof of market power, these new possibilities include allowing direct evidence of market power to trump evidence of low market shares in exclusion cases,<sup>67</sup> reducing the reliance on evidence of market concentration in analyzing mergers among sellers of differentiated products,<sup>68</sup> and evaluating the potential loss of research and development competition within ‘innovation markets’.<sup>69</sup> Exclusion allegations (or, more broadly, ‘raising rivals’ costs’ claims) are increasingly evaluated without regard to potential doctrinal differences across narrow legal categories (such as exclusive dealing or group boycotts);<sup>70</sup> predatory pricing doctrine may come to take more seriously the possibility that price predation could be a rational strategy;<sup>71</sup> and courts may apply truncated or structured legal rules to condemn the conduct of a monopolist who excludes a rival without an adequate business justification.<sup>72</sup> Other possibilities concern collusion. The analysis of the coordinated effects of mergers may be reframed around the question of whether the transaction causes the loss of a disruptive competitor or ‘maverick’;<sup>73</sup> and a contemporary understanding of how the firms in a market may solve their ‘cartel problems’ may give courts more latitude to infer tacit collusion,<sup>74</sup> notwithstanding the Supreme Court’s admonition that courts refrain from doing so when the allegation makes ‘no economic sense’.<sup>75</sup>

A quarter-century after antitrust’s Chicago revolution began, antitrust retains one legacy of the Chicago School, an economic orientation. The post-Chicago criticisms of received doctrine with traction are largely ‘internal’, not disputes about basic approaches or fundamental values. The diffusion of these

new ideas into antitrust law now depends upon their reception in the courts. As judges come to recognize the logic of economic developments since the work of Aaron Director and George Stigler, changes in antitrust doctrine may follow. In this way, with a new century, a post-Chicago School era in US antitrust may be upon us.

## NOTES

1. The author is grateful to Andrew Gavil, William Kovacic, James May, Steven Salop and Michael Wise.
2. For a more detailed treatment of some similar historical themes, see William E. Kovacic and Carl Shapiro, 'Antitrust Policy: A Century of Economic and Legal Thinking', 14 *J. Econ. Persp.* 43 (2000).
3. Morton Horwitz, *The Transformation of American Law 1870–1960: The Crisis of Legal Orthodoxy* (1992), at 9–31.
4. *United States v. Joint Traffic Ass'n*, 171 U.S. 505 (1898).
5. *Ibid.*, at 570–71.
6. *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290 (1897).
7. James May, 'Antitrust in the Formative Era: Political and Economic Theory in Constitutional and Antitrust Analysis', 50 *Ohio State L.J.* 257 (1989).
8. *Ibid.*, cf. Rudolph J.R. Peritz, *Competition Policy in America 1888–1992: History, Rhetoric, Law* (1996) at 20–25 (highlighting the significance of a common-law tradition rooted in liberty of contract in the framing of the Sherman Act).
9. Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (1977).
10. See James May, 'Antitrust in the Formative Era: Political and Economic Theory in Constitutional and Antitrust Analysis, 1880–1918', 50 *Ohio State L.J.* 257, 281–8 (1989).
11. Edward Chamberlin, *The Theory of Monopolistic Competition* (1933). See also Joan Robinson, *The Economics of Imperfect Information* (1933); William J. Fellner, *Competition Among the Few* (1949).
12. James May, 'Antitrust in the Formative Era: Political and Economic Theory in Constitutional and Antitrust Analysis, 1880–1918', 50 *Ohio State L.J.* 257, 308–9 (1989).
13. 221 US 1, 75 (1911). For a more recent economic analysis of Standard Oil's business practices, describing how that firm had acted to harm competition, see Elizabeth Granitz and Benjamin Klein, 'Monopolization by "Raising Rivals' Costs": The Standard Oil Case', 39 *J. Law & Econ.* 1 (1996).
14. Marc Allen Eisner, *Antitrust and the Triumph of Economics* (1991) at 64–6; Ellis W. Hawley, *The New Deal and the Problem of Monopoly* (1966) at 10–11. Cf. *Maple Flooring Manufacturer's Ass'n v. United States*, 268 U.S. 563 (1925) (information-gathering and sharing activities of industry trade association that do not lead firms to reach an agreement with respect to price or output do not violate the Sherman Act).
15. *Appalachian Coals v. United States*, 288 U.S. 344 (1933).
16. *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940); see *Virginia Excelsior Mills v. F.T.C.*, 256 F.2d 538 (4th Cir. 1958).
17. *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495 (1935).
18. Cartelization was thought to serve the public interest by protecting industry health and employment.
19. Ellis W. Hawley, *The New Deal and the Problem of Monopoly* (1966).
20. *Ibid.* at 420–55; Marc Allen Eisner, *Antitrust and the Triumph of Economics* (1991) at 77–83.
21. Many commentators during the structural era took from Chamberlin the lesson that supra-competitive prices were nearly inevitable in oligopolies. See, for example, G. Hale and

- R. Hale, *Market Power: Size and Shape Under the Sherman Act* (1958) at 122–3, 131–7; Marc Allen Eisner, *Antitrust and the Triumph of Economics* (1991) at 100–103. The dominant academic approach to industrial organization economics of that time was the ‘structure, conduct, performance’ paradigm, which emphasized the relationship between market concentration and higher prices. See Joe S. Bain, *Barriers to New Competition* (1956).
22. The legislative history of the Cellar-Kefauver Act is reviewed in *Brown Shoe Co. v. United States*, 370 U.S. 294, 311–23 (1962).
  23. *United States v. Von’s Grocery Co.*, 384 U.S. 270 (1966); *United States v. Philadelphia Nat’l Bank*, 374 U.S. 321 (1963).
  24. *Klor’s, Inc. v. Broadway-Hale Stores, Inc.*, 359 U.S. 207 (1959).
  25. *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967).
  26. *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685 (1967).
  27. *United States v. Borden Co.*, 370 U.S. 460 (1962).
  28. See, generally, William E. Kovacic, ‘Failed Expectations: The Troubled Past and Uncertain Future of the Sherman Act as a Tool for Deconcentration’, 74 *Iowa L. Rev.* 1105, 1108–9 (1989). These large monopolization cases were largely unsuccessful; substantial relief was obtained only against AT&T and Xerox. According to Professor Kovacic, ‘Never in antitrust history has so massive a litigation program yielded such disappointing results’(ibid.).. at 1108. To some extent their failure reflected their timing: though commenced during the structural era, many ended after courts had begun to accept Chicago School perspectives. See *ibid.* at 1138. Some of these cases were framed as challenging so-called ‘shared monopoly’; this formulation may have modern echoes in the European Commission’s recent concern with ‘collective dominance’.
  29. For example, Mark J. Green, *The Closed Enterprise System* (1972) (written with Beverly C. Moore, Jr. and Bruce Wasserstein) (Ralph Nader’s Study Group Report on Antitrust). President Eisenhower advanced a related concern, warning in 1961 of the dangers of the developing ‘military–industrial complex’.
  30. Frank Mankewicz, *U.S. v. Richard M. Nixon: The Final Crisis* (1975) at 47–9, 70–72, 161–3, 207, 261; J. Anthony Lukas, *Nightmare: The Underside of the Nixon Years* (1976) at 130–34, 182–5.
  31. This list of important Chicago School figures is illustrative; it is far from comprehensive.
  32. George Stigler, ‘A Theory of Oligopoly’, 72 *J. Pol. Econ.* 44 (1964).
  33. See, for example, Harold Demsetz, ‘Two Systems of Belief About Monopoly’, in *Industrial Concentration: The New Learning* (H. Goldschmid, H.M. Mann and J.F. Weston, eds), (1974) at 164; William M. Landes and Richard A. Posner, ‘Market Power in Antitrust Cases’, 94 *Harv. L. Rev.* 937 (1981).
  34. See Richard A. Posner, *Antitrust Law* (1976) at 147–8; Lester G. Telser, ‘Why Should Manufacturers Want Fair Trade?’, 3 *J. L. & Econ.* 86 (1960).
  35. John McGee, ‘Predatory Price-Cutting: The Standard Oil (N.J.) Case’, 1 *J. L. & Econ.* 137 (1958); Robert H. Bork, *The Antitrust Paradox: A Policy at War with Itself* (1978) at 144–55.
  36. The first important steps were arguably taken in 1975 by two circuit court panels that simultaneously recognized the role of supply substitution in market definition: Jonathan B. Baker, ‘The Problem with Baker Hughes and Syufy: On the Role of Entry in Merger Analysis’, 65 *Antitrust L. J.* 353, 354–6 (1997). The first Supreme Court antitrust decisions reflecting a Chicago School perspective were *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477 (1977); *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977) and *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1 (1979). The Supreme Court’s 1974 decision in *United States v. General Dynamics Corp.*, 415 U.S. 486 (1974) was transitional; it appears more like a change in course in retrospect than it likely did at the time. See *Hospital Corporation of America v. F.T.C.*, 807 F.2d 138, 1386 (1986) (Posner, J).
  37. *United States v. Baker Hughes Inc.*, 908 F.2d 981 (D.C. Cir. 1990); see *Hospital Corporation of America v. F.T.C.*, 807 F.2d 138, (1986) (Posner, J). The *Baker Hughes* decision was written by one future Supreme Court Justice, Clarence Thomas, and joined in by another, Ruth Ginsburg.
  38. Compare *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940) (per se rule against agreements among rivals concerning price) with *Broadcast Music, Inc. v. Columbia*

- Broadcasting System, Inc.*, 441 U.S. 1 (1979) and *National Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Oklahoma*, 468 U.S. 85 (1984). Compare *United States v. Topco Associates, Inc.*, 405 U.S. 59 (1972) (per se rule against agreements among rivals allocating markets) with *Polk Brothers, Inc. v. Forest City Enterprises, Inc.*, 776 F.2d 185 (7th Cir. 1985) (Easterbrook, J) and *Rothery Storage and Van Co. v. Atlas Van Lines*, 792 F.2d 210 (D.C. Cir. 1986) (Bork, J).
39. *Telex Corp. v. IBM Corp.*, 510 F.2d 894 (10th Cir.), cert. dismissed, 423 U.S. 802 (1975); *Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 676 F.2d 1291 (9th Cir. 1982); *United States v. Waste Management, Inc.*, 743 F.2d 976 (2d Cir. 1984).
  40. *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977).
  41. *State Oil Co. v. Khan*, 522 U.S. 3 (1997).
  42. *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986); *Cargill Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104 (1986); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).
  43. Compare *Standard Oil of California v. United States*, 337 U.S. 293 (1949) (Standard Stations) and *Tampa Electric Co. v. Nashville Coal Co.*, 365 U.S. 320 (1961) with *U.S. Healthcare, Inc. v. Healthsource, Inc.*, 986 F.2d 589 (1st Cir. 1993) and *Omega Environmental, Inc. v. Gilbarco, Inc.*, 127 F.3d 1157 (9th Cir. 1997).
  44. *Business Electronics Corp. v. Sharp Electronics Corp.*, 485 U.S. 717 (1988); see *Monsanto Co. v. Spray-Rite Service Corp.*, 465 U.S. 752 (1984).
  45. *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477 (1977); *Cargill, Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104 (1986); *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328 (1990).
  46. *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984).
  47. See *United States v. Microsoft Corp.*, 253 F.3d 34, 89–95 (D.C. Cir. 2001).
  48. *State Oil Co. v. Khan*, 522 U.S. 3 (1997).
  49. Chicago-influenced commentators might call for additional doctrinal changes, for example: barring predatory price claims when price exceeds average variable cost, adopting a rule of per se legality for non-price vertical agreements and resale price maintenance, adopting a rule of per se legality for agreements among rivals when their collective market share is small, cutting back or eliminating antitrust enforcement by private parties (particularly treble damage actions) and the states, and limiting exclusion cases to claims involving misuse of governmental processes. Although Chicago partisans may be unwilling to declare their revolution complete, the courts have already moved antitrust law substantially in these directions, relative to the doctrines of the pre-Chicago structural era.
  50. Charles F. Rule, 'Merger Enforcement Policy: Protecting the Consumer', 56 *Antitrust L.J.* 739, 752–3 (1988).
  51. For example, *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965 (N.D. Cal. 1979), *aff'd sub nom.*, *Transamerica Computer Co. v. IBM*, 698 F.2d 1377 (9th Cir.), cert. denied, 464 U.S. 955 (1983); *Calif. Computer Prods., Inc. v. IBM*, 613 F.2d 727 (9th Cir. 1979); *accord Memorex Corp. v. IBM*, 636 F.2d 1188 (9th Cir. 1980), cert. denied, 452 U.S. 972 (1981).
  52. *United States v. Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998); *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).
  53. William E. Kovacic, 'Reagan's Judicial Appointees and Antitrust in the 1990s', 60 *Fordham L. Rev.* 49 (1991).
  54. William E. Kovacic, 'The Influence of Economics in Antitrust Law', 30 *Economic Inquiry* 294 (1992).
  55. 'Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist' (John Maynard Keynes, *The General Theory of Employment, Interest and Money*, 383, 1936).
  56. A. Michael Spence's pioneering application of game theory to industrial organization theory dates from the 1970s. The game-theoretic literature highlighting how the prospect of post-entry competition can deter entry was sufficiently well developed to generate a survey in 1979: Steven Salop, 'Strategic Entry Deterrence', 69 *Am. Econ. Rev.* 335 (Papers & Proceedings 1979). Steven Salop and co-authors began to publish their influential articles on

- 'raising rivals' costs' in the 1980s, building on earlier work by Oliver Williamson in 1968 and Richard Nelson in 1957. (For a survey of recent developments in economics that have influenced antitrust practice, see Jonathan B. Baker, 'Policy Watch: Developments in Antitrust Economics', 13 *J. Econ. Persp.* 181 (1999).) Similarly, the contemporary antitrust use of econometric techniques to quantify the magnitude of anticompetitive effects, as from mergers among sellers of differentiated products, dates from my mid-1980s articles with Timothy Bresnahan on estimating residual demand curves. For a recent survey describing how the use of econometrics in antitrust has grown since that time, see Jonathan B. Baker and Daniel L. Rubinfeld, 'Empirical Methods in Antitrust Litigation: Review and Critique', 1 *Am. J. L. & Econ.* 386 (1999).
57. *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992). See also *California Dental Ass'n v. F.T.C.*, 526 U.S. 756 (1999).
  58. *JTC Petroleum Co. v. Piasa Motor Fuels, Inc.*, 190 F.3d 775 (7th Cir. 1999) (Posner, C.J.); *Toys 'R' Us, Inc. v. F.T.C.*, 221 F.3d 928 (7th Cir. 2000); *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).
  59. For example, *National Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Oklahoma*, 468 U.S. 85 (1984); *General Leaseways Inc. v. Nat'l Truck Leasing Ass'n*, 744 F.2d 588 (7th Cir. 1984) (Posner, J).
  60. *F.T.C. v. Staples Inc.*, 970 F. Supp. 1066 (D.D.C. 1997); see Jonathan B. Baker, 'Econometric Analysis in *FTC v. Staples*', 18 *J. Pub. Pol. & Mktg.* 11 (1999).
  61. As of July 2002, appeals courts had upheld lower court decisions finding unlawful exclusionary practices in *Toys 'R' Us* and *Microsoft*; a district court decision finding unlawful exclusion in the government's Visa case was on appeal; Intel had settled with the F.T.C., and the district court's award of summary judgment to Coke, resolving Pepsi's exclusionary conduct allegations, was on appeal. *Toys 'R' Us, Inc. v. F.T.C.*, 221 F.3d 928 (7th Cir. 2000); *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001); *United States v. Visa U.S.A., Inc.*, 163 F. Supp. 2d 322 (S.D.N.Y. 2001), appeal pending, No. 02-6074 (2d Cir. 2002); *In re Intel Corp.*, 1999 WL 701835 (F.T.C.); *PepsiCo, Inc. v. Coca-Cola Co.*, 114 F. Supp. 2d 243 (S.D.N.Y. 2000), appeal pending, No. 00-9342 (2d Cir., argued Oct. 11, 2001).
  62. For example, *United States v. F. Hoffmann-La Roche Ltd.*, No. 99-CR-184-R, Plea Agreement (N.D. Tex. May 19, 1999); *U.S. v. Andreas*, 216 F.3d 645 (7th Cir. 2000). See, generally, Jonathan B. Baker, 'Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory', 38 *Antitrust Bull.* 143, 152-69 (1993).
  63. *United States v. Arnold Schwinn & Co.*, 388 U.S. 365 (1967).
  64. *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977).
  65. 433 U.S. at 70.
  66. *Monsanto Co. v. Spray-Rite Service Corp.*, 465 U.S. 752, 763 (1984); see *Eastern Scientific Co. v. Wild Heerbrugg Instruments Inc.*, 572 F.2d 883 (1st Cir.), *cert. denied*, 439 U.S. 833 (1978).
  67. *Toys 'R' Us, Inc. v. F.T.C.*, 221 F.3d 928 (7th Cir. 2000) (defendant had the power to exclude rivals notwithstanding that it buys only 30 per cent of the output of large toy companies and accounts for only 20 per cent of nationwide toy sales); cf. *F.T.C. v. Indiana Federation of Dentists*, 476 U.S. 447 (1986) (actual effects evidence sufficient to prove collusive group boycott notwithstanding absence of proof of market concentration).
  68. For example, Jonathan B. Baker, 'Product Differentiation Through Space and Time: Some Antitrust Policy Issues', 42 *Antitrust Bull.* 177, 185-7 (1997); cf. James F. Rill (criticizing enforcement agency economists for downplaying market concentration in analyzing differentiated product mergers); Jonathan B. Baker, 'Stepping out in an Old Brown Shoe: In Qualified Praise of Submarkets', 68 *Antitrust L.J.* 203 (2000) (market definition may be conclusory when used to analyze unilateral competitive effects of mergers in differentiated product industries).
  69. See, generally, Richard J. Gilbert and Steven C. Sunshine, 'Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets', 63 *Antitrust L.J.* 569 (1995).
  70. Thomas Krattenmaker and Steven Salop, 'Anticompetitive Exclusion: Raising Rivals' Costs

- to Achieve Power over Price', 96 *Yale L.J.* 209 (1986); *JTC Petroleum Co. v. Piasa Motor Fuels, Inc.*, 179 F.3d 1073 (7th cir. 1999) (Posner, J); see Steven Salop, 'The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium', 68 *Antitrust L.J.* 187 (2000) (recommending an approach for analyzing a diverse variety of antitrust allegations in a single coherent framework); Andrew I. Gavil, 'Defining Reliable Forensic Economics in the Post-Daubert/Kumho Era: Case Studies from Antitrust', *Wash. & Lee L. Rev.* (forthcoming) (highlighting how the law has been moving toward 'concept-driven inquiries' in place of rigid categories and sub-categories of 'horizontal' and 'vertical' conduct).
71. See Jonathan B. Baker, 'Predatory Pricing After Brooke Group: An Economic Perspective', 62 *Antitrust L.J.* 585 (1994); Joseph Brodley, Patrick Bolton and Michael Riordan, 'Predatory Pricing: Strategic Theory and Legal Policy', 88 *Geo. L.J.* 2239 (2000).
  72. *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001); see Jonathan B. Baker, 'Promoting Innovation Competition Through the Aspen/Kodak Rule', 7 *Geo. Mason L. Rev.* 495 (1999) (reading recent Supreme Court cases to prohibit a monopolist from excluding rivals by restricting complementary or collaborative business relationships without justification). The primary focus of these recent initiatives is on promoting innovation in high-technology industries in which a firm has become dominant.
  73. Jonathan B. Baker, 'Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws', 77 *N.Y.U.L. Rev.* 135 (2002).
  74. See, generally, Jonathan B. Baker, 'Identifying Horizontal Price Fixing in the Electronic Marketplace', 65 *Antitrust L.J.* 41 (1996); Jonathan B. Baker, 'Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory', 38 *Antitrust Bull.* 143 (1993).
  75. *Matsushita Electrical Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587, 596, 597–8 (1986).



## 4. Post-Chicago, post-Seattle and the dilemma of globalization

**Eleanor M. Fox**

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### INTRODUCTION

Antitrust law is not law-and-economics in a vacuum. As Professor Giuliano Amato so eloquently observed in his book, *Antitrust and the Bounds of Power*,<sup>1</sup> antitrust law has a symbiosis with democracy. Citizens have a right to freedom of action; government has the duty to prevent private power from threatening the freedoms of the people; but there must be a balance to prevent ‘power conferred on institutions for this purpose . . . from itself enlarging to the point of destroying the very freedoms it ought to protect’. As Professor Amato admonishes: ‘There are two bounds that should never be crossed; one beyond which the unlegitimated power of individuals arises, the other beyond which legitimate public power becomes illegitimate. Where do these two bounds lie? This is the real nub of the dilemma.’<sup>2</sup>

The Chicago School controversy can be seen in terms of this dilemma. Chicago School economics is founded on the premise that governments should stay out of markets; they should let markets work. People benefit from markets and the economic freedoms they imply – as producers, to engage in the commerce of their choice; as consumers to choose, and to receive better goods and services at lower prices. In the United States in the late 1970s, Chicago adherents declaimed that the second bound of power had been crossed: public power illegitimately intruded into markets and restrained trade.

Pre-Chicago, Americans had feared a gross breach of Amato’s first boundary, unlegitimated private power. Chicago, in contrast, proclaimed a gross breach of Amato’s second boundary. Post-Chicago adherents ask whether the Chicago School itself (with which they largely agree) erred on the side of freedom from government surveillance (which, of course, Chicago meant to do).<sup>3</sup> In the United States, it is now fashionable to assert that we are in the era of post-Chicago. But are we?

This chapter argues that post-Chicago has succeeded merely in the sense of being a credible alternative to the Chicago School (not a mean feat after a

decade in which Chicago was the Emperor in the Emperor's new clothes). The chapter suggests that American jurists now choose Chicago or post-Chicago assumptions nontransparently and at their will, putting an elasticity into the language of economics. Finally, it argues that Amato's bounds-of-power insights have important relevance to questions of international antitrust.

I focus on the United States, home of Chicago. The Chicago School reifies economics and efficiency. I assert that competition law continues to be informed by but distinct from economics in two ways. First, it continues to be informed by values and goals in addition to efficiency goals; for example, a desire for openness, access and freedom from coercion, on the one hand (sympathetic with post-Chicago), and a desire to keep government 'out' (sympathetic with Chicago). Second, for the sake of rule of law and administrability of law, economics must be simplified and generalized, and the bases for generalization are normative. Either openness, on the one hand, or *laissez faire*, on the other, can be the anchor for the generalizations necessary to make competition law principles workable.

I illustrate these relationships through the window of three cases: *Toys 'R' Us*,<sup>4</sup> *California Dental Association*,<sup>5</sup> and *Microsoft*.<sup>6</sup> Before doing so, I describe pre-Chicago US antitrust law, the impact of Chicago School economics on US antitrust law, and the new platform of the 1990s in which Chicago assumptions have been relaxed and increased enforcement scrutiny advocated. Next, I analyze aspects of the above three legal landmarks and their hidden, conflicting assumptions. Third, I suggest that, in the wake of globalization, post-Chicago economics has a sympathetic fit with enhanced economic opportunity, opportunities for market integration and accountability of transnational enterprises. As we contemplate the possibility of yet 'higher' rules to deal with global market problems, the government skepticism of Chicago holds some lessons as well, but those lessons could counsel restraint and rules for subsidiarity rather than abstention.

## PRE-CHICAGO AND THE TRIUMPH OF CHICAGO

Let us begin in the 1960s. The US antitrust law reaffirmed its roots in political economy: the balance of power and a preference for those without power; a preference for diversity, autonomy and more nearly equal opportunity to compete on the merits.<sup>7</sup> Not surprisingly, the law developed rules against powerful firms' use of leverage to fence out powerless competitors. For example, it developed a partial *per se* rule against tie-ins: firms with market power were forbidden to use power over the tying product to sell a tied product.

But the law expanded beyond principle in the 1960s and early 1970s, sometimes hindering efficient competition, and leaving antitrust law vulnerable to

a ‘takeover’ by the Chicago School, whose adherents wished to minimize antitrust in the name of efficiency and sometimes, also, politics.<sup>8</sup>

In the 1980s, the Chicago School won. The Chicago School antitrust revolution had three major aspects. First, the purpose of US antitrust law was redefined and its scope dramatically narrowed. In the new regime, antitrust law was (is) law with only one *raison d’être*: to help achieve efficiency. The tight links of antitrust to other values (such as opportunity for the underdog, diversity, access, due process) were cut. Antitrust was isolated from political economy.

Second, to minimize the law, the efficiency goal was defined in terms of inefficiency. The mission of the law was defined to reprehend only transactions and conduct that were inefficient in the sense of producing artificial output limitation, pushing up price. The output-limitation anchor was intended to be a limiting principle that operated only in one direction, narrowing the purview for antitrust.

The third major aspect reinforced the first two. It was presumed that markets work well; that it is hard for firms to get and keep market power; that market discipline is almost always efficient and government intervention is almost always inefficient. Hardcore cartels aside, these assumptions would assure a very narrow scope for antitrust.<sup>9</sup>

Numerous Supreme Court cases adopted the language of output limitation and consumer welfare as the guides to US antitrust (points 1 and 2), overruling most rules of law that reflected other values. The tying rule has not (yet) been overruled. Also the case law formulation of the rule against monopolization is still broader than the Chicago paradigm would allow. In addition, several Supreme Court opinions adopted the most controversial premises underlying Chicago School analysis (point 3). That is, they incorporated the assumption that markets are dynamic and that capital markets are efficient, and therefore that business transactions and conduct are presumptively efficient and competitive.<sup>10</sup>

For US antitrust practitioners, the conversation and analysis necessarily shifted to the language of output limitation and consumer welfare; for this became the anchor of the law. But lawyers/jurists are not as constrained as economists in technical economic word usage. ‘Output limitation’ (the key to most cases) began to gain an elasticity. The same values that we purported to have squeezed out of the law by adopting a neoclassical economic model – either openness and opportunity or the low visibility of government – seem to influence current judicial characterization of conduct as output-limiting or not.<sup>11</sup>

Meanwhile, in their theoretical scholarship, several noted economists began to alter the foundational assumptions of Chicago analysis, injecting more market failure into their models. Their scholarship proves the sensitivity of outcomes to assumptions. These scholars developed a well-recognized body

of work showing how exclusionary strategies may alter market structure and lower output.<sup>12</sup>

## IS ANTITRUST LAW POST-CHICAGO?

### Introduction

Claiming victory or at least a rising star, post-Chicago adherents may point to *Kodak/ITS*,<sup>13</sup> *Toys 'R' Us*,<sup>14</sup> *Microsoft*,<sup>15</sup> *3M*<sup>16</sup> and the FTC's proceedings against Intel<sup>17</sup> and AOL/Time Warner.<sup>18</sup> But for every legal authority that may lean in the direction of post-Chicago, another legal authority leans in the direction of Chicago; for example, *California Dental Association* (Supreme Court 1999),<sup>19</sup> *Microsoft* (DC Circuit 1998),<sup>20</sup> *Intergraph v. Intel*<sup>21</sup> and *CSU v. Xerox Corp.*<sup>22</sup> This dissonance is not explainable as a lag in the understanding of contemporary economics; it is a reflection of access and diversity values in contrast with a keep-out-government perspective.

*California Dental Association* and *Toys 'R' Us* use assumptions that conflict with one another about the very meaning of output limitation. *Microsoft* illustrates both internal conflicts (within Judge Jackson's decisions) and external fault lines (Judge Jackson's decisions versus those of the appellate court).

### California Dental and Toys 'R' Us

Three quarters of California's dentists belong to the California Dental Association. The association has a code of ethics, supported by guidelines. In the name of prohibiting false and misleading advertising, the guidelines forbid simple advertisements such as: '10 per cent discount to seniors' or 'quality services' at 'reasonable prices'. The Federal Trade Commission and the appellate court found the guidelines to be anticompetitive after a quick-look analysis in which it observed apparent anticompetitive qualities and shifted the burden of justification to the dentists. It prohibited the challenged restraints. A divided Supreme Court reversed, holding that the likelihood of anticompetitive effects was not obvious; that the dentists' by-laws and guidelines might just as well have had net procompetitive effects or no competitive effect at all,<sup>23</sup> and that absent proof by the government of the likelihood that the restraints decreased the quantity of dental services demanded, no burden shifting was justified.

The Supreme Court, by Justice Souter, found 'puzzling' the appellate court's conclusion that, by their nature, the advertising bans were probably output limiting. It said that the appellate court erred because it

gave no weight to the countervailing, and at least equally plausible, suggestion that restricting difficult-to-verify claims about quality or patient comfort would have a procompetitive effect by preventing misleading or false claims that distort the market. It is, indeed, entirely possible to understand the CDA's restrictions on unverifiable quality and comfort advertising as nothing more than a procompetitive ban on puffery.<sup>24</sup>

Toys 'R' Us (TRU) is a big toy retailer. It is positioned in price level below department stores such as Macy's and above superstores such as Wal-Mart's and was faced with competition by the yet cheaper warehouse clubs, which stocked toys and other goods in boxes only, with no display. Markups of retailers were approximately as follows: department stores 40–50 per cent, TRU 30 per cent, Wal-Mart and like stores 22 per cent, warehouse clubs ('clubs') 9 per cent.

TRU was a most important outlet for the major manufacturers of popular toys such as Barbie dolls (Mattel). It carried a full range of their toys and it developed markets for 'hot' toys. It sold about 20 per cent of all toys sold in the United States, with higher shares in some local markets.

To shore up its position against the warehouse clubs, TRU approached each of its 10 major suppliers and demanded that they not supply the clubs with the same product they sold to TRU unless it was packaged differently so that price would be hard to compare. TRU conveyed its message separately to each supplier, and each supplier eventually agreed to TRU's demand. TRU apparently assured each or most of the major suppliers that each other supplier would go along with the TRU's demand.

The Federal Trade Commission brought proceedings and found both horizontal and vertical violations. The horizontal claim was that TRU coordinated a conspiracy among the manufacturers and a boycott by them against the warehouse clubs. The legal problem was the thinness of evidence that the suppliers, through TRU, in fact had an agreement with one another. Even if there were no horizontal conspiracy, the FTC found vertical violations. The vertical claim and finding was that TRU used buyer power to coerce separate anticompetitive (output-limiting) agreements. The Court of Appeals for the Seventh Circuit affirmed the FTC's decision.

To support the vertical claim, the appellate court had to find that TRU had market power. The court, by Judge Wood, noted that market power can be deduced where there is 'direct evidence of anticompetitive effects'. This methodology, she said, would obviate the need for a market share above a necessary threshold. (TRU sold only 20 per cent of toys.) Judge Wood found such anticompetitive effects. She said:

it was clear that [TRU's] boycott was having an effect in the market. It was remarkably successful in causing the 10 major toy manufacturers to reduce output of toys to the warehouse clubs, and that reduction in output protected TRU from having to lower its prices to meet the clubs' price levels.

But was reducing sales to the warehouse clubs equivalent to output reduction in the toy market? Was it equally plausible that sales of Barbie dolls and other toys were shifted from the warehouse clubs to TRU without reducing output? Was it plausible that TRU never made (and therefore was not protecting) supracompetitive profits?

Justice Souter's unwillingness to infer output limitation from trade-association bans on competitors' discount and quality advertising does not sit harmoniously with Judge Wood's willingness to infer output limitation from vertical agreements shifting sales from a lowest price warehouse retailer to a moderate-price, service-providing retailer. Neither approach is explainable by economics alone.

### **Two Vignettes from *Microsoft***

Microsoft has a monopoly in operating systems for personal computers. (The court so found, and I so assume.) In the early 1990s, it set out to protect and expand that monopoly by various acts including creating incompatibilities with rivals' software applications, effectively forcing personal computer (PC) makers to load Microsoft's operating system on all PCs they made, and effectively preventing applications providers for Microsoft from making applications for rivals.

The US Justice Department sued and procured a consent decree, widely regarded as weak. The decree was entered in 1995. It contained a 'sleeper' clause. Microsoft agreed not to condition the licensing of its operating system on the licensing of any other product; though it was not prohibited 'from developing integrated products.'<sup>25</sup>

Thereafter Netscape pioneered and offered a powerful, attractive browser that was in high demand. Netscape had plans to work with Java language and develop middleware. It would do so by forming a platform that would fit on top of the Microsoft or any other operating system and expose its own interfaces so that applications makers could profitably write applications for operating systems other than Microsoft. The new platform would port to other operating systems, multiplying opportunities for sales by makers of applications for operating systems other than Microsoft. This was a monopoly-threatening challenge to Microsoft, and Microsoft sprang into action. It vowed to 'cut the air off' from Netscape. It developed its own browser, Internet Explorer (IE), and at first sold it separately from the operating system. But the Microsoft team concluded that their own competition on the merits of IE would not do the job; they needed leverage.<sup>26</sup> So they simply bundled their browser with their operating system, charging a single price for the package, and put up numerous barriers to make it difficult for computer users to access Netscape. For example, Microsoft forbade PC manufacturers

to replace its own Internet Explorer with Netscape's Navigator and forbade the principal Internet service providers and content providers from offering or promoting Netscape's Navigator. It closed off the most efficient channels for Netscape to reach its public. It adopted numerous other strategies such as offers to divide markets and threats to withdraw its support from Intel and Apple unless they (Intel, Apple) abandoned competitive lines of research and development.

When Microsoft bundled its browser with its operating system, the Department of Justice concluded that Microsoft had violated the consent decree. Microsoft refused to unbundle, and the United States sued Microsoft for contempt. Microsoft denied violating the consent decree. Simply, it said, its browser was now part of the operating system. They were one integrated product. In the contempt action, trial judge Thomas Penfield Jackson was persuaded by the government. He issued a preliminary injunction providing that, if Microsoft chose to bundle the two products, it must also offer them separately.

Microsoft appealed, and the Court of Appeals for the DC Circuit reversed Judge Jackson. The appellate panel deferred to Microsoft's characterization: the technological combination of browser with operating system was one integrated product if Microsoft said it was, and it was beyond antitrust scrutiny, unless there was no plausible claim that it brought some advantage to the user/consumer.<sup>27</sup> Shortly thereafter, the US government and 20 states brought the larger, plenary monopolization action.<sup>28</sup>

In the plenary monopolization case, the states' complaint alleged, among other things, that Microsoft was leveraging its monopoly power in the operating system market to obtain a competitive advantage in the Internet and browser markets. The states claimed that Microsoft's use of leverage to shift market share in the browser market from Netscape to Microsoft was, in itself, an antitrust violation.

Microsoft moved to dismiss all claims. The court, by Judge Jackson, dismissed only one: the leveraging claim, noted above. Why? While Judge Jackson noted that the Supreme Court has not expressly ruled on whether mere use of leverage by a dominant firm violates the Sherman Act, he said that the Supreme Court 'has clearly stated that a firm violates § 2 [of the Sherman Act] only when it actually monopolizes or dangerously threatens to do so'. This he took to mean that mere leveraging is not a violation of Section 2; rather, a plaintiff must prove that the defendant's conduct will or dangerously threatens to produce monopoly in the second market. Judge Jackson added another, even more sweeping, basis for dismissal of the claim:

Assuming that Microsoft has an operating system monopoly and browsers are being sold competitively, Microsoft's incentive is to extract all available monopoly profits

from the OS/browser *combination*. Accordingly, it already prices its operating system at the monopoly profit-maximizing price, considering what consumers are willing to pay for the entire package. Even if Microsoft were to obtain a monopoly in the market for browsers, the profit-maximizing price for the combination wouldn't change; Microsoft could not make additional monopoly profits even by monopolizing the browser market as well.<sup>29</sup>

If even monopolizing the browser market was not anticompetitive because it could not limit output and raise the price of the package, then surely a mere shift of market share to Microsoft was also not anticompetitive.<sup>30</sup>

Judge Jackson's economic ground for dismissal of the leveraging claim is pure 'Chicago': there is only one monopoly profit to be had. A powerful firm's leveraging simply to shift market share to itself is not an antitrust problem.

But in other respects, Judge Jackson can be seen as post-Chicago; that is, as heeding the injunction against unlegitimated private power. This he demonstrated in his finding a monopolization violation based on exclusionary conduct that did not obviously reduce output of software; and by his ordering a breakup of an organically evolved firm in the new economy under circumstances in which it was not clear that the judge would do better than the market. The appellate court reversed the break-up order and affirmed much, but not all, of the liability decision.

## LIBERAL DEMOCRACY, GLOBALIZATION AND ANTITRUST

Professor Amato's dilemma of liberal democracy speaks also to the balance of power in the globalizing world. As trade barriers have lowered and boundaries at national frontiers have receded in economic relevance, the world faces two important challenges or opportunities. First, the enormous social, political and economic gains of greater world-market integration have become apparent. The European Union holds lessons for the world, even a world that desires less deep integration. Second, the international rather than national-only character of numerous transactions and restraints has led to calls for a world competition system enforced by a world agency.

Contemplation of 'the two bounds [of power] that should never be crossed' clarify the way forward in a globalized world. First, one perspective (Chicago) has deep toleration for private restraints, especially those that are vertical and exclusionary, as opposed to directly exploitative, on the assumption that they merely reshuffle buyer and supplier pairs, and may hurt competitors but normally do not raise prices to consumers. The other world view (pre- and post-Chicago) fears that exclusionary restraints will isolate national markets and entrench power, whereas implementation of access and contestability values



will open the world to cross-national penetration, lift up less well-off peoples and eventually offer the prospect of one, more harmonious world. Which, then, is the more serious error in regard to border restraints: too much government intervention to condemn them, or too much private power to maintain them?

Second, by one view, the increasing occurrence of international competition problems cries out for competition governance at international level. The proliferation of world mega-mergers exacerbates the problem; only international competition rules and enforcement can rein in firms that are bigger than nations. Others, however, assert that proposals for international antitrust will create illegitimate, unaccountable public power and will destroy the freedoms national governments ought to protect. Markets, they say, will always control private power, but no one can maneuver around the power of a mega-state.

This is the dilemma of globalization. Can we contain world private power without crossing the bound into too much public power? Can we forgo world governance over world corporations without unleashing too much private power?

The answers are sensitive to the premises. Chicagoans assert that national law, combined with markets and bilateral cooperation, are sufficient to control private power. Pre- and post-Chicagoans and the peoples of less developed nations tend to see a different reality: private power is increasingly unleashed by global liberalization, and nations are increasingly either powerless to contain it or reluctant because blinded by the race towards hegemony. Non-Chicagoans may entertain a vision of higher-than-national governance. They may respect the Chicago injunction against too much government, but, rather than renounce the vision of global governance, they may experiment with tools for subsidiarity in its design.

One or the other view might be the wiser, but one thing is clear: the world of post-Seattle does not revolve around Chicago.

## NOTES

1. See Giuliano Amato (1997).
2. *Ibid.*, at 3.
3. See Frank Easterbrook (1984), arguing that the costs of error in overenforcement are far greater than the costs of error in underenforcement.
4. *Toys 'R' US, Inc. v. FTC*, 221 F.3d 928 (7th Cir. 2000).
5. *California Dental Ass'n v. FTC*, 526 U.S. 756 (1999).
6. See *United States v. Microsoft Corp.*, 147 F.3d 935 (DC Cir. 1998); *United States v. Microsoft Corp.*, 84 F. Supp.2d 9 (DDC 1999) (findings of fact), 87 F.Supp.2d 30 (DDC) (conclusions of law), 97 F.Supp.2d 59 (DDC 2000) (final judgment), rev'd in part, aff'd in part, 253 F.3d 34 (D.C. Cir. 2001).
7. See E. Fox, 'The Modernization of Antitrust – A New Equilibrium', 66 *Cornell L. Rev.* 1140 (1981).
8. See E. Fox (1987).

9. See Fox and Sullivan (1987, 936).
10. See, for example, *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993); *Business Electronics Corp. v. Sharp Electronics Corp.*, 485 U.S. 717 (1988).
11. See next section.
12. For example, Tirole (1988); Brodley *et al.* (2000, 2239); Whinston and Segal (2000, 296); Baker (1999, 495); Riordan and Salop (1995, 513).
13. *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992).
14. *Supra*, note 4.
15. District court, *supra*, note 6.
16. *Le Page's Inc. v. Minnesota Mining & Mfg. Co.*, 2000-1 CCH Trade Cas. para. 72,846 (E.D. 2000), appeal en banc pending, Penn.
17. Matter of Intel Corp., consent order Aug. 3 1994, summarized at 5CCH Trade Reg. Rep. para. 24,575.
18. Proposed consent order agreed Dec. 14, 2000.
19. *Supra*, note 5.
20. 147 F.3d 935 (D.C. Cir. 1998).
21. 195 F.3d 1346 (Fed. Cir. 1999).
22. 2000-1 CCH Trade Cas. para. 72,795 (Fed. Cir. 2000), *cert. denied*, 121 S.Ct. 1077 (2001).
23. The Court stated that quality problems tend to arise in markets characterized by asymmetrical information, and that professional self-regulation may be necessary to prohibit advertisements that convey misleading information.
24. 526 U.S. at 778.
25. *United States v. Microsoft Corp.*, 1995-2 CCH Trade Cas. para. 71,096 at 75,244 (DDC 1994) (consent decree).
26. *United States v. Microsoft Corp.*, *supra* note 6, esp. findings 166, 169 (DDC 1999, 2000).
27. *United States v. Microsoft Corp.*, 147 F.3d 935 (DC Cir. 1998).
28. Ironically, had Microsoft agreed to settle the contempt case along lines of the short-lived preliminary injunction (that is, if Microsoft had agreed that, if it offered the bundled product, it would also offer the two products separately and let consumers decide), it would have sidestepped the Microsoft 'litigation war' that nearly ended with an order to break up Microsoft. See note 6 *supra*.
29. 1998-2 CCH Trade Cas. para. 72,261 at 82, 686.
30. While not acknowledged by Judge Jackson, the same reasoning would discredit the tie-in prohibition in the 1995 consent decree, the Section 1 violation (later) found by Judge Jackson to result from Microsoft's tie of its browser with its operating system, and the Section 2 attempt to monopolize violation (later) found by Judge Jackson to result from Microsoft's failed attempt to procure Netscape's agreement to abandon the Microsoft-compatible browser market.

Note that the states' leveraging claim was in addition to the claim by all plaintiffs that the same conduct frustrated Netscape's plan to develop middleware and therefore increased Microsoft's power in the operating system market. At trial, the latter claim formed the core of the governments' case.

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## 5. The bounds approach to antitrust

**Patrick Van Cayseele\***

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### INTRODUCTION

In this chapter, I investigate to what extent an antitrust policy that aims at breaking up cartels does better than a laissez-faire approach that relies on entry. The answer to this question will depend on a variety of assumptions, and hence will be different for each industry. Nonetheless, the aim of this chapter is to provide an answer that holds across a broad run of industries. Progress towards this goal can be made if one is willing to accept that the question is answered only by indicating the limits of what cartel enforcement can achieve relative to the laissez-faire. This is in line with what has recently been done in the context of going for the game-theoretic foundations of the old industrial organization, or the ‘bounds approach’, see Sutton (1997).

The ‘bounds approach’ in general aims at providing foundations for structuralist views such as the one that, in industries with high barriers to entry, increasing concentration justifies antitrust action.<sup>1</sup> The bounds approach can also be extended for identifying the appropriate antitrust actions to follow, and that is precisely what I intend to demonstrate. I will use a key element from Sutton (1991), viz. a strong mechanism called the  $P(N)$  function, to shed light on the role of entry and the limitations of anti-cartel enforcement rules, a topic very much flavored by the Chicago tradition.<sup>2</sup>

The organization of the chapter is as follows: I introduce the approach in the next section by reflecting on the general philosophy of the methodology, elaborating on a key element of theory, and briefly mentioning other elements and extensions which serve to show the limits of the methodology in the present chapter. In the third section, I provide a graphical characterization of the particular issue I address. In the fourth section, I analyze the possibilities of a model by Deneckere and Davidson (1985), by investigating it within the bounds approach tradition. This enables me to show some theoretical bounds that exist for anti-cartel enforcement rules. In the fifth section, a synthesis of empirical work on the matter is given, while in the sixth and final section conclusions and topics for further research are provided.

## THE BOUNDS APPROACH

Industrial organization economists have long realized the limitations that exist when analyzing industries from a structuralist viewpoint. Antitrust trials and subsequent defenses have created a unique interaction of economic arguments which has led to the conclusion that it is hard to evaluate industry performance by only looking at a few structural criteria like barriers to entry and concentration. For a survey, see Van Cayseele and Van den Bergh (2000). Proper game-theoretic analysis of oligopoly models shows that often multiple equilibria exist and that equilibrium properties can change drastically if the assumptions are just slightly changed. This implies that an outside observer of industry outcomes cannot always infer properly what conduct is taking place and that it is very hard to forecast, for example, the effects of a merger, unless the rules of the game are, for some reason or another, very well known.

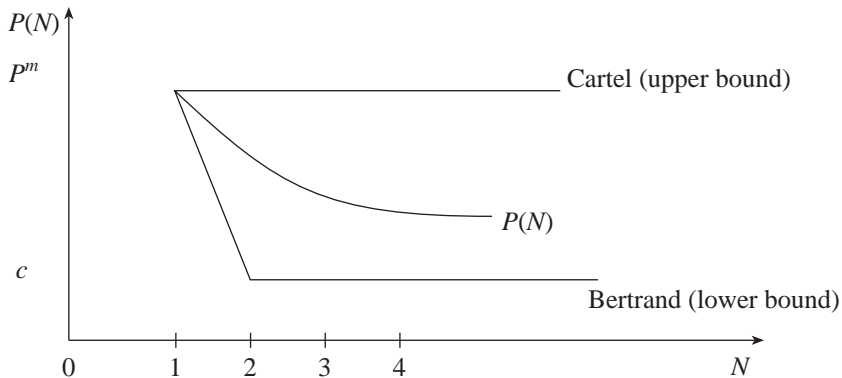
These observations imply that there is a tradeoff between the ‘realism’ and the ‘relevance’ of models. The ‘realism’ of a model relates to the accuracy of the predicted outcome, while ‘relevance’ pertains to the applicability of the results that follow from a model; see Sutton (1997). Therefore some models of particular industries will be very impressive in their power to explain observations from reality, but the insights obtained will not extend to other sectors. Other models only yield opaque predictions, but they can be applied to nearly every industry owing to their robust character.

The group of models that seek very accurate predictions for particular industries are often called the New Industrial Economics, or the New Empirical Industrial Organization (NEIO). The classic textbook by Tirole (1988) provides a detailed account of these models. New Empirical Industrial Organization models exist for a variety of industries: electricity markets, the diamond industry, banking and finance, cars, offshore oil tracts, ready-to-eat cereals, the film industry, and many others. For antitrust purposes however, this is no guarantee that the appropriate model to evaluate a merger is readily available. Given the dependence of the outcomes on details of the environment, it is by no means certain that a model calibrated on data generated in one jurisdiction during a certain period can be transposed to another country, a few years later. That, together with the urgent need to reach a decision either approving or blocking a merger,<sup>3</sup> implies that NEIO models tend to have the status of providing necessary background information for the economic effect of a merger. But they will only allow us to make an educated guess, unless we can complement the model with the particular elements of competition in the jurisdiction and for the time period that the case is being investigated. For example, excellent studies on the US car industry provide valuable insights on how car manufacturers compete in terms of price and non-price competition, as well as on the relevant submarkets, see Berry *et al.* (1995). Yet they cannot

be used for evaluating a merger between car manufacturers in the EU since submarkets here tend to be segmented not only by type but also by country. This triggers a richer set of strategies for car producers, enabling them to price discriminate, exploiting ‘local’ preferences and tax differentials, see Verboven (1996).

Thus, for policy purposes, we need models that have a more universal applicability, and that yield predictions which are more robust with respect to changes in the underlying assumptions. This is precisely what the bounds approach tries to achieve. Within this approach, one accepts that predictions can only be given within certain bounds, but these predictions continue to hold across a variety of different industries. Realism is traded off against relevance. The result is a set of correct but less fine predictions that directly allow us to gain insight into the effects of structural changes in an industry. That is, regardless of further detailed investigations of the conduct of the relevant players in the recent past, we can forecast the outcome of, say, a merger, at least within certain limits.

These limits can be very coarse, as illustrated by a particular ‘strong mechanism’, the so-called  $P(N)$  function (see Sutton, 1991). This mechanism lays down a relationship between the equilibrium price  $P$  and the number of players in an industry  $N$ . The  $P(N)$  function is non-increasing and lies between the monopoly price and marginal costs (see Figure 5.1 below). These claims are justified by the fact that more players in an industry will exert downward pressure on prices (although Rosenthal, 1980, provides a counterexample). The bounds are derived by noting that, if players form a cartel in which they all participate, price will be at the monopoly level no matter how many suppliers



where  $p^m$  denotes the monopoly price and  $c$  is marginal cost

Figure 5.1 A  $P(N)$  function and its bounds

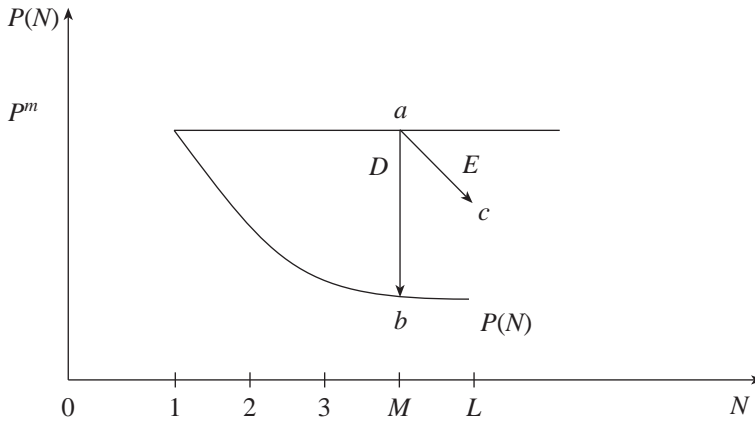
there are (upper bound).<sup>4</sup> And the lower bound is given by noting that, when the goods are homogeneous, and in the absence of capacity constraints, Bertrand competition yields marginal cost pricing, when there is more than one supplier in the industry (lower bound).

The mentioning of the condition that the lower bound is given by Bertrand competition with homogeneous goods already suggests that, besides the conduct (cartel-like behavior versus fierce price competition in the Bertrand mode), other elements also determine whether the  $P(N)$  function for a particular industry will be near its upper or lower bound. In the fourth section, I present a model where the product differentiation parameter determines the precise location of the  $P(N)$  function. As an extreme case, when there is no product differentiation the lower bound results, and as another extreme case, with very pronounced product differentiation, the upper bound comes out. Before that, the next section illustrates graphically how the  $P(N)$  function will be used to provide an upper bound to the efficiency of antitrust policy.

## THE BOUNDS TO ANTITRUST: A GRAPHICAL ANALYSIS

As economists, we focus very often on market failures, and when detecting them often quickly jump to a conclusion: governments should do something. This approach misses the fact that governments may also fail in what they undertake. De Bondt (1980) was one of the first to classify government failures: sometimes interventions lack effectiveness (they do not reach the target they intend). Sometimes, they simply are not efficient (there are other approaches which reach the same target in a less costly way to the economy). More recently, Hylleberg and Overgaard (1998) stress in this context that competition per se should not be the goal of competition policy, but rather the provision of the appropriate incentives for firms to innovate, introduce new products, cut slack and minimize costs.

Following this philosophy, I ask whether there exists an upper bound to the efficiency of antitrust action, assuming it is effective. In particular, I characterize the *relative* efficiency of antitrust policy in dealing with cartels. I assume that the antitrust authority can break up cartels and move an industry from its upper bound to the  $P(N)$  function that is obtained for non-cooperative conduct in supplying differentiated goods.<sup>5</sup> As argued above, this  $P(N)$  function will lie above the lower bound in Figure 5.1, which is obtained for homogeneous goods. The relative efficiency is obtained by comparing with a *laissez-faire* outcome where entry is called upon to contest the high prices of the cartel. This immediately illustrates that the *laissez-faire* is not anti-interventionist: it relies on other players, currently outside the market, but it also requires an authority to monitor entry barriers. So, either the antitrust authorities directly attack the



*Note:* Points  $a$ ,  $b$  and  $c$  denote respectively the initial industry configuration, the configuration after the antitrust authority took up the enforcement of anti-cartel rules and, finally, the configuration where the cartel authority relies on entrants contesting the cartel.

*Figure 5.2 An alternative to antitrust action*

cartel, for instance by controlling mergers, or they tackle all strategic barriers to entry.<sup>6</sup> The chapter thus compares two different approaches to antitrust action: on the one hand the direct attack on cartels, on the other hand the indirect attack, where the authority tries to establish market contestability by eliminating barriers to entry so that new rivals can and will enter against the cartel.

The two approaches can be represented graphically by making use of a  $P(N)$  function diagram (see Figure 5.2). Here, the arrow marked  $D$  stands for the effect of direct antitrust action: the authority, breaking up the cartel, pushes prices down to the non-cooperative level, as given by the relevant  $P(N)$  function. Since behavior is non-cooperative and since we focus on the free entry equilibrium, the number of firms does not increase beyond  $M$  by assumption. Or the sunk (and unobservable) costs of entering the market are such that only  $M$  firms can survive in a non-cooperative equilibrium.

This is in contrast to the effect of entry, marked in the figure as  $E$ . While against the non-cooperative configuration established by antitrust intervention, where entry is not viable beyond  $M$ , it will still be interesting to enter against a cartel. This drives down the prices along a different path, viz. the one in which the cartel continues to collude but now is confronted with a group of entrants. Since we again consider the free entry equilibrium, the process of entry will continue until the last entrant entering against the cartel is able to recoup his sunk costs.

By comparing the price levels associated with, respectively, the direct and



entry effect (that is the vertical coordinate of the points  $b$  and  $c$ ), we have a measure for the relative efficiency of antitrust action, or a ‘bound’ to what antitrust action can achieve. Indeed, the fact that antitrust action is taken is sufficient to reduce the attractiveness of the industry and thereby the competitive force of entry. This ‘limits’ the efficiency of breaking up cartels and therefore puts a bound upon what antitrust action can achieve when directly tackling cartels.<sup>7</sup>

The rest of this chapter is devoted to characterizing industry configurations  $b$  and  $c$  in Figure 5.2, comparing them, and providing an indication of the relative magnitudes of the  $D$  and  $E$  effects. In order to compute magnitudes, one needs a model. The next section is a guide to a class of models that can be justified in terms of robustness. It is explained why, for a variety of environments, the model proposed will indeed provide an *upper* bound to the relative efficiency of antitrust action.

## THE BOUNDS TO ANTITRUST: ANALYSIS

In this section I introduce the model and analyze its predictions regarding the relative efficiency of antitrust action. In a series of preliminary remarks, I pay particular attention (a) to showing robustness vis-à-vis the upper bound criterion, that is demonstrating why, under alternative assumptions, direct antitrust action will be less efficient; and (b), related to that, explaining how the methodology that I use avoids as much as possible the problem of ‘unobservables’.<sup>8</sup> Then I provide some formal aspects of the theory.

### Preliminary Remarks

The model I favor for analyzing these issues is one of global Bertrand competition. To the layman, this means that I focus on industries in which price is the strategic variable, and in which all brands compete in the same way with each other. To the expert, it means I will analyze a game with upward-sloping reaction functions, in which every consumer compares all the brands in the industry before buying. The reason for focusing on Bertrand (as opposed to Cournot) competition are twofold. The first is an intellectual one: price competition between differentiated goods simply is observed more often than quantity competition, and does not need to rely on economic institutions that are seldom observed, such as a Walrasian auctioneer. Even as Cournot models approach price setting-games with capacity constraints, they do so only under very limiting conditions (see Davidson and Deneckere, 1986).

The second reason is the more important one in view of what the present chapter is attempting to establish: with price competition, the appropriate

incentives to form cartels are present. At least since Salant *et al.* (1983), it has been known that, in quantity-setting games, the formation of cartels is made problematic by the fact that the incentive to organize for collusion is absent.<sup>9</sup> The reason is that firms who choose to form a cartel and restrict output in a quantity-setting game face expanding rivals, at least in the absence of capacity constraints (see Perry and Porter, 1985). This destroys their profits. In a price-setting game, this is reversed: players have the appropriate incentives to join cartels, for upward-sloping reaction functions induce outsiders also to increase prices; see Deneckere and Davidson (1985). When investigating the upper bound of antitrust efficiency, it is therefore appropriate to make sure that incentives to form a cartel are present to start with. Or, to put it in a different way, those industries which do not fit this structure will benefit less from antitrust action, the reason simply being that there will be no cartels because of the lack of incentives to form them.

The reason for focusing on a model of global competition, that is, one in which all brands compete with one another in an equal way has to do with avoiding the difficulties that arise with comparing consumers. A cartel will affect all consumers equally if the brands compete globally. This is not the case in a model with local competition when the cartel is between firms who cater for the same consumers. Those having strong preferences for a certain brand will be harmed if the firm producing it colludes with its most 'close' rivals, for the consumers will face equally expensive 'alternatives'. Other consumers who have a different taste may not be affected by the cartel at all. Therefore the incentives to form a cartel are most pronounced between firms producing close substitutes. But the incentives to entrants to locate near cartels are equally more pronounced. Without claiming that each and every consumer therefore is equally affected by direct antitrust action and entry, it is fair to say that both forces go in the same direction: consumers strongly affected by a cartel by the fact that they prefer the brands controlled by the cartel will benefit most from the antitrust authority breaking up the cartel, but also will attract most of all entrants. Consumers having no taste for the brands controlled by the cartel are not harmed, but will not attract additional entry either. The model of global competition introduced formally below is seen as representing the effects of direct antitrust action and entry on an 'average' consumer.<sup>10</sup>

A further remark is related to the behavior of the entrants in analyzing the 'Entry' mode. If the entrants join the cartel, there is of course no disciplining effect resulting from keeping the market contestable. Entry will continue until the cartel profits divided by the number of firms are equal to the sunk entry costs. The relative efficiency of direct antitrust action would simply be equal to its absolute effect or, in relation to Figure 5.2, a comparison of the vertical coordinate of the point *b* with the vertical coordinate of point *a*, since the vertical coordinate of *c* would be the same anyhow. Some will perhaps argue that,

in terms of robustness, the assumption that the entrants join the cartel is the proper one to make in order to characterize the true upper bound of efficiency.

Given the particular format for entry I have in mind, it makes sense not to assume that the entrants join the existing cartel. In particular, in relation to the empirical work that has been done and that will be discussed in the next section, I assume entry comes from firms who do not join an incumbent cartel. Strong analytical reasons can be given to sustain the hypothesis that the entrants will not join the existing cartel. In particular, Deneckere and Davidson (1985) show, in the corollary to their Theorem 3, on p. 481 how the payoffs to a member of coalition  $B_i$  are smaller than the payoffs to a member of coalition  $B_j$  if the size of  $B_i$  exceeds the size of  $B_j$ . But then, of course, the entrants have an incentive not to join the cartel and ‘free-ride’ by enjoying higher prices while staying out.

The next question then is: how do the entrants partition among themselves? There are incentives to form a cartel amongst themselves, but the free-riding possibility to be enjoyed by staying out is still present. Again, if one was after a precise prediction of the industry outcome after entry, one would need to make a behavioral assumption. A repeated game approach, for example, could be followed, including elements of detection and punishment of cheaters, hence endogenizing an optimal cartel size. One certainly would run into problems of observability. Alternatively, one could look explicitly at coalition formation games (see, for example, Bloch 1996). This equally implies imposing more structure upon the entry process.

By focusing on the characterization of an upper bound on the efficiency of direct antitrust action, however, the natural candidate for entrant behavior is the one which makes direct antitrust action as efficient as possible. Again from Deneckere and Davidson (1985), Theorem 3, it is known that  $P_i \geq P_j$  if the size of the coalition  $B_i$  is equal to or bigger than the size of the coalition  $B_j$ . The highest entrant prices (making entry the least effective in disciplining the incumbent cartel) therefore are achieved with a coalition structure in which all entrants also join a cartel, the entrant cartel.

Point  $c$  in Figure 5.2 above therefore reflects a situation where an incumbent cartel of  $M$  firms competes with an entrant cartel of size  $(L-M)$ . (Since this will entail two prices, the vertical coordinate of point  $c$  is to be seen as an output weighted average of the two prices – cf. the formal analysis below.) So the industry configuration after entry has taken place against the incumbent cartel is composed of two groups of firms, respectively of size  $M$  and  $(L-M)$ , who compete between groups, but collude within each group.

For the empirical work surveyed in the next section and linked to the present chapter, there are good institutional reasons to maintain the double cartel approach. Often the incumbent, domestic cartel will be organized around a domestic federation or within a sectorally organized trade union. The

exporters on the other hand often have a common agent, or are themselves organized within a trade union.<sup>11</sup>

A final remark before entering into the formal details of the model involves another variable which is difficult to observe, viz. entry costs. By assuming that the enforcement of anti-cartel laws brings the industry to the free-entry equilibrium with  $M$  firms, that is, point  $b$  in Figure 5.2, it becomes possible to equate firm profits in a non-cooperative industry configuration with  $M$  firms with firm profits in an industry configuration with two cartels, composed by, respectively,  $M$  and  $(L-M)$  firms. The reason is that, if there is no further entry after cartel laws have been enforced, it must be that in non-cooperative equilibrium firm profits just cover entry costs. But exactly the same holds in the free entry equilibrium where the foreign firms enter against the domestic cartel. Therefore, for any number of firms,  $M$ , who can survive in a non-cooperative environment, we can determine the number of foreign entrants  $(L-M)$  without knowing the magnitude of entry costs explicitly. When we know  $(L-M)$ , we know  $L$  and we can determine the coordinates of point  $c$  in Figure 5.2, as required.

In summary, then, Table 5.1 explains the key elements of the methodology I propose to follow. The left-hand column outlines the problem briefly. The right-hand column explains the solution proposed.

## SOME ELEMENTS OF A FORMAL MODEL

The model used to provide an indication of the relative efficiency of the two policy approaches is based on Van Cayseele (2000), and has the following characteristics:

1. Firms compete in prices (*à la* Bertrand).
2. Brands compete with each other in a global way, that is, each brand is an equally likely substitute for any other (*à la* Chamberlin).
3. There are no entry barriers, that is, one can focus on free entry equilibria.
4. Entrants against any cartel collude amongst themselves.

The starting point is consumer preferences. I choose to start with the symmetric demand system specified by Shubik (1980) which was also used by Deneckere and Davidson (1985) to show the propensity to collude in price setting games. In general, such a system reads as

$$q_i = f \left( p_i, p_i - \frac{1}{N} \sum_{j=1}^N p_j, \gamma, N \right), \quad (5.1)$$

Table 5.1 Some key elements of the methodology

Problem	Solution
1. Unobservability of conduct: incumbents	Quantity competition models do not provide proper incentives to form cartels, hence antitrust action will have the least effects in those industries. Hence focus on price competition models which represent industries with the appropriate incentives to collude.
2. Unobservability of conduct: entrants	Aim is to provide an upper bound on relative efficiency of policy options, in particular of direct antitrust action; hence assume conduct which is making entry least effective in disciplining the cartel.
3. Unobservability of tastes	Focus on a model where entry affects all consumers in the same way, rather than on a model where some consumers benefit strongly while others do not benefit at all.
4. Unobservability of the entry costs	Equate two free entry equilibria: one in which $M$ firms play non-cooperatively with one in which two cartels compete, each cartel including $M$ and $(L-M)$ firms who collude.

where

- $q_i$  denotes the quantity sold by the  $i$ th firm (that is, the firm selling brand  $i$ ),  
 $p_i$  denotes the price charged by the  $i$ th firm,  
 $p_j$  denotes the price charged by the  $j$ th firm,  
 $N$  denotes the number of firms in the industry,  
 $\gamma$  is a parameter that reflects the degree of product differentiation in the industry.

For particular values of  $\gamma$ , each brand becomes an independent submarket of its own. The producer of the brand will not have to take into account the actions of its rivals and hence can charge the monopoly price regardless of the number of competitors. In the case of inelastic demand, this will be the choke

price. For other values of  $\gamma$ , a homogeneous goods industry is approximated. Here, the slightest increase in one's price over those charged by any rival will imply that the firm loses all sales. Hence, even with only two firms in an industry, the competitive price will result, as with Bertrand competition in homogeneous goods without capacity constraints.

In Figure 5.3 below, parameter values for  $\gamma$  have been introduced in order to show how they shift the  $P(N)$  function. In relation to Figure 5.1, it clearly shows how industries with cartels are observationally equivalent to industries composed of many independent submarkets. Figure 5.3 further shows how, conditional on  $\gamma$ , the potential price reduction that can be achieved by breaking up the cartel can be made arbitrarily small or large. When  $\gamma$  takes on very low values, breaking up the cartel simply will not move industry away from the horizontal line at the  $p^m$  level. There is scope neither for direct antitrust action nor for entry, since entrants also will charge  $p^m$ . The efficiency of both policies thus will be the same: nil. When  $\gamma \rightarrow \infty$ , the scope both for direct antitrust action and for entry is substantial, yet different in magnitude. This preliminary analysis already shows that, when we derive a measure of relative inefficiency, it will depend on the possibilities opened up by the magnitude of product differentiation,  $\gamma$ .

When there are  $M$  firms competing in prices and facing a demand system such as the one given by (5.1), it is easy to show that, in a symmetric non-cooperative equilibrium, they will all charge an equilibrium price that only depends on  $M$  and  $\gamma$ , or

$$p_i + g(M; \gamma) \quad \forall i. \tag{5.2}$$

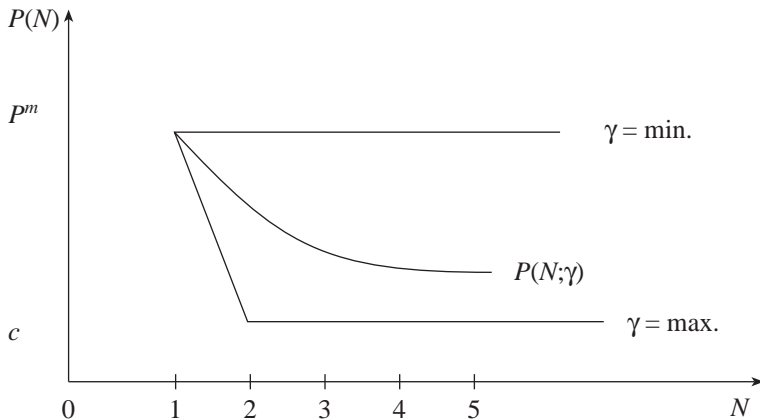


Figure 5.3 The  $P(N)$  function parameterized on  $\gamma$

For a particular format of (5.1), in a symmetric equilibrium, each firm will sell 1 unit, and hence profits are also given by *RHS* (5.2).

The next step is to depart from the symmetric equilibrium and investigate the case where two cartels each charge their optimal price. This implies that conduct changes from a non-cooperative mode into a cooperative one, at least for the firms belonging to the same group. Between the two groups, the prices continue to be determined in a non-cooperative way. For this case, it is easy to show that the optimal prices follow the reaction functions of the following type:

$$r = h^1(L, M, p; \gamma), \quad (5.3)$$

$$p = h^2(L, M, r; \gamma), \quad (5.4)$$

where

$M$  denotes the initial number of (domestic) firms in the industry,

$L$  denotes the total number of firms in the industry, hence  $L-M$  is the number of (foreign) entrants,

$r$  is the price charged by the (foreign) cartel,

$p$  is the price charged by the (domestic) cartel.

The game studied so far is one of strategic complements and hence the reaction functions are upward-sloping. For a variety of explicit specifications of (5.1), they will be linear and the slopes will be equal. The difference is in the intercept. Whenever the domestic cartel has more members than the import cartel, or  $M > L-M$ , the intercept of (5.4) will exceed the intercept of (5.3), implying that the incumbent cartel charges a higher price, as can be seen from the Nash equilibrium implied by (5.3) and (5.4).

In Figure 5.4, the Nash equilibrium is shown for the domestic cartel having more members than the cartel of foreign entrants. As mentioned already, Deneckere and Davidson (1985) in their Theorem 3 provide an exact relationship between the price charged by any coalition and its size.

At these equilibrium prices, it is easy to compute what the incumbent cartel member sells. Also what the entrant cartel member sells can be found by substituting the expression for the equilibrium prices in the demand system. By the same token, it is possible to find the associated profits for both an incumbent and an entrant cartel member. This last magnitude especially is important, since entry will occur until

$$\pi^E = F. \quad (5.5)$$

But as argued already,  $F$  is hard to observe. Furthermore, if entry should occur after direct antitrust action has taken place, the two policy approaches are hard

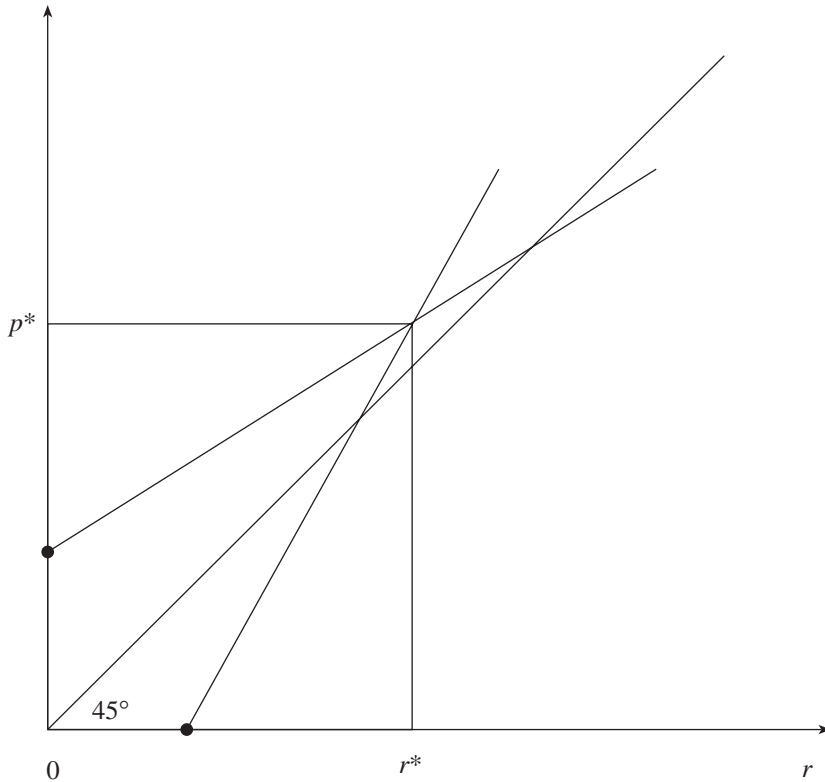


Figure 5.4 The Nash equilibrium  $(p^*, r^*)$  of the pricing game with  $L > M$

to disentangle. Therefore the logical assumption to make is that the following equality is satisfied:

$$RHS(5.2) = F. \tag{5.6}$$

This equation says that, initially,  $M$  firms have entered because there was no room for  $M + 1$  to survive. Equating (5.5) and (5.6) allows for the computation of the entrant cartel size  $(L - M)$ , as a function of  $M$ .

Without direct antitrust action, the industry then will be composed of  $L$  members, with  $L$  also given from equating (5.5) and (5.6).<sup>12</sup> Next, the  $P(M, E)$  function is defined as:

$$P(M, E) = w^C p + w^E r, \tag{5.7}$$



where  $p$  and  $r$  have been defined above and  $w^C$  and  $w^E$  denote the weights of the incumbent and entry cartel in total output.

The values for  $P(M, E)$  range from 0 (with  $\gamma$  maximal, the homogeneous good case) to (with  $\gamma$  minimal, products are completely independent from one another). For any given  $\gamma$ , the  $P(M, E)$  function decreases as one moves from duopoly to a very large number of firms (decreasing concentration decreases  $P(M, E)$ ).

As a yardstick with which to compare, consider the price that will result from direct antitrust action; that is, when the authorities break up the cartel. This is given by (5.2), by definition, for it is the non-cooperative symmetric equilibrium, in which all firms get equal weights as they all sell the same quantity.

The values for  $P(M)$  again range from 0 to . The largest difference between direct antitrust action and entry is given by

$$\Delta P = P(M, E) - P(A). \quad (5.8)$$

This magnitude is the upper bound on direct antitrust action. It is always positive because it can be shown that the highest price obtained under entry will exceed the lowest price attainable by breaking up the cartel. The scope for direct antitrust action can be characterized by analyzing equation (5.8). For some particular choices of (5.1), this can be done analytically. In other cases, numerical solution techniques are needed. In general, out of these efforts one gets the following proposition, which is given here without proof.

*Proposition: the scope for direct antitrust action over entry is larger as the initial concentration in the industry is lower and the products sold are more heterogeneous.*

Intuitively, the last result is the easiest one to explain. When products in an industry are more differentiated, entry will affect prices least of all. While the difference between the cartel and non-cooperative prices will also be small, and hence the scope of direct antitrust action also limited, entry will nonetheless stop quickly and have a lesser result. The formation of an entry cartel does not make entry more profitable than when no such cartel is formed. Hence, vis-à-vis the initial configuration in which  $M$  firms have entered, not many additional entrants will present themselves. Moreover, each of them has very little effect on prices. To illustrate this case and thereby the model even further, consider the limiting case where the industry is composed of  $M$  almost independent submarkets. Each of these firms charges almost the monopoly price. Now they form a cartel. This brings the price to the monopoly level, and slightly higher than what they charged initially. Direct antitrust action then has

little affect, but entry has no effect at all, for it will not take place, owing to the fact that, if the  $M$ th firm in an industry charging close to the monopoly price just breaks even, there is little room for an additional firm. And, should it enter, its weight in the industry price index is  $1/M + 1$ , against  $M/M + 1$  firms charging the cartel price. So whereas direct antitrust action has little effect, the effects of entry are negligible or even zero.

The result that direct antitrust action has most effect when initial concentration is low deserves some further elaboration. From a policy perspective, it implies that antitrust authorities should focus their attention on fragmented industries, which runs against the general opinion. Nonetheless, the effect again can be explained quite intuitively. The upper bound approach focused on a post-entry scenario with two cartels. Even in an industry with many firms, this outcome is not very competitive, for every firm belongs to a cartel, and only the cartels compete. Certainly, when compared to an outcome with many firms competing, the entry solution will not be as competitive. When concentration is higher and fewer firms initially are in the industry, the beneficial effects of entry tend to be more important. Few firms point to substantial entry costs. The cartel of entrants overcome these high entry costs by making substantial profits that justify entry to all its members.

## THE EMPIRICAL ANALYSIS OF ANTITRUST ACTION

In this section, I comment on a few empirical studies that can be seen as tests of the theory developed in the previous section. The link between theory and empirical research can be seen as a loose one. Future research should go into the details of translating the model presented in the previous section, into empirical work. Besides discussing the empirical studies done to date, I also focus on ‘natural’ experiments documented by others, which offer indirect evidence for the causalities documented earlier.

### **Empirical Studies**

Recently, very interesting econometric work has been done regarding the direct estimation of markups in industry. This research has important implications for policy making. Rather than having to rely on concentration ratios, the estimation of the price–cost margin directly tells how far an industry is from the competitive outcome. Within this approach, several methodological improvements have been made recently. In a nutshell, starting with the work of Hall (1988), a series of papers have estimated price–cost margins in a variety of countries. Belgium, France, Italy, the Netherlands and the USA, as well as transition countries, have all been covered in a series

Table 5.2 A comparison of price–cost margin estimates in European and US manufacturing: a sample of industries

Industry	Belgium <sup>a</sup>	France <sup>a</sup>	Italy <sup>a</sup>	US <sup>b</sup>
Tobacco	0.22**	–	–	0.64***
Textiles	0.26**	0.32***	0.38***	0.26***
Lumber and wood	0.15**	0.30***	0.21***	0.43***
Paper and allied products	0.29**	0.24***	0.31***	0.36***
Printing and publishing	0.26**	–	0.39***	0.29***
Chemicals	0.25**	0.28***	0.19***	0.53***
Machinery except electrical	0.19	0.27***	0.19***	0.29***

*Notes:*

\*\*\*/\*\* indicates statistical significance at the 1%/5% level.

<sup>a</sup> For Belgium, France and Italy, estimates are on a panel or firm data, for the period 1992–6, see Konings *et al.* (2001) and Roman (1999).

<sup>b</sup> For the USA, estimates are at the sectoral level for the period 1953–84; see Roeger (1995).

of studies. Table 5.2 provides a survey of the results for comparable industries. In all of these studies, the methodology has taken into account the criticism of Hall regarding the proper use of instruments. Also the inclusion of materials costs (see, for example, Domowitz *et al.* 1988), as well as other corrections have been made. For further methodological developments, see, for example, Roeger (2000). For a comparison of different OECD countries over the business cycle, see Martin and Scarpetta (1999).

Besides giving an idea of the markups charged in certain industries, and hence some guidance to potential antitrust action, these estimates can also be analyzed from a dynamic perspective. This is precisely what is done in Konings *et al.* (2001), where the evolutions of markups are studied for two open countries, before and after antitrust authorities were established. The results are strikingly different. In Belgium, price–cost margins are unilaterally lower than in the Netherlands and have not decreased after the installation of an antitrust authority in 1993. In sectors with strong import penetration (foreign entry), the price–cost margins are significantly lower.

In the Netherlands, a completely opposite picture emerges. Price–cost margins used to be high, and were not affected by foreign entry as measured by import penetration. But they started to decline after the antitrust authority was installed. While several competing explanations for this phenomenon can be given, at least one explanation is consistent with the predictions of the theoretical model presented in the previous section. In particular, for many industries, the supply of Dutch firms is more differentiated than its Belgian

counterpart owing to the fact that it consists more of finished rather than semi-finished goods or intermediate inputs. In chemicals, for example, the Belgian players tend to be the producers of the bulk goods, while the Dutch deliver the branded specialties. Other examples of industries exhibiting the same pattern abound in the sample underlying the empirical analysis.

### Natural Experiments

In an article on the estimation of price–cost margins, Bottasso and Sembenelli (1999) investigate the impact of the EU Single Market program on a large sample of Italian firms. The study identifies two groups of firms: those sensitive to the Single Market program, and those not. For selecting the sensitive industries, criteria such as the height of non-tariff barriers have been used. But also criteria such as the price dispersal for identical products between member states and the level of intra-EU trade were used.

The findings are that, indeed, the Single Market program has reduced the market power of the firms operating in sensitive industries. Conversely, on firms operating in non-sensitive industries, the Single Market program, trying to stimulate foreign entry, has had no effect. Their market power resisted.

Now it is easy to argue that the classification of industries as ‘sensitive’ and non-‘sensitive’ to a certain extent runs parallel with a classification of industries according to the degree of product heterogeneity. The mere fact that ‘price differentials of *identical* products between member states’ was in the list of criteria suggests that sensitive industries often produce ‘homogeneous’ goods. Therefore the outcome could be rephrased as ‘foreign entry was effective in industries with low product differentiation’ or ‘foreign entry was not effective in industries with strong product differentiation’. This is clearly what the main theorem states.

## CONCLUSIONS

This chapter has taken a Harvard-like approach to an important element of Chicagoan antitrust economics. This keystone element is of a laissez-faire nature: why intervene, in the absence of important sunk costs? Entry will do its job and discipline cartel-like behavior. This argument was taken beyond the analysis of a single industry, by focusing on an upper bound on the efficiency of direct intervention over entry. This makes it possible to write down statements regarding efficiency which hold good for all industries, and depend only on a few structural elements of that industry.

The often crucial but unobservable elements, conduct and entry costs, can be circumvented in this new approach, yet at the cost of only being able to

provide an upper bound on the efficiency of intervention. For policy purposes, in particular for guiding antitrust action to address particular industries, this is worthwhile. Together with the recommendation that the possibility of entering an industry should always be available, that is in every industry the erection of entry barriers should be forbidden, the recommendation is that antitrust authorities should watch over the formation of cartels in highly differentiated product industries with low concentration. The fact is that in some countries this has been the case, resulting in more effects of antitrust action than in other countries. These first empirical analyses therefore do not reject the predictions of the theoretical model.

## NOTES

- \* The viewpoints expressed in this chapter are by no means binding for the Belgian Antitrust Authority and merely reflect the personal opinion of the author. Valuable research assistance given by F. Warzynski is gratefully acknowledged. Comments by R. De Bondt, M. Goos, J. Konings and especially C. Whelan have been much appreciated. All errors are mine.
- 1. This derives from the prediction that increased concentration will lead to higher price cost margins, and hence reduced consumer welfare that is not entirely compensated by increased profits due to deadweight losses. For just one challenge to this view, see Bork (1978).
- 2. An alternative title for this chapter could have been: 'Using Harvard's approach to generalize Chicago's views'. Since I do not like the overemphasis of some on 'Schools' (in my view it only diverts attention away from the analytical foundations of a contribution), I prefer the current title.
- 3. Decisions often need to be taken in a few weeks, for reasons of avoiding legal uncertainty. As long as the merger has not been approved by the appropriate authority, companies cannot change anything structurally; for example, they cannot integrate business lines.
- 4. Although the problems of discipline in large cartels or cartels with finite horizons have been known at least since Stigler (1961), see also notes 5 and 9 below.
- 5. I do not make a distinction between a cartel and a merger, although by the formal transfer of voting rights of one firm to another, one could argue that joint profit maximization is obvious, which it is not with a cartel. The cartel has to find ways to enforce the rules, detect cheaters and punish them. In view of presenting an upper bound to the efficiency of antitrust action, the choice then would go in the direction of characterizing the antitrust action that I have in mind as merger control, the reason being that a cartel has more trouble in implementing the correlated strategies and side payments that bring about the monopoly outcome than a merged entity where in principle one decision maker directly controls the whole.
- 6. Of course, the believers in contestable markets argue the unimportance of these barriers; see Baumol (1982). An excellent and critical survey is provided by Brock (1983). By now, contestable market theory has been challenged for its lack of empirical relevance: markets without sunk costs, enabling hit and run entry, simply do not exist. Yet it is also important to note that the theoretical foundations of the model are very particular. The timing of the decisions, especially, is very crucial. De Bondt (1976) shows the implications of entry requiring time. More recently, Van Cayseele and Furth (1996) have shown that changing the assumption that consumers spot low prices before incumbents leads to outcomes drastically different from the contestable market model.
- 7. When investigating welfare effects, one should take into account that the 'Entry' approach entails welfare losses in that sunk costs are made by  $L$ - $M$  players who should not have entered if prices were 'competitive'.
- 8. The problem of 'unobservables' arises owing to the fact that both the researcher and the

policy maker are unable to observe crucial elements pertaining to any industry. Therefore the problem is related to robustness since an alternative, non-verifiable assumption could reduce efficiency of direct antitrust action. Hence, both from a policy making and a scientific perspective, one needs to avoid unobservables as much as possible, for only theories that map observables into observables can be tested properly or used for addressing antitrust action.

9. If, however, for some reason or another, a Cournot cartel gets formed, Radner (1980) shows that it may last for any period of time, provided that the number of firms is small in comparison to the lifetime of the industry. This is interesting, but does not solve the problem that cartel members reduce their profits by colluding, unless at least 80 per cent of them join the cartel; see Deneckere and Davidson (1985). Regarding cartel stability with overcapacity, see Nocke (1999).
10. The degree to which certain brands compete with other brands is to a large extent 'unobservable' to an outsider. Some consumers will consider Volvo and Saab close competitors, but others will choose between Saab and BMW, but certainly will not trade a Volvo for a BMW, while still others will consider that the closest substitutes in the market are BMW and Audi. For evaluating the harm of a particular cartel or approving a particular merger one therefore will face instances where only a model of local competition can shed light. For the general policy purposes intended here, the model of global competition gets around the 'unobservability' problems of which brands compete and where the entrants will position themselves.
11. At least in Belgium, the experience of the first six years of antitrust enforcement against cartels indeed show that nearly all of the important cases were related to practices organized by professional groups or trade unions.
12. In practice, some methodological choices have to be made. Often equations (5.5) and (5.6) result in a polynomial in  $L$  of second or higher order. Since the effect of entry should be kept to its minimum when looking for an upper bound on direct antitrust action, one should always pick the smallest root.

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## 6. Dynamic efficiency and US antitrust policy

**Rudolph J.R. Peritz**

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### INTRODUCTION

In the United States, we are witnessing two important shifts in antitrust. Both shifts result from the increased importance of innovation to competition policy, especially in the high technology sectors of the economy. First, there are tectonic rumblings shaking the very ground that has supported antitrust since the mid-1970s. That ground has been neoclassical price theory and its static model of efficient markets. The rumblings are produced by a turn to the economics of dynamic efficiency and, in consequence, by the tensions between settled concerns about price and output, and new concerns about promoting innovation and maintaining market access. Although the nearness of Mount Aetna to Taormina, the Sicilian resort where the paper for this chapter was presented, makes particularly appropriate the metaphor of tectonic rumblings, Joseph Schumpeter's more familiar image of a 'perennial gale of creative destruction' would do just as well to describe the threat to price theory's domination seen in dynamic efficiency's expanding share of the market for antitrust economics in America. This heightened attraction to dynamic efficiency has, of course, brought new concerns. Most of all, economists and policy makers are working to understand more clearly the competitive effects of innovation and its commercialization, protected by expanding intellectual property rights. More and more, their work is informed by Brian Arthur's analysis of increasing returns and path dependency.<sup>1</sup>

There is a second important shift that is reshaping US antitrust. Seen most conspicuously in the current *Microsoft* litigation, enforcement officials and scholars are turning their attention to unilateral conduct and, more generally, to the competitive effects of commercial conduct in upstream or downstream markets. In short, the vertical dimension of competition is attracting closer scrutiny. Whether *Microsoft's* contractual restraints on customers or *America Online's* merger with *Time-Warner*, such concerns should not come as a surprise because market access is now recognized as an important issue, market access as much for customers and suppliers as for rivals. Indeed, the

lines separating customer from rival and one relevant market from another have themselves become more difficult to discern. They have become more difficult for two reasons. The practical reason is increased vertical integration among already large firms, most noticeably in the converging high technology, communications and media sectors. The theoretical reason is the imperiled state of market definition itself in an economics informed by dynamic efficiency. After all, perennial gales of innovation, particularly the kinds we have seen in high technology markets in the past two decades, reshape or destroy markets. What, then, should we make of market definitions that last only as long as the next technical or entrepreneurial innovation?

These two shifts in US antitrust, one a turn to dynamic efficiency and the other an increasing concern with verticality, are already challenging current legal doctrine and influencing the federal enforcement agencies. I leave to another day an exploration of these doctrinal and institutional matters. In this chapter, I focus on the economics of innovation by examining the work of three economists. Two are widely associated with dynamic efficiency (Schumpeter and Arthur), while the third is better known for influencing antitrust economics in other ways – Edward Chamberlin. But Chamberlin, as we shall see, also had something important to say about innovation. With time and space scarce resources, the triangulation of these three economists can quickly tell us a great deal about our understandings of innovation and even more about the tensions they provoke.

Certainly, Schumpeter's call for policy that serves the 'new' has been heard loud and clear. Economists tend to agree with his claim that over time the benefits of innovation far outweigh the benefits of markets efficient in the static sense of low prices and high output. Respected scholars have called for changes in antitrust policy to take better account of the conditions that promote innovation even though some changes might threaten static efficiency by improving conditions for collusion. As well, the Antitrust Division's current case against Microsoft involves anticompetitive conduct in Schumpeter's sense, conduct stifling innovation. In contrast, the importance of Microsoft's pricing policies is clearly secondary.

As much as the Antitrust Division might have been inspired by Schumpeter's call, its head, Joel Klein, has stated that his approach to the Microsoft case was informed by the work of Brian Arthur, whose analysis of innovation differs in significant ways from Schumpeter's. Whether one understands Arthur's work as a logical extension of or a sharp break from Schumpeter's, Arthur's view of how alternative technologies compete raises new questions about innovation's efficiency and competitive effects.

This chapter is divided into three sections. In the first, I explicate Chamberlin's categorical distinction between product innovation and product differentiation, and then I compare his concerns about product differentiation

to Schumpeter's undifferentiated conception of innovation. I conclude by suggesting that these two economists' views of innovation diverge in ways that lead to different approaches to competition policy. In the second section, I examine Arthur's framework for analyzing markets in which alternative technologies compete. Because Arthur has contested the view that innovation naturally leads to dynamic efficiency, his work has challenged the recent confidence of many economists and policy makers in innovation as a reliable engine for efficient allocation of goods and resources over time. In short, Arthur's analysis concludes that commercial success can be the consequence of historical accident. One troubling implication for a dynamic economics of consumer welfare is that the better technology sometimes loses in the marketplaces of ideas and commerce. This threat of a false path, of a gap between the use value and market value of winning technologies, reflects the conflicting views of innovation taken by Schumpeter and Chamberlin in the first half of the twentieth century. At the end of the chapter, I discuss some of the policy implications embedded in the alternative conceptions of innovation that are now in play.

## INNOVATION AND THE NATURE OF THE NEW

Among economists and policy makers today, the importance of innovation to economic well-being is beyond dispute, although what constitutes real innovation remains debatable. In the book that most influenced US antitrust policy in the 1960s and early 1970s, Carl Kaysen and Donald Turner termed innovation-rich markets progressive.<sup>2</sup> But not everyone has seen the relationship between innovation and progress as linear. As early as 1933, Edward Chamberlin argued a distinction between product differentiation and product change. For Chamberlin, differentiation is a surface feature, a matter of appearances, while product change reflects substantive improvement and increased value. His mentor at Harvard, Joseph Schumpeter, refused to make such distinctions. He described his well-known 'perennial gale of creative destruction' simply as the 'new' displacing the status quo, whatever the nature of the 'new.' Since the mid-1980s, the pressures of globalization and the promise of the 'digital economy' have led economists and policy makers in the USA to take up Schumpeter's model with greater intensity, whether pursuing its policy implications or testing its empirical underpinnings.

### **Product Differentiation, Product Change and Progress**

I begin, then, with Edward Chamberlin's analysis of non-price competition. In the book that launched post-classical microeconomics in the USA,

Chamberlin simply relaxed the neoclassical assumption of a standardized product to conceive *The Theory of Monopolistic Competition*. (Of course, the other half of the book developed oligopoly theory.) A basis for distinguishing one's goods or services from those of another, he wrote, may be a 'patent or trademark, quality, packaging, design, color, style, or even conditions of sale, including location, way of doing business, reputation or personal links'.<sup>3</sup> Chamberlin further observed 'that virtually all products are differentiated'. Like a shock wave, the theory of monopolistic competition pulsed through microeconomics in the 1930s, illuminating the reality of commercial markets, the common practices of avoiding price competition not visible in light of neoclassical price theory. Often there was no invisible hand, no dominant price mechanism, that regulated densely populated markets. Instead, there was the visible hand of management plying an avoidance mechanism to differentiate products, to evade price competition and to dissolve the very perception of a market with rival firms and substitute products or services.<sup>4</sup>

The basics are familiar to all of us. In a perfectly competitive market, sellers have only two choices: sell all that they can produce at the market price or withdraw from the market. Each seller engaged in monopolistic competition, according to Chamberlin, deploys some combination of two strategies to differentiate its product and, thus, to avoid price competition. The seller can change 'the nature of his product', that is, offer a better product; or the seller can improve the reputation of its brand name through 'advertising outlays'. In each case, the intent is to persuade customers to prefer the seller's brand for reasons other than price, allowing the seller to charge them higher prices. When successful, the seller can avoid the harshest price competition. When wildly successful, the seller can charge a monopoly price.

Although product change and product advertising often go together, Chamberlin analyzes them separately. He begins with an analysis of competition by product change under assumptions that the market has numerous sellers and that buyers have perfect information and unchangeable wants. Under these rigid constraints, he posits that sellers can either compete on price, holding the product constant, or compete by changing the product, holding the price constant. He concludes that product change, whether alone or in combination with price competition, will raise both production costs and prices, but without any assurance of success. Thus increased profits are indeterminate.<sup>5</sup>

Competition by product advertising, Chamberlin recognizes, only makes sense when buyers have imperfect knowledge and when wants can be altered. In such markets, advertising takes two forms: (a) 'informative' advertising to 'channel . . . existing wants' and (b) 'manipulative' advertising to 'alter the wants themselves'.<sup>6</sup> Certainly, Chamberlin could have relaxed one assumption at a time and treated separately each form of competition by product advertising. But he did not.<sup>7</sup> Whatever his reasons, the categorical distinction between

competition by price and product change on the one hand, and competition by advertising on the other, led Chamberlin to make a normative distinction between two different kinds of non-price competition: the one product change and the other image change. This value judgment can be seen most clearly in an Appendix to the book, which is provocatively entitled ‘Some Arguments in Favor of Trade-Mark Infringement and “Unfair Trading”’.<sup>8</sup> Trade-mark laws, of course, create a property right in goodwill and, in consequence, promote product differentiation. ‘The protection of trade-marks from infringement and of business men generally from the imitation of their products known as “unfair trading”,’ he contends, ‘is the protection of monopoly’.<sup>9</sup> ‘If competition is good and monopoly bad, the conclusion would be that “unfair” competition . . . ought to be permitted and encouraged.’<sup>10</sup>

Chamberlin contends that ‘the right to goodwill is the fundamental legal right, and competition is “tolerated” only as a matter of policy’.<sup>11</sup> The goodwill in a trade-mark, as understood in the common law, is ‘any sign, mark, symbol, word or words which indicate the *origin* or ownership of an article *as distinguished from its quality*’.<sup>12</sup> It is the producer’s name that is protected, not the consumer’s expectations of the product. Although we might question this simple binary opposition between brand name and product quality, Chamberlin was certainly right in his view that trade-marks, goodwill, and product differentiation generally, constitute property rights protected from the workings of competition, property rights accruing to the brand name owner.

Chamberlin’s misgivings about competition by product differentiation are obvious in his statement that permitting trade-mark infringement would discourage ‘useless differentiation’ and reduce ‘the wastes of advertising’. Moreover, he is quick to distinguish ‘innovation’ – product changes – from product differentiation, trade-marks and other surface features. ‘As to innovation,’ he remarks, ‘there would still remain the possibility of a patent for a limited period of time.’<sup>13</sup>

In contrast to law’s protection of trade-mark monopoly, Chamberlin points to economics and its presumption in favor of competition, arising out of competition’s supposed social benefits. Trade-marks not only create selling costs without improving product quality, they also impede ‘the natural flow of capital under competition to check the profits [of producers] and to adjust the supply of the commodity to the demand for it at cost’.<sup>14</sup>

In consequence, trade-marks, goodwill and product differentiation generally throw a wrench into the price mechanism, shutting down the ‘natural’ process of competition. The result of permitting trade-mark infringement and discouraging product differentiation generally, Chamberlin concludes, would be ‘a closer approach to those beneficent results ordinarily pictured as working themselves out under “free competition”’.<sup>15</sup>

In sum, Chamberlin viewed innovation in terms of product change, which

improves quality and thus reflects real progress. Product differentiation, in sharp contrast, is ‘manipulative’ and often ‘useless’ and ‘waste[ful]’. For him, economic inefficiency lies in differentiation without innovation, form without substance. Simply product proliferation was not enough. Therein lay the problem.

### **Perennial Gales of the New**

For Joseph Schumpeter, the proliferation of products was not the problem but the solution. He declared, in *Capitalism, Socialism and Democracy* (1942):

The fundamental impulse that keeps the capitalist engine in motion comes from the *new* consumers’ goods, the *new* methods of production or transportation, the *new* markets, the *new* forms of industrial organization that capitalist enterprise creates.<sup>16</sup>

In glorifying the ‘new’, he dismissed with a stroke of his pen the traditional importance attributed to the price mechanism. Moreover, he ignored Chamberlin’s distinction between innovation and differentiation, although he was very much aware of it. Indeed, Schumpeter insisted that it was the ‘new’, regardless of its substance, that drove capitalism relentlessly to increase output and raise standards of living. The ‘new’ produced wave after wave of progress, uprooting monopoly in perennial gales of creative destruction. For Schumpeter, the ‘new’ was capitalism’s most important product.

Schumpeter introduced the economic process of ‘creative destruction’ with this imagery: ‘Industrial mutation – if I may use a biological term – incessantly revolutionizes the economic structure from within’. This incessant revolution is ‘an organic process’, whose cumulative effects give life to ‘an evolutionary process’<sup>17</sup> of Darwinian character. Schumpeter saw capitalism as an organic body whose economic lifeblood is change.

He insisted that a proper economic understanding of commercial change demands study of the larger system over time, rather than the narrow investigation of isolated firms or markets at some moment in time. Thus, for Schumpeter, figures showing the successes of capitalism since the mid-nineteenth century in increasing output and raising standards of living were more important than short-term decline in price competition or growth in monopoly, even if ‘short-term’ meant a decade or more.<sup>18</sup> In this light, most concern over ‘restrictive practices’ and ‘rigid price’ was misplaced. Moreover, he contended, large and powerful firms not only accumulate the higher profits needed to invest in the risky business of innovation but are able to take the time to do research and development because they are not so susceptible to short-term cycles that unsettle highly competitive markets. Market stability and responsiveness to longer-term ‘fundamental’ changes require large powerful firms. Schumpeter further defends large corporate monopoly by asserting

that perfect competition exacts a great social cost. The firm in perfect competition

displays wastes of its own. [It] is in many cases inferior in internal, especially technological, efficiency. If it is, then it wastes opportunities. It may also in its methods of production waste capital because it is in a less favorable position to evolve and to judge new possibilities. And . . . a perfectly competitive industry is much more apt to be routed – and to scatter the bacilli of depression – under the impact of progress or of external disturbance than is big business.<sup>19</sup>

For Schumpeter, monopoly is the crucial ingredient in the long-term successes of capitalism not only because monopoly power is needed to produce the ‘new’ but also because it is the ‘new’ that ultimately destroys monopoly power.

Although Schumpeter’s evolutionary logic would seem to herald perpetual cycles of competition by innovation and, with this, perpetual regeneration of capitalist enterprise, his logic takes an unexpected turn when he concludes that capitalism’s enormous successes will ultimately destroy it. The problem, according to Schumpeter, is that capitalism’s economic successes have created an unfavorable social and political climate. Part of that unfavorable climate is the proliferation of large corporate enterprise.<sup>20</sup> Bureaucratic capitalism, as he calls it, succeeded spectacularly in organizing and routinizing mass production and distribution of goods. The same process, however, appeared to make obsolete the ‘entrepreneurial function’ which, for Schumpeter, actually creates the ‘new’.

Large corporate bureaucracy destroys the entrepreneurial function by mechanizing progress itself. In contrast to Ronald Coase’s entrepreneur who organizes production according to a transaction cost analysis, Schumpeter’s entrepreneur is someone who ‘reforms or revolutionizes the pattern of production’. Coase imagines a cost accountant, Schumpeter a revolutionary. For Schumpeter the passing of entrepreneurship signaled the end of capitalism. With the profit incentive now salaried, economic progress became ‘depersonalized and automatized’.<sup>21</sup>

Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways. The romance of earlier commercial adventure is rapidly wearing away, because so many more things can be strictly calculated that had of old to be visualized in a flash of genius.<sup>22</sup>

In his tragic history of capitalism’s demise, Schumpeter’s hero was the individual entrepreneur, or perhaps more accurately, capitalism’s historical apotheosis was the entrepreneurial spirit. Yet his model for ‘plausible capitalism’ is the large firm which has achieved monopoly status. After describing the death of entrepreneurialism as its disappearance into the quicksand of large

corporate bureaucracy, Schumpeter devotes his entire chapter on capitalism to the rehabilitation and defense of large monopolistic corporations. Why advocate rather than attack them? Why not seek to rejuvenate the individualist spirit of entrepreneurialism?

The answer to that question lies in Schumpeter's unstinting belief that history is a process whose logic is strictly economic. And his particular economic logic is sorely out of fashion today. Schumpeter's book can be understood as a reluctantly Marxian analysis of the inevitable historical progression from entrepreneurial capitalism to bureaucratic capitalism to socialism: 'One may hate socialism or at least look upon it with cool criticism,' Schumpeter wrote, 'yet foresee its advent.'<sup>23</sup> His historiography was progressive in the sense that it allowed only forward motion. And it was mechanistic, driven by a relentless economic logic through successive stages that could only culminate in the socialization of production. Thus he followed his autopsy of capitalism with an equally lengthy chapter of post-mortem speculation on the unhappy question whether socialism and democracy could be compatible. The very title of the book reflects his intellectual debt to the logic of Marxian historiography: *Capitalism, Socialism and Democracy*.<sup>24</sup>

Schumpeter saw the passing of capitalism as inevitable because its bureaucratic corporations could not sustain the kind of progress that drove entrepreneurial capitalism's successes. 'Perennial gales of creative destruction' need the institutional conditions of entrepreneurial capitalism. 'Industrial mutation' needs an adolescent body economic, not the mature form of late capitalism. Whatever the naturalistic metaphor, for Schumpeter, there was no turning back the clock. His only hope, then, for postponing the inevitable and disagreeable advent of socialism, the only hope for prolonging capitalism, lay in promoting progress under the historical constraints he identified: the irreversible stage of bureaucratic capitalism and the disagreeable prospect of socialism. Schumpeter found virtue in market dominance because he saw the dominant firm's capacity for innovation as the only life support system for the late stage of capitalism.

Even beyond his view of economic history, Schumpeter's logic of monopolistic innovation relied on two questionable assumptions. First, Schumpeter simply assumed that large corporate monopolies produce monopoly profits to invest in research and development. That assumption is questionable for several reasons. Here are three of them. (1) First, monopolies might invest profits in shorter-term strategies to maintain their monopolies, increasing costs and lowering profits.<sup>25</sup> Or they might buy monopoly profits through corporate merger or acquisition. Second, while Schumpeter understood and, moreover, seemed to agree with Berle and Means, he put aside their view that modern bureaucratic corporations are not coherent institutions whose logic is profit maximization because managers face only dispersed and unorganized ownership, leaving



them relatively free to pursue their interests, interests often at odds with maximizing profits and minimizing costs.<sup>26</sup> (In the current view, efficient markets for corporate control would bridge the gap between ownership and control, and pressure managers to raise shareholder value by increasing earnings in the short-run.) Third, regardless of the institutional character of large corporate monopolies, Schumpeter was surely aware of the static economics that a firm's power to charge a monopoly price derived from the slope of its demand curve, the nearness of substitutes for its products, more than its market share and large size. For these and other reasons, large bureaucratic monopolies cannot be depended upon to produce the monopoly profits driving Schumpeter's model of competition by innovation.

Schumpeter's view that innovation requires large bureaucratic monopolies relied on a second questionable assumption: a binary view of markets despite his intimate knowledge of Chamberlin's theories of oligopoly and brand differentiation, theories that explained the possibility of monopoly profits in the absence of monopolized markets.<sup>27</sup> This neglect allowed Schumpeter to structure his comparison of monopoly and competition as a dichotomy, as a choice between perfect monopoly and perfect competition. In sum, his turn to the old neoclassical model, together with his Marxian view of history, impelled him to argue for the proliferation of large bureaucratic monopolies.

## INNOVATION AND INCREASING RETURNS

By stepping back into the neoclassical model, Schumpeter also avoided difficult questions about the substantive content of innovation. By not acknowledging the strategy of product differentiation in his discussion of monopolistic practices, Schumpeter was free to assume that all 'new' products and processes reflect, in Chamberlin's terms, progress not waste, innovation not differentiation.<sup>28</sup> He could rest on the unexamined view that monopoly profits produce the 'new,' which itself will ultimately destroy monopoly power.<sup>29</sup> Because Brian Arthur deals with knowledge-based sectors that rely on innovation, one might expect significant congruity between his analysis and Schumpeter's pioneering work. But their approaches are markedly different. Most importantly, Schumpeter located innovation within the traditional logic of negative feedback, leading to the view that new products provoke market reactions no different in kind than reactions to new prices.<sup>30</sup> Indeed, Chamberlin discussed product change in similar fashion. In their views, the best products would win and markets would predictably tend toward allocative efficiency. As we shall see, Arthur's application of increasing returns logic has produced a sharply different view of competition by innovation, particularly in questioning the belief that well-functioning markets predictably tend toward efficiency.

Arthur identified increasing returns as a powerful force that jeopardizes the efficiency of markets driven by perennial gales of innovation. Arthur's analysis of increasing returns provides a conceptual framework and a language for understanding knowledge-based industries in the 'digital' economy. Traditional market economics begins with the assumption that market changes provoke reactions tending to stabilize prices and market shares. Arthur gives as an example the high oil prices of the 1970s, which stimulated energy conservation, the development of alternative energy sources and increased oil exploration, resulting in lower oil prices some years later. In short, a market change prompted reactions that offset the very change in predictable ways. Higher prices stimulated supply and dampened demand, which lowered prices. Thus does traditional theory hold that markets tend to produce negative feedback and, as a result, both static and dynamic changes promote the most efficient allocation of resources.<sup>31</sup>

But Arthur recognized that many industry sectors do not act according to traditional theory. Particularly in high technology sectors, *positive* feedback can multiply the effects of market changes, even very small and short-lived changes. In these circumstances, what gets ahead tends to get further ahead because stabilizing reactions fail to appear. Most of the time, according to Arthur, accidental pools of demand appear, randomly favoring one product or another. But sometimes they just happen to cluster along a particular path, turning the market toward one product. In early stages of competition between alternative technologies, strong demand for one of them can reflect nothing more than accidental clusters of random events. If a positive feedback loop is triggered, the demand clusters will expand. As market share grows, the likelihood increases that the market will tip toward the market leader. Once the market has tipped toward a particular technology, currently available alternatives as well as late bloomers tend to be locked out, even if superior. Hence, in such markets, there is no assurance that competition by innovation yields the best product, no assurance that the path taken is the most efficient one.<sup>32</sup>

Schumpeter wrote that the most important competition was rivalry between old and new technologies. It is Arthur who looked closely at the market processes brought into play by competing technologies, including competition between alternative new technologies. He gives as an example the development of the market for videocassette players. Early in the product's life cycle, two comparable but incompatible formats emerged: Beta and VHS. Each format had its advantages and its limitations. Each appeared at about the same time and market shares remained comparable for a while. Both could expect the benefit of increasing returns to growing demand: increased production would lower costs and improve knowledge about how to produce a better player and better tapes. But one of them, either Beta or VHS, might have gotten *another* sort of benefit from increasing returns. Which one would get a

second benefit, one that could influence if not dictate the outcome of their rivalry? No one could predict that.

According to the traditional story, VHS became the industry standard because it was superior to Beta. But in the simplest story according to Arthur, here is what might have happened instead. Early in the competition, a short spurt of increased sales of VHS players (perhaps several spurts) started a positive feedback loop. That is, the sale of more VHS players over a short period of time increased (or shifted) demand for prerecorded tapes, signaling video stores to carry more prerecorded VHS tapes, in turn prompting film companies to prerecord more VHS tapes. These developments increased the benefits of owning a VHS player, leading even more people to choose the VHS format and beginning another cycle of the positive feedback loop. At the same time, increased production accelerated the learning that leads to improved and cheaper products. The cumulative impact of accidental clusters of VHS purchases created a small early advantage that triggered positive feedback loops, loops that magnified the purely accidental advantage into a driving force that tipped the market toward the VHS format, essentially ending the competition. Up to the tipping point, the outcome had been unpredictable: Beta might have prevailed if an early spurt or two of demand had triggered Beta loops.

As a general matter, in competition between incompatible technologies, positive feedback loops tend to produce a single industry standard and, with it, a monopolized market. Once the market tipped toward VHS, increasing returns made the most probable outcome a monopolized market, not a shared one, regardless of the relative prices and the relative advantages of the two formats. At that juncture, you would have been hard pressed to give away Beta VCRs, even though today they are still thought to produce superior audio and video quality. Customers and suppliers were locked in to the VHS format.<sup>33</sup>

That is the simple stochastic story, the pure probability-based version that assumes an efficient market mechanism for public information and no strategic behavior. Arthur's work has sought to model the impact of relaxing these two assumptions. In one study, he determined that the common behavior of seeking private information – for example, polling neighbors or co-workers about their experiences with VCRs – could provoke additional positive feedback loops. These loops would produce effects similar to those seen in the simple story: more information would be available about the technology that just happened to have experienced a local spurt in demand. If we assume that the two technologies were comparable, then the positive feedback to private polling would likely favor the technology that had an early lead in adoptions.<sup>34</sup>

Informed by Arthur's study, we could also imagine positive feedback loops that did not coincide: that is, some pointing toward VHS and others pointing toward Beta. Aside from pure probability, the reasons could be multiple. One

reason could be inefficiencies in the dissemination of public information: for example, loss or corruption of data about Beta demand clusters or delays in Beta's production response, weakening Beta feedback loops. Another reason for noncoincident loops could be the information itself – a polling that uncovered some bad experiences with VHS, activating Beta loops. Other polling events could have provoked VHS loops.

Arthur has also studied the effects of strategic behavior on markets with positive feedback loops. To be more precise, Arthur and a colleague developed a model to investigate the effects of pricing strategies in a market with increasing returns. Their model suggested that strategic pricing can stabilize the unpredictable patterning of demand clusters. Lowering price can 'mitigate the effect of positive feedback and stop the loss of market share'. And raising price can magnify the effect, increasing the rate of loss.<sup>35</sup> In short, the study suggests that the strategic manipulation of price can stabilize the workings of positive feedback loops. For example, if VHS lowered prices at crucial moments early in the competition, favorable VHS loops might have been reinforced. If Beta responded to increased demand by increasing price, favorable Beta loops might have been weakened. However, once the market stabilized, once the VHS share grew enough to tip the market in its favor, price competition lost its impact. Thus the greater the VHS market share, the less impact Beta price cuts would have. Beta could not recapture market share by lowering prices. VHS could charge its profit-maximizing price, knowing that customers were locked in.

By implication, other sorts of strategic behavior are more promising early in the competitive process. The manipulation of public information through advertising might have created demand clusters that prompted positive feedback loops. For example, television commercials comparing the VHS tape's three-hour recording capacity to Beta's one-hour capacity might have generated demand. Other sorts of strategic behavior, such as exclusive dealing contracts and tie-in arrangements, at an early stage in the competition could tighten the positive feedback mechanism for one format and limit market access to the other.

What we see, then, is a complex set of overlapping market mechanisms working in knowledge-based industries, especially ones that require large investments in research and development or initial tooling. What is new is the mechanism of increasing returns. Personal computers and software packages, commercial jet aircraft and pharmaceutical products, high definition television and telecommunications equipment fall into this category. Increasing returns to scale were understood long before Arthur's work, particularly the cost savings and lower prices sometimes attributable to economies of scale. But Arthur identified a second sort of increasing return in his analysis of the positive feedback mechanism: the so-called 'network effects' that benefit current

users each time a new user joins the network and that, in time, lock them in to the network.

The dominance of Microsoft Windows is a more recent example of the network effects that can result from positive feedback.<sup>36</sup> Of what value is the IBM OS/2 Warp operating system, even if faster, cheaper, more stable than Microsoft Windows, when relatively few application programs run in its environment? And why would a software company develop a new game or assiduously improve an existing spreadsheet program for IBM OS/2 Warp when almost everyone uses Windows?<sup>37</sup> Together, the decisions of customers and software suppliers reinforce one another and, moreover, powerfully influence future decisions. Microsoft's Windows monopoly derives from customer and supplier lock-in.

In this light, the governments' *Microsoft* case can be understood as a suit to enjoin certain kinds of strategic behavior – restraints of market access – intended to maintain *artificially* conditions favorable to increasing returns and customer lock-in. Like the competition between VHS and Beta, the commercial context involves competing technologies, first in operating systems and then in web browsers. But the *Microsoft* case presents different issues, not only because of Microsoft's well-known tactics but also because alternative software packages were *not* incompatible in ways that made them mutually exclusive alternatives and naturally led to monopoly, as we saw in VHS and Beta. Indeed, recognizing the *absence* of technological incompatibility goes a long way in explaining Microsoft's relentless use of the exclusionary strategies that have raised antitrust questions.

The success of Windows 3.1 did *not* introduce incompatibility to the market for Intel-compatible operating systems. Windows 3.1 was not an operating system but a graphical interface to the underlying DOS operating system. Microsoft's appropriation of Apple's point-and-click, mouse-and-icon technology worked well with several DOS systems, not just Microsoft's version. Indeed, Microsoft *created* needless incompatibilities, according to a recently settled lawsuit, for the purpose of excluding other DOS versions. A few years later, Microsoft *integrated* the Windows 3.1 graphical interface and Microsoft's underlying DOS operating system into Windows95, which eliminated the need for a separate DOS program. Only then would Windows become the industry standard operating system.<sup>38</sup> Software integration has been an important part of Microsoft's strategy to create product incompatibility and to lock in customers. The strategy led first to an operating system monopoly and then, with Internet Explorer's integration into Windows 95, a market share approaching 65 per cent for web browsers.

Nor are Microsoft's Internet Explorer and AOL's Netscape Navigator technologically incompatible from the user's perspective. Indeed, they are very close substitutes. Moreover, Sun Microsystems's introduction of Java has virtually

eliminated incompatibility from the applications programmer's perspective.<sup>39</sup> Just as Navigator's once dominant market share did not produce customer lock-in of the sort seen in VHS, Explorer's increasing market share alone will not tip the market in its direction. Microsoft, of course, has always understood this and, thus, it sought to restrain distribution of Navigator and Java by means now the subject of the US government's current antitrust case.

Regardless of the outcome, the *Microsoft* case is important because it has publicized the kinds of exclusionary conduct that can distort the working of high technology markets by closing access to alternative technologies. Microsoft no longer intimidates customers, suppliers and rivals quite so easily. Before the law suit, Gateway and AOL would not have introduced a Linux PC. AOL might not have acquired Netscape. The federal judge in Sun Microsystem's case against Microsoft might not have understood the importance of a standard Java language to the software industry. And so on. The governments' case against Microsoft has produced information that itself has improved access to high technology markets that were under Microsoft's corporate thumb.

## CONCLUDING REMARKS

Where does the work of these three economists lead us? We begin with what might be called Schumpeter's paradox: innovation both needs and destroys large bureaucratic monopoly. In Schumpeter's model of competition, the best we can hope for is perennial waves of large bureaucratic monopoly. But industry studies and recent experience have raised doubts about Schumpeter's model. Economic studies have not confirmed the need for large firms.<sup>40</sup> Moreover, experience in the digital economy suggests that entrepreneurial innovation is alive and well. Nonetheless, other industrial sectors, particularly pharmaceuticals, seem to support Schumpeter's view. At the very least, Schumpeter would have been heartened by the entrepreneurial innovation driving the new digital economy and surprised, perhaps, at the enormous market capitalizations that have resulted. Brian Arthur offers a corollary that explains the large capitalization phenomenon. Indeed, venture capitalists, digital entrepreneurs and investors are betting on Arthur's corollary, that increasing returns to innovation naturally lead to monopoly and, presumably, to monopoly profits.

Arthur's corollary sheds new light on competition in high technology markets. Even more, it calls into question the dominant model of market economics with what might be called Arthur's uncertainty theorem. The theorem holds that the outcome of competition in markets with increasing returns to market share is unpredictable, leading to the inference that innovation

markets, which exhibit such returns, do not necessarily produce the best products. In Chamberlin's terms, neither product change nor product differentiation guarantee progress because commercially successful innovation does not logically entail efficient outcomes. Even more broadly, Arthur's uncertainty theorem means that commercial success in the many market sectors with positive feedback can be the result of accident.

Two large questions are presented. First, how does Arthur's work portray the competition that produces perennial gales of innovation? Second, how, as a subject of public policy, should we treat these perennial gales?

Arthur applies a probabilistic approach to explain competition by perennial gales of innovation, an approach that describes the attachment of positive feedback loops to some demand clusters, to some local aggregations of demand for one technology or another, but not to others. Once a loop attaches and begins to work, the cluster starts to expand. When demand clusters for one alternative technology reach a certain size, a certain market share, the market tips toward the winning alternative and the competition is over. To understand the positive feedback mechanism driving perennial gales of innovation, we must consider three small questions. First, what produces clusters of demand? Second, why do positive feedback loops attach to demand clusters in some markets but not others? And third, what are the market conditions required for positive feedback loops to attach?

First of all, in Arthur's simplest scenario, it is chance that produces demand clusters. In this view, the success of VHS or Beta, AOL or Prodigy, would be attributable to pure accident. Quality and price would be beside the point. It is here that current understandings of Arthur's work end because they are uninformed by his larger body of work. In other studies, Arthur determined that demand can cluster for reasons other than pure chance. Those studies suggest that strategic manipulation of price and information can decrease the effects of pure chance, especially in the early stages of competition between alternative technologies. Once a market has tipped in favor of one alternative, however, the power of positive feedback loops weighs so heavily in favor of the market leader that strategic behavior gradually loses its effectiveness. But Arthur's work does corroborate the commercial efficacy of strategic behavior, particularly pricing. By implication, other strategic behavior, including exclusionary practices, can also encourage the development of demand clusters. For example, Microsoft's well-known restraints of trade, particularly the exclusive dealing provisions and tie-ins, were likely successful in creating demand clusters for Internet Explorer and shrinking clusters for alternative products such as Netscape Navigator. In this instance, strategic behavior does remain effective, even in advanced stages of competition between them, because Internet Explorer and Netscape Navigator are not incompatible technologies. Indeed, they are close substitutes with only slight look-and-feel differences. Hence

positive feedback loops are not as powerful a mechanism.<sup>41</sup> As a consequence, the current browser market presents only a weak tendency toward a winner-takes-all outcome and the most meager possibility of customer lock-in.

Second, given the various forces that can affect demand, why do positive feedback loops attach so readily to demand clusters in some markets but not others? Loops can attach in many markets because many products attract new customers in part because others have already purchased them. This network effect can be seen in markets for products as diverse as Tom Clancy novels, designer jeans and computerized word processing software. Arthur's contribution is the recognition that positive feedback loops can have overwhelming effects in competition between alternative products that are incompatible. In such markets, there is a strong natural tendency for one industry standard to emerge and, thus, for a winner-takes-all outcome because both customers and suppliers are attracted by the compelling benefit of buying the winner and avoiding the costs of choosing and then later replacing the loser. For example, as the VHS customer base grew, each new customer's choice of VHS made it even more attractive, for both old customers and new. VHS became more attractive because the industry standard was reinforced, increasing the likelihood that new VHS machines, tapes and other accessories would continue to proliferate, improve and decrease in price. Customers could anticipate quite the opposite for Beta products.

Third, given the probabilistic forces that can create demand clusters and the product characteristics that attract positive feedback loops, what are the market conditions necessary for positive feedback loops to function? The answer is a familiar one. Like negative feedback loops, their positive counterparts require efficient markets. And three well-known aspects of efficient markets remain important. One, robust market information is needed to trigger feedback loops, both positive and negative. Two, on the supply side, production and distribution functions must be capable of responding quickly to market information. And three, markets must be contestable. It is important to remember that investigation of market conditions must employ the tools of dynamic economics, including those of strategic behavior analysis.

I want to conclude with a few words about the requirement of contestability, which for me means markets free of both public and private barriers to entry. As we all know, public barriers can include both international trade and domestic industrial policies. Antitrust scholar and federal judge Diane Wood has written extensively about that. Moreover, an influential group of scholars has recommended changes in US antitrust policy to allow more cooperation among firms both large and small in research and development, and, presumably, its commercialization.

I have already made reference to the *Microsoft* case, which now stands before the Federal Circuit Court of Appeals, as the paradigm case of unilateral



restraints to limit entry. Some cooperative enterprise, particularly closed joint ventures in research and development, can result in industry standards that should raise questions about market access and exclusion. Even standard-setting by open membership organizations can close markets to alternatives because of members' sunk costs – their investments in unsponsored standards.

My final remarks address another kind of restraint, at the same time both public and private in origin. That restraint is intellectual property rights protection. What should we make of innovation as a subject of public policy shaping the far side of competition policy – that is, policy shaping intellectual property rights? As Chamberlin reminded us, property rights and competition policy create tensions that sometimes call for a reconciliation of conflicting values. The conflict is as old as antitrust law in the USA. The formative era's *Northern Securities* (1904) case splintered the Supreme Court into four factions who could not resolve the fundamental policy conflict raised in a merger, the conflict between the Sherman Act's competition policy and the common law property and contract rights of the merging parties. In the current *Microsoft* litigation, the defendant has argued that the government suit interferes with its freedom to innovate and its intellectual property rights in the Windows software. Moreover, the remedies ordered by Judge Jackson raise similar questions. Among the conduct remedies, compulsory access to Windows programming code and explanatory materials approaches compulsory licensing, which is anathema in the USA.

Indeed, the view of compulsory access as a taking of private property rights lies at the heart of opposition in the USA to antitrust's essential facilities doctrine, it seems to me, because the doctrine has authorized the judicial decree of compulsory access, typically in cases involving indispensable mediums analogous to Microsoft Windows. Although compulsory access to Windows programming code and explanatory materials would strengthen network effects and, thus, strengthen Windows' hold on the market, by making public more information for complementary innovation, such access to potential competitors would dilute Microsoft's intellectual property rights and, according to traditional theory, weaken the underlying incentive structure for innovation. In Arthur's terms, access might shorten the duration and narrow the scope of the winner-takes-all cycle of competition. In Chamberlin's view, compulsory licensing would improve competition and attack monopoly.

As for what remains of Schumpeter's view that monopoly drives innovation, it is not self-evident that maximizing private gains maximizes innovation. If intellectual property protection rests on instrumentalist grounds, then policy would call for a balancing of private gain and public benefit to maximize innovation. The balancing would call for theories of optimal benefit distribution and then empirical testing. Whatever the outcome, policy makers would be remiss in simply assuming that innovation calls for maximizing the profits of

commercializing innovation. Rather, they would heed not only Schumpeter's call to promote innovation, but also Chamberlin's view about the conflict between intellectual property rights and competition, and finally, Arthur's observation that competition by innovation demands market access and fair competition.<sup>42</sup>

## NOTES

1. The tension between competition policy and property rights is an old one. See generally, Rudolph J.R. Peritz, *Competition Policy in America: History, Rhetoric, Law* (rev. ed. 2001). Game theory and other approaches to strategic behavior have offered important insights into market behavior for some years. But the ultimate arbiter of US antitrust law and policy, the Supreme Court, has not been persuaded to take strategic behavior seriously. For a thorough and persuasive critique of current predatory pricing policy that makes clear its neglect of what has become mainstream economic theory, see Patrick Bolton, Joseph F. Brodley and Michael H. Riordan, 'Predatory Pricing: Strategic Theory and Legal Policy', 88 *Geo. L. Rev.* 2239 (2000).
2. *Antitrust Policy: An Economic and Legal Analysis* (1959).
3. Edward H. Chamberlin, *The Theory of Monopolistic Competition* (1933), pp. 56–7. The book also developed theories of, first, perfect, then imperfect oligopoly.
4. *Ibid.* For a discussion of Chamberlin's impact on microeconomics, see Peritz, *supra*, note 1, at 106–10, 145, 157, 170–71, 183–4, 241–2, 258–9; Donald T. Levy, 'Analyzing Anticompetitive Behavior in Retail Markets: Things Are Not Always As Simple As They May Appear', 35 *N.Y.L. Sch. L. Rev.* 969 (1990); see generally, Joan Robinson, *The Economics of Imperfect Competition* (1933).
5. Chamberlin, *supra*, note 3, at 71–100.
6. *Ibid.*, at 118–19.
7. For a discussion of changes in public perceptions of advertising after the First World War, see Peritz, *supra*, note 1, at 104–9.
8. *Ibid.*, at 204–8.
9. *Ibid.*, at 270.
10. *Ibid.*
11. *Ibid.*, at 271.
12. Chamberlin, *supra*, note 3, at 272, quoting *Ball v. Broadway Bazaar*, 194 N.Y. 429, 87 N.E. 674 (1909), an opinion of the New York Court of Appeals. The emphasis was Chamberlin's.
13. *Ibid.*, at 273–4.
14. *Ibid.*, at 272.
15. *Ibid.*, at 274.
16. Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (1942), at 83 (emphasis added). Schumpeter was quick to point out that Alfred Marshall, the original price theorist, recognized the common occurrence of monopoly power and, thus, anticipated the work of Chamberlin. For his earlier description of economic development as 'revolutionary' or discontinuous change by entrepreneurs, see Schumpeter, *The Theory of Economic Development* (first German language edition 1911) (R. Opie trans. 1934), particularly his discussion of the 'fundamental phenomenon of economic development,' at 57–94.
17. *Ibid.* Note Schumpeter's shift from revolutionary to evolutionary metaphors.
18. *Ibid.*, at 93–4 n.10. Compare Ronald Coase, 'The Nature of the Firm', 4 *Economica* 386 (1937).
19. *Ibid.*, at 106.
20. Schumpeter contended that bureaucratic capitalism destroyed not only entrepreneurship but also the political leadership that protected it from the demands produced by liberal democracies, the small producers and tradesmen who served as a buffer between large enterprise

and its trading partners, and finally, traditional property and contract rights. These self-destructive tendencies were exacerbated, he maintained, by the an intellectual class which turned against the very system that produced it. (Ibid., at 131–42).

Because Schumpeter believed that capitalism's successor would be some form of public ownership, some sort of socialism, he devoted much of his book to exploring the possibility of socialist economics and democratic politics. Indeed, the politics that he developed amounts to a market-based vision of competition for political leadership.

His low opinion of citizenry – as 'irrational', 'infantile', subject to 'crowd psychology', easily swayed by propaganda – led him to an elitist view of government as 'competition for leadership'. (Ibid., at 256, 257, 271). Citizens produced a government by voting for 'a leader' whose legitimacy, whose democratic pedigree flowed only from the democratic process of voting in an arena of 'free competition for a free vote' (Ibid., at 271, 272). Citizens had no say in government except in times of election; 'producing government practically amounts to deciding who the leading man shall be' (Ibid., at 273).

Schumpeter defined democracy in purely methodological terms, refusing to give it any normative content. Indeed, he defined 'liberty' as the process in which 'everyone is free to compete for political leadership' (Ibid., at 272). He ignored the kinds of market imperfections that he found irrelevant in economic markets: imperfect knowledge, unformed opinions or demands; the propaganda effects of advertising were brushed aside. Moreover, he apparently believed that there was no need to discuss the effects of economic power on his 'theory of competitive leadership' because his concern was with the possibility of democracy under a socialist economic regime (Ibid., at 284).

21. Ibid., at 132.

22. Ibid.

23. Ibid., at 61.

24. Indeed, Schumpeter's dynamic view of capitalism, his rejection of static equilibrium economics, can be understood as a revision of Karl Marx's criticism of classical economics. A student of Hegel, Marx rejected the equilibrium theories of economics, which posited that the 'basic relationship between employer and worker, between land, capital and labor, never changed.' Changes in supply would bring a 'new and similar equilibrium'. Marx posited instead a dynamic and conflictual relationship between capital and labor, whose historical unfurling would involve a series of disruptions rather than an eternal return to an equilibrium. For a brief discussion, see John Kenneth Galbraith, *Economics in Perspective: A Critical History* (1987), at 126–139. Of course, Marx did imagine an end of history, a final equilibrium of common control with socialized ownership of the means of production. Schumpeter replaced the working class with the individual entrepreneur as the agent of change in his dynamic view of capitalism. Analogously to but radically different from Marxian struggle between labor and capital, Schumpeter's entrepreneur competed against and defeated static monopoly, only to replace it and risk similar defeat at the hands of the next entrepreneur, the next agent of change in his dynamic vision of capitalism. For another rendition, that of the entrepreneur as engineer, see Thorstein Veblen, *The Engineers and the Price System*, Chs V & VI (1921) (on the relationship between technicians and the revolution).

For an explication of approaches to historical explanation, see my 'History as Explanation: Annals of American Political Economy', 22 *Law & Social Inquiry* 231 (1997) (review essay).

25. Richard Posner, *Antitrust Law* (1975).

26. His chapter entitled 'Destruction of the Institutional Framework of Capitalist Society' describes the corporate 'attack' on traditional 'property' and 'free contracting' (Schumpeter, *supra*, note 16, at 139, 141–2).

27. Schumpeter, *supra*, note 16, at 79 n.9.

28. Taking account of these difficulties would have darkened Schumpeter's last hope for encouraging the progressive elements in bureaucratic capitalism. Of course he recognized them, stating in another context that perfect competition (and, presumably, perfect monopoly) was a simulacrum – what cultural critic Frederic Jameson has called 'an identical copy for which no original has ever existed' (Frederic Jameson, *Postmodernism or The Cultural Logic of Late Capitalism* (1991), at 18; Schumpeter, *supra*, note 16, at 81).

29. Thus, at least in early stages in the life cycles of technological and entrepreneurial change, rivalry takes the form of competition for the market, with the winner taking all. In mid-life stages, when change tends to be incremental rather than revolutionary, there is more competition by other means. See Richard B. DuBoff, *Accumulation and Power: An Economic History of the United States* (1989) (describing monopoly as the recurring result of competition). Cf. Niles Eldridge and Stephen Jay Gould, 'Punctuated Equilibria: An Alternative to Phyletic Gradualism', in *Models in Paleobiology*, (T.J. Schopf, ed., 1972) 82; Gould, 'Is a New and General Theory of Evolution Emerging?', 6 *Paleobiology* 119 (1980).
30. Arthur quotes Schumpeter, without citation, as having written the following in 1954: 'Multiple equilibria are not necessarily useless, but from the standpoint of any exact science the existence of a uniquely determined equilibrium is, of course, of the utmost importance, even if proof has to be purchased at the price of very restrictive assumptions; without any possibility of proving the existence of [a] uniquely determined equilibrium – or at all events, of a small number of possible equilibria – a field of phenomena is really a chaos that is not under analytical control' (W. Brian Arthur, *Increasing Returns and Path Dependence in the Economy* (1994), at 4). There is some irony in Schumpeter's pejorative reference to chaos, given Arthur's use of some methodologies associated with what is called chaos or complexity theory.
31. Arthur, *supra*, note 30, at Ch.2 (early, more technical version of 'Competing Technologies, Increasing Returns, and Lock-In by Historical Events', 99 *Econ. J.* 116 (1989)). Arthur points out that 'Modern economists do not see economies of scale as a reliable source of increasing returns. Sometimes large plants have proved more economical; often they have not' (*Ibid.*, at 3).
32. Arthur called this 'growth processes where probabilities of addition to categories could be an arbitrary function of their current proportions (or market share)' (Arthur, *supra*, note 30, at xv).
33. Arthur, *supra*, note 30, at 1–3, 25–9, 115–120. Two economists have critiqued Arthur's use of the VHS–Beta example by arguing that a decreasing returns explanation shows that the better product won. See S.J. Liebowitz and S.E. Margolis, 'Path Dependence, Lock-in and History', 11 *J.L. Econ. & Org.* 205 (1995). Although their conclusion is plausible, their analysis pays insufficient attention to Arthur's studies of strategic behavior.
- Because of its better quality, Beta format has been the standard in the relatively small niche market of analogue tapes used for television rebroadcast.
- Certainly, there were antecedents to Arthur's work. For example, Arthur recounts Lord Marshall's recognition that a firm with costs that decrease as its market share increases could dominate a market simply by the good fortune of getting the best start: *Ibid.* at 2–3.
34. Arthur, *supra*, note 30, at 69 et seq. ('Information Contagion').
35. Arthur, *supra*, note 30, at 159 et seq. Their duopoly model played out the assumption that, the greater the market share, the more likely customers were to switch to the product. Two producers faced an unstable market in the sense that customers' random switching could accidentally create clusters that would momentarily increase market share and unpredictably trigger a positive feedback loop that would result in one firm's market dominance for an indeterminate period of time. It was indeterminate because it would always be subject to the next accidental clustering and positive feedback loop that favored the other firm. Would changing prices have any effect on market share? Their model suggested that raising price weakened the dominant firm's hold on customers and increased switching and that, in symmetrical fashion, lowering price strengthened customer lock-in. In short, customers would be influenced by price and, in consequence, firms could stabilize market shares because switching was no longer purely stochastic. That is, strategic pricing made switching behavior more predictable because it was no longer purely probabilistic.
- It should be noted that the researchers defined switching behavior in terms of probabilities that were functions of two variables – not only market share but also the customer's current product – thereby allowing them to take account of levels of compatibility and other switching costs. (*Ibid.*, at 162.)
36. Markets with positive feedback need not produce network effects. The positive externalities might be outweighed by negative ones. For example, current users of a particular digital

communications network might, on balance, be worse off when new users begin to become so populous that network performance is degraded even though the increasing number of users made the network more attractive.

37. Corel's development of its Office Suite, including WordPerfect word processing, for the Linux operating system is not really an exception. Rather, it reflects the realization that Corel is threatened with losing to Microsoft the small Windows customer base that remains. Writing for Linux seems to be a survival strategy. It should be noted that, at least in this author's view, the triumph of Microsoft Word over WordPerfect is a good example of the inferior product winning a market by customer lock-in. Although the two word processing programs have been written to accept documents from one another, there was a crucial period of time when Word did not accept WordPerfect documents. Moreover, the transmission of this Wordperfect document in Word format has reminded the author that their compatibility, even in the best of times, is less than satisfying.
38. Just to make sure that customers would migrate to Windows 95, Microsoft gave huge financial incentives to application software companies to rewrite their programs. The rewriting was necessary because Windows 95 was incompatible with the earlier version. The incompatibility meant that customers who wanted new applications programs or continued support for current ones had to switch to Windows 95. The success of this strategy was in doubt for some time because Windows 3.1 customers were reluctant to absorb the switching costs.
39. Microsoft tried to reintroduce incompatibility with its revised version of Java, which a California federal court recently enjoined Microsoft from distributing: *Sun Microsystems, Inc. v. Microsoft Corp.*, 999 F.Supp. 1301 (D.C.N.D. Cal. 1998); 'Microsoft Is Told to Abide by Sun on Java', *N.Y. Times*, Jan. 26, 2000, at C2.
40. For sources compiling empirical research about the relationship between firm size and innovation, and industry concentration and innovation, see Peritz, 'Some Realism about Economic Power in a Time of Sectorial Change', 60 *Antitrust L.J.* 247, 264 n.55 (1997).
41. Product improvement and user familiarity could provoke less powerful loops.
42. Brian Arthur, talk presented at the conference 'Appraising Microsoft and its Global Strategy', Washington, DC, November 13, 1997, hosted by the Consumer Project on Technology, downloaded in RealPlayer Audio from <http://www.appraisingmicrosoft.org/day1rm.html>. See Ian Ayres, 'Antitrust Implications of the Envelope Theorem', 17 *Miss. C.L. Rev.* 21 (1996) (giving theoretical framework for an approach to regulating monopoly pricing with minimal impact on the pecuniary incentive to compete); Ian Ayres and Paul Klemperer, 'Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-injunctive Remedies', 97 *Mich. L. Rev.* 985 (1999) (arguing that patent holder's unconstrained monopoly pricing is cost ineffective because last bit of monopoly pricing produces large deadweight loss for small amount of patentee profit).

## 7. ‘Obvious’ consumer harm in antitrust policy: the Chicago School, the post-Chicago school and the courts

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### INTRODUCTION

Antitrust policy was born as a compromise between laissez faire and interventionist ideologies (Page, 1991, p. 1). Because the terms of the compromise were never specified, interpretive schools espousing versions of those antithetical ideologies have long competed to give their preferred content to the statutes’ vague terms. Over the past few decades, the Chicago School, expressing a strong preference for market ordering over government intervention, has sought to reorient antitrust analysis away from the populism of the Warren Court era toward economic efficiency (Page, 1989, p. 1221). In recent years, post-Chicago scholars have advocated a more activist approach to antitrust, identifying circumstances in which, under certain assumptions, markets may fail and government intervention may be justified (Kwoka and White, 1999, p. 445; Royall, 1995, p. 445).<sup>1</sup> Yet neither side of the debate has won full judicial acceptance. The Supreme Court has endorsed the Chicago School’s approach in several decisional contexts – particularly antitrust injury, the characterization of practices and standards for summary judgment (Page, 1989, p. 1257) – but has expressly overruled only two precedents of the Warren Court era.<sup>2</sup> Post-Chicago analysts have claimed victories in the Supreme Court’s *Aspen* (1985) and *Kodak* (1992)<sup>3</sup> decisions and the district court’s *Microsoft* (2000a) decision, but have otherwise met with little judicial success.

It is not surprising that the courts’ decisions depart from the policy views of a particular interpretive school. And one should not necessarily expect those departures to display any particular regularities.<sup>4</sup> We suggest, however, that the pattern of acceptance and rejection of Chicago School positions reflects a decisional approach that is broadly consistent with Chicago’s, but places greater weight on immediate, tangible effects – good or bad – on consumers. The court finds legal arguments most persuasive when they are supported by theory and evidence showing the practice’s *obvious* effect. The most important (though by no means

the only) determinant of obviousness is immediacy. The court is most likely to accept a Chicago-inspired argument blocking liability where the practice in question is immediately beneficial to consumers; it is correspondingly less likely to accept such an argument when the practice is immediately harmful to consumers.

This approach is broadly consistent with two tenets of the Chicago School's approach. First, and most obviously, it is consistent with Chicago's view that antitrust law is designed to protect consumers (Bork, 1993, p. 427; Lopatka, 1995, p. 23). Chicago scholars have argued that the interests of competitors, suppliers or dealers are worthy of protection only to the extent that they are consistent with consumer welfare. Second, it is consistent with the view, voiced most often by Frank Easterbrook, that courts have limited competence in evaluating complex business practices.<sup>5</sup> The 'inhospitality tradition' in antitrust law (Easterbrook, 1984, p. 4)<sup>6</sup> – the assumption that complex practices are monopolistic – has declined as courts have gained humility about their capacity to eradicate monopolistic practices and greater respect for the market's ability to do so.

But the judicial implementation of these two premises differs from Chicago's in ways that have led the court to reject some Chicago arguments against liability. Sensitive to their institutional role in the legal process, courts (perhaps more than antitrust scholars or enforcers) exhibit a degree of deference to established lines of liability and to the jury (Page, 1995, p. 51). The courts have, for example, refused summary judgment in cases in which there was some evidence of consumer harm, even though a strict application of Chicago models would suggest that the harm was illusory or not properly an antitrust concern. This history provides a basis for predicting the prospects for success for post-Chicago scholars' doctrinal prescriptions.

In the next section, we set out the principal determinants of the Supreme Court's recent antitrust decision making. We note the court's endorsement of the consumer interest as its explicit guide, but explain that other institutional factors have influenced the court to give special weight to immediate effects on consumers. In the third section, we survey the court's antitrust decisions of the past two decades, showing that the pattern of Chicago's victories and losses is broadly consistent with the standard of immediate consumer harm. In the fourth section, we examine how some post-Chicago theories of liability, particularly those advanced in the *Microsoft* case, are likely to fare under the approach to consumer harm we outline here.

## COMPETITION, THE CONSUMER INTEREST AND INSTITUTIONAL COMPETENCE

Determining whether a practice harms 'competition' involves two inquiries. First, the court must identify an observable variable as a measure of the practice's

competitive effect. Because adherents of competing ideologies differ in their views of the mechanisms and outcomes of 'normal' competition, they also differ over what sorts of variables, or proxies, can be linked to competitive and noncompetitive outcomes. The modern Supreme Court has settled on the consumer interest as the guiding measure of competition for antitrust law, a choice that deeply affects the framing and application of antitrust rules. Second, the court must evaluate the evidence that a change in the variable has occurred or is likely to occur. Again, observers differ over when the applicable theory and the available evidence justify an inference that a practice will hurt or benefit consumers. The modern court, expressing an awareness of the judiciary's role in the legal process, has chosen to give priority to evidence of immediate effects, good or bad, as the best indicator of the consumer interest. This priority has led it to depart from the policy proscriptions of the Chicago School.

### **The Primacy of the Consumer Interest**

The Supreme Court has not always viewed the interests of consumers as paramount in antitrust law. When Earl Warren wrote in 1962 that antitrust was for the protection of 'competition, not competitors' (*Brown Shoe v. United States*, 1962, p. 320), he did not mean that antitrust was designed to protect consumers from the effects of monopolistic restrictions of output. In those days, the court was concerned with preserving 'competition on the merits', a process dependent upon the exercise of independent discretion by individual traders (Page, 1995, p. 27). To that end, the court sought to preserve smaller rivals<sup>7</sup> and to protect distributors from coercion in their choices on issues like price and quality of products, even where the evident outcome of the coercion was to reduce prices to consumers.

In *Albrecht v. Herald Co.* (1968, p. 145), for example, the court held vertical maximum price fixing unlawful per se, even though the practice manifestly prevented exploitation of consumers by dealers with local market power. As one commentator explains, the decision reflects 'the theoretical conviction that the most general function of the competitive process, the allocation and reallocation of resources in a rational yet automatic manner, can be carried out only if independence by each trader is scrupulously required' (Sullivan, 1977, p. 212).<sup>8</sup> This conviction is better termed ideological than theoretical: it has almost no basis in economic theory. Because the process of competition is not well understood, opinions about whether this or that action harms the process tend to reflect these sorts of preconceptions. *Albrecht* shows that protecting the 'process of competition' by protecting trader freedom paid scant attention to the interests of consumers, who were simply assumed to benefit – at least in a social or political sense – from the long-term effects of competition on the merits (*State Oil Co. v. Khan*, 1997, p. 18).<sup>9</sup>



Nowadays, the court views injury to competition primarily in terms of harm to consumers (*National Collegiate Athletic Ass'n v. Board of Regents*, 1984, p. 106).<sup>10</sup> Even if the court still refers to 'competition on the merits', it is careful to link the notion to the consumer interest (*Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 1984, p. 14).<sup>11</sup> The court famously recognized in 1979 that 'Congress designed the Sherman Act as a "consumer welfare prescription"' (*Reiter v. Sonotone Corp.*, 1979, p. 343),<sup>12</sup> citing Robert Bork's *Antitrust Paradox* (1978). Of course, the court was not necessarily endorsing Bork's view that consumer welfare is equivalent to economic efficiency or total social wealth.<sup>13</sup> Others have argued that antitrust's primary concern is with preventing wealth transfers from consumers to producers (Lande, 1982, p. 74). But, in practice, the differences between these positions are less important than their similarities. Both repudiate 'trader freedom' as an independent goal of antitrust. And both focus on protecting the consumers from the effects of monopolistic output restrictions.<sup>14</sup> Because those effects include both wealth transfers and simultaneous deadweight losses from reduced output, the effect on consumers is the crucial indicator of reduced competition. A monopolistic overcharge, for example, is a 'harm . . . that reflect[s] reduced efficiency', because 'The same output restriction that permits the price increase also creates the deadweight loss in consumers' surplus' (Page, 1985, p. 1465). Demonstrable consumer harm is the cash value of any claim of harm to competition.

The court has also accepted the Chicago view that it is often difficult to distinguish practices that reduce consumer welfare from those that increase it (*Monsanto Co. v. Spray-Rite Service Corp.*, 1984, p. 752). Unduly broad antitrust prohibitions can themselves harm consumers by deterring actively beneficial conduct. Because of these concerns, the court has identified practices that are particularly likely to benefit consumers by increasing output, and so should be insulated from findings of antitrust liability (*NYNEX Corp. v. Discon, Inc.*, 1998, p. 136).<sup>15</sup> In this context, harm to rival producers is, if anything, usually an indication that the practice increases output, benefits consumers and should be lawful.<sup>16</sup> In a sense, in these cases, the court is protecting the process of competition. But, unlike the Warren Court's emphasis on protecting the freedom of traders from private coercion, the modern court seeks to protect the freedom of traders from perverse *antitrust* constraints. The market itself has powerful mechanisms that attack monopoly profits. In cases where the consumer interest is otherwise unclear, the modern court takes care not to create rules that interfere with those mechanisms.

### **The Primacy of Immediate Effects in Judicial Decision Making**

Up to this point, our description of the court's antitrust approach is fully consistent with the primary tenets of the Chicago School: the preference for

the consumer interest and awareness of the judicial limitations in identifying genuinely monopolistic practices. But, as we show in the next section, the court's implementation of these principles has upheld liability more frequently than an orthodox Chicago School approach would allow. The reason, we believe, is that the court's perception of its role in the legal process leads it to give greater weight to the immediate effect of practices on consumers. This preference for immediate effects can work both for and against liability.

Some statutory schemes prohibit specific practices based on legislative determinations that the practices harm the public interest in the long run. A court applying this sort of legal standard may have to be aware of legislative intent to define the contours of the prohibition, but will typically not have to determine that prohibiting the practice in any given case will advance the public interest in specific ways. Courts routinely enforce intellectual property rights, for example, in ways that inflict massive immediate injuries on consumers, without proof in each case that the public interest will benefit in the long run (*Data General Corp. v. Grumman Sys. Support Corp.*, 1994, p. 1187).<sup>17</sup> In such cases, courts properly recognize that their institutional role is to implement the congressional view of the public interest by prohibiting the legislatively proscribed conduct.

The antitrust laws, in contrast, give the courts greater latitude not only in defining the public interest (for example, by equating it with consumer welfare) but in defining and identifying practices that harm it. In addressing the latter question, however, courts have required proof of harm to consumers in defined markets and time periods (*Data General*, p. 1184).<sup>18</sup> Aware of their limitations in resolving complex economic and technical issues, the courts have focused on effects in the (relatively) short run. They take Keynes's view that the 'long run is a misleading guide' in practical economic analysis, because 'in the long run we are all dead' (Keynes, 1924, p. 80).<sup>19</sup>

Historically, through the use of the per se rule, the court has made quasi-legislative determinations that certain practices are so likely to be harmful that they can be prohibited without proof of their effect on competition in particular cases (*Northern Pacific R. Co. v. United States*, 1958, p. 5).<sup>20</sup> But even when a practice was literally within a per se category, the court asked 'whether the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output' (*Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 1979, p. 19). Outside of the per se category, the court has often required a detailed investigation of a practice's effect before it could be prohibited (*Board of Trade of the City of Chicago v. United States*, 1918, p. 238).<sup>21</sup> In recent years, the court has concluded that there is no dichotomy between practices 'that give rise to an intuitively obvious inference of anticompetitive effect and those that call for more detailed treatment' (*California Dental Ass'n v. FTC*, 1999, p. 780).<sup>22</sup> Instead, the court conducts:

an enquiry meet for the case, looking to the circumstances, details, and logic of a restraint. The object is to see whether the experience of the market has been so clear, or necessarily will be, that a confident conclusion about the principal tendency of a restriction will follow from a quick (or at least quicker) look, in place of a more sedulous one. (*California Dental Ass'n v. FTC*, 1999, p. 780).<sup>23</sup>

In this inquiry, the court determines the practice's likely net effect by first determining the relative obviousness or clarity of the practice's effect, then conducting an appropriately intense 'empirical' evaluation. The obviousness of an effect determines the sort of evidence the court will require for the parties to prove the effect or its opposite.

Obviousness of anticompetitive effect is in part dependent on one's measure of competition. In *Schwinn*, the Warren Court could conclude that vertical territorial restrictions were 'so obviously destructive of competition' as to justify per se condemnation (*United States v. Arnold, Schwinn & Co.*, 1967, p. 379). The court abandoned that perception 10 years later in the watershed *Sylvania* decision, which held that those restrictions should be judged under the rule of reason (*Continental T.V., Inc. v. GTE Sylvania Inc.*, 1977, p. 36). The difference between those cases reflects the change in the court's understanding of the goals of antitrust, and therefore its understanding of what it means to destroy competition.<sup>24</sup> In *Schwinn*, the only question was the effect of the restraint on trader freedom; in *Sylvania*, the issue was the effect of the restriction of trader freedom (particularly the control of 'free-riding') on consumers. That change alone altered the court's perception of obvious harm to competition.

But obviousness is also a function of the immediacy of a practice's effect. This preference for immediate, concrete effects is evident in the law of antitrust damages (Blair and Page, 1995, p. 423) and standing,<sup>25</sup> both of which deny recovery to those who assert speculative harms from antitrust practices. A damage model becomes more speculative as it seeks to account for a longer sequence of events involving more economic actors (*ibid.*, 1995, p. 441). Courts are less likely to accept such a model because it fails to account for potential causal factors other than the defendant's monopolistic conduct. The same preference for immediate effects can block liability entirely when the plaintiff, regardless of the immediacy of its own harm, can only speculate that *consumers* will suffer harm from the practice.

This is not to say that immediate effects on consumers are the only concern of antitrust. Rather, the ultimate issue concerns the obvious effects of a practice. As Joseph Brodley notes, antitrust does not dissolve monopolies achieved by superior skill or even by chance even if doing so might lead to lower prices in the short run (Brodley, 1987, p. 1036).<sup>26</sup> The harm to consumers from dissolving innovative monopolies is perhaps more obvious than the benefit consumers might derive from an immediate price reduction.

Where the theoretical and empirical case is sufficiently strong, business justifications can override a transitory consumer interest. Our point is that less direct effects must be supported by correspondingly stronger theory and evidence.

Plaintiffs' cases supporting liability vary in the determinacy of their predictions of consumer harm. Establishing consumer harm might require proof of historical facts, counterfactual inferences (deciding what would have occurred had particular acts not taken place) or predictions of future effects. Making any of these determinations requires both evidence and theory (Blair and Page, 1995, p. 436). But the proof of hypothetical events and particularly the prediction of remote future events are necessarily more speculative than proof of historical facts or immediate consequences of present practices. Theories supply the intervening steps necessary to predict remote effects. If the evidence or empirical assumptions fill the theories' slots, an expert can predict that the later effect will occur. But theories can only account for a limited number of variables – a small percentage of those that influence outcomes in real-world markets. Where the theory depends on many intermediate steps, and the actions of numerous intervening parties, the noise of the market can easily swamp the theory's predictions (*ibid.*, p. 441). Tastes may change. New products may emerge and new firms may enter, particularly if there are substantial profits to attract them.<sup>27</sup> Consequently, courts are skeptical of the claim that evident immediate harms are (or will be) outweighed by compensating benefits. They are still more skeptical of the claim that, though a practice conferred immediate benefits, things would be still better had the practice not occurred.

All of this echoes the Chicago School's cautionary challenges to judicial competence in evaluating complex business practices. Given that the court has largely accepted consumer welfare as the appropriate goal for antitrust law, one might then expect the court to reach the same policy conclusions as Chicago analysts. But, as we have argued elsewhere, and as we develop more fully below, the court's implementation of Chicago's models and policy arguments have differed significantly from the Chicago program. The differences, we believe, stem from the differing institutional constraints of courts and scholars.

Both objective and subjective factors drive choices among available theories (Kuhn, 1977, p. 320). Just as ideological factors affect the choices of competing interpretive schools, institutional factors influence the choices of judges. Although modern judges accept the legal realist insight that ideological factors influence judicial decision making, they remain sensitive to their role in the broader legal process (Page, 1995, p. 1). Judges may be more hesitant than scholars to accept some kinds of theoretical analyses as the basis for decisions. So theoretical extensions of basic models might be widely accepted

within an interpretive school, yet less well accepted by judges, even those with a similar ideological outlook.<sup>28</sup> Judges are more likely to defer to established precedents or to other decision makers in the legal system, such as the jury (Page, 1995, p. 51; Blair and Lopatka, 1998, p. 168). Consequently, viewing the same models as the commentators, a court is likely to implement their insights in less sweeping ways. For example, where a scholar recommends that a practice be declared per se lawful, the court might conclude that it should be judged under some form of the rule of reason, and set limits on which classes of plaintiffs can sue for harms caused by the practice (Page, 1995, p. 53).

The same institutional constraints lead courts to place greater emphasis than scholars on immediate effects. Moreover, the preference for immediate effects does not only work against plaintiffs. In some instances, an immediate benefit to consumers will lead courts to limit liability. In other instances, however, immediate harm to consumers will lead courts to impose liability. We show in the next section that these biases have in some instances led the court to accept the prescriptions of the Chicago program and in others to reject them.

## CHICAGO'S GREATEST HITS (AND MISSES)

Adherents of an analytical school share a set of theoretical models of the practices within antitrust's categories: resale price maintenance, tying, predatory pricing and so forth (Page, 1989, p. 1231). If those models predict that a practice is never harmful or always harmful, then the appropriate policy prescription follows: per se legality or illegality. In intermediate cases, a policy prescription requires an empirical estimate – also commonly shared by members of the school – of the prevalence of the practice and the frequency with which it has harmful or beneficial effects (*ibid.*, p. 1239). The Chicago School, from its shared models and empirical estimates, proposed a policy program that required the wholesale reform of antitrust doctrine, generally in the direction of per se legality for a range of traditionally suspect practices (*ibid.*, p. 1243).

Although the Supreme Court has been receptive to Chicago's theoretical models in many instances, its outcomes in antitrust cases have not always been in line with those Chicagoans have advocated (*ibid.*). The reason does not apparently lie in a disagreement over the ultimate goal of antitrust – to enhance consumer welfare. The difference lies in the weight the court has been willing to give the theoretical predictions and empirical estimates of the Chicago School in the face of the evidence of the effects of particular practices. For institutional reasons, the Court gives greater weight to evidence of immediate effect.

## Hits

Where Chicago analysis would support liability based upon the immediate harm a practice does to consumers, the court has generally agreed. Chicago scholars have long argued that the primary focus of antitrust should be on cartels (Bork, 1993, p. 263; Posner, 1971, p. 529; Lopatka and Page, 1995, p. 1722). A cartel agreement, by its nature, restricts output and increases prices, thus immediately harming both consumers who continue to pay for the product and those who are induced to buy less-preferred substitutes. The theoretical support for this inference of consumer harm from price-fixing agreements is widely accepted. Some scholars (including some associated with Chicago) have argued that the effort to penalize cartels is unwise or unnecessary, because, for example, cartels will be destroyed by entry in the long run or because some cartels are more efficient than competition in certain markets (Telser, 1987; Dewey, 1979, p. 587; Bittlingmayer, 1983, p. 57). But the obvious, immediate effect of the cartel on consumers overwhelms any such arguments.<sup>29</sup> The enforcement agencies under both parties have pursued aggressive policies against cartels and the Supreme Court has shown no inclination to restrict liability for horizontal price restraints, or practices that amount to the same thing (*Catalano, Inc. v. Target Sales, Inc.*, 1980, p. 647; *FTC v. Indiana Fed'n of Dentists*, 1986, p. 447).<sup>30</sup>

Chicago-inspired arguments have been most successful in *blocking* liability in cases in which the practices in question provided immediate consumer benefits. For example, in *Brunswick Corp. v. Pueblo Bowl-O-Mat*, (1977, p. 477), the court denied firms the right to sue for damages from a merger that prevented their rivals from leaving the market. The lost profits the plaintiffs suffered as a result of continued competition had nothing to do with – and indeed contradicted – the rationale for prohibiting merger. Implicitly, the decision recognized the primacy of immediate, tangible effects on consumers over predicted or assumed long-run effects.<sup>31</sup> Even if the merger were illegal – and thus at least potentially harmful to competition in the long run – it only benefited consumers in the near term, and thus did not inflict antitrust injury on the merging firms' rivals (*Rebel Oil Co. v. Atlantic Richfield Co.*, 1995, p. 1445).<sup>32</sup>

The court has also repeatedly emphasized immediate effects on consumers by sharply restricting predatory pricing claims. The court has endorsed the Chicago School's view that predatory pricing is unlikely to be an effective means of gaining or protecting monopoly power (*Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 1986, p. 595).<sup>33</sup> At the same time, the court has observed that an unduly broad prohibition of price cutting trades an immediate consumer benefit for a necessarily more speculative future benefit. Judge (now Justice) Breyer explained the significance of this tradeoff for antitrust policy:

A price cut that ends up with a price exceeding total cost – in all likelihood a cut made by a firm with market power – is almost certainly moving price in the ‘right’ direction (towards the level that would be set in a competitive marketplace). The antitrust laws very rarely reject such beneficial ‘birds in hand’ for the sake of more speculative (future low-price) ‘birds in the bush’. (*Barry Wright Corp. v. ITT Grinnell Corp.*, 1983, p. 233).<sup>34</sup>

The Supreme Court voiced a similar concern in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.* (1993, p. 223):

Even in an oligopolistic market, when a firm drops its prices to a competitive level to demonstrate to a maverick the unprofitability of straying from the group, it would be illogical to condemn the price cut: The antitrust laws then would be an obstacle to the chain of events most conducive to a breakdown of oligopoly pricing and the onset of competition. Even if the ultimate effect of the cut is to induce or reestablish supracompetitive pricing, discouraging a price cut and forcing firms to maintain supracompetitive prices, thus depriving consumers of the benefits of lower prices in the interim, does not constitute sound antitrust policy.<sup>35</sup>

The court also noted that, ‘Although unsuccessful predatory pricing may encourage some inefficient substitution toward the product being sold at less than its cost, unsuccessful predation is in general a boon to consumers’ (*Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 1993, p. 224). In these passages, the court directly expresses the preference for immediate benefits to consumers: even if the plaintiff can tell a story in which conduct immediately beneficial to consumers could be monopolistic in the long run, it is not ordinarily sound antitrust policy to condemn the conduct.<sup>36</sup>

For similar reasons, the court has also set limits on claims of vertical maximum price fixing. In *Atlantic Richfield Co. v. USA Petroleum Co.* (1990, p. 328), the court extended *Brunswick* to deny the right to sue to rivals of firms that were subject to nonpredatory vertical maximum price fixing. Even though the rivals lost profits as the result of a practice that was per se unlawful under *Albrecht*, the primary effect of the maximum price policy was beneficial: ‘Low prices benefit consumers regardless of how those prices are set, and so long as they are above predatory levels, they do not threaten competition’ (*Atlantic Richfield Co. v. USA Petroleum Co.*, 1990, p. 340). And in *State Oil Co. v. Khan*, (1997, p. 15), the court finally overruled *Albrecht*, emphasizing that the immediate effect of the maximum prices was to prevent dealers from charging higher prices to consumers. Predictions that maximum prices would ultimately become minimum prices and thus harm consumers, or that interfering with the distributor freedom would necessarily harm competition, were insufficient to justify per se illegality.<sup>37</sup>

Of course, immediate consumer benefit is not the whole story. Chicago arguments have been successful in blocking liability, even when the practice

may have imposed immediate harm on consumers, when the theoretical predictions of future benefit were particularly strong. For example, *Sylvania* overruled the per se illegality of vertical territorial restraints, even though the practice imposed immediate harm on at least some consumers by limiting intrabrand competition. The free-rider argument (Telser, 1960, p. 86) was sufficiently persuasive to demonstrate that territorial restraints could benefit consumers by promoting interbrand competition. And in *Berkey Photo, Inc. v. Eastman Kodak Co.* (1979, p. 263), the Second Circuit recognized that a dominant firm's refusal to predisclose its innovations to competitors was not monopolization, even though predisclosure might have immediately led to lower prices by allowing smaller rivals to copy the new product more quickly. For one thing, introducing a new product benefits consumers, even if it could have been done in a way that provided still more immediate consumer benefits. To require sacrifice of the lead-time monopoly would be to place an obvious, unjustified burden on the process of innovation. These cases demonstrate that consumer benefit need not be immediate to be obvious.

Chicago also won a victory in *NYNEX Corp. v. Discon, Inc.* (1998, p. 128), even though the practice at issue conferred no immediate benefit on consumers. The defendant had allegedly switched suppliers in order to find a more cooperative partner in a plan to increase its rates by submitting misleading cost data in rate applications to a regulatory agency. Moreover, although the terminated suppliers were injured and consumers might conceivably have paid higher prices as a result of the alleged arrangement, the court reasoned that the alleged

consumer injury naturally flowed not so much from a less competitive market for removal services, as from the exercise of market power that is lawfully in the hands of a monopolist, namely, New York Telephone, combined with a deception worked upon the regulatory agency that prevented the agency from controlling New York Telephone's exercise of its monopoly power. (*NYNEX Corp. v. Discon, Inc.* 1998, p. 136)

This sort of harm was not the result of an illegal exercise of monopoly power, and so was not grounds for imposing per se illegality.

More generally, the court in *Discon* required the plaintiff to 'allege and prove harm, not just to a single competitor, but to the competitive process, that is, to competition itself' (*NYNEX Corp. v. Discon, Inc.* 1998, p. 135). But the court's understanding of harm to the 'competitive process' differed from that of the Warren Court, in which the goal was to protect trader freedom from private coercion. In *Discon*, lacking evidence of relevant consumer harm or benefit, the court emphasized a different idea of trader freedom: the *Colgate* principle of freedom to choose trading partners (*United States v. Colgate & Co.*, 1919, p. 300). It wrote: 'The freedom to switch suppliers lies close to the



heart of the competitive process that the antitrust laws seek to encourage' (*NYNEX Corp. v. Discon, Inc.*, 1998, p. 136). To impose liability for switching suppliers would undermine 'the most efficient means for the prevention of monopoly' (*NYNEX Corp. v. Discon, Inc.*, 1998, p. 136).<sup>38</sup> Thus the 'competitive process' can be injured both by private conduct that limits output and by antitrust rules that limit the market's own ability to erode monopolistic practices. While private coercion might in some instances be truly exclusionary and thus harmful to consumers, those cases are exceptional. More often, the decision to refuse to deal is simply a by-product of value-maximizing or cost-minimizing exchange and thus predictably beneficial to consumers.

### Misses

Despite the examples of *Sylvania*, *Berkey Photo* and *Discon*, Chicago has been, in general, less successful in arguing against liability in cases in which the immediate effect of the practice was to harm at least some consumers. Recall that Judge Breyer rejected a more lenient predatory pricing rule (that would have allowed liability for pricing above average total cost) because it asked the court to trade immediate benefits in the hope of more speculative future ones. Significantly, he added that 'To do so opens the door to similar speculative claims that might seek to legitimate even the most settled unlawful practices' (*Barry Wright Corp. v. ITT Grinnell Corp.*, 1983, p. 233). The preference for immediate effects on consumers does not only limit liability; it can *justify* established theories of antitrust liability, despite creative arguments that the net or long-run effect of the practice will be to benefit consumers.

We can see the influence of this viewpoint in the court's treatment of vertical restraints in distribution apart from *Sylvania*. Chicago's victory in *Sylvania* coincided with the court's shift to the primacy of the consumer interest. *Schwinn*, as we have seen, based its imposition of per se illegality of vertical territorial restrictions in sale transactions not on any showing of consumer harm, but on the bare fact that they 'limited the freedom of the retailer to dispose of the purchased products as he desired' (*Continental T.V., Inc. v. GTE Sylvania Inc.*, 1977, p. 48). But despite the predictions of then-Professor Posner (1981, p. 6), *Sylvania's* endorsement of the free-rider argument did not herald the adoption of Chicago's prescription of per se legality for all vertical restraints in distribution. Vertical minimum price restraints remain, at least nominally, illegal per se (*Dr. Miles Medical Co. v. John D. Parke & Sons*, 1911, p. 373).<sup>39</sup> The analysis so far suggests that one reason is the court's hesitancy to reject evidence of obvious and immediate consumer harm for a theoretical argument that consumers in fact benefit, at least over the long run, in ways that are less measurable, by receiving valuable services and information. In a typical distributional restraint case, no one denies that preventing intrabrand price

competition raises prices to consumers. Instead, the usual defense is that the higher prices buy a higher-quality package of products and services, that consumers prefer (Telser, 1987, p. 91).<sup>40</sup> But the difference in quality cannot be observed merely by examining the market outcome. And unlike the consensus on the price effect, not all commentators agree the restraint leads to enhanced quality. Indeed, in theory, total consumer surplus need not increase as a result of the restraint (Comanor, 1987, p. 1153).<sup>41</sup> Even Chicagoans concede this point, even if they differ from other analysts over its policy implications (Easterbrook, 1987, p. 317; Boudreaux and Ekelund, 1988, p. 137).<sup>42</sup>

The court also rejected Chicago-inspired arguments supporting the legality of the NCAA's television plan that restricted the number of football games televised by member schools (*National Collegiate Athletic Ass'n v. Board of Regents*, 1984, p. 85). The practice, in the view of the court, plainly limited viewers' abilities to see the games of their choice (*National Collegiate Athletic Ass'n v. Board of Regents*, 1984, p. 99).<sup>43</sup> Those obvious effects outweighed the NCAA's suggestion that it was simply providing an attractive package of games in competition with other televised sports and entertainment (Easterbrook, 1984, p. 7).<sup>44</sup>

The preference for immediate consumer effects is particularly striking in the law of monopolization. As we saw in the last section, claims of monopolization by predatory pricing are viewed skeptically. But plaintiffs have fared better where they were able to offer evidence of immediate consumer harm. For example, the court refused to overturn a jury's finding that the dominant operator of skiing facilities in Aspen monopolized by terminating a popular all-Aspen pass that it had offered jointly with its sole rival (*Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 1985, p. 585). Despite the orthodox Chicago view that the refusal of one firm to participate in a cooperative arrangement with another could not reduce output in the market, the court credited evidence that a substantial share of consumers preferred the variety of skiing opportunities that the all-Aspen pass provided. It concluded that 'consumers were adversely affected by the elimination of the 4-area ticket' (*Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 1985, p. 606).

In *Eastman Kodak Co. v. Image Technical Services* (1992, p. 451), the court refused to require summary judgment for the defendant in a case in which a standard Chicago analysis suggested there could be no harm to competition. Kodak refused to provide spare parts for its copiers unless the buyer also agreed to use Kodak service or to provide their own service. The policy injured independent service organizations (ISO) that provided service for Kodak copiers, and there was evidence that consumers preferred the ISO's service. But Chicago analysis suggested that, because Kodak lacked market power in the market for the copying equipment, their policy could not harm consumers in a meaningful way. Consumers would view the real price of the

copiers as including the price of parts and service over the useful life of the equipment.<sup>45</sup> Some consumers might be injured, but Chicago analysis suggested that such an injury was not the result of an exercise of market power, and therefore not properly a matter of antitrust concern. As Justice Scalia stated in dissent:

Leverage, in the form of circumstantial power, plays a role in each of these relationships; but in none of them is the leverage attributable to the dominant party's market power in any relevant sense. Though that power can plainly work to the injury of certain consumers, it produces only 'a brief perturbation in competitive conditions – not the sort of thing the antitrust laws do or should worry about'. (*Eastman Kodak Co. v. Image Technical Serv's*, 1992, p. 498)<sup>46</sup>

The majority, however, was unwilling to ignore evidence of immediate consumer harm based on the theoretical argument that the harm should be characterized as merely opportunistic exploitation of a transitory contractual advantage.

An amicus in *Image Technical* argued that the 'case is precisely the opposite [of *Matsushita*]: conduct that produces direct and immediate harm to consumers – higher (service) prices, which antitrust law generally aims to prevent – is being defended on the speculative theory that such conduct is, from a broader perspective, actually beneficial to consumers'.<sup>47</sup> The court agreed. Echoing *Sylvania*, the court noted that: 'Legal presumptions that rest on formalistic distinctions rather than actual market realities are generally disfavored in antitrust law. This Court has preferred to resolve antitrust claims on a case-by-case basis, focusing on the "particular facts disclosed by the record"' (*Eastman Kodak Co. v. Image Technical Serv's*, 1992, p. 466). In this context, 'formalistic distinctions' means theoretical predictions of necessary effects. In *Sylvania*, the court's rejection of formalistic distinctions worked against per se illegality; in *Kodak*, it worked against per se legality. Unlike the practice in *Matsushita*, the court continued, 'The alleged conduct – higher service prices and market foreclosure – is *facially* anticompetitive and exactly the harm that antitrust laws aim to prevent' (*Eastman Kodak Co. v. Image Technical Serv's*, 1992, p. 478) (emphasis added). Kodak was not entitled to summary judgment, because it could not show that 'despite evidence of increased prices and excluded competition, an inference of market power is unreasonable' (*Eastman Kodak Co. v. Image Technical Serv's*, 1992, p. 469). Thus the facial, obvious effect of the practice was sufficient to avoid summary judgment.<sup>48</sup>

One case in which the court found liability qualifies as a Chicago miss, even though the evidence seemed to suggest that consumers received immediate benefits from the practice. In *Arizona v. Maricopa County Medical Society* (1982, p. 332), the court upheld summary judgment for the plaintiff, despite

evidence that supported the argument that the horizontal maximum price fixing mechanism plausibly held down prices to consumers (Herndon and Lopatka, 1999, p. 117).<sup>49</sup> Perhaps the best explanation for the case is as an expression of the strength of the cartelization prototype. Horizontal price restraints are so clearly harmful to consumers that even a practice assertedly aimed at reducing prices to consumers is viewed as so dangerous to the consumer interest that it justifies per se prohibition (*Arizona v. Maricopa County Medical Society*, 1982, p. 348).<sup>50</sup>

## IMPLICATIONS FOR THE FATE OF POST-CHICAGO THEORIES: *MICROSOFT*

Our argument in the previous section suggests that the immediate harm or benefit that a practice does to consumers is a primary determinant of the Chicago School's success in arguing for or against liability. If a practice immediately benefited consumers, then Chicago's arguments for legality were given great weight; if there was credible evidence the practice immediately harmed consumers, the Chicago argument for legality was viewed with skepticism. Because the court endorses the consumer interest as the goal of antitrust, the difference in outcome apparently shows that the court assigns greater weight than does the Chicago School, in certain doctrinal contexts, to evidence of immediate effects as opposed to theoretical predictions or counterfactual inferences from known facts.

The foregoing analysis suggests how we might predict which post-Chicago theories of liability will face the greatest obstacles to acceptance by the present federal judiciary. Those that rest on evidence of immediate consumer harm are most likely to win judicial favor. For example, theories that mergers in markets with differentiated products will harm competition through unilateral, non-collusive effects show some promise (*FTC v. Staples, Inc.*, 1997, p. 1066; Hammer, 2000, p. 896 n.129).<sup>51</sup> Although these theories bypass conventional standards for market definition, and rely on complex statistical techniques, they do so in a way that focuses on evidence of immediate price effects that can harm consumers in the near term. Similarly, courts may be receptive to a properly supported case alleging that a firm with some market power has coordinated a conspiracy among its suppliers to impose disadvantageous terms on its lower-priced competitors (*Toys 'R' Us, Inc. v. FTC*, 2000, p. 934).<sup>52</sup> The evident intent of such an agreement is to increase prices to consumers immediately. But theories resting on predictions that practices that benefit consumers in the short run will eventually harm them in the future are likely to be met with continued skepticism.<sup>53</sup> Most likely to fail are theories attempting to expand liability for predatory pricing.

The *Microsoft* case represents an interesting study from the perspective of consumer harm.<sup>54</sup> In *Microsoft*, the government alleged and the district court ultimately held that Microsoft included its browser (Internet Explorer or IE) in its Windows operating system in order to forestall the evolution of Netscape's Navigator browser and Sun's Java technologies into a competing platform on which applications software could run (*United States v. Microsoft Corp.*, 2000a, p. 38). Had it succeeded, the new platform would allegedly have reduced the 'applications barrier to entry' by making it possible to write software that would run on any operating system. The case eventually ranged far from the legality of including IE in the operating system, but that action remained the core of the case. The court agreed with the government that inclusion of IE was an illegal tying arrangement (*United States v. Microsoft Corp.*, 2000a, p. 47). In so doing, it rejected the DC Circuit's lenient standard for finding that integrated products constituted a single product.<sup>55</sup>

Recently, the court accepted the government's proposed remedy in its entirety (*United States v. Microsoft Corp.*, 2000b, p. 62).<sup>56</sup> The judge ordered that Microsoft be divided into two firms, one limited to operating systems and the other to applications (*United States v. Microsoft Corp.*, 2000b, p. 64). He also imposed a set of conduct restrictions, some of which apply to both firms and some of which apply only to the operating systems business (*United States v. Microsoft Corp.*, 2000b, p. 65).<sup>57</sup> The Supreme Court refused expedited review of the district court's decision and remanded the case to the Court of Appeals (*United States v. Microsoft Corp.*, 2000d), where it is now pending.

*Microsoft* represents post-Chicago antitrust's most prominent victory. But it remains to be seen whether the district court's conclusions will stand. Our analysis in the previous section suggests that the most central conclusions face obstacles in the appellate courts.<sup>58</sup> First, we argue that the most important findings on liability show that Microsoft's conduct conferred present benefits on consumers, while any harms are more conjectural. Second, the most important aspect of the decree – the division of Microsoft into operating systems and applications businesses – will impose almost certain harms on consumers, while promising largely speculative competitive benefits.

## Liability

We have argued that the inclusion of IE should not be considered an illegal tying arrangement, because it lacks the crucial quality of forcing consumers (Page and Lopatka, 1999, p. 1265). Under the Supreme Court's precedents, tying is illegal because it hurts consumers in a particular way, *forcing* them to take the tied product and thus preventing them from choosing the products of a rival (*Jefferson Parish Hospital Dist. v. Hyde*, 1984, p. 15).<sup>59</sup> But Microsoft's practice involves no forcing of consumers in this sense. Because

Windows is not designed in a way that physically excludes competing browsers, consumers and original equipment manufacturers (OEMs) remain free to acquire and install Netscape's product. Equally important, because IE is free in all channels of distribution, the inclusion does not satisfy consumer demand for a browser in the same way as, say, including 'free' developing in the price of a roll of film would effectively force consumers to choose the tied developing services. Any exclusion that does occur is the result of the unequivocal, immediate consumer benefit of providing them with a free, 'perfectly adequate' browser. Moreover, those effects all occurred in the process of introducing and developing a new product that challenged a dominant incumbent in the browser market.

Recognizing these effects, the court itself found:

The debut of Internet Explorer and its rapid improvement gave Netscape an incentive to improve Navigator's quality at a competitive rate. The inclusion of Internet Explorer with Windows at no separate charge increased general familiarity with the Internet and reduced the cost to the public of gaining access to it, at least in part because it compelled Netscape to stop charging for Navigator. These actions thus contributed to improving the quality of Web browsing software, lowering its cost, and increasing its availability, thereby benefitting consumers. (*United States v. Microsoft Corp.*, 1999, para. 408)

Nevertheless, the court also found that Microsoft's actions (not only its combination of IE and Windows) had caused 'serious and far-reaching, consumer harm by distorting competition' (*United States v. Microsoft Corp.*, 1999, para. 409). The court pointed to those consumers who wanted a browserless version of Windows, and those who wanted only Navigator, but who were required to have both. The court found that inclusion of IE degraded performance for those using Navigator by consuming system resources and creating confusion (*United States v. Microsoft Corp.*, 1999, para. 410). And the court found that Microsoft had

harmed consumers indirectly by unjustifiably distorting competition. The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conducted to consumer choice and nurtured innovation. (*United States v. Microsoft Corp.*, 1999, para. 411)

Microsoft thus inhibited the evolution of Navigator into a competitor that might have eventually threatened the Windows monopoly.

We cannot explore all of the court's findings and conclusions here. But we need not do so in order to suggest that the harms that the court invokes are less immediate and tangible than the benefits. The primary harm with which

antitrust is concerned is monopolistic overcharges. Although the government's economic experts testified that Microsoft was charging supracompetitive prices for Windows (*United States v. Microsoft Corp.*, 1998a),<sup>60</sup> the court did not so find (*United States v. Microsoft Corp.*, 1999, para. 65).<sup>61</sup> Indeed, it suggested that Microsoft could be 'pricing low relative to the short-run profit-maximizing price, thereby focusing on attracting new users to the Windows platform' (*United States v. Microsoft Corp.*, 1999, para. 65). Nor did it find that Netscape's browser and Java would necessarily have evolved into a competing platform but for Microsoft's actions.<sup>62</sup> On the other hand, the effects of Microsoft's actions on prices in the browser market were immediately beneficial to consumers. Microsoft drove Navigator's price to zero and had made its own free browser available in the most convenient way – as part of a package with the operating system.

The court in *Microsoft* offered the following test for whether conduct is illegally predatory:

If the defendant with monopoly power consciously antagonized its customers by making its products less attractive to them – or if it incurred other costs, such as large outlays of development capital and forfeited opportunities to derive revenue from it – with no prospect of compensation other than the erection or preservation of barriers against competition by equally efficient firms, the Court may deem the defendant's conduct 'predatory'. (*United States v. Microsoft Corp.*, 2000a)<sup>63</sup>

Notably absent from this formulation is any mention of the effect of the practice on consumers. Like *Albrecht*, the suggested test focuses on the 'process of competition'. The flaw in the test becomes apparent if we recall Judge Breyer's rejection of a rule that defined pricing above average total cost as predatory. A dominant firm can destroy competitors that are less efficient on average by pricing just below the competitors' entry points. The presence of these fringe firms in the market constrains the dominant firm's monopoly power; driving them out of the market demonstrably reduces social welfare, even though they are less efficient on average than the dominant firm (Page, 1990, p. 2156).<sup>64</sup> The price cut serves no purpose (by hypothesis) other than to reinforce the dominant firm's monopoly power. Nevertheless, Judge Breyer properly rejected a rule that would penalize price cuts to levels above average total cost. Such a rule sacrifices the bird in the hand of lower short-term prices to consumers in the hope of avoiding higher monopoly prices in the future. But many things can happen to prevent those monopoly prices from ever occurring. Equally important, the rule deters price cutting – conduct that in general is the essence of competition's benefit to consumers.

This logic sinks the district court's test for predation in *Microsoft*. The court found that Microsoft's actions were unremunerative on any rational basis other than to build Internet Explorer's usage share at the expense of Netscape

(*United States v. Microsoft Corp.*, 2000a, p. 44). No apparent source of direct or ancillary revenues could compensate Microsoft for its investment in IE. But in Internet markets it was not unusual, at least until very recently, for firms to attract investors even though they lacked any apparent means of recouping the investment, by monopoly prices or otherwise. According to one venture capitalist:

The notion that entrepreneurs have to spend a lot of time creating business plans has always seemed silly to me, but now in most cases it's completely absurd. In the past, you might have been able to write a business plan that could last a year or two before you had to change it. Now you have to change course all the time – you have to adapt, not plan. The best you can do, I think, is have a sense of direction – an intuition about where the big opportunities are. (Khosla *et al.*, 2000, p. 962).

In such an environment, it is dubious for judges to second-guess business strategies aimed at building usage share based on their chances for success. Firms in the new economy frequently must price aggressively to build usage share. More important, those strategies, like other forms of price cutting, benefit consumers. To deter the archetypal form of aggressive competition, even by a dominant firm, risks serious harm to consumers. Any sensible test for predation must account for these concerns.

We have shown that the courts give greater weight to the immediate effects of practices because of concerns about their own competence. The New Economy context of the Microsoft case magnifies these concerns (Posner, 2000).<sup>65</sup> *Microsoft* requires a court to determine, for example, whether a defendant's technological design decisions are inefficiently exclusionary. Issues like these are extraordinarily difficult, particularly in light of the dearth of disinterested experts to advise the court on the relevant economic and technical questions (Posner, 2000). And the pace of technological change in the new economy makes it more likely that even genuinely monopolistic conduct will be transitory (Liebowitz and Margolis, 1996, p. 318).<sup>66</sup>

This is not to say that the new economy context should immunize a practice from scrutiny. As Alan Meese points out, courts may prohibit mergers, even if the defendants make plausible claims of complex technological efficiencies (Meese, 1999, p. 104). Large-scale horizontal mergers in the new economy that are likely to raise prices should likewise be subject to scrutiny under conventional standards. But in *Microsoft*, the benefits of Microsoft's conduct to consumers went beyond the asserted technological gains from adding new functionality to the operating system. Microsoft provided free functionality and drove down prices in a previously noncompetitive market, without physically preventing competing browsers from operating on Windows. Those benefits are far more obvious than the purported harms from reduced innovation in cross-platform technologies.



In a famous episode in the *Microsoft* trial, the government's lead attorney asked Franklin Fisher, one of the government's economic expert witnesses, whether Microsoft's conduct had hurt consumers. Professor Fisher replied:

That's very hard to know. The reason that it's mostly hard – *on balance, I would think the answer was no, up to this point*. The reason for that is that Microsoft has used its power to protect its operating system's monopoly from a threat that might not have materialized by this time anyway. And, in doing that, it has given away a lot of things. (*United States v. Microsoft Corp.*, 1998a)<sup>67</sup>

He continued that the harm would come from deterring innovation that threatened the Microsoft monopoly: 'I don't think that's good for consumers, but those effects have only just begun' (*United States v. Microsoft Corp.*, 1998a).<sup>68</sup> In later testimony he elaborated that

as in any predatory campaign, it is the case that, while the predatory campaign is going on, consumers are not injured by the low prices involved. But *any injury to competition is an injury to consumers* . . . And in the meantime, consumers have been injured by having their choices restricted. (*United States v. Microsoft Corp.*, 1998a).<sup>69</sup>

In this passage, Professor Fisher conceded that there has been an immediate, tangible benefit to consumers, but suggested that the benefit is really a harm because it induces consumers to make choices they may not otherwise have made. He then fell back on the assertion that injury to competition is necessarily an injury to consumers. He explained:

Antitrust policy and antitrust cases are about harm to competition. It is true that we care about harm to competition, largely because of the results as to harm to consumers, but it's an error to suppose that antitrust policy is directly about harm to consumers, although, as I say, that is a primary part. The economics of antitrust policy is based upon the proposition that competition ends up, in one way or another, always being good for consumers. (*United States v. Microsoft Corp.*, 1998a).<sup>70</sup>

Professor Fisher suggests in this testimony that antitrust policy should seek to protect competition directly, because consumers will always benefit from competition.

We agree that economics teaches that competition ultimately benefits consumers, even when the immediate effects on consumers are not discernable. But it does not follow that antitrust law should not focus directly on harm to consumers. As we show above, the courts have converged on the realization that our best *legal* measure of harm to competition is the effect of a practice on consumers. As the court in *Brooke Group* noted, 'Although unsuccessful predatory pricing may encourage some inefficient substitution toward the

product being sold at less than its cost, unsuccessful predation is in general a boon to consumers' (*Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 1993, p. 224). Even if there is harm to competition in some sense, the fundamental fact remains that consumers benefit from the lower price. Other attempts to identify harm to the competitive process are fraught with danger that the court will project its ideological assumptions onto the available evidence. The danger is particularly great when we are asked to sacrifice immediate consumer benefit because of purported interference with the competitive process.

Lacking clear evidence of harm to consumers, both Professor Fisher and Judge Jackson pointed to harm to original equipment manufacturers (OEMs), which Microsoft prevented from deleting IE and otherwise reconfiguring Windows.<sup>71</sup> In response to questioning from the court, Professor Fisher testified that OEMs are 'in some sense the representatives of the consumer for certain purposes' (*United States v. Microsoft Corp.*, 1998a).<sup>72</sup> He asserted that, in any chain of manufacturing and distribution, 'a failure of competition anywhere in the system leads to a situation which is sooner, in one way or another, not as good for consumers as could otherwise be the case . . . in a system of fully competitive markets' (*United States v. Microsoft Corp.*, 1998a).<sup>73</sup> But this step once again takes us away from the question of immediate consumer harm and returns us to *Albrecht's* unsupported idea that private interference with trader freedom is harmful to the competitive process.

The pertinent question is whether OEMs were trustworthy agents for consumers in these circumstances. Netscape would certainly have been willing to pay OEMs to make its browser the only preinstalled browser on the desktop. Microsoft insisted that OEMs not make such an arrangement. No economic theory predicts that an OEM would necessarily serve consumer interests if it were permitted to accept Netscape's offer. Indeed, the obvious and immediate effect of Microsoft's restriction is to preserve greater consumer choice. With all of the restrictions on OEMs, the most tangible immediate impact of Microsoft's actions was beneficial.

### **The Divestiture Order**

Similar reasoning leads us to predict that the district court's order separating Microsoft into an operating systems company and an applications company will be overturned.<sup>74</sup> There is reason to believe that the decree will sacrifice productive efficiencies from integration. Many software firms are integrated, including those without monopoly power. That suggests that the reasons for the integration are not solely monopolistic. Equally important, divestiture will almost certainly reduce allocative efficiency by compounding monopolies. As it stands, Microsoft sets a profit-maximizing price for Windows and its Office

productivity suite software – for example, setting a lower price for Windows in order to sell more copies of Office. Assigning the two products to separate profit centers will likely cause double marginalization, as each sets a separate monopoly price (Blair and Kaserman, 1983, p. 31). The net effect will be to harm consumers.

In contrast, the asserted benefits of divestiture are largely speculative. The primary asserted benefit lies in reducing the applications barrier to entry that the court found protected Microsoft's monopoly. By separating the operating systems business from the applications business, the decree would assertedly encourage development of middleware applications like Office into platforms that could compete with Windows. Similarly, it is suggested that the applications company would be more likely to port applications to competing operating systems like Linux. But the decree does not require any of this, and with good reason: no one knows if it would be efficient or not. The applications barrier to entry would still make it more remunerative to write applications for the dominant operating system, Windows. The court itself conceded that it had no way of knowing what the competitive consequences of its order would be.

## CONCLUSION

The pattern of acceptance of Chicago School and post-Chicago school arguments reflects judicial reliance on immediate consumer benefit as the primary measure of a practice's effect on competition. Courts must rely on both theory and evidence in resolving antitrust cases, but the persuasiveness of theoretical predictions depends in large part on the determinacy of their implications for consumers. Theories are often too restrictive in their assumptions and markets are often too diverse to allow confident predictions beyond the present time period. These considerations suggest that the leading post-Chicago victory in the *Microsoft* case will not survive judicial review, at least in its present form. The primary effect of Microsoft's conduct in the case – indeed the primary mechanisms by which it is alleged to have excluded competition – conferred immediate benefit on consumers.

## NOTES

1. For the seminal post-Chicago work, see Krattenmaker and Salop (1986, p. 209).
2. *Continental T.V., Inc. v. GTE Sylvania Inc.* (1977) overruled *United States v. Arnold, Schwinn & Co.* (1967); *State Oil Co. v. Khan* (1997) overruled *Albrecht v. Herald Co.* (1968).
3. For an argument that *Aspen* and *Kodak* substantially expand antitrust liability in line with post-Chicago theories of liability, see Baker (1999).
4. Of course, collective decision making is unlikely to be fully consistent over time (Easterbrook, 1982, p. 811).

5. See, for example, *United States v. Microsoft Corp.* (1998b, p. 949) ('In antitrust law, from which this whole proceeding springs, the courts have recognized the limits of their institutional competence and have on that ground rejected theories of "technological tying".'). See generally Easterbrook (1987a; 1987b; 1984, pp. 15–17). For a discussion of Easterbrook's ideas, see Lopatka (2000, p. 158); Kenney and Jordan (1998, p. 1399); Liebowitz and Margolis (1996, p. 317). But for a contrary view, see Meese (1999, p. 102–08) (arguing that antitrust violations involving technological innovations should be subject to rule of reason analysis).
6. Easterbrook (1984, p. 4) attributes the origin of the phrase to Donald Turner.
7. For example, in *Brown Shoe v. United States* (1962, p. 344), the court states that 'we cannot fail to recognize Congress' desire to promote competition through the protection of viable, small, locally owned businesses'.
8. See also *Kiefer-Stewart Co. v. Joseph E. Seagram & Sons, Inc.* (1951, p. 213), in which the court states that agreements to fix maximum prices, 'no less than those to fix minimum prices, cripple the freedom of traders and thereby restrain their ability to sell in accordance with their own judgment'.
9. The court notes that 'Albrecht's rule may actually harm consumers and manufacturers' (*State Oil Co. v. Khan*, 1997, p. 18).
10. The court asserts that a 'restraint that has the effect of reducing the importance of consumer preference in setting price and output is not consistent with this fundamental goal of antitrust law' (*National Collegiate Athletic Ass'n v. Board of Regents*, 1984, p. 106). See also the following statement in *Hospital Corp. of America v. FTC* (1986, p. 1386):

the Supreme Court, echoed by the lower courts, has said repeatedly that the economic concept of competition, rather than any desire to preserve rivals as such, is the lodestar that shall guide the contemporary application of the antitrust laws, not excluding the Clayton Act. . . . Applied to cases brought under section 7, this principle requires the district court . . . to make a judgment whether the challenged acquisition is likely to hurt consumers, as by making it easier for the firms in the market to collude, expressly or tacitly, and thereby force price above or farther above the competitive level.

11. The Court has stated that
 

from the standpoint of the consumer – whose interests the statute was especially intended to serve – the freedom to select the best bargain in the second market is impaired by his need to purchase the tying product, and perhaps by an inability to evaluate the true cost of either product when they are available only as a package (*Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 1984, p. 14).
12. See also *Associated General Contractors of California, Inc. v. California State Council of Carpenters* (1983, p. 538) where the court states that 'the Sherman Act was enacted to assure customers the benefits of price competition'.
13. Bork accepts the traditional economic view that wealth transfers alone do not reduce social welfare (Bork, 1993, p. 110) ('Those who continue to buy after a monopoly is formed pay more for the same output, and that shifts income from them to the monopoly and its owners, who are also consumers. This is not dead-weight loss due to restriction of output but merely a shift in income between two classes of consumers').
14. One commentator has argued that, although the court has not endorsed a narrowly specified standard of consumer harm, it has increasingly used cartelization as the prototype antitrust violation by which alleged violations are measured (Clark, 1985).
15. The court held that imposing per se liability for switching suppliers would deter procompetitive conduct.
16. The idea that 'the focus of the procompetitive justifications for the business practice [is] the ultimate consumer . . . cannot be overemphasized and is especially essential when a successful competitor alleges antitrust injury at the hands of a rival' (*SCFC ILC, Inc. v. Visa USA, Inc.*, 1994, p. 965). See also *San Juan v. American Bd of Psychiatry and Neurology, Inc.* (1994, p. 251), in which the court stated that 'The claim that a practice reduces (particular) producers' incomes has nothing to do with the antitrust laws, which are designed to drive producers' prices down rather than up.'

17. The court in *Data General Corp. v. Grumman Sys. Support Corp.* (1994, p. 1187) found that ‘at least in a particular market and for a particular period of time, the Copyright Act tolerates behavior that may harm both consumers and competition’ and ‘while exclusionary conduct can include a monopolist’s unilateral refusal to license a copyright, an author’s desire to exclude others from use of its copyrighted work is a presumptively valid business justification for any immediate harm to consumers.’ See also *A & M Records, Inc. v. Napster, Inc.* (2001) (upholding an injunction against a web site that facilitated the sharing of copyrighted recordings).
18. The court stated that, unlike copyright law, ‘Antitrust law generally seeks to punish and prevent harm in particular markets, with a focus on relatively specific time periods’ (*Data General Corp. v. Grumman Sys. Support Corp.*, 1994, p. 1184).
19. Indeed, one can argue that, because competition will always eradicate monopolies or cartels eventually, the primary goal of antitrust is to ‘speed . . . up the arrival of the long run’ (Easterbrook, 1987a, p. 985).
20. When a court governs by ‘rule,’ it ‘singles out one or a few facts and makes it or them conclusive of legal liability’ (*MindGames, Inc. v. Western Pub. Co.*, 2000, p. 657).
21. In such cases, the court has preferred to govern by ‘standard’, allowing ‘consideration of all or at least most facts that are relevant to the standard’s rationale’ (*MindGames, Inc. v. Western Pub. Co.*, 2000, p. 657).
22. The *California Dental* court also asserted that ‘our categories of analysis of anticompetitive effect are less fixed than terms like “per se,” “quick look,” and “rule of reason” tend to make them appear’ (*California Dental Ass’n v. FTC*, 1999, p. 779).
23. For the sorts of advertising restrictions at issue in the case, the court concluded, ‘The obvious anticompetitive effect that triggers abbreviated analysis has not been shown’ (*California Dental Ass’n v. FTC*, 1999, p. 778). Lopatka (1991, p. 379) asserted that a ‘flexible rule of reason’ was emerging in the courts under which the legality of a practice is a function of the strength of the anticompetitive story, the strength of any procompetitive story, and the presence or absence of market power. Similarly, Kolasky (1999, p. 70) concludes that ‘courts must apply a sliding scale, in which the amount of proof demanded of the plaintiff depends both on how obvious the anticompetitive effects are and on how strong or weak the proffered justifications are’.
24. The court repudiated the view that Schwinn’s rule could be justified by the need to ‘prohibit restrictions on the autonomy of independent businessmen even though they have no impact on “price, quality, and quantity of goods and services”’, noting that ‘an antitrust policy divorced from market considerations would lack any objective benchmarks’ (*Continental T.V., Inc. v. GTE Sylvania Inc.*, 1977, p. 53 n. 21).
25. The primary focus of the remedial provisions of the antitrust laws is on deterrence. They seek to impose a penalty approximating the optimal one, relying on assigning a right to recover to classes of plaintiffs who are actually harmed by antitrust violations. The goal of deterrence requires denying some of those classes a right to sue and assigning the right to a more efficient enforcer: ‘An appropriate balance is achieved by granting standing only to those who, as consumers or competitors, suffer immediate injuries with respect to their business or property, while excluding persons whose injuries were more indirectly caused by the antitrust conduct’ (*In re Industrial Gas Antitrust Litig.*, 1982, p. 520).
26. Brodley (1987, p. 1036) states that ‘Antitrust law has always permitted to some degree conduct that is not in the immediate interest of consumers in order to sustain innovation and production efficiencies.’
27. The assertions in the 1970s that IBM’s dominance of computers was permanent, for example, seem absurd in retrospect (Lopatka, 2000, p. 158).
28. One can view this sort of incrementalism as a way of testing theoretical arguments by allowing an opportunity for refutation in litigation and the scholarly literature:

Most newly suggested theories do not survive. Usually, the difficulties that evoked them are accounted for by more traditional means. Even when this does not occur, much work, both theoretical and experimental, is ordinarily required before the new theory can display sufficient accuracy and scope to generate widespread conviction. . . . What from one viewpoint

- may seem the looseness and imperfection of choice criteria conceived as rules may, when the same criteria are seen as values appear an indispensable means of spreading the risk which the introduction or support of novelty always entails. (Page, 1995, p. 332)
29. One could argue that the ban on competitive bidding in *National Society of Professional Engineers v. United States* (1978) was efficient because it reduced search costs, so that consumers who wanted high-quality services were able to find them. The price paid might have been higher, but the quality was better. Absent a low-cost method of identifying high-quality suppliers, the lemon effect could result in high-quality suppliers being squeezed out of the market, which would injure consumers who wanted high-quality service (Akerlof, 1970). The court was unwilling to trade lower prices for possibly higher quality, concluding that the antitrust laws rested on the premise that 'ultimately competition will not only produce lower prices, but also better goods and services' (*National Soc'y of Prof'l Eng'rs v. United States*, 1978, p. 695).
  30. A probable exception is *California Dental* (1999) in which the court refused to apply a truncated rule of liability to dental associations' rule limiting advertising, even though the rule limited the ability of a dentist to advertise or make claims of quality – information clearly valuable to consumers.
  31. Similarly, in *Cargill, Inc. v. Monfort of Colorado, Inc.* (1986), the court recognized that firms could enjoy a merger of their rivals only by proving that the merger would likely lead to predation that would exclude competitors to the detriment of consumers.
  32. The court stated that, 'because the Sherman Act's concern is consumer welfare, antitrust injury occurs only when the claimed injury flows from acts harmful to consumers' (*Rebel Oil Co. v. Atlantic Richfield Co.*, 1995, p. 1445).
  33. The Court explained, 'economic realities tend to make predatory pricing conspiracies self-detering: unlike most other conduct that violates the antitrust laws, failed predatory pricing schemes are costly to the conspirators' (*Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 1986, p. 595).
  34. See also *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.* (1986, p. 594), where the court placed a special evidentiary burden on predatory pricing claims, reasoning that outlawing a practice that brings lower prices to consumers is 'especially costly' because 'cutting prices in order to increase business often is the very essence of competition'.
  35. See also *Concord Boat Corp. v. Brunswick Corp.* (2000, p. 1060), where the court held that an engine manufacturer's discounts based on the percentage of that firm's products used by the particular boat manufacturer were simply price cutting and therefore protected by *Brooke Group*.
  36. For this reason, the losses suffered by competitors during the period of predatory pricing 'are not the stuff of antitrust injury. It would be incongruous to award damages to plaintiffs for actions that in general benefit consumer welfare' (*Rebel Oil Co. v. Atlantic Richfield Co.*, 1995, p. 1444).
  37. The court wrote: 'we find it difficult to maintain that vertically-imposed maximum prices could harm consumers or competition to the extent necessary to justify their per se invalidation' (*State Oil Co. v. Khan*, 1997, p. 15).
  38. The court quoted *Standard Oil Co. of N.J. v. United States* (1911, p. 62).
  39. See also *Monsanto Co. v. Spray-Rite Serv. Corp.* (1984, p. 760, n.7), where the court declined the Solicitor General's invitation to reconsider *Dr. Miles*.
  40. Telser (1960, p. 91) explains as follows:
 

Sales are diverted from the retailers who do provide the special services at the higher price to the retailers who do not provide the special services and offer to sell the product at the lower price. The mechanism is simple. A customer, because of the special services provided by one retailer, is persuaded to buy the product. But he purchases the product from another paying the latter a lower price. In this way the retailers who do not provide the special services get a free ride at the expense of those who have convinced consumers to buy the product.
  41. This shows that, when the benefits of point-of-sale services go mainly to marginal consumers, social welfare need not increase with profit-maximizing resale price maintenance.

42. These authors concede that intramarginal consumers may be injured by the restraint, but argue that the market will correct any such harms better than courts.
43. The court found that:
- Because it places a ceiling on the number of games member institutions may televise, the horizontal agreement places an artificial limit on the quantity of televised football that is available to broadcasters and consumers. By restraining the quantity of television rights available for sale, the challenged practices create a limitation on output; our cases have held that such limitations are unreasonable restraints of trade. (*National Collegiate Athletic Ass'n v. Board of Regents*, 1984, p. 99)
44. According to Easterbrook:
- The NCAA portrayed its practices as elements in a struggle involving pro football, other sports, and entertainment in general; all were trying to attract viewers in a much larger advertising–entertainment business. The business as a whole required cooperation; Oklahoma did not want to destroy Nebraska and take Nebraska’s business.
45. As Justice Scalia explained in dissent, a ‘rational consumer considering the purchase of Kodak equipment will inevitably factor into his purchasing decision the expected cost of aftermarket support’ (*Eastman Kodak Co. v. Image Technical Serv’s*, 1992, p. 495 (Scalia, J., dissenting)).
46. Justice Scalia quoted from the dissenting opinion of Judge Posner in *Parts & Elec. Motors, Inc. v. Sterling Elec., Inc.* (1988, p. 236).
47. The amicus was Bell Atlantic, and it filed a brief in support of the respondent. The brief is quoted in Katz (1991, p. 15).
48. It is possible that Kodak’s real motivation in imposing the tie of parts and service was to discriminate in price among its customers (Klein, 1993, p. 65). If so, the restraint may have harmed some consumers while not affecting allocative efficiency. It is not clear whether the court, had it adopted this view of the facts, would have allowed a jury verdict for the plaintiffs to stand. The pure Chicago argument would be that ‘Prohibiting marketing practices such as these because they would not exist in a perfectly competitive world would imply a level of detailed government planning that is inconsistent with the fundamental goals of antitrust – to set ground rules that permit the competitive market process to function’ (*ibid.*, p. 71). The court, following this logic, might categorize this sort of consumer harm as not properly a matter of antitrust concern for reasons similar to *Discon*. Alternatively, the court might adopt the view of Lande (1982), that an exercise of monopoly power that harms consumers simply by a wealth transfer constitutes monopolization, even if there is no output restriction.
49. The respondents contended that ‘schedules impose a meaningful limit on physicians’ charges, and that the advance agreement by the doctors to accept the maxima enables the insurance carriers to limit and to calculate more efficiently the risks they underwrite and therefore serves as an effective cost-containment mechanism that has saved patients and insurers millions of dollars’ (*Arizona v. Maricopa County Medical Society*, 1982, p. 342). The court stated that, on appeal from summary judgment for the plaintiffs, ‘we must assume that the respondents’ view of the genuine issues of fact is correct’ (*Arizona v. Maricopa County Medical Society*, 1982, p. 342).
50. The court asserted that a minimum price agreement ‘may be a masquerade for an agreement to fix uniform prices, or it may in the future take on that character’ (*Arizona v. Maricopa County Medical Society*, 1982, p. 348).
51. In *FTC v. H.J. Heinz Co.* (2000a), the court rejected the FTC’s challenge of the merger of the only two significant rivals of a dominant producer on the grounds that greater innovation and efficiency was more likely than price increases. The appellate court, however, enjoined the merger pending appeal, finding that the FTC had demonstrated a substantial probability of success on the merits (*FTC v. H.J. Heinz Co.*, 2000b).
52. The court considered the argument that consumers benefited from the arrangement because it restrained free-riding, but found that the evidence did not support the claim (*Toys ‘R’ Us, Inc. v. FTC*, 2000, p. 933).
53. Post-Chicago arguments often invoke these more remote and intangible concerns. See, for example, Brodley (1995, p. 24):

the immediate consumer interest in lower prices does not reflect the totality of antitrust concerns in merger enforcement. Merger policy also seeks to prevent probable future collusion and predation that threaten no immediate loss to consumers, to promote dynamic efficiency and innovation, to maintain the disciplining effect of competitive markets, and to preserve alternative centers of decisionmaking.

54. The principal decisions of the district court in *Microsoft* are set out in three opinions: the findings of fact, *United States v. Microsoft Corp.* (1999), the conclusions of law, *United States v. Microsoft Corp.* (2000a) and the remedy, *United States v. Microsoft Corp.* (2000b).
55. The DC Circuit Court's decision in the 1997 Microsoft consent decree case held that whether separate products exist in cases of technological integration depended upon whether the combination provides a 'facially plausible' claim that the bundling 'combines functionalities . . . in a way that offers advantages unavailable if the functionalities are bought separately and combined by the purchaser' (*United States v. Microsoft Corp.*, 1998b, pp. 948, 950). Because of 'the limited competence of courts to evaluate high-tech product designs and the high cost of errors', a 'court's evaluation of a claim of integration must be narrow and deferential' (*United States v. Microsoft Corp.*, 1998b, pp. 950, n13, 949). The combination 'must be different from what the purchaser could create from the separate products on his own' and the combined form must 'be better in some respect. . . . The concept of integration should exclude a case where the manufacturer has done nothing more than to metaphorically "bolt" two products together' (*United States v. Microsoft Corp.*, 1998b, p. 949).
56. 'Plaintiffs won the case, and for that reason alone have some entitlement to a remedy of their choice' (*United States v. Microsoft Corp.*, 2000b, p. 62). The litigation against Microsoft was the consolidation of a case brought by the United States and one pursued by 19 states (*United States v. Microsoft Corp.*, 2000a, p. 35). For simplicity, we refer to all of the plaintiffs in these cases as the government.
57. Judge Jackson stayed the final judgment pending disposition of Microsoft's appeal (*United States v. Microsoft Corp.* (2000c).
58. Microsoft is also defending numerous state class action suits on behalf of consumers. In these cases, the issue of consumer harm is complicated by the fact that consumers almost always are indirect purchasers of Microsoft products. Thus not only the harm but the determination of whether it was passed on to consumers must be capable of classwide proof (Coordinated Proceedings, 2000). See generally Page (1999).
59. Tying hurts consumers because 'the freedom to select the best bargain in the second market is impaired by his need to purchase the tying product, and perhaps by an inability to evaluate the true cost of either product when they are available only as a package' (*Jefferson Parish Hospital Dist. v. Hyde*, 1984, p. 15).
60. This was the testimony of Franklin Fisher (*United States v. Microsoft Corp.*, 1998a, 11 Jan. 1999, session). All transcripts are available at <http://www.microsoft.com/presspass/trial/transcripts/> and in the Westlaw 'Microsoft-Trans' database. Microsoft's expert testified that, under reasonable assumptions, a monopoly price for Windows would be \$1480 (*United States v. Microsoft Corp.*, 1998a; testimony of Richard Schmalensee, 23 June 1999, a.m. session).
61. The court did find that Microsoft could charge such a price (*United States v. Microsoft Corp.*, 1999, para. 33).
62. The court found insufficient evidence that, 'absent Microsoft's actions, Navigator and Java already would have ignited genuine competition in the market for Intel-compatible PC operating systems' (*United States v. Microsoft Corp.*, 1999, para. 411). It did find that Microsoft had 'retarded' the development of a promising potential competitor (*United States v. Microsoft Corp.*, 1999, para. 411).
63. The court in *United States v. Microsoft Corp.* (2000a, p. 37) cited with approval the following formulation of a test for predation from *Neumann v. Reinforced Earth Co.* (1986, p. 427):

predation involves aggression against business rivals through the use of business practices that would not be considered profit maximizing except for the expectation that (1) actual rivals will be driven from the market, or the entry of potential rivals blocked or delayed,



- so that the predator will gain or retain a market share sufficient to command monopoly profits, or (2) rivals will be chastened sufficiently to abandon competitive behavior the predator finds threatening to its realization of monopoly profits.
64. The increase in allocative inefficiency from the output restriction is greater than the savings in the fringe firms' higher production costs.
  65. 'cases in the new economy present unusually difficult questions of fact because of the technical complexity of the products and services produced by new-economy industries' (Posner, 2000).
  66. Rapid displacement of market leaders shows that high-tech markets are self-correcting (Liebowitz and Margolis, 1996, p. 318).
  67. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 12 Jan. 1999, a.m. session (emphasis added). For further development of Professor Fisher's views, see Fisher and Rubinfeld (2000).
  68. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 12 Jan. 1999, a.m. session. Asked if he could elaborate on the effects on consumers, he replied:

typically we rely on competitive forces to determine the allocation of resources, to determine prices, to determine what gets produced, to determine the – what kinds of innovation succeeds and don't. This is a consumer-driven society.

The effects that will occur is that, in this area, it won't be a consumer-driven society; it will be a Microsoft-driven society. Microsoft will determine what it charges for different products, and for certain of those products, there won't be a choice. Microsoft will determine what innovations are successful and what innovations are not successful, and consumers won't get the choice.

I used last week the analogy of Henry Ford and the black car. Another way of describing this is Microsoft's advertising slogan 'where do you want to go today?' Where you want to go today is going to be where Microsoft is willing to take you or where you choose to go, given the way Microsoft has restricted your choice. And you are certainly going to have to use the means of transportation Microsoft provides. Those may be nice means of transportation. You may, in fact, want to go to these places, but that's not consistent with the kind of market-driven choices – consumer-driven market choices, rather, that a competitive policy relies on. (*United States v. Microsoft Corp.*, 1998a; testimony of Franklin Fisher, 12 Jan. 1999, a.m. session)

69. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 2 June 1999, a.m. session. Asked whether Microsoft had begun to recoup its investment in its predatory campaign, Professor Fisher testified:

Microsoft is recouping in the form of freedom from – its freedom or increasing freedom from the threat of losing its monopoly power.

It is going – its financial recoupment will occur from preserving the returns to the monopoly power in operating system, returns that might have been dissipated had it not acted in the way in which it did.

In this connection, I should say, that, of course, one cannot know with any kind of certainty when or even whether the threats from Java and the browser would have led to a breakdown of the applications barrier to entry and, therefore, more competition in operating systems. And maybe the answer to that is never. But Microsoft didn't give it a chance to try. And it's managed – it is managing to preserve its monopoly profits into the foreseeable future. (*United States v. Microsoft Corp.*, 1998a; testimony of Franklin Fisher, 12 Jan. 1999, a.m. session)

70. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 2 June 1999, a.m. session.
71. Professor Fisher testified:

there are documents from the OEMs that say, 'We wanted to do certain things, and we didn't want to be restrained – constrained by Microsoft, and we wanted to do this because we thought it would be good for our consumers and, therefore, good for us.' And they were prevented from doing those things. They had to ship IE, and so forth. They

- were restricted in the initial – there were various screen restrictions placed upon them. (*United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 2 June 1999, a.m. session).
72. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 2 June 1999, a.m. session.
  73. *United States v. Microsoft Corp.* 1998a; testimony of Franklin Fisher, 2 June 1999, a.m. session.
  74. For a fuller development of these arguments, see Lopatka and Page (2001).

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## 8. Second order oligopoly problems with international dimensions: sequential mergers, maverick firms and buyer power

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### INTRODUCTION

The unprecedented merger wave of the past several years has consolidated many markets, and raised the specter that economies worldwide may be increasingly subject to oligopolistic coordination. Oligopoly problems are hardly new to competition law, but the largest of those problems, though well-rehearsed, are seemingly irresolvable.<sup>1</sup> Are oligopolists more likely to compete with one another than to collude?<sup>2</sup> Is collusively coordinated behavior apt to succeed, and if so under what kinds of conditions?<sup>3</sup> Does signaling, or the use of focal points available in certain oligopoly markets, sometimes or always obviate the need for collusion in those very markets where successful coordination is more likely to occur?<sup>4</sup> Is collusion more likely in a three-firm market than in a four-firm one?

These are large and important questions indeed. The fact that they remain unanswered despite the increasing sophistication in economic theory and methodology that is the hallmark of the post-Chicago School suggests that oligopoly in general is highly resistant to coherent analysis. The large increase in recent years in the number of oligopoly markets suggests that coherent analysis is more important than ever.

The worldwide merger wave of the late 1990s<sup>5</sup> has resulted in substantial increases in concentration levels in dozens of markets and in almost all developed countries. In some of those countries, most notably Australia and New Zealand, great distance from other markets and relatively small populations – along with the increased consolidation that mergers bring – have combined to make oligopoly markets the rule rather than the exception. Firms seeking regulatory approval for their merger often attempt to balance the potential harm to competition resulting from the post-merger oligopoly against the potential benefits to international competition made possible by merger-related efficiencies of

scale and scope. Indeed, in important respects the current trend toward oligopoly may be economically inevitable. The process of globalization and the rapid growth of the information technology sector have demonstrated anew that in industries with increasing returns to scale oligopoly may be the only profitable market structure.

Once formed, however, oligopolies are particularly difficult to regulate, and pose seemingly intractable problems for competition policy and enforcement authorities. The experience of United States courts' trying to distinguish conscious parallelism (which is lawful and ungovernable in any event) from tacit collusion (which consists of conscious parallelism and certain 'plus factors' from which collusion may be inferred) is neither a coherent nor a happy one.<sup>6</sup> Some smaller problems exist, however, that are both important and more amenable to regulation; and their resolution may help to soften the impact of the larger ones. This short chapter focuses on three of those smaller problems, each of which relates to current enforcement difficulties, and implicates the shared concern that oligopoly markets yield suboptimal results for consumers, a concern that animates the approach of competition law, and especially control, in all developed regimes of antitrust enforcement.

The first problem is that of 'sequential' mergers, a term that I use to describe the circumstance where one merger proposal in a concentrated industry leads almost immediately to a second or third proposal by firms in the same market, requiring the competition regulator to evaluate and perhaps to compare several large and competing mergers simultaneously. The second problem deals with the 'maverick' firm in merger law, the small but feisty competitor that disrupts oligopolies and, for that reason, is viewed as too valuable to be lost through merger. The third problem concerns 'buyer power', a problem that seems lately to have captured the attention of regulators and legislators alike and that arguably affects areas as diverse as physician services, grain elevators, business to business (B2B) exchanges, and the plight of the family farm. These problems may be less significant than the large dilemmas involving the behavior of oligopolies and their effects on consumers. But they nevertheless present real problems in enforcement for almost all of the developed competition law regimes in the world. Perhaps, because these problems are small and perhaps because – unlike the large theoretical questions – they cannot be perpetually debated but must be resolved one way or another, public and academic discussion may prove useful in their resolution.

## THE PROBLEM OF SEQUENTIAL MERGERS

The unprecedented merger wave of the past 10 years has raised a host of new and challenging issues regarding the role of global merger enforcement, the

need for enhanced cooperation between and among national and regional competition authorities, and the appropriate bounds of market definition in a much more commercially fluid world.<sup>7</sup> It has also produced (or produced more of) a phenomenon that, for want of a better term, I shall call 'sequential mergers'. Sequential mergers, as I see them, occur in markets that are concentrated but not to the extent that applicable merger guidelines would forbid any further mergers. Indeed, and more precisely, market structure is such that one more merger would be permissible (assuming of course that it promises to be efficiency-enhancing), while two (or more) would not be.

Imagine then that in such a market, shortly after two firms announce a planned merger and notify it to the competition authority, two rival firms announce similar plans. An example occurred in the summer of 2000 in the airline industry when, following a merger announcement by United Airlines and US Airways, American and Northwest announced a similar intention, followed almost immediately by like announcements from Delta and Continental, and KLM and British Airways. Another occurred more recently when, in response to American Airlines' announcement in January 2001 that it would acquire TWA and significant assets from US Air, Delta reportedly initiated merger discussions with Northwest and Continental.<sup>8</sup> Many other examples can be found in the recent past in Europe and the USA, in telecommunications, pharmaceuticals, petrochemicals, consumer package-foods, media, oil refining and other areas.<sup>9</sup>

From an enforcement perspective, sequential mergers are problematic for a variety of reasons. In the first place, the business dynamics that engender them are not always easy to identify. On the one hand, there may be a relatively mundane explanation for them: the need to attain economies of scale, scope, distribution and other efficiencies that lies behind most consolidations may also explain sequential mergers. Moreover, since the parties to sequential mergers operate in the same markets, usually use common – if not identical – inputs and presumably face the same economic pressures, the fact that they might choose to merge at almost the same time may be unremarkable. Finally, if the industry is one in which economies of scale matter, the first merger might yield a substantial advantage to the merger partners that rivals would need to counter in order to remain competitive.

On the other hand, however, given the way in which merger enforcement normally proceeds, there may sometimes be a strategic explanation behind sequential mergers. A merger announcement by rivals might lead competing firms reasonably to conclude that the announced merger will likely receive regulatory approval because it promises (a) to be efficiency-enhancing and (b) not to concentrate the relevant market so as to threaten a reduction in competition, through either the creation of unilateral market power or an environment more conducive to successful collusion. These other firms might



plausibly decide that, if approved, the merger would place them at a competitive disadvantage; and that the best way to avoid or ameliorate that disadvantage would be to announce their own merger in response. Though doomed from the outset, a second merger proposal might nevertheless serve the important strategic purpose of dissuading the enforcement agency from approving the first proposal.

Given the administrative, social and legal complexities of the merger review process, the existence of a second merger proposal would likely create serious roadblocks to the approval of the first. In the first place, the need to evaluate two large mergers at once in the same market is bound to place a significant strain on agency resources and thus to lengthen the time required for review. Time is usually an enemy of mergers – among other things, it allows dissident shareholders to raise objections, political opposition to galvanize, and outside parties to bid for the company in play – and a longer review process is thus apt to endanger the success of any merger. In the second place, competition regulators are hardly immune from expressions of public opinion, nor should they be. The prospect of two large mergers in one (important and already seemingly concentrated) market is bound to provoke serious public concern, some of it populist perhaps, but some based on the legitimate fears of industry concentration that form the main rationale for merger enforcement. In the third place, the added threat of market concentration posed by a second merger may counsel strongly against the approval of either, since to authorize one but not both proposed mergers might expose the regulator to charges of favoritism, or require that it overtly compare the efficiencies and projected cost savings of one merger with those of the other, a comparison fraught with difficulty and political risk.

The ‘reactive’ strategic response is not the only one to suggest itself. There is a preemptive strategy as well. Under the latter scenario, two firms anticipate that their rivals will soon announce a merger proposal, perhaps having learned informally of such plans. These firms realize that their rivals’ merger will yield substantial efficiencies, will therefore likely be approved by the regulator, and will thus place them at a significant competitive disadvantage. They decide therefore to announce their own merger – an efficiency-enhancing one, but not nearly to the same extent as their rivals’ – before the rivals announce their own, calculating that, for the reasons described above, the presence of their merger proposal would either eliminate or lessen the competitive disadvantage that they would suffer should their rivals’ merger proposal go unchallenged.<sup>10</sup>

The sequential merger strategy offers an important potential side benefit to firms choosing to deploy it. Following the announcement of their merger plans, the firms can embark on what would appear to be a normal course of pre-merger discussions ostensibly designed to organize the details of the merger, should it be approved. Those discussions, however, will enable them

to exchange much more information with one another, and information of a more sensitive nature, than they would otherwise be able lawfully to exchange. Thus, even (and especially) if the merger is disallowed, oligopolistic coordination in the period following the merger application may be improved by the discussions. The Federal Trade Commission (FTC) has warned firms about engaging in this kind of coordination, and most firms doubtless avoid it. As to deviants, however, the ability of regulators to police this problem effectively seems limited at best: conversations are apt to be confidential and equally incriminating (so that neither party has an incentive to disclose them); and any party wishing not to disclose commercially sensitive information to its prospective partner remains free not to do so.

Can bona fide mergers be distinguished from their strategic counterparts? If telling them apart is impossible, what, if anything, can be done to protect merger enforcement and the public (who loses when an efficient merger is disapproved) from the kind of strategy outlined above? The problem is made more complicated by the possibility that, since the game players in the scenario need not invariably be the parties to the second merger proposal, the regulator cannot determine from the order of the proposals which is bona fide and which is strategic. Because the game can be played from either position in the merger proposal sequence, a regulatory strategy that viewed only the second merger skeptically would be incomplete and might be erroneous.

By contemplating the possibility of these strategic behaviors, I do not mean to suggest that they occur with some high level of frequency, and rivals can certainly attempt to defeat strategic mergers in other, more direct ways. But the problem nevertheless seems quite real. Agencies are apt to take a skeptical view of rivals' complaints about the motive behind a merger proposal. It is widely recognized that rivals would tend to endorse mergers that promised higher consumer prices, content to shelter under the resultant price umbrella, and would complain only about those likely to yield lower prices.<sup>11</sup> Of course, 'strategic' mergers are not cost-free. They impose expenses of time, energy and possible break-up fees<sup>12</sup> on the parties involved. But they offer potential benefits as well, and occasionally the discounted value of those benefits will exceed the anticipated costs. Because the strategy is bound to be cost-effective sometimes, it is certain to be deployed.

Even if no strategy is at work,<sup>13</sup> however, agency review of sequential mergers is problematic. Bona fide sequential mergers in relatively concentrated markets force agencies to make very difficult choices. If all such mergers were allowed to proceed, the relevant market would become unduly concentrated, and consumers might suffer from collusion or coordination. If all are disallowed, consumers will necessarily forgo the lower prices likely to flow from merger-related efficiencies. Some of the mergers, viewed in

isolation, would be pro-competitive on balance. All of them, viewed collectively, would be anticompetitive. Which, if any, should be permitted?

There is no obvious answer to this question. The agency cannot favor the first to file, because such a rule would bestow an unfair advantage on first movers, and might result in the approval of the less socially advantageous outcome. Nor can it automatically approve both, since by hypothesis two approved mergers would exceed permissible thresholds of concentration. Nor should it approve neither, since either one, again by hypothesis, offers an improvement in social welfare; although it must be said that, from a political perspective, and because of the difficulties of choosing one merger over the other, this option may sometimes seem the safest choice.

So in theory, at least, it seems that the proper approach is to acknowledge the presence of two or more merger applications, to approve, on the basis of recognized and provable criteria, the one that offers more potential consumer benefit, and to disallow the others. But this process requires the regulator to make inter-merger comparisons, which are extremely difficult to draw, because there are few reliable criteria for comparing mergers. As we know from experience in the area of merger-related efficiencies, it is difficult enough to quantify the benefits likely to arise from any particular merger and to prove that they (or some provable portion of them) will be passed on to consumers in the form of lower prices<sup>14</sup>. Comparing the relative benefits of two competing mergers would seem much more difficult, not only because there are two sets of numbers on the table but because the sets themselves may be interrelated: merger A might yield  $x$  efficiencies by itself, but only  $x - y$  if merger B occurs.

Burden shifting might prove useful. Perhaps the agencies should ask each set of parties to sequential mergers to demonstrate how or why their merger would be competitively preferable to the others. Each set of merger partners might then be able more accurately to assess and challenge the efficiency claims of the others. Or perhaps a sort of applicant auction could be set in motion, similar in some respects to class action counsel auctions, with the agency announcing in advance that it will approve only one merger, basing its final decision on which ultimately offers more in the way of consumer benefit. The auction process could elicit information from the parties that would enable the agency to compare relative efficiencies more easily. The agency could then press the parties for beneficial concessions, and might, with the parties' agreement, disclose in some limited way what each is willing to offer, in the hope of stimulating a (relatively short-term) 'bidding war' whose ultimate beneficiaries would be consumers. The 'winning' applicant might be made to offer an enforceable undertaking with regard to the benefits bid, with self-enforcing financial penalties that would be paid to the agency from an escrow fund or insurance policy established for this purpose, in the event that promised consumer benefits failed to materialize.<sup>15</sup>

Finally and paradoxically, it seems worth noting that it might be better in a sense if more mergers were sequential. If all would-be merger partners could appear before the enforcement authority at the same time, then the first mover advantage accruing to the first merger in a somewhat concentrated market would be diminished, time and expense would be saved, and consumers might realize important benefits. Imagine a market with six firms, and three possible mergers only the first of which would be permissible under conventional analysis. Imagine further that the first and only announced merger is beneficial but much less so than any of the other possible combinations. It might be preferable for the enforcement regime to hold the 'first' merger in abeyance and allow, or even encourage, the other prospective (and more efficient) partners to form their own combinations. Of course, no enforcement authority could adopt such a highly interventionist approach without a direct legislative command. But such a command might prove beneficial.

Sequential mergers thus pose analytical problems not found in the run of the mill, isolated merger application, problems of strategic behavior and of enforcement methodology. It is important, I believe, to recognize these special problems. The simple suggestions made above can, I hope, provide a start down that road.

## THE 'MAVERICK' FIRM AS TAKEOVER TARGET AND MERGER PRODUCT

Many modern regimes of competition law make special allowance in their merger regulations for the 'aggressive' firm, the small but feisty competitor who is a persistent price cutter and refuses steadfastly to collude or coordinate his behavior with the oligopolists that dominate his market. Unlike its less competitive counterparts, this 'aggressive' firm – also known as the 'maverick' or the 'vigorous and effective' competitor – is an impermissible merger target even (or especially) in markets where its takeover would not increase concentration to impermissibly high levels. Its effect on competition is thought to be so salubrious that, even when the 'maverick' wishes to sell itself to a competitor, enforcement guidelines will prevent it from doing so.

The view in the United States, expressed in the 1992 *Merger Guidelines* and the 1997 *Revised Merger Guidelines*, is that there are two kinds of 'maverick' firms, one pre-existing and the other the anticipated result of certain efficiency producing mergers. The pre-existing mavericks are firms 'that are unusually disruptive and competitive influences in their market' and that can therefore effectively prevent or limit coordinated interaction between or among oligopolists.<sup>16</sup> By contrast, the maverick-to-be is not yet such an influence but is anticipated to become one. It is an imaginary firm projected to

spring forth from a merger yielding such significant marginal cost reductions that the new company promises to emerge as a vigorous force for competition in a market that would otherwise remain competitively stagnant.

Australian competition law also recognizes the maverick. Section 50 of the Trade Practices Act ('Prohibition of acquisitions that would result in a substantial lessening of competition') requires the Australian Competition and Consumer Commission (ACCC) to take into account, in determining whether a proposed acquisition would have, or would likely have, the proscribed effect, '(f) the likelihood that the acquisition would result in the removal from the market of a vigorous and effective competitor.'<sup>17</sup> During 1998–99, as a Visiting Scholar at the ACCC, I attended the Commission's weekly meetings and observed the workings of its merger section; and during that time, several proposed mergers were prohibited because the target firm was regarded as a useful – indeed an indispensable – maverick.

Although in general the rationale behind the law's protective regard for aggressive competitors is simple enough to grasp, there are serious difficulties with the concept, suggesting that some caution in its application might be warranted. The first is definitional. Identifying the US 'maverick', for example, seems quite problematic. The pre-existing maverick must be both 'disruptive' and 'competitive', one characteristic alone will not suffice, and the terms are almost certainly not synonymous. What then is the difference between a 'competitive' firm and a 'disruptive' one? And what does it mean to be 'unusually' disruptive and competitive? Is it a comparative term, using the rest of the sector as a benchmark? Does it refer to a 'lengthy' course of conduct, or can it instead allude to a shorter period of vigor or to several acute episodes of competition? None of this seems self-evident. The 'vigorous and effective competitor' posited by Australian law is no easier to define.<sup>18</sup>

Definitional clarity in this area seems very important, however, because the stakes can be quite high for the supposed 'maverick'. One reason – not the main one perhaps, but important nevertheless – for making oneself a nuisance to one's larger rivals is the hope that their annoyance will eventually lead one or more of them to initiate merger discussions that will eventually result in the maverick's shareholders' receiving a sizeable takeover premium. In an oligopoly market, especially a relatively mature one, the small, aggressive firm may have no realistic prospect of attaining the market share and associated scale economies of its larger rivals. Its best option for maximizing shareholder value may therefore be a strategy that looks to provoke merger offers; and vigorous short-term competition may be a means, even the best means, to that end.<sup>19</sup>

If merger law prevents that offer from being accepted, then a significant incentive for short-term competition – certainly not the only incentive but an important one nevertheless at the margin – is eliminated. Would-be mavericks, deprived of the merger option, might decide in the first instance that their best

strategy would be to cooperate with, or acquiescence in, the pricing practices of the dominant firms; and net consumer welfare might therefore decrease. Moreover, future mavericks might, again at the margin, avoid the market in question altogether in favor of one where the potential merger premium remains available. The existing oligopoly in the market thus avoided will then become more deeply entrenched. By contrast, and depending of course on ease of entry, permitting the maverick to merge might encourage other firms seeking merger premiums to enter the market and to reenact the maverick scenario in hopes of attracting the next merger offer. If this were to occur, consumers would benefit in the short term and, if the need for scale economies did not interfere, might benefit in the long term as well.

This is certainly not to suggest that every small and vigorous competitor in concentrated markets is motivated only or even mainly by the prospect of capturing a merger premium for its shareholders. But it is to suggest that some probably are. Foreclosing them from gaining that premium is likely to discourage them from competing vigorously, affect future decisions about which firms enter which markets, embed certain oligopolies more deeply than necessary or desirable, and do consumers more harm than good.

The maverick-in-waiting is an even more troublesome concept than the pre-existing maverick. Since by definition it has no history, there is no basis in fact for predicting its future as a maverick. This maverick firm, as noted above, does not yet exist, but it will – presumably – if its predecessors are allowed to merge and thus to realize substantial anticipated reductions in marginal cost. In theory, these merger-related savings will enable two previously passive firms to become an unusually dynamic one, a firm whose newfound vigor will transform a moribund market into a competitive one, even as the merger that creates it significantly increases the market's already high level of concentration. The *Revised Merger Guidelines* suggest that the creation of the maverick justifies the added risk of collusion that accompanies higher levels of concentration.<sup>20</sup>

But is it? How can regulators and courts decide? The increase in concentration will definitely follow the merger, but the merged firm may not become a maverick. By hypothesis, neither merger partner is a maverick-in-being: if either were, the merger would not be allowed to extinguish it. So the maverick-in-waiting, the unusually vigorous competitor that will inject new life into a stagnant market, is born of two firms neither of which competed vigorously in the relevant past, but which together are somehow expected to assume a vigorously competitive character. The corporate leadership may remain the same, the market will grow more concentrated and thus the ease of coordination will increase, but the imagined maverick, we are told, will resist the temptation to collude because of the cost savings projected from the merger that creates it. This could happen, but nothing in the relevant past suggests that it

will. What factors, apart from merger-related efficiencies, might justify courts and regulators in making such an extravagant prediction?

The potential dangers in the exercise necessary to imagine the creation of the maverick-in-waiting were highlighted in a recent merger opinion of the United States District Court for the District of Columbia. The court denied the FTC's motion seeking to enjoin the merger of Heinz and Beech-Nut, the number two and three firms in the US market for jarred baby food, even though the FTC showed compellingly that the merger would significantly increase concentration in an already highly concentrated market.<sup>21</sup> Focusing entirely on the efficiencies anticipated to flow from the merger, the court implicitly accepted the notion that the merger would effectively create a new maverick, even though neither of the merging firms had competed vigorously in the past and all parties agreed that the pre-merger market had long been 'stagnant'.

A three-judge panel of the Circuit Court of Appeals has stayed the district court's ruling, expressing serious skepticism about the trial court's use of efficiency analysis. It remains to be seen how the merger will fare on final appeal. But the district court's extravagant application of efficiency testimony as the basis for imagining that the merger would create a new maverick demonstrates dramatically the misuse to which the maverick concept may be put. Though the *Revised Merger Guidelines* indicate that efficiencies will 'almost never justify a merger to monopoly or near-monopoly', by allowing for the possibility that they might – if they resulted in the creation of a new maverick, for example – the *Guidelines* create an unfortunate and unnecessary loophole.

The *Revised Merger Guidelines* should be revised again. It is hard enough to identify a maverick-in-being, but virtually impossible to predict the creation of a new maverick from the merger of two firms neither of which had been a vigorous competitor in the past. Market concentration, though, is much easier to predict and much more likely to produce post-merger coordination. The prospect of a new maverick should never justify merger to monopoly or near-monopoly. If the maverick-in-waiting concept has any utility, it should be narrowly restricted to mergers that will leave five or six firms in the post-merger market.

## THE PROBLEM OF 'POWER' BUYERS

Oligopolies are worrisome not just for reasons of market power and the potential for successful collusion. They are also problematic because their members sometimes possess significant buying power, or the ability to drive their suppliers' prices below 'competitive' levels.<sup>22</sup> From the law and economics perspective, this power is not worrisome unless it rises to the heights of

oligopsony power, which firms exert by reducing the quantity of inputs that they purchase in order to drive input prices below competitive levels, depressing output and raising price. It is often quite difficult, though, to distinguish the harmful manifestation of buying power, which culminates in lower total output and higher consumer prices, from the benign variety commonly achieved through increased scale or efficiency, which results in increased output and lower prices.

Unequal levels of 'power', broadly conceived as the ability to wrest margin from one's bargaining adversary, are the norm in business. Power is rarely divided equally between the buying and selling sides of a market. Robust competition can and does occur against this background of unequal power; and this everyday inequality, without more, has never been a concern of a sophisticated regime of competition law. Monopsony (and oligopsony) power is a serious concern, but monopsonists differ importantly from 'power' buyers. Monopsony exists when there is a single buyer of a good or service; oligopsony exists when there are a few such buyers.<sup>23</sup> The exercise of monopsony power necessarily entails the buyer's restricting the quantity of its purchases in order to drive down suppliers' prices, which results in the production of less final product than would have been produced under competitive conditions and (possibly though not always) in higher prices to consumers. Monopsony thus produces some of the same allocative inefficiencies normally associated with monopolies. By contrast, 'power' buyers are not apt to restrict their purchases of inputs. The lower prices that they 'extract' from their suppliers lead to their buying more inputs, not fewer; and the increased output likely to ensue will ordinarily result in lower prices for consumers.<sup>24</sup>

The preconditions for successful monopsony are difficult to achieve, while those for successful oligopsony are more difficult still. The buying group must account for a large enough share of the buying market for its purchases to influence the price of the relevant inputs. Disadvantaged sellers must have no significant buyers outside the group for their goods, and new entry on the buying side must be difficult. The goods must be either relatively perishable or incapable of being warehoused and withheld from the market long enough and at low enough cost to allow one or more of the colluding buyers to cheat. Such cheating, should it occur, must be detectable and punishable by the other members of the oligopsony. The other 'normal' organizational risks inherent in any unlawful collusive activity are also present (coordinating the collusive price over time), as is the more basic difficulty of distinguishing the efficient use of 'ordinary' bargaining power from the anti-competitive use of the 'extraordinary' variant.

The antitrust literature contains very few reported cases dealing with the exercise of oligopsony power.<sup>25</sup> This relative paucity reflects the fact that, just as concerted schemes of predatory pricing face nearly insurmountable



organizational difficulties,<sup>26</sup> so too do oligopsonistic joint ventures or cartels. Apart from the problems of coordination, monitoring and policing, would-be oligopsonists must be especially wary that their collaborators might cheat – by secretly purchasing additional inputs and selling more output at a lower price. The more durable the input in question, the longer sellers can hold it off the market and thus induce either an increase in the buyers' price or an outbreak of cheating by one or more of the collaborators. As long as the ability to cheat on the venture remains an option, the venture is at risk of breaking apart. Oligopsony is thus less likely to occur than monopsony; and, as noted above, monopsony itself does not seem to occur all that often.

Whatever its form, buyer power is keenly felt and deeply resented by sellers confronted with it. Since those sellers are comparatively small and relatively numerous, their complaints – about mergers or joint ventures that might produce or increase buyer power – often fall on very attentive ears, which sometimes belong to politicians and regulators. These sellers invariably claim that large buyers, or buyer groups, take unfair advantage of their size to compel small suppliers to accept ever-shrinking margins, forcing many of them to leave the market, setting the stage for bilateral oligopoly, raising rivals' costs and harming consumers in the process. While some of these claims may be true, others may simply represent the usual kinds of dissatisfaction voiced by smaller firms that are price takers but not the victims of oligopsony.

Buyer power therefore is not a monolithic concept, but can come in many forms, some of which may justify antitrust concern and some of which will not. It seems clear, as a starting point, that antitrust regulation cannot and should not attempt to maintain rough bargaining parity between buyers and sellers, a task that would be impossible to implement. Even if regulators could agree on what 'parity' might mean in context, the constant and unprecedented interventions required to maintain the supposedly proper equalities would likely wreak havoc with markets and overwhelm the resources of the enforcement agency involved. It is important therefore to approach the issue of buyer power with great caution, and with a view primarily to consumer welfare. The array of buyer power issues that has emerged in the past year is itself unprecedented and bears witness both to the broad nature of the problem and to the need for a useful theoretical structure in this potentially charged area of competition law.

At least four separate manifestations of buyer power have arisen in the United States in just the past few years. US antitrust regulators challenged two mergers that threatened to create buyer power. The Federal Trade Commission held extensive hearings and issued a report dealing with the competitive issues (including, prominently, monopsony) surrounding the emergence of B2B electronic marketplaces. A federal Appeals Court ruled that Toys 'R' Us (TRU),

the superstore toy retailer, was sufficiently ‘dominant’ vis-à-vis its sellers that it could (and did) coerce them into illegally boycotting the warehouse stores that are TRU’s closest competitors. And, in the legislative arena, bills were introduced into the US Congress seeking in part to provide small farmers and independent physicians with some protection from the large buyers of their goods and services. These various issues demonstrate two important points about the buyer power issue. First, it is appearing with more frequency, a result perhaps of the recent merger wave that has restructured the buying side of many markets; and second, the issue is too diverse, fact-intensive and context-dependent to admit of easy or political solutions. As an area of antitrust concern, the term ‘buyer power’ is overly inclusive.

### **Buyer Power through Merger**

Concerns about buyer power figured prominently in two recent merger challenges brought by the Antitrust Division of the US Department of Justice, one involving Aetna’s acquisition of Prudential’s health insurance assets, the other involving Cargill’s acquisition of Continental’s grain trading division.<sup>27</sup> In the *Aetna* case, the Department alleged that the merger of the parties’ health maintenance organization (HMO) businesses would allow Aetna to depress prices paid to physicians for their services in the Houston and Dallas markets. In the government’s view, physicians in those markets would be unable adequately to protect themselves from the post-merger entity, because they could neither effectively solicit new patients (buyers) through advertising or otherwise nor store their services – the hours of time available for patient care – for sale in the future. In *Cargill*, the complaint alleged that the post-merger Cargill would be the sole purchaser of certain grains in certain markets and able therefore to depress prices paid to certain grain sellers, particularly farmers and small grain handlers. While the government took the view in *Aetna* that the exertion of buyer power post-merger would harm consumers,<sup>28</sup> it pursued the case against Cargill, despite the likely absence of consumer harm,<sup>29</sup> on the controversial ground that the merger would diminish not consumer welfare but ‘overall welfare’,<sup>30</sup> since Cargill’s potential gains from the use of its power were deemed to be smaller than its sellers’ potential aggregate losses.

### **B2B Purchasing Ventures**

1999 also brought the announcements of plans for the first large B2B purchasing ventures.<sup>31</sup> These announcements touched off concern among US regulators that the largest ventures would be able to facilitate collusion among the buyer-participants that would force suppliers’ prices down to unacceptable

levels. Large firms in Europe and Australia have formed similar consortia that have attracted similar regulatory attention.<sup>32</sup> In June 2000, the Federal Trade Commission held a two-day public workshop designed ‘to examine issues of competition policy that arise in connection with business to business . . . electronic marketplaces’,<sup>33</sup> a workshop made necessary in part, according to the FTC, because ‘scholarship is limited on the implications of e-commerce for competition policy’.<sup>34</sup> In September, the FTC concluded its investigation of Covisint, a consortium formed by General Motors, Ford, DaimlerChrysler, Renault SA and Nissan to buy their manufacturing inputs from tens of thousands of suppliers, effectively permitting it to proceed but reserving ‘the right to take such further action as the public interest may require’.<sup>35</sup> And in October, it published a report describing the development of B2B markets and the competition law issues that they raise.<sup>36</sup>

The electronic marketplace is still in its infancy and its potential for growth seems enormous. *The New York Times* reported in summer 2000 that, while \$336 million is now exchanged in B2B transactions, estimates suggest that by 2005 that amount will increase to \$6 trillion.<sup>37</sup> As the FTC Report notes, however, though treated as a group, ‘B2Bs are remarkably diverse’.<sup>38</sup> They serve a broad array of industries, buy and sell a wide variety of goods and services, and can be organized under different kinds of ownership structures. They offer a variety of different market mechanisms – simple auction, reverse auction, public negotiation, facilitated private negotiation – and a variety of accompanying services. Some are for-profit, some not-for-profit. They have very different organizational rules and purposes, and serve a wide variety of industries. Their commercial success remains very much in doubt.<sup>39</sup>

From the perspective of competition law, the B2B ventures are theoretically a mixed blessing. They permit firms to gather and share information at an unprecedented rate and in real time. They have the potential to open markets and create new opportunities for small firms. They can make the supply chain more efficient and facilitate prompt competitive responses to changing market circumstances. On the other hand, they may enable participants to facilitate coordination on price and other terms, to discriminate against rivals of owner/participants, and to exercise monopsony power. These are the possibilities, but it is simply too soon to know which of them will materialize. As to buyer power in particular, the FTC Report cautioned that ‘buyer groups driving prices down through monopsony power are not to be confused with buyer groups that get better prices through increased efficiencies’. The FTC was wise to adopt a cautionary stance in this emerging area. General statements and unformed fears about buyer power offer little guidance to regulatory policy, which must in the end examine specific transactions and arrangements.

### **Buyer Power in the Courts: the Toys 'R' Us Case**

The past decade has seen the emergence of a wide variety of superstores, large facilities with huge quantities of stock on hand, selling books, office supplies, toys, pet supplies and many other items.<sup>40</sup> In most of these superstore sectors, no one chain has 'market power' as that term is usually defined by United States law; that is, none has a market share approaching 65 or 70 per cent. Almost all superstore chains, however, seem 'dominant' in the sense that (a) each has the 'power' independently to refuse to stock the products of particular suppliers; (b) suppliers are often relatively small firms whose scale economies and profitability depend upon their having shelf space in every important superstore chain; and (c) even larger suppliers can ill afford to lose the business of any superstore.

Last year, the US Court of Appeals for the Seventh Circuit affirmed an FTC ruling to the effect that one of these superstores, Toys 'R' Us (TRU), the major toy retailer, possessed something tantamount to buyer power, even though it sold only 20 per cent of all toys sold in the United States and bought about 30 per cent of the traditional toy companies' total output.<sup>41</sup> The administrative law judge who heard the FTC's case found that TRU is usually the most important customer of the toy companies who sell to it; that it is a 'critical outlet' for all toy makers; and that even the largest manufacturers, such as Hasbro and Mattel, felt that 'they could not find other retailers to replace TRU'.<sup>42</sup> On appeal, the Seventh Circuit held that these facts, together with proof that TRU was using its influence with manufacturers to orchestrate a successful boycott of its major rivals, adequately demonstrated the kind of 'market power' necessary to bring TRU's conduct within the rule of per se illegality for group boycotts announced by the Supreme Court in the Northwest Stationers case.<sup>43</sup>

The Seventh Circuit made no finding to the effect that the power possessed by TRU was monopsony power, or that firms of similar size occupy a similarly dominant position. Rather, it determined that TRU was powerful ('dominant') in its market because its purchases were large enough to be critical to the profitability of toy manufacturers, and thus to enable it to dictate the terms of the boycott in question. Power to influence suppliers in this fashion is not necessarily power to drive price below competitive levels, nor does the exercise of such power suggest that TRU would wish to depress output and raise prices to consumers. But TRU's power seems both real and relatively widespread. It is yet another form of buyer power, and one arguably possessed by most superstore chains: the loss of shelf space at any large supermarket, for example, would likely prove disastrous for any affected manufacturer.<sup>44</sup>

The TRU case demonstrates again that buyer power is hardly a unitary concept. There are several kinds of buyer power, only one of which TRU

deployed. The case also demonstrates implicitly that the issue of buyer power is a matter of proof not assumption, and thus requires the same close attention to market dynamics that characterizes many other important inquiries in competition law. Importantly, the opinion highlights the attention that courts seem willing to afford to claims of buyer power, and suggests that such issues may arise more frequently in the future, given especially the existence of arguably comparable ‘power buyers’ both in other superstore sectors and in oligopoly markets in general.

### **Buyer Power and Legislation**

In 2000, farm interests in the United States introduced three separate bills into the 106th Congress, each of which sought among other things to protect small farmers from the large buyers of their products. Captioned respectively the ‘Agriculture Competition Enhancement Act’,<sup>45</sup> the ‘Farmers and Ranchers Fair Competition Act of 2000’,<sup>46</sup> and the ‘Fair Play for Family Farms Act of 2000’,<sup>47</sup> each aimed in its own way to redress or halt the perceived imbalance in bargaining power between small farmers and the large ‘vertically integrated multinational corporations’<sup>48</sup> to whom they sell. In important respects, the bills constituted a collective response to increased concentration in the markets for food processing, wholesale distribution and retail sales.

The ‘Agriculture Competition Enhancement Act’ proposed to create a Special Counsel for Competition Matters within the Department of Agriculture, who would be empowered to review almost all mergers affecting agriculture and to challenge mergers that ‘would cause substantial harm to the ability of independent producers and family farmers to compete in the marketplace’.<sup>49</sup> The ‘Fair Play for Family Farms Act’ contained similar provisions.<sup>50</sup> And the ‘Farmers and Ranchers Fair Competition Act’ would have permitted the Secretary of Agriculture to ‘take actions to enhance the bargaining position of family farmers and ranchers and to promote the viability of rural communities nationwide.’<sup>51</sup> Each bill seeks to respond to the very high level of concentration that has lately come to characterize most sectors of agriculture in the USA, and to the attendant social, economic and political problems.<sup>52</sup> Each seeks to help small sellers of agricultural products. None mentions monopsony power.

Farmers are not the only group in the United States seeking legislative relief from perceived imbalances in bargaining power. Physicians have been in active pursuit as well. In response to the claims of organized medicine that powerful health maintenance organizations were exerting buyer power unfairly in their fee negotiations with independent physicians and small practice groups, the state of Texas last year passed a law providing limited antitrust immunity to physicians seeking to bargain collectively against certain powerful purchaser

organizations. Over the past few years, similar bills have been introduced in the US Congress<sup>53</sup> and in several other state legislatures<sup>54</sup>. Some of these bills require a showing that buyers have ‘market power’, before the seller/physicians may bargain collectively about fees and fee-related matters. None of them mentions monopsony.

### **Buyer Power: the Political Dimension**

Some of the concern about buyer power seems to reflect not so much the particular activity of the buyers as the general fate of their small sellers. This seems true above all in the agriculture and food sectors where millions of small suppliers can be still be found and where they have become forced increasingly to deal with large supermarket chains, input suppliers and buying cooperatives. The merger movement among supermarket chains has largely eliminated what little bargaining leverage these suppliers once had, and resulted in tremendous downward pressure being placed on their prices. More importantly perhaps, their buyers’ power is seen as a powerful threat to their entire way of life.

In many countries, the farming sector has traditionally possessed political power disproportionate to its size or wealth, and for that reason among others has generally enjoyed a receptive audience in government. In 1999 in Australia, for example, representatives of the farming sector and trade associations of independent grocers complained to both the competition authorities and Parliament about the strong merger trend in the Australian supermarket industry, prompting a parliamentary enquiry into the effects of chain store buying power on the viability of small farms and the rural communities built around them.<sup>55</sup> These effects are felt very acutely by those living in the country, not just for the obvious economic reasons but also because they diminish the general attractiveness of rural life. Short of dismantling the supermarket chains (and large banks, and gasoline companies), however, little can be done – by any arm of government – to reduce their bargaining power to the level of their small suppliers, or to restore some bygone bargaining equilibrium. Similar concerns for small farmers can be found in statutory form in Italy and France.

Small firms are often at a disadvantage in dealing with larger ones, and small suppliers are usually ‘dependent’ on their larger buyers in a variety of ways. But this relatively common phenomenon is not so much a problem of competition law as it is an inevitable consequence of a modern market economy. ‘Seller power’, without more, is not normally a concern of competition law, especially in the United States where monopolists and oligopolists acting independently are free to charge what the market will bear. Time and the absence of artificial entry barriers are trusted to impose limits on the ability of

powerful firms to price non-competitively. Moreover, prices judged to be ‘too high’ must presumably be reset by judicial fiat, a prospect long considered unfortunate and unworkable.<sup>56</sup> For similar reasons, buyer power in most settings should not be a concern either. Powerful buyers, like all buyers, need and want large numbers of viable, efficient sellers; bankrupting them would usually run counter to self-interest.

In the early days of US antitrust law, and continuing through the 1940s, courts were inclined to believe that competition law expressed an implicit bias for an atomized economy, for the ‘small dealers and worthy men’ praised by Justice Peckham in *United States v. Trans-Missouri Freight Association*,<sup>57</sup> or for ‘a system of small producers, each dependent for his success upon his own skill and character’, as described by Judge Hand in the *Alcoa* case.<sup>58</sup> The Robinson–Patman Act,<sup>59</sup> much criticized for focusing largely on competitors rather than competition, was enacted in response to the perceived inequity resulting from the purchasing power of the emerging supermarket chains.<sup>60</sup> If such a judicial preference once existed, however, the realities of modern economic life have eradicated it. Society may wish for a variety of reasons – social, historical, mythical, political – to subsidize rural communities or independent doctors. Politicians may wish periodically to inveigh against the ‘injustice’ inherent in disparities of size and economic power. But competition law should no more concern itself with the existence of large and powerful buyers per se than with the existence of small and powerless ones. Nor should it prefer rural communities to urban or suburban ones. ‘Power’ buyers, either standing alone or as independent (non-colluding) members of an oligopoly, do not violate the law when they buy, no matter how good a deal they may strike. Small rural sellers have no greater claim to antitrust concern than small urban ones.

### **Buyer Power: the Bottom Line**

It should be clear from this brief review of the array of buyer power problems lately come to light that buyer power is a multifaceted concept, with economic, political and social dimensions. Some of its manifestations are amenable to and deserving of antitrust regulation, while others are not. The diversity of the concept argues strongly for regulatory caution. Buyer power is a large concept, capable of embracing a range of behavior that stretches from true monopsony on the one hand to small and temporary advantage on the other. Anticompetitive use of buyer power should of course be punished and discouraged. But blanket condemnations of powerful buyers serve no useful end. As in other areas of antitrust enforcement, a plausible theory of anticompetitive behavior and facts supportive of that theory should be an essential precondition for regulatory action.

## CONCLUSION

Though each of the problems discussed in this chapter is small, compared with the enduring problems of oligopoly, each is important in its own way. The problem of sequential mergers suggests perhaps that regulators should consider adopting procedures for merger review and notification that would enable them to view concentrating markets in a more comprehensive and less episodic fashion. The problem of the ‘maverick’ firm, or aggressive competitor, inheres in the imprecise terminology used to describe the maverick-in-fact, the questionable incentives created by denying it the freedom to merge, and the possibilities created by the *Revised Merger Guidelines* for imagining a future maverick born entirely from merger-related efficiencies. At the very least, the ‘maverick’ concept needs to be expressed more precisely; at the most its rationale and the *Revised Merger Guidelines* need to be reconsidered. Finally, the problem of power buyers seems less a problem of competition theory or economics (both of which seem well-equipped to cope with the phenomenon) than a problem whose dimensions are more directly political and social, and therefore perhaps best treated outside the regulatory realm.

## NOTES

1. See, for example, F.M. Scherer, *Industrial Market Structure and Economic Performance*, 151 (2d edn, 1980): ‘Economists have developed literally dozens of oligopoly pricing theories – some simple, some marvels of mathematical complexity. This proliferation of theories is mirrored by an equally rich array of behavioral patterns observed under oligopoly. Casual observation suggests that virtually anything can happen. Some oligopolistic industries maintain prices approximating those a pure monopolist would find most profitable. Others gravitate toward price warfare.’
2. See A. Cournot, *Studies in the Mathematical Principles of the Theory of Wealth* (1838; English translation by N. Baker, 1897); for a survey of the economic literature dealing with oligopoly, see F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, chs. 6–8 (3d edn, 1990).
3. George Stigler, ‘A Theory of Oligopoly’, 72 *J. Pol. Econ.* 44 (1964).
4. Jonathan B. Baker, ‘Two Sherman Act section 1 dilemmas: parallel pricing, the oligopoly problem and contemporary economic theory’, *The Antitrust Bulletin* 143 (Spring 1993).
5. From 1991 to 1999, for example, Hart-Scott-Rodino filings tripled, and the total value of the reported mergers increased eleven-fold. See Richard G. Parker and David A. Balto, ‘The Evolving Approach to Merger Remedies’, available at <http://www.ftc.gov/speeches/other/remedies.htm> (accessed October 3, 2000).
6. Compare the Baby Food litigation in the Third Circuit with the Potash litigation in the Ninth.
7. For a discussion of the issues, see Robert Pitofsky, ‘The Effect of Global Trade on United States Competition Law and Enforcement Policies’, available at <http://www.ftc.gov/speeches/pitofsky/fobefbl.htm> (October 15, 1999).
8. See Martha Brannigan, ‘Delta instigates talks with Northwest and Continental’, *The Wall Street Journal*, available at <http://www.msnbc.com/news/524331.asp>. (January 31, 2001).
9. Australia, whose important markets, as noted above, are almost all oligopolies, has adopted an informal policy designed to prevent sequential mergers in the banking industry, currently



- dominated by four large companies. The 'Four Pillars' policy seeks to prevent a merger between any of the Big Four, largely on the theory that one merger would touch off a second, and that, if either was allowed, the other would have to be permitted in order for some sort of parity to be maintained.
10. It seems worth noting that the value of the strategies under discussion does not depend entirely on the disapproval of both mergers, or on the approval of both without conditions. The strategic merger proposal might result in the regulator's granting both mergers but with conditions – divestitures, for example – that would yield a net advantage to the strategic actors.
  11. See, for example, *Hospital Corporation of America v. FTC*, 807 F.2d 1381 (7th Cir. 1986): 'A rational competitor would not complain just because it thought that [its rivals'] acquisitions would facilitate collusion. Whether the competitor chose to join a cartel or stay out of it, it would be better off if the cartel were formed than if it were not formed. For the cartel would enable this seller to raise its price, whether or not to the cartel level. By staying out of the cartel and by pricing just below the cartel price, the competitor might . . . do even better than by joining the cartel'.
  12. Agreements allowing for large break-up fees may themselves be strategically anti-competitive, since they impose a high cost on fully marketing the company in play and may thus dampen or eliminate competitive bidding.
  13. In an important sense, of course, all mergers are strategic. The strategy is to improve one's position vis-à-vis one's rivals. The strategy described above, however, is to propose a merger, not to have it succeed, but to have it serve as a barrier to the merger of one's rivals.
  14. See, for example, *FTC v. Staples*, 970 F Supp. 1066 (D.D.C. 1997) and 1992 *Horizontal Merger Guidelines*, with 1997 revision to section 4.0, efficiencies statement.
  15. All subject, of course, to allowance of some kind for unanticipated economic circumstances. The details of such a bonding arrangement would be undeniably complicated; but if the parties want to merge badly enough they might be agreeable to investing the regulator with a fair amount of good faith discretion.
  16. See the 1992 *Merger Guidelines*, section 2.12: 'In some circumstances, coordinated interaction can be effectively prevented or limited by maverick firms – firms that have a greater economic incentive to deviate from the terms of coordination than do most of their rivals (e.g., firms that are unusually disruptive and competitive influences in their market). Consequently, acquisition of a maverick firm is one way in which a merger may make a coordinated interaction more likely, more successful, or more complete.'
  17. Trade Practices Act of 1974, section 50 (3) (f).
  18. How vigorous and competitive? For how long and by what measure? Compared to what? What does 'vigorous' mean in this context? Energetic? How does it modify or add to the term 'competitive'?
  19. In *FTC v. B.A.T. Industries*, the FTC argued that the acquisition of American Tobacco Company by Brown & Williamson 'would eliminate a uniquely disruptive force from the market, thereby simplifying tacit coordination among the remaining firms' (FTC's Memorandum of Points and Authorities, on file with author). American Tobacco was claimed to be a maverick because it had (a) 'refused or lagged in following price increases of the market leaders' and (b) 'changed its corporate focus to develop and grow market share through . . . discount cigarette brands' (Memorandum, at p. 15). The FTC's claim about the 'maverick' qualities of American Tobacco seems hard to credit fully, however, since it appears that rather than compete head-on with the leaders, American had sought to develop its own market niche, and since it did not appear that this strategy was or could be profitable in the long run.
  20. On the consensus among economists that a reduction in the number of major sellers in a market increases the likelihood of anticompetitive coordinated conduct, see, for example, the testimony of Alfred E. Kahn, quoted in *State of New York v. Kraft General Foods, Inc.*, 926 F. Supp. 321, 364 (S.D.N.Y., 1995): 'As a general proposition, I, along I believe, with a great majority of economists, subscribe to the proposition that the more highly concentrated a market is, the greater the likelihood sellers will avoid direct and open everyday low price competition, whether through overt collusion or conscious parallelism or mere recognition of oligopolistic interdependence.'

21. *FTC v. H.J. Heinz Company*, 116 F.Supp.2d 190 (2000).
22. See, for example, the 1992 *Horizontal Merger Guidelines* of the U.S. Department of Justice and Federal Trade Commission: 'Market power also encompasses the ability of a single buyer (a "monopsonist"), a coordinating group of buyers, or a single buyer, not a monopsonist, to depress the price paid for a product to a level that is below the competitive price and thereby depress output.' See also Louis Vogel, 'Competition Law and Buying Power: The Case for a New Approach in Europe' (January 1998), *E.C.L.R.* 4.
23. George Stigler, *The Theory of Price*, 216–218 (1987).
24. See generally, Roger D. Blair and Jeffrey L. Harrison, 'Antitrust Policy and Monopsony', 76 *Cornell L.Rev.* 297 (1991).
25. Three of the leading cases dealing with monopsony power are *Mandeville Island Farms v. American Crystal Sugar Co.*, 334 U.S. 219 (1948); *Balmoral Cinema v. Allied Artists Pictures*, 885 F.2d 313 (6th Cir. 1989); and *National Macaroni Manufacturers Association v. FTC*, 345 F.2d 421 (7th Cir. 1965).
26. See *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993); *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).
27. *United States et al. v. Aetna, Inc. et al.*, No. 3–99CV1398–H (N.D. Tex.) (complaint filed June 21, 1999); *United States v. Cargill, Inc. et al.*, No. 1:99CV018875 (D.D.C.) (complaint filed July 8, 1999). Both transactions were approved subject to divestitures aimed at addressing competitive concerns.
28. See 'Buyer Power Concerns and the Aetna–Prudential Merger', address by Marius Schwartz, Economics Director of Enforcement, Antitrust Division, US Department of Justice, presented at the 5th Annual Health Care Antitrust Forum, Northwestern University School of Law (October 20, 1999) ('Lower prices paid to physicians by Aetna would likely have caused some physicians to drop out of the market, to curtail their hours, or to spend less time with each Aetna HMO patient; in any such case, the quantity or quality of medical care would have suffered.').
29. Despite its power over sellers, Cargill could not restrict total output and thus depress price to consumers because it faced vigorous competition from other large firms in the end market.
30. Overall welfare refers to the sum of gains and losses to all relevant parties to a particular transaction, expressed in dollar equivalents and weighted equally.
31. Depending on the actors involved, e-commerce can be divided into four main categories: business to consumer e-commerce (B2C); consumer to consumer e-commerce (C2C); consumer to business e-commerce (C2B); and business to business e-commerce (B2B). (*The Economist*, 26 February 2000, at 54). B2B involves the on-line exchange of products, services, or information between businesses; and thus far its main focus has been on exchanges that facilitate the purchase and sale of goods and services over the Internet. These exchanges come in a wide variety of names and organizational forms, and partly for this reason they are appearing in a diverse range of industries. The value of B2B trade has already been estimated to exceed that of B2C by a factor of 10 and is expected to grow significantly. See Merrill Lynch, *The B2B Market Maker Book 2000* at 3 (available at <http://www.netmarketmakers.com/reports/index.asp>).
32. The European Commission has authorized MyAircraft.com, a B2B exchange between Honeywell and United Technologies; and Australia's three largest mining companies have joined their counterparts in the USA, Canada, South America and South Africa to create a global procurement portal named Metique. See Australian BRW, June 2, 2000 (available at <http://www.brw.com.au/frame.asp?page=/stories/20000602/5963.htm>).
33. Press Release of the Federal Trade Commission, May 4, 2000 (available at <http://www.ftc.gov/os/2000/05/b2bworkshopfm.htm>).
34. See ICPAC Final Report at 213.
35. See *In re Covisint, Inc.*, File No. 001 0127 (Sept. 11, 2000) (closing letter to General Motors Corp., Ford Motor Co., and DaimlerChrysler AG available at <http://www.ftc.gov/opa/2000/09/covisint.htm>). Though the Commission found that no action against the venture was warranted, it cautioned that 'Because Covisint is in the early stages of its development and has not yet adopted bylaws, operating rules, or terms for participant access, because it is not yet operational, and in particular because it represents such a large

- share of the automobile market, we cannot say that the implementation of the Covisint venture will not cause competitive concerns.’
36. ‘Entering the 21st Century: Competition in the World of B2B Electronic Marketplaces’, A Report by the Federal Trade Commission Staff (October 2000, copy on file with author).
  37. *The New York Times*, June 28, 2000.
  38. FTC Report, *supra*, note 39 (Executive Summary at 1).
  39. See Elise Ackerman, ‘B2B Marketplaces Revamp, as Purchasing Staffs Show Little Interest’, *San Jose Mercury News*, September 18, 2000 (‘Workers who do the purchasing for big companies have shown little interest in actually using the new services’).
  40. This is not an entirely new development, of course. Supermarkets appeared in the 1930s, provoking many of the same fears now associated with the more widespread emergence of superstores, fears which were largely responsible for the passage of the Robinson–Patman Act, which as originally proposed was entitled the ‘Wholesale Grocers’ Protection Act’. See H.C. Hansen, ‘Robinson–Patman Law: A Review and Analysis’, 51 *Fordham L.Rev.* 1113 (1983).
  41. *Toys ‘R’ Us v. Federal Trade Commission*, 221 F.3d 928 (7th Cir. 2000), affirming *Federal Trade Commission v. Toys ‘R’ Us*, FTC Docket No. 9278, 1998.
  42. *Ibid.*, at 930.
  43. *Ibid.*, at 937. See *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*, 472 U.S. 284 (1985).
  44. Among other things, if the business lost cannot be replaced, the loss of scale economies will increase the manufacturer’s costs and thus its price, causing its sales and profits to decline even further.
  45. S.2252, introduced March 20, 2000 by Senator Grassley of Iowa.
  46. S. 2411, introduced April 12, 2000 by Senator Dachle of South Dakota, and others.
  47. S. 2744, introduced June 15, 2000, by then Senator Ashcroft of Missouri.
  48. S. 2411, at section 2 (3).
  49. S. 2252.
  50. S. 2744.
  51. S. 2411, at section 2 (b)(1).
  52. See Peter C. Carstensen, ‘Concentration and the Destruction of Competition in Agricultural Markets: The Case for Change in Public Policy’, 2000 *Wisconsin Law Rev.* 531.
  53. See, for example, H.R. 1304, the ‘Quality Health–Care Coalition Act of 1999’, which would exempt health care professionals from federal antitrust laws when they negotiate with health plans over fees and other terms of service contracts.
  54. Ohio, District of Columbia.
  55. The supermarket chains not only have buying power, but they often reshape the communities to which they move, opening up outside the central business district on inexpensive suburban land, and taking so much business out of the center city – not just from food retailers but from many other small shops, such as news agents, florists and locksmiths – that the city gradually becomes unable to support much business, and becomes unattractive and uninviting. This phenomenon is associated not just with supermarket growth; in the USA it has also been associated with the expansion of Wal-Mart.
  56. See Judge Taft in *Addyston Pipe and Steel*, speaking about ‘setting sail on a sea of doubt’.
  57. 166 U.S. 290 (1897).
  58. 148 F.2d 416, 427 (2d Cir. 1945).
  59. Section 2 of the Clayton Act, as amended in 1936 by the Robinson–Patman Act, makes it ‘unlawful for any person . . . to discriminate in price between different purchasers of commodities of like grade and quality . . . where the effect . . . may be substantially to lessen competition or tend to create a monopoly’ (15 U.S.C.A. sec. 13(a)).
  60. The original legislation was entitled the ‘Wholesale Grocers’ Protection Act’. See H.C. Hansen, ‘Robinson–Patman Law: A Review and Analysis’, 51 *Fordham L. Rev.* 1113, 1123 (1983); see also Federal Trade Commission, ‘Final Report on the Chain-Store Investigation’, S. Doc., No. 4, 74th Cong., 1st Sess. (1935). For a piece of particularly pungent criticism of the Act, see W.F. Baxter, ‘A Parable’, 23 *Stan. L. Rev.* 973 (1971).

## 9. Rule fixing: an overlooked but general category of collusion

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Most cartels, or anticompetitive agreements among firms, are simply devices to permit the colluding firms to mimic the price and output that would result were the firms to be merged to a monopoly.<sup>2</sup> Firms can also agree to take actions jointly that are designed to disadvantage actual or prospective rivals.<sup>3</sup> This chapter is concerned with a third set of cases, one which includes many important instances of collusion that defy categorization into one of these two categories, even if the categories are defined expansively.<sup>4</sup> The set of cases we delineate consists of instances of firms agreeing to establish the rules under which their competition takes place.<sup>5</sup> These rules are designed to soften or restrict that competition, but not to eliminate it, so that the resulting noncooperative outcomes give the participants higher profits than they otherwise would have received.

We believe that all anticompetitive collusion can be categorized in terms of one of three explanations. Every collusion case that cannot be explained in terms of fixing prices or disadvantaging rivals can be explained by a new category we call ‘rule fixing’ collusion.<sup>6</sup> Before describing in more detail what collusion to fix the rules of competition means, however, we will first contrast these types of cases with the other, more conventional cases by briefly defining and describing the two traditional categories of collusion.

### CLASSIC PRICE FIXING: TYPE I COLLUSION

Firms can raise prices by agreeing to coordinate pricing and/or output in order to obtain the monopoly solution, either directly or fairly directly.<sup>7</sup> Typically, such an agreement restricts the conspirators’ own output.<sup>8</sup>

Examples of Type I or classic collusion include price fixing,<sup>9</sup> bid rigging,<sup>10</sup> assignment of customers<sup>11</sup> and division of territories.<sup>12</sup> Price fixing and bid rigging allow the competitors to achieve the joint monopoly solution. Market division and customer assignments give each cartel member a slice of the marketplace over which it possesses a monopoly.<sup>13</sup> Monopoly-like outcomes are achieved, collusively, by each firm.

Sometimes Type I collusion manifests itself in ways that help to hold the cartel together or that make cheating less likely (that is, in agreements that are ancillary to an underlying and perhaps effectively hidden monopoly agreement).<sup>14</sup> These variations are less straightforward than simple collusion, but their ultimate goal is the same as that of simple collusion: raise prices as if the cartel members were monopolists.

## COLLUSION TO DISADVANTAGE RIVALS: TYPE II COLLUSION

One group of cooperating firms can attack and disadvantage rivals in a manner that later allows the colluding firms to raise prices. Two general types of practices can disadvantage rivals. The first consists of practices that raise rivals' costs.<sup>15</sup> These rivals can be actual or potential rivals. These higher prices for a cartel's rivals eventually permit the colluding firms either to raise their own prices or to deter the entry that would otherwise have eroded prices.<sup>16</sup>

The second way that a cartel can disadvantage rivals is by reducing rivals' revenues. Boycotts, for example, can be a way for a cartel to deprive their rivals of revenue.<sup>17</sup> This strategy enables the colluders to raise prices later.<sup>18</sup>

Both of these methods of disadvantaging rivals are outward-oriented because the direct targets are firms outside of the cartel. Not only the target firms suffer, however, so too do the consumers who are forced to pay higher prices.

## COLLUSION TO FIX THE RULES OF COMPETITION: TYPE III COLLUSION

Every remaining case of anticompetitive collusion can be characterized as collusion to fix the rules of competition. Since this category of rule-fixing collusion, or Type III collusion, is novel, we will devote the remainder of this chapter to it.<sup>19</sup>

Type III collusion occurs when cartel members agree upon and implement practices that insulate cartel members to some degree from hard competition with each other. The restrictions cause a cushion or space in which cartel members have some degree of pricing freedom. They are able to exploit this cushion by charging higher prices.

These cartels limit competition and cause prices to rise, even though cartel members never get together to set price or output. Instead, cartel members

compete less vigorously in the collusively altered environment; they compete along fewer dimensions. The agreed-upon practices limit, soften, or channel competition, but the firms still compete. However, this additional cushion or space between the cartel members and their nearest competitors, and the subsequent isolation of consumers, gives cartel members the power to raise price within this space. Type III collusion can be summarized by the phrase 'isolate and exploit consumers'.

Type III collusion is often an imperfect substitute for Type I collusion. When the cartel cannot achieve a total monopoly-like outcome because Type I collusion will not work very well, it may resort to Type III collusion as an imperfect, partial substitute.

The following cases are examples of prominent collusion cases that cannot be explained adequately, if at all, by the first two, conventional, categories of collusion. All, however, are members of this new category, Type III collusion. We will present a number of important US cases to show that Type III collusion is worthy of being called 'one of only three general explanations for cartels', and not just a category consisting of a few unusual cases.<sup>20</sup>

Two similar United States Supreme Court cases, *National Society of Professional Engineers*<sup>21</sup> and *Indiana Federation of Dentists*,<sup>22</sup> provide our first examples of Type III collusion. *National Society of Professional Engineers* (NSPE) involved some of the provisions of the ethical code promulgated by a group of consulting engineers.<sup>23</sup> These provisions forbade engineers from discussing price with their customers until just before contracts were signed.<sup>24</sup> Customers could decline to sign after they learned what the price of the contract was, but only after they had made a considerable investment of time working with the engineer.<sup>25</sup> The ethical code made it much more difficult for customers to engage in comparative shopping for engineering services.<sup>26</sup>

*Indiana Federation of Dentists* (IFD)<sup>27</sup> involved a group of dentists that agreed not to provide patients' x-rays to insurance companies.<sup>28</sup> The x-rays helped insurers determine whether certain dental procedures were necessary.<sup>29</sup> Instead, the dentists agreed to require the insurance companies to visit each dentist's office to examine patient records.<sup>30</sup> This made it much more difficult for the insurers to detect fraud and unnecessary dental work.<sup>31</sup>

Neither of these cases was an example of Type I collusion. Neither involved an agreement on prices or output. There was no agreement upon a monopoly-like outcome. Nor was either case Type II collusion. The organizations imposed restrictions on their own members, not on outside rivals, and rivals were not hurt.

Both cases, however, involved Type III collusion. Of course, in NSPE the restraints at issue directly involved customers, while those in IFD directly involved third party insurers. But the practices had very similar effects insofar

as they served to establish cushions from hard competition for cartel members,<sup>32</sup> and these cushions allowed revenue and prices to rise.<sup>33</sup> The practices allowed cartel members to ‘isolate and exploit’ consumers to a large extent.

In neither NSPE nor IFD were consumers prevented from making price comparisons, but in each case rules were adopted to make such comparisons more difficult. Advertising also facilitates such comparisons. It should not be surprising, then, that firms often attempt to limit advertising, particularly price advertising.

The next group of examples are a United States Supreme Court case<sup>34</sup> and a similar lower court advertising restriction case.<sup>35</sup> In each case a group of competitors enacted an ethical code that restricted advertising by every member of that profession.<sup>36</sup> Some of these collusion cases, like *Bates v. State Bar of Arizona*,<sup>37</sup> involved a nearly total advertising prohibition (on lawyer advertising).<sup>38</sup> Other advertising restriction cases, such as *In re Massachusetts Board of Regulation in Optometry*<sup>39</sup> (Mass. Bd. of Optometry)<sup>39</sup> involved severe restrictions on advertising (of optometric services).<sup>40</sup>

The advertising restriction cases did not involve Type I collusion. They did not involve monopoly-like agreement on prices. In fact, classic cartels would often be impossible for lawyers or optometrists. Too many independent entities would be involved, and the products or services at issue would often be unduly heterogeneous.

Nor would the advertising restrictions be good examples of Type II collusion. The primary motivation behind and effect of the practices did not involve outside firms. There was no plan to attack rivals by raising their costs or reducing their revenues. Raising rivals’ costs cases and reducing rivals revenues cases are outward looking, while Type III cartels are inward looking, with the cartel imposing restrictions upon its own members.<sup>41</sup>

By contrast, for these cases Type III collusion fits very well. Less advertising leads to less competition and some pricing freedom.<sup>42</sup> Cartel members obtain some ability to ‘isolate and exploit’ consumers. Cartel members do not enter into any agreement on prices, yet prices and profits rise.

Two additional examples involve interesting actions by groups of automobile dealers.<sup>43</sup> In the first of these cases, members of the Detroit Auto Dealers Association, consisting of every new car dealer in the Detroit metropolitan area, entered into an agreement to severely restrict the evening and weekend hours that they would be open.<sup>44</sup> This caused shopping for a new car to become significantly more difficult.<sup>45</sup>

The second case involved a newspaper, the *San Jose Mercury News*, which ran an article advising buyers how to purchase cars more effectively.<sup>46</sup> In retaliation, the local car dealers’ association, the Santa Clara Automobile Dealers Association, agreed to withhold member advertising from the newspaper.<sup>47</sup>

This boycott was an apparently successful attempt to convince the newspaper not to run similar articles in the future.<sup>48</sup>

The facts of these cases differ, but their effects were similar. Neither case involved a Type I agreement – there were no agreements on prices or cars and no agreements to limit the output or sale of cars. Nor did either case involve any Type II agreements – none of the practices were directed at any rivals of the members of the cartels.

Both cases are, however, excellent examples of Type III collusion. By making shopping or negotiating more difficult, the practices insulated cartel members to some degree from hard competition.<sup>49</sup> The practices helped the cartel isolate and exploit consumers to a significant degree.

Our final examples involve collusion to price discriminate. Unlike the previous examples, these cases do not involve raising consumers' costs.

*United States v. Brown University*<sup>50</sup> (the 'Ivy Overlap Case') involved a number of agreements among competing universities.<sup>51</sup> First, they agreed to fix the net discounts (and therefore the net charges) to needy students.<sup>52</sup> Second, they agreed not to engage in price competition for especially talented students: that is, they agreed not to offer merit-based scholarships to wealthy students.<sup>53</sup>

Insofar as price competition for needy students was eliminated, the agreement was the equivalent of price fixing.<sup>54</sup> This agreement was therefore Type I collusion.<sup>55</sup>

Price competition continued for the wealthier students since tuitions varied across schools.<sup>56</sup> The competing universities did not achieve a monopoly-like outcome. They eliminated one important method of competition and agreed not to price discriminate (when they agreed not to engage in price competition for especially talented students by offering them merit-based scholarships).<sup>57</sup> But they continued to compete on price, the base from which discounts were computed, so these later restraints were Type III collusion, not Type I.

*United States v. The Stop & Shop Cos.*<sup>58</sup> (Stop & Shop) involved an agreement by competing grocery stores not to offer double coupons (the grocery stores had been doubling the face value of manufacturer coupons presented to them).<sup>59</sup> Since stores use double coupons to attract especially price-sensitive consumers, the agreement not to offer to double coupons amounted to an agreement not to price discriminate in favor of these shoppers.<sup>60</sup>

The agreement in *Stop & Shop* was not Type I collusion, since the stores still competed on the basis of the base prices of the products they sold. Nor was it Type II collusion; no rivals were targets. But the cartel members did fix an important rule of competition. The agreement not to price discriminate in favor of especially price-sensitive shoppers was another example of Type III collusion.



## WHY TYPE III PRACTICES ARE BETTER EXPLAINED AS RULE FIXING THAN AS RAISING CONSUMERS' SEARCH COSTS

We initially believed that the key to Type III collusion, the best way to explain all of the cases that could not be explained as price fixing or as disadvantaging rivals, was to explain them as collusion to raise consumer search costs, negotiating, switching and other costs. However, 'rule fixing' is a better explanation, for several reasons.

The higher consumer search costs were the means to 'isolate and exploit' consumers, but they were not the end. Higher consumer search costs cannot be captured by the cartel that engineers them, and represent instead a necessary evil. The key to explaining Type III collusion is the cushion from competition, the consumer isolation and the pricing freedom that this brings. Given this isolation, firms can independently choose prices, but will choose prices that are more profitable for each cartel member individually than had the rules not been changed, and which exert less competitive pressure on rivals.

Moreover, empirically, consumers' costs need not rise. Were lawyers or optometrists, for example, forbidden to advertise, consumers might not increase the amount of search carried out, but, confronted by high costs of comparing providers, could instead choose a provider on the basis of very little information. An uninformed choice can simultaneously be inexpensive to make and unsatisfactory in practice.

Finally, some cases that cannot be explained as Type I or Type II collusion, including *United States v. Brown University* and *Stop & Shop*, involved collusion to price discriminate. Consumer search costs did not rise. In cases like *Stop & Shop*, fewer consumers may have chosen to collect coupons and 'comparison shop', but the likely effect once again was to diminish competition and to increase prices paid.

## WELFARE EFFECTS OF TYPE III COLLUSION

Type III collusion lowers consumer welfare in more ways than does traditional collusion. Preliminarily, Type III collusion does lead to the same negative effects on welfare as classic Type I collusion. Consumers must pay higher prices, and this causes both a transfer of wealth from consumers to the cartel and to allocative inefficiency.

Type III collusion can also interfere with consumer choice and thereby cause an additional type of loss to consumer welfare. For example, in *Detroit Auto Dealers Association* consumers might well have purchased a car that was not as

optimally suited to their needs.<sup>61</sup> Consumers in *NSPE*, *Bates* and *Mass. Bd. of Optometry* might also have secured services that suboptimally suited their needs.<sup>62</sup> In *Indiana Federation of Dentists* the practices probably led to unnecessary and fraudulent dental work.<sup>63</sup> This caused wasted time and pain for patients.

In addition, Type III collusion can also cause inefficiency as a result of the need for consumers to overcome the barriers that cartel members erected to increase their insulation from vigorous competition. In other words, often consumers will face higher search costs.<sup>64</sup> In *Detroit Auto Dealers Association*, for example, consumers might have had to take leave from work to shop for a car.

Finally, Type III collusion can harm third parties. For example, the Santa Clara car dealers' conspiracy not to advertise hurt the *San Jose Mercury News* significantly.<sup>65</sup>

## MULTIPLE EXPLANATIONS

Although the three explanations for collusion that we have offered are theoretically and analytically distinct, real-world cartels are not always neatly classifiable into only one category.<sup>66</sup>

Many of the examples discussed above are relatively pure; cases like *Indiana Federation of Dentists*, *Detroit Auto Dealers Association* and *San Jose Mercury News* have Type III effects but no Type I or II effects. Some cartels, however, employ a variety of techniques that fall within more than one category. As noted earlier, for example, *United States v. Brown University* involved a number of practices, and these included both Type I and Type III collusion.

In addition, particular practices can have a different degree of impact upon different members of the cartel. For example, advertising restrictions are often adopted primarily to cushion every firm in an industry from hard competition. The restrictions can nevertheless have a disproportionate effect on less established firms or firms with an inclination to discount. For these reasons advertising restrictions can have both Type II and Type III effects.<sup>67</sup>

Because of these overlaps it is more accurate to describe the three types of collusion that we have formulated as three distinct explanations for collusion, rather than as airtight and rigid categories.

## RULE FIXING CAN ALSO BE PROCOMPETITIVE

This chapter has only discussed practices that were, and were found to be, anti-competitive.<sup>68</sup> However, groups of firms often adopt rules of competition that are procompetitive.<sup>69</sup> Not all rule fixing agreements are, nor should they be, illegal.

In every one of the cases that we analyzed above, the defendants offered procompetitive explanations.<sup>70</sup> In many of these cases it was a very close question whether the practices at issue were on balance anticompetitive. In none of these cases, however, were the defendants' explanations accepted. Nevertheless, there are many examples of cases where the parties fixed a rule of competition for procompetitive purposes.

For example, *Vogel v. American Society of Appraisers*<sup>71</sup> involved a society's ethical rule that gem appraisers could not set appraisal fees that were a percentage of the appraisal; that is, an appraisal fee that was 1 per cent of the appraised value of the gem.<sup>72</sup> Judge Posner found that fees based upon appraised value could distort the incentives of the appraiser.<sup>73</sup> He therefore, quite correctly, held that the society's rule was in the public interest.<sup>74</sup>

## CONCLUSIONS

Every example of anticompetitive collusion can be explained in terms of Type I, II or III collusion, with some overlaps. This classification scheme, together with the three explanations for collusion that accompany it, can yield a number of advantages.

A better understanding of each category can help the antitrust profession to distinguish anticompetitive collusion more effectively from joint activity that is harmless or beneficial. Moreover, many Type III cases involve subtle practices, and it is often difficult to explain why the practices at issue are anticompetitive. Our articulation can assist judges and enforcers in preventing the practices that are indeed anticompetitive.

Further, our formulation of this new framework focuses the attention of enforcers on cases likely to harm consumer welfare significantly. For example, Type III collusion usually is used when more traditional collusion is not available, such as in markets with many firms and heterogeneous products. If firms can get together and effectively fix prices using classic Type I collusion, why should they bother with a halfway measure like a ban on advertising? For these reasons, rather than just observing that traditional price fixing is unlikely for lawyers or optometrists and then concluding that they should look for abuses elsewhere, enforcers need instead to examine these industries for examples of Type III collusion.

## NOTES

1. The authors thank Michaela Roberts for excellent research assistance. This is a condensed version of an article titled, 'The Three Types of Collusion: Fixing Prices, Rivals, and Rules', 2000 *Wis. L. Rev.* 941.

2. This category of collusion includes agreements both to fix prices and to restrict output. Alternatively firms can divide the market into segments in which each cartel member holds sway as an unchallenged monopolist. See *infra*, notes 7–13 and accompanying text.
3. See *infra*, notes 14–17 and accompanying text.
4. The rationales underlying the first two types of collusion cannot explain why these anomalous cases were anticompetitive. Indeed, most of these cases involve heterogeneous products and either individually negotiated or otherwise non-transparent prices that make traditional price fixing unlikely. The first two conventional categories simply cannot explain cases like *California Dental Ass'n v. FTC*, 526 U.S. 756 (1999); *Nat'l Soc. Of Prof'l Eng'rs. v. U.S.*, 435 U.S. 679 (1978); *In re Detroit Auto Dealers Ass'n*, 955 F.2d 457 (6th Cir. 1992); *U.S. v. The Stop & Shop Co.*, 1985–2 Trade Cas. (CCH), & 66,689 (D. Conn. Nov. 8, 1984). For a full discussion of each of the above listed cases, see *infra*, third section.
5. See *infra*, third section.
6. *Ibid.*
7. 'The pure collusive practice involves cooperation between competing sellers (in the form of an agreement, express or tacit, limiting competition, or a merger or other method of fusion) to raise the market price above the competitive level' (Richard Posner, *Antitrust Law: An Economic Perspective*, 28 (1976)). Although cartel agreements are illegal, when this type of market power is exercised unilaterally, by a monopolist, it usually is legal. See *Grinnell Corp. v. United States*, 384 U.S. 563 (1966). Only on rare occasions, such as when it was unlawfully acquired through an illegal merger or when it is manifested through practices such as certain tying arrangements, can it be illegal. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984).
8. The cartel can seek monopoly profits by imposing quotas on its members. The OPEC cartel is an example. For a discussion, see Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 214ff (2nd edn, 1994). For collusion to be effective, many prerequisites must exist, including market power in a well-defined market and effective barriers to the entry of new competition. Otherwise the market's natural tendency towards self-correction will prevent the cartel from harming consumer welfare. For a more detailed discussion, see *ibid.*, at ch.6.
9. For a discussion of straightforward price-fixing arrangements, see American Bar Association (ABA) Section Of Antitrust Law, *Antitrust Law Developments*, 78–87 (4th edn, 1997). The vitamin cartel provides a recent example of a large price-fixing cartel. See 'Price Fixing: Hoffman-LaRoche, BASF Plead Guilty, Agree to Pay Over \$700 Million in Fines', 76 *Antitrust & Trade Reg. Rep.* (BNA) 558 (May 20, 1999). Sometimes price fixing cartels assign responsibility for marketing the cartel members' products to a joint sales agency. The DeBeers diamond cartel has used this device successfully for a long period. For a discussion of joint sales agencies, see George Stigler, *The Organization of Industry*, 41 (1968).
10. See *Antitrust Law Developments*, *supra*, note 9, at 66–7. Sometimes bid rigging will occur in procurement auctions for projects with perfectly inelastic demand over a range of prices substantially above the competitive price, such as certain public works projects. In these cases output might not decrease.
11. *Ibid.*, at 74, 77.
12. *Ibid.*
13. See *supra*, note 8.
14. Sometimes the practices over which collusion occurs are ancillary to the agreements over the prices themselves. As Posner notes, 'Confronting a price-fixing rule that attaches conclusive significance to proof of an "actual" agreement to fix prices, competitors have an incentive to engage in all of the preliminary steps required to coordinate their pricing but to stop just short of "agreeing" on what price to charge' (Posner, *supra*, note 7, at 135).

An anticompetitive agreement can facilitate price setting by, for example, making cheating on a cartel price transparent and hence unattractive. For example, Westinghouse was alleged to have agreed through a license with General Electric to adopt the terms of sale chosen by General Electric for sales of light bulbs. The terms included resale price maintenance which might have been used to ensure that any discounts offered to light bulb wholesalers would appear transparently at the retail level. See Lester Telser, 'Why Should

Manufacturers Want Fair Trade?', 3 *J.L. & Econ.* 86 (1960). See also *Antitrust Law Developments*, *supra*, note 9, at 64–74, discussing *Catalano Inc. v. Target Sales* (credit terms fixed), and other cases involving non-price terms.

Rivals can also agree upon strategies to strengthen secret or tacit agreements. This can be accomplished through explicit agreement over the collusion and dissemination of information. For classic examples, see *Maple Flooring Mfrs. Ass'n. v. United States*, 268 U.S. 563 (1925); *American Column & Lumber Co. v. United States*, 267 U.S. 577 (1921). Or rivals can agree upon policies that punish consumers or cartel members who deviate from approved prices. See Glenn Ellison, 'Theories of Cartel Stability and the Joint Executive Committee', 25 *Rand. J. Econ.* 37 (1994). Note however that, in each case, there must be some underlying actual or tacit agreement as to the correct price – the problem of cooperating to set a monopoly price must somehow be solved. If not, these agreements are more properly interpreted as members of our Type III category.

15. See Krattenmaker and Salop, 'Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price', 96 *Yale L. J.* 209 (1986); Krattenmaker *et al.*, 'Monopoly Power and Market Power in Antitrust Law', 76 *Geo. L. J.* 214, 251 (1987).
16. See, for example, *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988); *Reazin v. Blue Cross & Blue Shield*, 635 F. Supp. 1287 (D. Kan. 1986), discussed in Krattenmaker *et al.*, *supra*, note 15, at 258 n.77.
17. For examples of boycotts, see *Fashion Originators' Guild v. FTC*, 312 U.S. 437 (1941); *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*, 472 U.S. 284 (1985).

Another way for firms to reduce rivals' revenues is through predatory pricing. However, although cases in which predatory pricing is alleged are easy to find, there is considerable debate over how often successful predation actually occurs. Scholars also disagree over whether the antitrust laws should attempt to deal with this phenomenon. This chapter does not enter this debate. For summaries of this scholarly literature and empirical arguments as to how common anticompetitive predatory pricing is, see Richard O. Zerbe, Jr. and Donald S. Cooper, 'An Empirical and Theoretical Comparison of Alternative Predation Rules', 61 *Tex. L. Rev.* 655 (1982); W. Baumol, 'Predation and the Logic of the Average Variable Cost Test', 39 *J. L. & Econ.* 49 (1986).

18. Whether the colluders or predators actually will be able to raise prices afterwards is complex and controversial. These complexities are beyond the scope of this chapter. For a discussion of some of these issues, see Frank H. Easterbrook, 'Predatory Strategies and Counterstrategies', 48 *U. Chi. L. Rev.* 263 (1981); James D. Hurwitz and William E. Kovacic, 'Judicial Analysis of Predation: The Emerging Trends', 35 *Vand. L. Rev.* 63 (1982).
19. The cases we will discuss in this section, however, do not involve agreements over market outcomes. We also emphasized above that collusion to disadvantage rivals is outward looking. By contrast, the collusion in the following cases is inward looking, imposing restrictions upon the cartel's members instead of increasing the costs of sellers outside the agreement.
20. The discussion of each example is abbreviated. For a fuller discussion of each case, and a discussion of many additional Type III collusion cases, see Lande and Marvel, *supra*, note 1.
21. 435 U.S. 679 (1978).
22. 476 U.S. 447 (1986).
23. See *Nat'l Soc. of Eng'rs.*, 435 U.S. at 681.
24. See *ibid.*, at 682–3, 683 n.3. The court stated that this case:

involves a charge that the members of the Society have unlawfully agreed to refuse to negotiate or even to discuss the question of fees until after a prospective client has selected the engineer for a particular project. Evidence of this agreement is found in §11(c) of the Society's Code of Ethics, adopted in July 1964. (*Ibid.*, at 682–3)

The Society's Code of Ethics stated:

Section 11 – The Engineer will not compete unfairly with another engineer by attempting to obtain employment or advancement or professional engagements by competitive bidding. . . .

- c. He shall not solicit or submit engineering proposals on the basis of competitive bidding. Competitive bidding for professional engineering services is defined as the formal or informal submission, or receipt, of verbal or written estimates of cost or proposals in terms of dollars, man days of work required, percentage of construction cost, or any other measure of compensation whereby the prospective client may compare engineering services on a price basis prior to the time that one engineer, or one engineering organization, has been selected for negotiations. The disclosure of recommended fee schedules prepared by various engineering societies is not considered to constitute competitive bidding. An engineer requested to submit a fee proposal or bid prior to the selection of an engineer or firm, subject to the negotiation of a satisfactory contract, shall attempt to have the procedure changed to conform to ethical practices, but if not successful he shall withdraw from consideration for the proposed work. These principles shall be applied by the engineer in obtaining the services of other professions. (Ibid., at 683 n. 3)
25. Ibid., at 684 n.6.
  26. Ibid., at 692–93. The Court held that the ethical code ‘operates as an absolute ban on competitive bidding, applying with equal force to both complicated and simple projects and to both inexperienced and sophisticated customers . . . and substantially deprives the customer of the ability to utilize and compare prices in selecting engineering services’ (citations to lower court opinion omitted). The Court rejected the engineers’ claimed justifications for their restraints.
  27. 476 U.S. 447 (1986).
  28. Ibid., at 450–51. Another group, the Indiana Dental Association, initially refused to supply the requested x-rays. Under a consent agreement with the Federal Trade Commission, however, they abandoned the practice. See *ibid.* The Indiana Federation of Dentists consisted of a small group of dentists that refused to accept this Consent Order. (Ibid., at 451.) This small group was, however, concentrated in three specific communities where they may have had market power. For example, the Federation enlisted nearly 100 per cent of the dental specialists in one town.
  29. Ibid., at 449.
  30. Ibid., at 456.
  31. Ibid., at 457.
  32. See *Nat’l Soc. of Eng’rs*, 435 U.S. at 695, stating, ‘Petitioner’s ban on competitive bidding prevents all customers from making price comparisons in the initial selection of an engineer, and imposes the Society’s views of the costs and benefits of competition on the entire marketplace’; *Indiana Federation*, 476 U.S. at 457, where the Supreme Court found that the agreement forced insurance companies ‘to choose between acquiring that information in a more costly manner or foregoing it altogether. To this extent, at least, competition among dentists with respect to cooperation with the requests of insurers was restrained.’
  33. See *supra*, note 26; see *Indiana Federation*, 476 U.S. at 459. The Supreme Court stated, ‘A refusal to compete with respect to the package of services offered to customers, no less than a refusal to compete with respect to the price term of an agreement, impairs the ability of the market to advance social welfare by ensuring the provision of desired goods and services to consumers at a price approximating the marginal cost of providing them.’
  34. See *Bates v. State Bar of Ariz.*, 433 U.S. 350 (1977).
  35. See *In re Massachusetts Bd. of Registration in Optometry*, 110 F.T.C. 549 (1988).
  36. See *Bates*, 433 U.S. at 353, 355; *Mass. Bd. of Optometry*, 110 F.T.C. at 551–2.
  37. 433 U.S. 350 (1977).
  38. See *Bates*, 433 U.S. at 355 (quoting the text of Arizona’s Disciplinary 2–101(B) as follows, ‘A lawyer shall not publicize himself, or his partner, or associate, or any other lawyer affiliated with him or his firm, as a lawyer through newspaper or magazine advertisements, radio or television announcements, display advertisements in the city or telephone directories or other means of commercial publicity, nor shall he authorize or permit others to do so in his behalf.’)
  39. 110 F.T.C. 549 (1988).
  40. Ibid., at 551–2.
  41. See *supra*, pages 183–4.

42. See *Mass. Bd. of Optometry*, 110 F.T.C. at 549, 584 (stating, 'Banning advertisements of discounts impedes entry by new optometrists that depend on a high volume of patients. Discounts also attract patients during times of low demand. A prohibition on discount advertisements obstructs such efforts to promote efficient use of resources. By preventing optometrists from informing consumers that discounts are available, Respondent eliminates a form of price competition' (citations omitted)).
43. See *In re Detroit Auto Dealers Ass'n*, 955 F.2d 457 (6th Cir. 1992); *Santa Clara County Motor Car Dealers Association: Proposed Consent Agreement With Analysis to Aid Public Comment*, 60 Fed. Reg. 39959 (1995).
44. See *Detroit Auto Dealers Ass'n*, 955 F.2d at 458–9.
45. See *ibid.* at 477 (Ryan, J, concurring in part and dissenting in part), quoting the FTC Commission report which stated, 'the restriction reduces efficiency, since without it consumers could reorganize their activities in a way that would increase their overall satisfaction'.
46. See 'A Car Buyer's Guide to Sanity: Here's a Low-Price, Low-Stress Route to Getting the Most for Your Dollar', *San Jose Mercury News*, May 22, 1994.
47. See FTC Press Release, 'Santa Clara County Auto Dealers Association Settles Charges Over Alleged Advertising Boycott', FTC File No. 941 0107 (visited July 19, 1999) <<http://www.ftc.gov/opa/1995/9508/scautoad.htm>>.
48. See *ibid.* The FTC asserted that the 'boycott' or punishment occurred pursuant to an agreement and was anticompetitive because it 'restrains competition among dealers and chills the publication of important consumer information'.
49. See *Detroit Auto Dealers*, 955 F.2d at 477 (Ryan, J, concurring in part and dissenting in part), finding that the *FTC* case included letters from the dealers demonstrating that they 'expected the hours restriction to benefit them by limiting comparison shopping', and this limitation was expected to result directly in higher prices: 'with fewer shopping hours, the public can devote less time to shopping, and forcing down prices'); *FTC, supra*, note 56 (stating, 'The car dealers could have made individual decisions to pull their advertising, but an agreement to do so restrains competition among dealers and chills the publication of important consumer information, making it more difficult for consumers to compare dealer prices and services'); see also Ian Ayres, 'Fair Driving: Gender and Race Discrimination In Retail Car Negotiations', 104 *Harv. L. Rev.* 817 (1991). Ayres provides the following example closely tracking our analysis:
 

One dealer, interviewed informally, espoused a desire to close his showroom in the evening, if his competitors would follow suit. Although forcing consumers to purchase at inconvenient times would seem to reduce the demand for cars, the dealer felt that restricting showroom hours would also reduce the amount of search that buyers undertake. Thus, the dealer believed that, although he might not get as many people in his showroom, he would have less competition for those who did arrive. (*Ibid.*, at 872 n. 90)
50. 5 F.3d 658 (3rd Cir. 1993). This case involved many additional issues, including a number of alleged social benefits. The case was eventually settled.
51. See *Brown University*, 5 F.3d at 662.
52. See *ibid.*, at 662 n.2: 'The purpose of the Overlap agreement is to neutralize the effect of financial aid so that a student may choose among Ivy Group institutions for non-financial reasons.'
53. See *ibid.*, at 663. Only differences of less than \$500 were permitted. As evidence of this agreement regarding wealthy students, the court cited the retaliatory actions of the Overlap Group when one member awarded scholarships based on merit. The court stated:
 

All Ivy Overlap Group institutions understood that failing to comply with the Overlap Agreement would result in retaliatory sanctions. Consequently, noncompliance was rare and quickly remedied. For example, in 1986, Princeton began awarding \$1,000 research grants to undergraduates based on academic merit. After a series of complaints from other Overlap institutions who viewed these grants as a form of scholarship, Princeton terminated this program.

54. See *ibid.*, at 668, holding that ‘financial assistance to students is part and parcel of the process of setting tuition and thus a commercial transaction’. The court remanded the case to district court to review the Overlap’s actions under a full rule of reason analysis to determine if the agreement violated section 1 of the Sherman Act. The case settled. See *ibid.*, at 679.
55. See *supra*, note 9 and accompanying text. We will not discuss whether this collusion was justified by the social goals that the court discussed. See *Brown University*, 5 F.3d at 677.
56. See *ibid.*, at 663.
57. See *ibid.*
58. 1985–2 Trade Cas. (CCH) ¶ 66,689 (D. Conn. Nov. 8, 1984).
59. See *ibid.*, at ¶ 63,240.
60. See *ibid.*: ‘The court is persuaded that . . . a conspiracy to discontinue double coupons is a form of price-fixing and therefore is a per se violation of the Sherman Act.’
61. Often potential purchasers prefer to test drive a number of cars before they can determine which one best suits their particular needs. If consumers must shop at times they find undesirable, such added costs need to be counted as social welfare loss. In addition, we need to include any losses due to ‘settling’ for a suboptimal choice. For instance, if a consumer pays \$20 000 for a green car, but would have been willing to pay \$21 000 for an otherwise identical car of a different color at another dealer where the consumer would have shopped if not for the agreement to restrict dealer hours, social welfare costs need to include the forgone \$1000 in consumer surplus net of additional search costs incurred.
62. See *supra*, notes 26, 38, 42 and accompanying text.
63. See text accompanying note 31, *supra*.
64. See *supra*, note 61 for an example of higher search costs to consumers.
65. See *supra*, notes 46–8 and accompanying text.
66. Indeed, it is likely that, whenever anyone announces that they have divided a field into three categories, someone can find an exception or some overlap. We believe that our classification is comprehensive (for anticompetitive examples of agreements), but not necessarily mutually exclusive.
67. As an illustration, consider an important case analyzed above. The straightforward effect of the advertising restrictions in *Mass. Bd. of Optometry* was to fix the rules of competition in a manner that made comparative shopping more difficult for consumers. These increased consumer search costs led to higher prices. In addition, the advertising restrictions also seemed to have had the effect of disadvantaging firms that wanted to enter the market and hampering firms within the market that want to expand aggressively. We do not know whether the restrictions at issue in *Mass. Bd. of Optometry* actually caused the promotion costs of new or prospective opticians to increase. Indeed, a ban on advertising could actually cause the opticians to save money. And, although we lack the necessary data, we would not be at all surprised if the restrictions did cause the revenues of some types of firms within the industry to decrease. Nevertheless, this case is a good example of one with practices that have both Type II and Type III effects.
68. See *supra*, third section.
69. See *Vogel v. American Society of Appraisers*, 744 F.2d 598 (1984). For a full discussion of *Vogel*, see *infra*, notes 71–4.
70. See *Nat’l Soc. of Prof. Eng’rs. v. U.S.*, 435 U.S. 679, 693 (1978): ‘The Society argue[d] that the restraint [was] justified because bidding on engineering services [was] inherently imprecise, would lead to deceptively low bids, and would thereby tempt individual engineers to do inferior work with consequent risk to public safety and health.’ See also *FTC v. Indiana Fed. of Dentists*, 476 U.S. 447, 452 (1986) (the Federation argued, ‘its policy of withholding x-rays was reasonable because the provision of x-rays might lead the insurers to make inaccurate determinations of the proper level of care and thus injure the health of the insured patients’); *U.S. v. Brown University*, 5 F.3d 658 (3rd Cir. 1993) (the Overlap group argued that, ‘by enabling member schools to maintain a steadfast policy of need-blind admissions and full need-based aid, Overlap promoted the social ideal of equality of educational access and opportunity’); *In re Detroit Auto Dealers Ass’n*, 955 F.2d 457, 471 (6th Cir. 1992) (the Dealers argued that ‘efficiency justifications’ existed, such as ‘(1) lower dealer overhead



costs, (2) the ability to attract higher-quality sales personnel, and (3) the prevention of unionization”’); *In re Massachusetts Bd. of Registration in Optometry*, 110 F.T.C. 549, 607 (1988) (the Board argued, ‘such advertisements are inherently deceptive, [and] its ban protects the public from the results of “undue commercial influence” ’).

71. 744 F.2d 598 (7th Cir. 1984).
72. See *ibid.*, at 599. Vogel, an experienced gem appraiser, charged a flat rate of 1 per cent. Although he had been a member of the American Society of Appraisers, it expelled him out of the belief ‘that it is unprofessional and unethical for the appraisers to do work for a fixed percentage of the amount of the value . . . which he determines at the conclusion of this work’.
73. See *ibid.*, at 602–3. Judge Posner observed that Vogel’s system of charging a 1 per cent appraisal fee was not a charge related to the time, skill or effort needed to perform the appraisal. (See *ibid.*, at 602.) Rather, it was a way to charge wealthier or less sophisticated customers more. He called Vogel’s fees a form of ‘price discrimination, which is normally anticompetitive’.
74. See *ibid.*, at 603. Judge Posner noted that the Society’s prohibitions against percentage appraisal fees seemed to have been based upon legitimate ethical concerns. The method gave the appraiser an incentive to value the gem at an unduly high price. Some customers, such as those who wanted to sell their gems, also had an incentive to want the appraised price to be higher than their gem was worth, so they also might have wanted an inaccurate appraisal. Judge Posner concluded that the ‘challenged bylaw is more likely a praiseworthy effort at self-regulation than a device for facilitating supracompetitive pricing’.

## 10. Raising consumers' costs as an antitrust problem: a sketch of the argument from *Kodak* to *Microsoft* (the European proceedings)

**Francesco Denozza**

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### INTRODUCTION

Transaction cost economics examines 'the comparative costs of planning, adapting and monitoring task completion under alternative governance structures' (Williamson, 1996, p. 58). The hypothesis is that 'transactions which differ in their attributes are assigned to governance structures which differ in their costs and competencies so as to effect a (mainly) transaction-cost economizing result' (Williamson, 1998, p. 75).

This chapter explores some implications of an obvious fact: consumers, such as firms, meet costs in 'planning, adapting and monitoring'. We can place those costs in the category of 'transaction costs' (as I shall call them in this chapter) assuming that they affect, directly or indirectly, the transactions between consumers and firms; or we can invent a different class of costs. Either way, the point is that these costs exist and they can be considered as 'costs of running the economic system' in the same way firms' costs are.

Problems arising from the impact that firms' behavior has on consumer transaction costs have occasionally been pointed out (perhaps the discussion concerning *Kodak* is the most remarkable example). This chapter tries to sketch a rough classification of these problems that, I argue, are pervasive and may even affect the way we conceive consumer welfare.

### CONSUMERS' TRANSACTION COSTS: A TENTATIVE CLASSIFICATION

The facts examined in the *Kodak* case (*Eastman Kodak Co. v. Image Technical Service Inc.*; 112 S Ct. 2072) can be read from different viewpoints. From one of these viewpoints they provide an example of an attempt (by Kodak) to

increase new purchasers' information costs in order to restrict effective consumer mobility. As has been noted, 'some new purchasers may be willing to buy despite the higher service costs, either because they do not engage in life cycle costing and instead base their decision solely on the new equipment price or because they employ too high a discount rate for discounting future service costs' (Salop, 1993, p. 4).

Even if the court did not base its decision on the 'informational' market power, the case illustrates, just the same, the problems that arise from an increase in consumers' transaction costs, especially when we consider that informational problems faced by Kodak customers were very different and, I believe, much more difficult to solve, than the problems faced by franchisees tied to buying tomatoes and cheese from their franchiser, as was the case in the facts examined by the court in *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430 (3rd Cir. 1997).

In any case, the potential antitrust relevance of situations in which consumers' transaction costs are *increased* by firms' behavior and are *exploited* by firms' practices, is rather evident. I shall come back to this subject later. Here I would like to underline that antitrust problems can arise also in other situations, that we could classify as (a) situations in which transaction costs are created by firms as by-products of their behavior, not with specific intent to create them; and (b) situations in which transaction costs are exploited by a firm's practice, but are not directly created by it.

In the first group we can class situations in which firms' decisions can create consumers' transaction costs, but no firm is able to exploit them. In these cases it could be that no firm is interested in removing or lowering the costs and therefore we can have increases in consumers' costs (caused by firms' practices) that do not activate any countervailing mechanism.

In the second group we can class firms' practices that exploit situations in which transaction costs assume consumers' reaction and thus make practices that, otherwise, would not have been undertaken, profitable.

I shall examine the general problem of 'transaction costs externalities' and then these classes of consumers' transaction costs before coming back to problems raised by facts like those examined in *Kodak*.

## TRANSACTION COST EXTERNALITIES

Transaction cost economics suggests that many forms of unfamiliar or non-standard business behavior that was once presumed to be anticompetitive are in fact transaction costs-economizing mechanisms. They are assumed to be efficiency-enhancing. The legal implication is that, unless specific structural conditions exist, vertical market restrictions and other contractual constraints

should not be considered as antitrust violations if it can be affirmatively demonstrated that they achieve non-trivial transaction costs economies (for example, Williamson, 1979; 1996, p. 279).

I contend that transaction costs economies that are attributable to the contractual and organizational practices of the firms are not sufficient grounds for presuming such practices to be procompetitive and welfare-enhancing.

In examining the costs of one mode of governance, in relation to alternative feasible modes, transaction cost economics focuses on the costs of the parties of the transaction under scrutiny. Less attention – if any – is paid to possible third party effects (for example, to the effects that the choice of one governance structure for a given transaction has on the transaction costs faced by economic entities other than the transaction parties).

The contractual relation or governance structure that defines the way in which two economic entities cooperate or compete usually affects the costs met by other economic entities in collecting information and in drafting, negotiating and safeguarding their agreements. An agreement by which shareholders commit themselves not to monitor the managers raises creditors' transaction costs. Shareholders are usually interested in monitoring the financial situation of the company and often they are able to monitor it from a better position than most creditors do. As far as shareholders and creditors are both interested in a company's financial health, shareholders' monitoring helps in keeping the creditors' monitoring costs lower.

An agreement between controlling shareholders and managers which increases the powers of the latter creates huge information costs to investors who consider this provision as a source of new and bigger risk. They have to establish the exact value of the risk's increase; they must analyse the different risk degrees offered by different available investment opportunities and eventually decide how much to disinvest from the corporations which amended their charters and how much to invest in less risky business (we are assuming that the problem risk averse investors face is not that of keeping the same portfolio value, but that of keeping a level of risk consistent with their personal preferences regarding the riskiness of their investments).

In the antitrust field, exclusive dealing provides another example. Perhaps a governance structure in which each retailer sells only the product of a given producer economizes the transaction costs of producers, distributors and retailers. Certainly, this structure raises consumers' transaction costs. Exclusive dealing agreements make interbrand and intrabrand comparisons much more difficult and expensive: 'If each of the five stores is the exclusive agent for one of the five brands, a consumer canvassing all stores obtains one price on each brand and no interbrand price comparison whatsoever. In contrast if all stores carry all brands, a five stores canvass yields a total of 25 inter and interbrand prices, with minimally more search time' (Steiner, 1985, p. 183).

Numberless firms' decisions affect consumers' transaction costs: even the launching of new products raises costs, at least information costs. Obviously, the fact that a firm's practice raises consumers' costs is not yet a reason to forbid it. Those costs cannot, on the other hand, be simply ignored. We must take into account the effects that the choice of governance mechanisms has *on the whole system and not only that on the considered transaction*. Identifying the best institutional arrangement with the arrangement which is most suitable from the point of view of the contracting parties, can be seriously misleading. The economizing effects of the firms may result in increasing the information and transaction costs of the consumers, so the outcome, evaluated in terms of aggregate welfare, is undetermined.

From an antitrust law viewpoint, consumers' costs considerations do not provide us with cutting edges. They support the balancing approach familiar to antitrust scholars and enrich the dispute as to which effects should count in favor of and against a restraint. They suggest, for example, paying more attention to the relationship between the offer of new alternatives that may be welfare increasing and the rise in transactions costs.

We know that, 'if the old goods are still available on their original terms, the introduction and acceptance of new goods' is welfare-increasing (Lancaster, 1991, p. 3). Unfortunately, old goods are often not available on their original terms and in any case we should always verify that acceptance is due to genuine consumers' preference rather than increased transaction costs. We should take into account, moreover, that in transaction cost contexts we cannot assume that firms maximize the overall efficiency of the systems. *There are consumers' costs that firms have no interest in or no possibility of lowering*. This is a crucial point and we shall examine it further.

## COSTS THAT ARE FIRM BEHAVIOR'S BY-PRODUCTS

In the examples provided in the previous section, increase in third parties' transaction costs was not the aim of the agents, nor were agents interested in exploiting the costs created by their practices. Even in the example of exclusive dealing agreements we can suppose that firms had chosen this governance mechanism to solve their coordination problems, not to exploit the search costs created for consumers.

Where transaction costs increases are a by-product of firms' behavior, it may happen that at least one firm is interested in lowering consumers' costs. The firm launching a new, more sophisticated product as a substitute for the old product to which consumers are accustomed is obviously interested in overcoming, as soon as possible, the difficulties that the new possible choice creates for the consumers.

Unfortunately, much more complicated situations exist. In the example of exclusive dealing agreements we can easily imagine situations in which no firm is spontaneously interested in lowering consumers' search costs, as the incidence that these costs can have on the final outcome of consumer choices is usually unpredictable. When this is the case (the final outcome of consumers' decision-making process is uncertain and unforeseeable) and no firm has reason for presuming that an improved decision-making process will entail a greater number of final choices in favor of its products, there is no incentive for firms to lower consumers' decision costs.

From a more general point of view, we have to consider that consumers face costs, mainly information costs, at each stage of their decision-making process. We know that, in the first stage, consumers have to ascertain the potential functions of goods (their 'properties') and to confront them with their preferences. The process leads to the desired mixture of products. In the second stage, consumers need further information to determine the mix of goods that would give those properties at the least cost (Lancaster, 1991).

In both stages (and especially in the first), *the information created by the decision-making process may reshape the consumer preferences*. This is the main reason why firms may have no incentive to lower consumers' information and decision costs. Consumers provided with new information and new alternatives might change their attitude and develop new preferences in an unpredictable way.

## WELFARE ANALYSIS AND ANTITRUST PROBLEMS

Welfare analysis which considers only the last step of the second stage of the consumers' decision-making process (the offer of the maximum quantity at the minimum price) is at the least incomplete. When we assume that the market process maximizes consumer welfare we *necessarily presume* that, in any one period, it is offered the sample of products and product qualities that entail the best satisfaction of consumer needs. *This presumption is hardly supported by deservable facts*. What we know is that consumers confronted by a given set of possible alternatives can make the choices that maximize the satisfaction of their desire. We do not know whether the same consumers confronted by an equally possible set of different alternatives would make different choices entailing greater satisfaction of their needs.

Markets cannot record preferences for products that are not offered and no theory explains how the existence of a *latent* consumer preference can be perceived by the firms and so gain the possibility of becoming a *revealed* preference. In this context, welfare analysis that ignores latent preferences and considers only consumer preferences that are made visible by the firm decision

seems seriously flawed. This is another reason why the proposal that the legality of some restraints be evaluated on the basis of their effect on output (the so-called 'output test' – Posner, 1981; Easterbrook, 1984 – that has been criticized by many scholars, for example Krattenmaker and Salop, 1986, p. 283–4; Williamson, 1996, p. 290–91; Fox, 1981, p. 1159; Amato, 1997) is unacceptable.

Practices which reduce the number of available choices, or make the consumer decision-making process more expensive, do not necessarily entail an output decrease. Consumers who desire a product of firm A (for example, a boat) in combination with a product of firm B (for example, sails) do not necessarily give up buying a boat when A decides to sell boat and sails jointly. Yet it is hard to assume that those consumers' welfare is unaffected by A's decision.

From a more general point of view, we can cast doubts on the way in which antitrust problems are formulated by transaction cost economics. Transaction cost economics describes firm and markets as alternative means of carrying out the same thing. There are contexts in which markets enjoy the advantage and contexts (where cooperative adaptation is needed) in which the advantage shifts to hierarchies.

The choice between market and hierarchies seems to be, from an antitrust viewpoint, almost neutral. The only concern is with transaction costs: when they are low the usual suggestion is to rely on the efficiency of the competitive markets. When transaction costs are high and autonomous adaptation becomes difficult, we are invited to seek institutions which, in the given situation, can guarantee the most efficient outcome. It is imagined that for any given transaction costs framework a suitable institution exists. The market becomes a governance mechanism among others. The preference for competitive markets is lost. The conclusion is that 'no antitrust policy should be based on a belief that atomistic competition is better than some blend of cooperation and competition. The right blend varies from market to market' (Easterbrook, 1984, p. 1700). Consumer transaction costs considerations suggest that this conclusion is misleading.

An antitrust policy dedicated to maximizing consumer welfare should evaluate governance structures taking into account (among other things) the efficiency with which they economize on the resources consumers spend: to specify their preferences in relationships with properties of existing or *possible* goods and to communicate them to firms; and to determine the mix of goods that would give the chosen properties at the least cost.

Atomistic competition is in no way one governance mechanism among others. It is the egregious governance mechanism, which lowers consumer transaction costs by creating a context in which each of a great number of firms strives to deliver a performance that outdistances his rival by doing something *different* and better.

Among the many beneficial effects of this mechanism (all well understood since a few centuries ago at least) I would like to stress here the fact that producers compete actively not only by offering different prices for the same product, but also by offering a better quality (or a poorer quality at a lower price), a different style, an array of substitute goods and so on. This is the way atomistic competition guarantees a continuous survey of the *latent* preferences of the consumers. 'The consumer is too often in the position of the voter who has but one candidate to vote for, or several candidates who all stand for the same thing' (Scitovsky, 1961, p. 267).

As in competitive markets, it is impossible to organize consumers' (voters') participation in products (candidates) selection (there is no room for primary election); the only hope of discovering consumer latent preferences lies in the rivalry of many firms trying new ventures, experimenting with new prices and new qualities of products, continuously searching for something they are not sure exists (Kirzner, 1973, p. 229; Fox, 1981, p. 1173).

Seen in this light, atomistic competition is irreplaceable. Each and every departure from this governance mechanism has costs. Obviously, we can imagine a lot of contractual or organizational arrangements that economize on other costs, but, in balancing a restraint's procompetitive and anticompetitive effects, we must always take into account the impact that the restraint could have on the discovery mechanism fostered by atomistic competition. I maintain that we have grounds for viewing with suspicion, under the antitrust law, practices (for example, franchise tie-in or exclusive dealing) *that prevent firms* (for example, franchisees required to purchase all relevant inputs from a franchiser) *from being alert to the possibility of as yet unperceived opportunities.*

## CONSUMERS' TRANSACTION COSTS THAT FIRMS ARE ABLE TO EXPLOIT

An example of this class of transaction costs is provided by the analysis of predatory pricing. As has been noted in the literature, the rule against predation would be useless if consumers could cooperate against the predator by buying all together the predator's victim's product at a higher price; the fact that consumers do not do so does not prove that predation is efficient; it could just prove that consumers' transaction costs are too high. 'If consumers could overcome free rider problems and combine against a monopolist or cartel they could directly bargain for an efficient result, just as the public would not need protection from pollution laws if such collective action were possible' (Kaplow, 1985, p. 556).

In this area we are confronted with problems that have been widely investigated with reference to firms' behavior. Transaction cost economics created



a set of conceptual tools that are usually employed in analyzing the relationships of firms among them, with consumers, with employees, and so forth. Less consideration, if any, has been devoted to the problem of governance mechanisms' comparative assessment from the consumer transaction cost point of view. We could ask whether conceptual tools akin to that employed in analyzing firms' transaction costs problems could be useful in analyzing analogous consumers' problems.

Usually, competitive markets are powerful mechanisms in economizing on consumer transaction costs. Markets facilitate the efficient production and allocation of resources 'without a complete exchange of information among economic agents' (Radner, 1982, p. 95). Usually, markets are able to collect and to process a great deal of information about preferences, desires, beliefs, natural, intellectual and symbolic resources of the agents participating in the bargaining. No other governance mechanism can collect as much information at a lower cost. Autonomous adaptation in a context in which prices accurately convey necessary information to every consumer usually replaces any need for (costly) cooperative adaptation which requires verbal communication of all the detailed information that is dispersed throughout the system.

Consumers' choices in market-like situations are made on the basis of a greater deal of information than that available in a context of verbally transmitted information. Therefore, to the extent that we can trust that consumers make better choices the more information they have, we can conclude that market autonomous adaptation usually outperforms decisions reached by collective deliberation. Yet we know from transaction cost economics investigations that circumstances exist in which cooperative adaptation is needed and therefore firms switch from markets to other governance mechanisms. What about consumers?

Let us compare some information problems analyzed with reference to firms' organizational problems with 'corresponding' consumers' problems. For instance, we know that firms face problems when they meet informational problems arising from the fact that other economic entities have hidden 'private information', that is information concerning events that are not directly observable by other parties. For example, the principal can observe the outcome of the agent's activity 'but cannot assess to what degree this outcome is determined by the two components of exogenous shock and the agent's effort' (Zappia, 1996, p. 136; Radner, 1982).

May private information be troublesome for consumers as it is for firms? We should deepen, first, the notion of private information when it is used with reference to interconsumer relationships. We could explore the possibility of considering as 'private' the information consumers possess on facts different from goods' observable qualities. For instance, let us imagine a house situated in a neighborhood suspected of undergoing a degradation process.

The situation of the would-be buyers depends as usual on other would-be buyers' opinions about objective qualities of the house (opinions that are reflected in the price). But it also depends on private information of the actual inhabitants regarding their evaluation of degradation probability (which influences their propensity to leave the neighborhood and the consequential acceleration of the degradation problem). This kind of information problem may transform even a usually quiet activity (purchase of a house) into a risky business.

From an antitrust law point of view, we could cast doubts on the legality of business practices, which exploit consumer 'private' information problems. Bundling might be a case, especially when the producer of a widely used product with positive network effects (say a word processor) bundles it with another product which could be invested by a network effect (say a spreadsheet), thus exploiting consumers' anxiety of being excluded from the possible new network.

In many cases private information problems could be overcome through cooperative adaptation. It may be that this is the case for many of the traditional market failure hypotheses and certainly it is the case for the would-be house buyers of our example, who could improve their situation by acting as a deliberative community instead of autonomous decision makers.

Problems arise, however, when we attempt to apply the newly acquired wisdom to the relationship between different informational gaps of the firms and the most suitable mechanism to address them in contexts in which consumers' transaction costs are relevant. In particular, we face problems in designing governance mechanisms able to perform for consumers the same useful function that hierarchies, vertical integration and so forth perform for firms where moral hazards, asset specificity and so on are present. In network industries with positive network effects, for example, it is evident that the possibility exists that consumers, by using a collective decision-making procedure, would reach a different decision, better than that they would have attained by autonomous adaptation.

Obviously, huge transaction costs make a consumers' meeting and the subsequent resolution impossible. On the other hand, suggesting regulation to overcome those transaction costs by imitating the result of collective deliberation could seem reckless with regard to the choice of the network itself. In fact, we do not know whether consumers remain in a given network on account of its being objectively better than other available alternatives, or owing to the prisoner's dilemma-like situation in which they are embedded.

There is, however, at least one indication we can draw from the analysis advanced here. We can compare consumers connected by network relationships with members of a voluntary community like, say, a club. Perhaps regulation of network industries could be driven by the goal of mimicking the

decisions to which consumers would come if they were acting as members of a club.

In this light, it is easy to presume that decisions pertaining to the services offered to the club members (for example, the choice of the restaurateur) would be based on an auction or at least on an accurate search of the best among all possible alternatives. In arguing for a regulation which ensures the maximum possible competition in providing goods and services to consumers stuck in the network, we could rely on a diagnosis of possible superiority of a deliberative process and a clear indication on how to mimic its results.

## EXPLOITING CONSUMERS' COSTS AND ESSENTIAL FACILITY DOCTRINE

Coming back to the problems connected with firms' attempts to increase consumers' transaction costs and to exploit them, we can consider as special features of these cases the fact that costs can be removed (or lowered) by intervening in the process that creates them and the presence of agents possibly interested in removing them (the competing firms negatively affected by consumers' costs increase).

In this area we are obviously confronted by the conventional antitrust analysis of market power and other factors that can prevent competitors from providing consumers with better alternatives. Yet it may be that some problems are becoming more complicated. I would like to recall here only one of these problems, which has already attracted the attention of the courts and of a vast literature. It is the problem which arises when competitors cannot overcome the situation created by a firm, for this firm exercises exclusive control over an essential resource (often an intangible asset protected by copyright or patent law).

This problem immediately evokes the disputed essential facility doctrine and its difficult application to industrial and intellectual property rights. Perhaps US law and European law have different attitudes on this point and a brief comparison could be useful. I shall use as an example a case of no enormous importance, yet it may be that it provides a first signal that a different attitude between US and European courts exists.

In *London European Airways v. Sabena*, 4 CMLR 662 (1989) the EC Commission held that 'the Belgian national airline Sabena infringed Article 86 EEC in that it abused its dominant position on the market for the supply of computerized flight reservation services to flight operators by refusing to grant London European Airways access to its reservation system on the grounds that London European's fares were too low and that it had entrusted the ground handling of its aircraft to another company'.

Almost at the same time, American courts (*In re Air Passenger Computer Reservation Sys Antitrust Litigation*, 694 F. Supp 1443, *aff'd sub nom Alaska Airlines, Inc v. United Airlines Inc*, 948 F2d, 9th Cir 1991) examined a case in which plaintiffs argued that United and American Airlines had violated Section 2 of the Sherman Act by denying plaintiffs reasonable access to their computerized reservation systems (CRS) and by leveraging their dominance in the CRS market to gain a competitive advantage in the downstream air transportation market. The Ninth Circuit rejected the claim that the American Airlines SABRE reservation system had established itself as an essential facility and affirmed the district court's grant of summary judgment against the plaintiffs. The facts were in the two cases quite different. The Ninth Circuit underlines that United and American 'have never refused any of the plaintiffs access to their respective CRS . . . Rather United and American have always given all of their competitors in the air transportation market such access for a fee. Neither United nor American have ever set this fee at a level that would drive their competitors away'. In fact we do not know how restrictive practices such as that charged to Sabena would have been judged by American courts.

Neither decision pays attention to the consumer information cost issue. Consumers' interest is, instead, one of the main points considered by the European Commission in enacting Regulation no. 3652/93 on the application of Article 85 (3) of the Treaty to certain categories of Agreements Between Undertakings Relating to Computerized Reservation Systems for Air Transport Services (OJL 333, 31/12/1993).

The Commission underlines that CRS 'help the air traveller to exercise choice on the basis of fuller information in order to meet his travel needs in the optimal manner'. Therefore the Commission establishes that:

**Article 3** A system vendor shall allow any air carrier the opportunity to participate, on an equal and non-discriminatory basis, in its distribution facilities within the available capacity of the system concerned and subject to any technical constraints outside the control of the system vendor.

**Article 5** Participating carriers and other providers of air transport products shall ensure that the data they decide to submit to a CRS are accurate, non-misleading, transparent and no less comprehensive than for any other CRS.

**Article 7 1(a)** Displays generated by a CRS shall be clear and non-discriminatory.  
**(b)** A system vendor shall not intentionally or negligently display in its CRS inaccurate or misleading information.

**2(a)** A vendor shall provide through its CRS a principal display or displays for each individual transaction and shall include therein the data provided by participating carriers on flight schedules, fare types and seat availability in a clear and comprehensive manner and without discrimination or bias, in particular as regards the order in which information is presented.

**(b)** A consumer shall be entitled to have, on request, a principal display limited to scheduled or non-scheduled services only.

I argue that this way of dealing with airline reservation systems deserves assent. When we address the matter from the viewpoint of consumer welfare, we cannot simply consider the airline's cost of using a CRS and the marginal revenue gained by the booking. We have to consider that the withdrawal from one CRS affects not only the costs and revenues of the airline which decides to withdraw. This decision may also affect travel agents' behavior and eventually consumers' possibility to be provided with clear and full comparison of all offered fares. As the European Commission noted, 'in order for these benefits [for consumers] to be obtained, flight schedules and fares displays must be as complete and unbiased as possible'.

## THE EUROPEAN PROCEEDINGS AGAINST MICROSOFT

The European Commission, on 3 August 2000, announced that it was launching proceedings against Microsoft for alleged discriminatory licensing and refusal to supply software information (*Antitrust & Trade Regulation Report*, vol. 79, No. 1971). The Commission stated (DN:IP/00/906):

Microsoft has a market share of about 95% in the market for personal computer (PC) operating systems (OS) and thus enjoys a practically undisputed market dominance. Most PCs today are embedded into networks which are controlled by servers. Interoperability, that is the ability of the PC to talk to the server, is the basis for network computing. Interoperability can only function if the operating systems running on the PC and on the server can talk to each other through links or so-called interfaces. To enable competitors of Microsoft to develop server operating systems which can talk to the dominant Windows software for PCs, interface information – technical information and even limited parts of the software source code of the Windows PC OS – must be known. Without interoperating software and as a result of the overwhelming Microsoft dominance in the computer software market, computers running on Windows operating systems would be de facto obliged to use Windows server software if they wanted to achieve full interoperability. This phenomenon is referred to as 'the client (PC) dragging the server'.

Sun Microsystems alleged, in a complaint in December 1998 and in subsequent submissions that the near monopolistic position of Microsoft in the PC operating system market creates an obligation on Microsoft to disclose its interfaces to enable interoperability with non-Microsoft server software. This obligation would cover the OSs distributed by Microsoft at the time when Sun's request for disclosure of interface information was refused in October 1998, for example Windows 95,98, NT 4.0 and all subsequent updates. Sun alleges that the launch of Windows 2000, on 17 February 2000, was a final step in Microsoft's strategy to strengthen the effects of its refusal to supply interface information with the intention of driving all serious competitors out of the server software market. Sun claims that Microsoft has applied a policy of discriminatory licensing by distinguishing between its competitors according to a so-called 'friend-enemy' scheme.

The Commission was given evidence that Microsoft did not carry out its obligation to disclose sufficient interface information about its PC operating system. The

Commission believes that Microsoft gave information only on a partial and discriminatory basis to some of its competitors. It refused to supply interface information to competitors like Sun Microsystems.

As is made evident by the long quotation, this proceeding will involve the solution of the question whether a firm in a dominant position has a duty to disclose information (even information created and owned by it in a legally protected way) necessary to enable interoperability with other firms' products.

This question immediately evokes the problem of relationships between antitrust law and laws protecting industrial and intellectual property. On this subject the official opinion shared by European Courts is clear. Recently, the European Court of first instance (*Micro Leader Business v. EC Commission*, 16 December 1999, *CMLR*, 1999) reaffirmed that 'it is clear from the case law that whilst, as a rule, the enforcement of copyright law by its holder . . . is not in itself a breach of Article 86 EC *such enforcement may, in exceptional circumstances, involve abusive conduct*' (emphasis added). In application of this rule the court overruled the Commission Decision of 15 October 1998 (case *Micro Leader/Microsoft IV/36.219*) on the grounds that 'the Commission could not argue, without undertaking further investigation into the complaint, that the information in its possession at the time it adopted the contested Decision did not constitute evidence of abusive conduct by Microsoft'.

In fact, the rule that the enforcement of industrial and intellectual property rights may involve abusive conduct is well established in European law (see, for example, *RTE and ITP v. EC Commission*, 4 *CMLR*, 1995). Therefore the proprietary nature of the right on technical and software information is not, in itself, a safe harbor against antitrust storms.

This being the context in which the proceedings against Microsoft will develop, what can be added by consumers' transaction costs considerations? I believe that at least a working program can be sketched. As to the possible conflict between the inventors' encouraging philosophy supporting intellectual and industrial property law on one side, and the application of the antitrust law on the other, consumers' costs considerations suggest examining closely the random nature of some of the incentives provided by creation of consumers' transaction costs.

Profits that can be extracted by denying rival 'software' manufacturers access to one's own 'hardware' depend on variables that are, at least to a not negligible degree, out of the control of the hardware owner (the terms 'software' and 'hardware' are used in the sense that they are used in the paradigm explained by Katz and Shapiro (1994, p. 94); in this paradigm the role of 'hardware' can be played even by a product that is usually considered 'software', for example 'Windows' versus 'Word' or 'Word' versus another software application that elaborates documents 'written in Word'). Profits in fact

depend on value and quantities of application programs that have been developed and on the consumers' evaluation of the respective merits of the basic hardware and of the set of possible applications. The outcome of this evaluation is often unforeseeable and can change over time, as in the case of Apple, which had previously attempted to deny access to its system and is now developing software to permit application programs written by other firms to run both on Macintosh and on work stations of other manufacturers. I believe that such an uncertain reward can hardly be considered as an effective incentive for investments in innovation activity.

As to the criteria by which different situations have to be judged, the possibility of mimicking the results consumers would reach acting as a deliberative community could be deepened.

We have already noted that consumers in network industries may happen to drop into a situation akin to that of members of a club with a costly exit, in which they have to buy every service from a non-member acting as the owner of the club (the reference to the club tries to capture the peculiar feature of the network industry, for example the fact that the value of the network is created, as the value of a club, to a great extent by members). We know that in this case the permanence in the club is not able to signal that members prefer it to other clubs. It may be, in fact, that transaction costs prevent a collective action and compel each member to remain in the club only because of the impossibility of agreeing with others a simultaneous transfer to another club.

Yet we could ask whether the original voluntary choice of the club can imply that consumers, all things considered, prefer this club to every other. Transaction costs considerations suggest that this implication may seem well founded only when the nature of the club was clearly stated in advance and the values and varieties of the connected services were, at least approximately, foreseeable.

On the grounds of these two variables it may be that we can distinguish – from a consumers' transaction viewpoint – situations that seem, from different viewpoints, alike. Let us compare, for example, the network of 'Windows' users with the network of Sony Playstation users. Home video game producers sell proprietary hardware (as such clearly declared) that – at least up to now – is useful only for running software of a limited kind which is able to satisfy only very specific needs. Probably the situation was very different when the first 'Windows' was launched. There were people accustomed to consider 'compatibility' the main merit of the so-called 'PC world' (against the 'Apple world'). As to the expectations about the nature and the availability of software, we can guess that the potential development of useful software was simply unimaginable by the standard consumer.

In conclusion, consumer transaction costs consideration might support different antitrust attitudes towards otherwise similar networks. For example,

they might support a rule according to which firms controlling 'hardware' have a duty to disclose information necessary to development of a competitive supply of 'software' to its hardware consumers' installed base, except in the case in which consumers were (made) from the beginning well aware of the firm's intention to prevent compatibility and of all consequences of this firm's decision.

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# 11. How safe is the king's throne? Network externalities on trial

**Roberto Pardolesi and Andrea Renda**

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Network externalities are among the most debated market phenomena of present days. Since Katz and Shapiro published their seminal paper in 1985,<sup>1</sup> many authors have tried to measure the impact of such effects on the so-called 'neoclassical' analysis of the market, without reaching any established outcome. Network externalities have been defined as a *ubiquitous*, pantheistic entity;<sup>2</sup> they have been taken as supply-side as well as demand-side effects, and have been associated with natural monopoly, essential facilities, learning effects, standardization and tipping.

The remarkable rise of economists' and lawyers' attention to network effects is also due to the advent of the so-called 'post-Chicagoan' approach to antitrust, whose more intense activism stems from the belief that these effects are likely to divert the market away from its otherwise spontaneous efficiency path. According to this vein of antitrust analysis, network externalities may severely harm competition insofar as they strengthen the barriers protecting incumbent firms from new entrants. Many antitrust decisions of the last decade refer to the existence of network effects as a clue that a certain degree of intervention is needed, even though in most of these cases no solid evidence concerning their effective impact on the aggregate market equilibrium was brought about.<sup>3</sup>

As we hope to make clear in the following sections, the overwhelming majority of these decisions are based on a vague, nebulous interpretation of the concept here at stake, so as to end up in an embarrassing *impasse*. Some 15 years after Katz and Shapiro's first hint, it still remains unclear whether network effects are really as ubiquitous – and by any means related to networks – as they have been credited. Moreover, be they actually widespread or not, it is equally unclear whether their existence alone involves any need for an antitrust inquiry.

A closer analysis of the scenario where the phenomenon is supposed to manifest itself suggests a more cautious approach, aiming to revisit the whole subject from a different, more functional standpoint. Accordingly, this chapter attempts to provide an answer to a few, crucial questions that, in our opinion, still remain partially unsolved. First of all, do network externalities fit their

current definition? Are they truly ubiquitous? Do they generate, and to what extent, undesirable effects? Are network externalities actually related to networks? Eventually, should they be treated as an antitrust issue? Might other remedies, linked to contract law, unfair competition or intellectual property, offer a feasible alternative?

In the first section, we cursorily review the mainstream theory of network externalities. At first glance, they qualify as positive external effects, benefiting both suppliers and final consumers, yet inclined to introduce some level of distortion in the market. The second section contains an attempt to provide a finer tuning of the definition of network effects, together with an analysis of the market conditions that, combined with the network externalities, determine the so-called ‘tipping’ effect and a worrying degree of ‘lock-in’ and ‘path dependency’ on the part of final users. In the third section, we try to understand whether such effects really show up whenever we deal with networks. An even cursory phenomenology reveals that they are lacking in most cases, particularly in the so-called ‘actual’ networks, and that, at any rate, no perverse effect may be associated with their mere existence. In other words, the impact of network externalities on the aggregate welfare requires further analysis, becoming thorough and meaningful only if other peculiar aspects of the markets where they arise are taken into due account.

Hence the fourth section is dedicated to a dynamic welfare analysis of the networks in which final users derive positive external effects from other users’ decision to enter the network. We will argue that these are mainly multidirectional networks, with users dealing with information goods;<sup>4</sup> and we will offer an overall assessment of the peculiar effects that make this kind of market deviate from the typical functioning of neoclassical markets. Finally, the fifth section applies the findings of the preceding sections to the dilemma between the option of *laissez-faire* and an intervention based either on antitrust rules, or on alternative remedies. Some recent cases will be scrutinized on the basis of the theoretical approach provided by the descriptive part of this chapter, thus leading to some prescriptive considerations on how network externalities should be dealt with by regulators.

## THE ID OF NETWORK EXTERNALITIES AT FIRST BLUSH

### **The Mainstream Theory of Network Externalities**

According to the prevailing view, if ‘the utility that a user derives from consumption of a good increases with the number of other agents consuming the good’, then network externalities are deemed to be at work.<sup>5</sup> As we will

show, this approach turns out to be exceedingly generic, so that too many heterogeneous phenomena might be associated with it. In this and in the following sections, we try to explain why setting up a finer tuning may prove highly recommendable.

But let us proceed step by step. An externality can be seen as the feedback of an individual activity on other agents in an interactive environment – namely, an unintended consequence of an intended action, generating utilities or disutilities borne by other individuals.<sup>6</sup> In order to qualify for an externality, two elements must be observed: an individual action aiming at the maximization of the agent’s payoff and a collateral effect involving other agents. Thus externalities may be either positive or negative: in both cases, economic efficiency requires that they be completely internalized, letting individual rational decision making lead to an efficient outcome. This appears as one of the most meaningful contributions of the law and economics literature to the understanding of market dynamics. Incidentally, however, it is worth noticing that the internalization of negative externalities has been stressed more frequently than that of positive ones.<sup>7</sup>

Networks are nothing more than the most efficient market structure that can be adopted in many exchange environments. The higher the number of agents involved, the more efficient the choice of a reticular structure. Networking might also be held as the best way of abating transaction costs, in particular distribution and communication costs. Indeed, networks are used both for distribution of a good for final consumption and for communication among end users.

Networks can be divided into *actual* and *virtual*.<sup>8</sup> The former are based on a physical infrastructure, such as a railroad track or electrical energy wires. The latter, on the contrary, do not rely on any physical facility, and imply the distribution and exchange of information goods: examples include exchange in cyberspace, information technology markets and so on.

As we have already pointed out, in order to spot an externality we need to observe an individual action that generates (unintended) effects on other agents. In the case of network externalities, the individual action is the decision of an agent to buy the good and therefore enter the network. Network externalities emerge when the value of the good for other agents rises as a consequence of this new entry. Economists measure such a value by observing an agent’s willingness to pay for that good, which depends both on the good’s quality and on its diffusion, namely its network value:

$$W_A = A_i + A_n$$

where  $W_A$  is the willingness to pay for a good  $A$ , yielded by the sum of its so-called ‘intrinsic value’  $A_i$  and its ‘network value’  $A_n$ .<sup>9</sup> This is a simplified

version of what is usually called *hedonic price*, in that it distinguishes the components of consumers' willingness to pay for a good, isolating the relative weight of each of the good's peculiarities with respect to the final consumption decision of the single agent.<sup>10</sup>

When a market is characterized by a sufficient degree of network externalities, the widespread diffusion of a good generates a sort of virtuous circle, since users derive a higher utility and therefore tend to value the good more and more, which eventually leads to a larger number of agents entering the network, and so on. The value of a network rises along with the enlargement of its number of users – the so-called 'installed base'.<sup>11</sup>

The effect of network externalities on the diffusion of a good is represented as in Figure 11.1. The usual demand curve for a good shifts upwards as a consequence of a higher willingness to pay on the part of agents. Under the same price conditions, the quantity demanded will increase, together with the installed base of users. The extent of the upward shift is that of the higher network value of the good,  $\Delta A_n$ .

The upward shift in the demand curve highlighted in Figure 11.1 is the result of a demand-driven rise in the value of the good at stake. As we will show in the following sections, these are entirely physiological effects that arise in almost every market exhibiting such characteristics. The new equilibrium will benefit consumers insofar as the price level does not change. Yet,

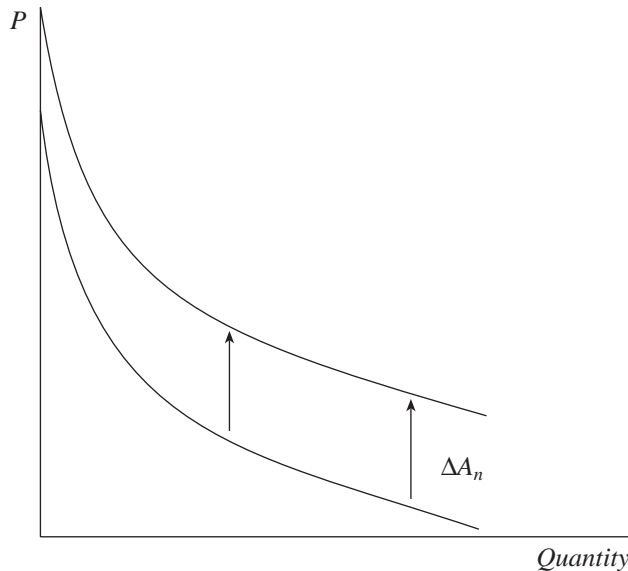


Figure 11.1 The effect of diffusion of good A in a network

even if the price for the good rises adapting to the increased demand, the higher value of the network will benefit consumers.<sup>12</sup> The net increase in the value of the network is shared between the standard good producer and the installed base, with the size of the shares depending on the elasticity of the demand curve. In some circumstances, this would be a Pareto-improvement, that is, a change that yields no worsening of any agent's condition in the market, if it were not for the competitors' lost chance in the race.

One possible shortcoming is that users think twice before leaving the network good in favor (where possible) of a rival, newly entered product  $B$ , provided that this would be a rational choice only if

$$W_B > W_A \Rightarrow B_i > A_i + A_n;$$

that is, the rival good's intrinsic value  $B_i$  is *so much higher* than good  $A$  that it can compensate its user for the loss of the network value  $A_n$ , provided that ( $B_n = 0$ ). This may lead to a degree of friction in the market, depending on the relative weight that the network value has over the intrinsic value of the good at stake.

When the network value of a good exhibits a sufficient relative weight, the market may converge towards the selection of a *de facto standard good*, that dominates for a certain amount of time. Economists call this process tipping; some of them would speak of '(excess) inertia',<sup>13</sup> leading to different market structures, more competitive as the heterogeneity of consumer tastes rises and the critical mass of single networks decreases.<sup>14</sup>

In many cases, more than one network coexists in the same market. The drive towards standardization is seldom strong enough to hinder all potential competitors' attempts to enter the market. Hence users will choose what they perceive as the best network, and will 'vote with the feet' selecting their favorite exchange environment.<sup>15</sup> Given the higher value of larger networks, dominant incumbent networks are more likely to be voted for than small, new entrant ones. When more than one network operates in the market, regulators have to choose between granting competitors access to a single incumbent network or fostering the competition between different networks. The issue comes down to the alternative between 'internetwork' and 'intranetwork' competition. As we will show later, such an alternative becomes mostly important in information-driven markets, where communication goods imply the purchase of primary and complementary goods that build up a 'system'.

To summarize, the description of the phenomenon leads to some basic considerations:

- network externalities may be viewed as *demand-side* effects, generated by consumer preferences;

- network effects are mostly positive. When the value of a network to its users depends on the installed base, the demand curve shifts upwards as the number of users increases;
- network externalities may determine a certain degree of tipping, that is a market equilibrium in which a few firms – if not a single actor – gain a substantial share of the whole market, therefore hampering the entry process of would-be competitors. In other words, these externalities work as self-reinforcing peculiarities of consumption. What remains to be assessed is whether this tendency is really so strong that it can lead to a significant distortion in the market, therefore affecting the number of viable competitors.

### **Interlude: What is Wrong with the Currently Adopted Definition of Network Externalities?**

So far, so good. Still, as we reported at the very beginning of this chapter, these externalities are subject to a heated debate and to the *j'accuse* of many post-Chicago proceedings.<sup>16</sup> Antitrust scholars seem to be concerned with network effects' alleged contribution to the crystallization of dominant positions in the market. What we have described thus far, however, appears hardly to fit this theoretical scenario. As we will demonstrate in the next section, there is not so much in network externalities as to upset the ordinary matching of supply and demand, and correspondingly to create timeless dominant positions, endangering the process of competition on the merits. As a consequence, either the impact of network externalities is so faint and widespread that it eventually turns out to be of no concern for regulation, and has been starkly overstated by scholars and judges, or there exist other (types of) market effects that, combined with the network ones, pave the way to dangerously anticompetitive outcomes.

More than tipping, *lock-in* and *path-dependency* are the major concerns that should alert policy makers.<sup>17</sup> Network externalities, let alone, may just generate an ephemeral tipping: they work exactly as many other frictions that characterize the market in a second-best context, and therefore provide an insufficient explanation of the very limited degree of competition observed in some networks.<sup>18</sup> To strengthen this view, one could argue that network effects arise in many non-network markets, such as legal citation techniques in the USA, where one cannot but resort to the Western standard, or language learning, insofar as the consumer's decision concerning which language to learn is highly driven by the number of other agents speaking that language (so that, once an agent has learnt, say, Italian, the value of his investment in learning will be higher the greater the number of Italian-speaking agents and the lesser the number of Italian agents speaking the de facto standard language, English).

As will be clear in the following sections, learning comes close to the core of network externalities. One could also argue – as many did – that in some cases the existence of network externalities determines a standstill situation, in which a new, more efficient solution cannot be selected by the market because of network effects. This reminds us of the famous argument over Qwerty typewriter keyboards as opposed to the Dvorak ones, which allegedly could have led to a higher typing speed, but which did not succeed as a new standard because no user was really willing to switch from the formerly adopted standard to the new one.<sup>19</sup> A similar argument was often raised with respect to the choice of personal computer operating systems and applications, starting from the PC–Macintosh dilemma and ending with the actual Windows–Linux choice.

It is very important to note that in all the aforementioned cases the existence of network externalities was accompanied by a strong influence of learning investments. In the following sections, this interaction will be dealt with more thoroughly. What we would like to stress at this stage of the analysis is that network effects determine only a limited degree of friction in the market, and at first glance seem to generate neither any true *lock-in* situation nor any real *path-dependency* in consumption.

## A CLOSER LOOK AT NETWORK EFFECTS

### **Testing the Currently Adopted Definition of Network Externalities: Are There Any Network Effects Inside and Outside Network Industries?**

In the last section we alluded to the embarrassment of scholars and judges when coping with what (appears to us a positive, desirable market effect, yet) they tend to treat as the ‘dark side’ of most network monopolies. Let us have a closer look. There are a number of questions that still wait for an answer, concerning where network externalities can actually be found and observed.

As a matter of fact, it is not even clear whether network effects are consistently related to network industries, especially with respect to the so-called ‘actual networks’. We defined those externalities as demand-side effects, arising when the utility that a user derives from consumption of the good rises along with the number of other agents consuming it. Could we apply this rationale to actual networks, such as railroad tracks, electrical energy, gas pipes, television broadcasting? Certainly not.<sup>20</sup> The individual decision to buy the service or not leaves the other users’ condition absolutely unaffected.<sup>21</sup> Among actual networks, only telephones seem to match the usual model, since the intrinsic value of a telephone set is not higher than that of a useless knick-knack, while its network value is undoubtedly predominant.<sup>22</sup>



The same reasoning does not apply to virtual networks, based on no physical infrastructure. The clearest example is that of computer operating systems, whose network value is at least as important as the corresponding intrinsic value.

Not only network effects are missing in several network industries. As long as the current definition is concerned, one could easily ascertain that other phenomena – clearly unrelated to network environments – seem to match such definition, so that the latter ultimately appears too vague.<sup>23</sup> Here are two examples:

*Fashion:* think of trendy, *dernier cri* clothes. Once consumers observe that a certain kind of cloth is more widespread and trendy than others, they will derive a network (social) value from purchasing that good instead of choosing others of the same kind. The wider the spread, the higher will be consumers' willingness to pay. This leads to very ephemeral dominant positions, showing a periodical tipping in a market for less-than-durable goods and yielding a non-quality-related change in consumers' willingness to pay for the standard good. This cyclical tipping does not involve any consumer lock-in or path-dependency in consumption.

*Herd behavior:* this occurs when consumers are not able to observe perfectly the quality of a good; that is, its experience and credence peculiarities.<sup>24</sup> Consumers may rely on the diffusion of a product as a sort of quality signal, that imperfectly compensates their rational ignorance.<sup>25</sup> As a consequence, the willingness to pay rises, along with the number of other consumers purchasing the good, exactly as happens with network externalities. In this case, like the preceding one, tipping is not accompanied by lock-in or by path-dependency.

### **Testing the Currently Adopted Definition of Network Externalities: When do Network Effects Generate Lock-in and Path-dependency?**

In order to find out whether and when network externalities endanger the competitive environment, we need to isolate cases where network effects produce not only tipping, but also some degree of lock-in and path-dependency. In our opinion, this happens only when network effects combine with switching costs, therefore depending upon the kind of good exchanged in the focal market. In this chapter, we focus our attention on learning effects, which we consider to be by and large the most relevant category of switching cost as far as network industries are concerned. Hence it is now time to analyze the interaction of the two phenomena of network and learning effects.<sup>26</sup>

#### **Demand-side effects: lock-in through learning**

Learning effects are well known to economists, and imply that the value consumers attach to a durable, reusable good rises over time, as users become acquainted with it. As a consequence, users need to undertake a costly training investment in order to fully enjoy the potential value of the good they

purchased. In other, simpler words, learning effects are positive, demand-side effects that imply a preliminary, costly investment. To be sure, learning how to use a good *is* costly, and might be viewed as a *sunk* investment, since conversion to a substitute product may cause the partial or total loss of the effort/investment made to get familiar with the formerly used good. This creates a friction in the market, enhancing the barriers to exit from a technology and therefore partially protecting incumbent firms from the threat of rival technologies. Users find themselves to some extent locked in through learning how to use a product.

Sunk costs associated with the learning process yield the so-called ‘switching costs’. This involves a further gap between agents’ willingness to pay for the de facto standard good and the value of a newly entered product. A hypothetical good *B* will be adopted by agents only if

$$W_B > W_A \Rightarrow B_i > A_i + A_n + C,$$

where *C* measures the amount of switching costs agents have to bear when leaving the de facto standard good in favor of the newly entered product *B*. These costs depend both upon the sunk investment made by agents in order to get familiar with the standard technology and upon the costs required for learning how to exploit the new one. The better and simpler the new technology, the better its chance of becoming the new de facto standard.<sup>27</sup>

Learning effects are clearly demand side-effects, since they modify the shape of the demand curve in a market. This is shown in Figure 11.2, where the slope of the curve becomes more inelastic. The true believers in the use of a good will progressively value it more and more, whereas those who are not persuaded by its properties will choose to resort to others. The effect on the price level is uncertain, depending on the relative weight of the two factions.

At any rate, the figure clearly shows that the learning process determines an enlargement of consumer surplus. Sunk costs here are necessary to maximize the utility single users derive from the good. The welfare effect is again positive, since no user will bear a sunk investment that she expects will yield an insufficient return. No user will quit the market before recovering at least the value of learning investments.

### **Learning effects and network effects combined**

We have already emphasized that network externalities may provide a Pareto-superior change in the market. We also found out that learning effects alone generate desirable welfare consequences, and hence have to be taken as positive effects, though leading to lock-in and path-dependency in consumption.

Yet, when network externalities combine with learning effects, users may find themselves so locked into a dominant technology that it becomes

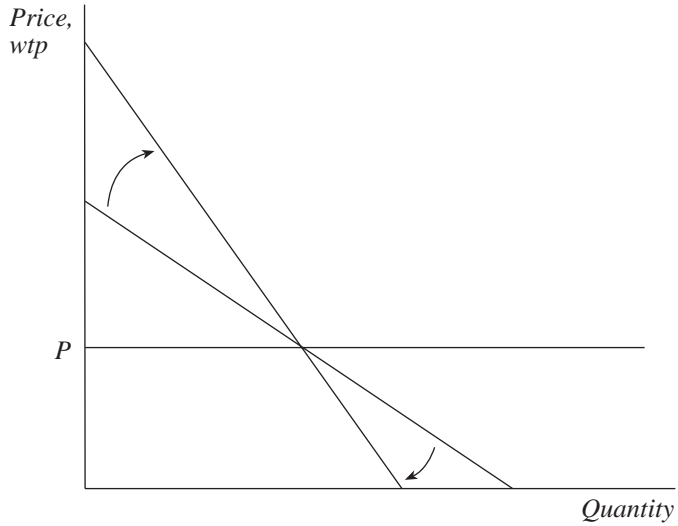


Figure 11.2 *Learning effects, let alone, merely change the slope of the demand curve, increasing the size of consumer surplus*

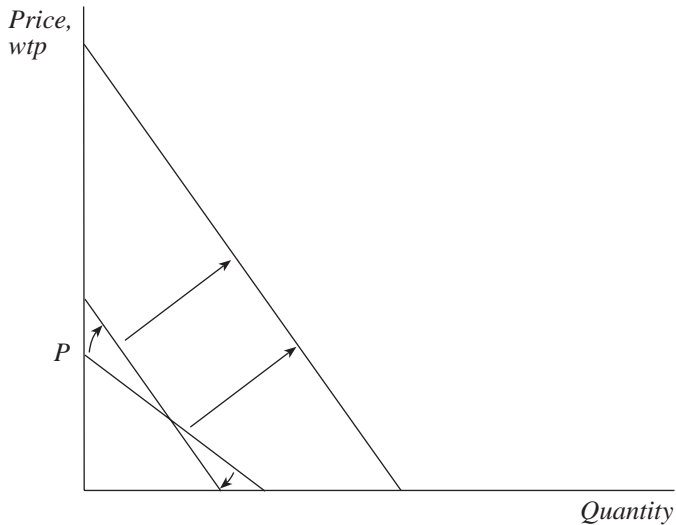


Figure 11.3 *The combined effect of learning effects and network effects*

irrational to switch to a better product. This might well strengthen the market position of a de facto standard owner. The joint analysis of Figures 11.1 and 11.2 portrays the aggregate impact of the two effects here described. As shown in Figure 11.3, the demand curve changes its slope, becoming more rigid, and shifts upwards, expanding the market and allowing higher profits on the part of the dominant firm.

## PHENOMENOLOGY OF NETWORK EFFECTS

After dropping as practically worthless (at least from our standpoint) the traditional dichotomy between actual and virtual networks, it becomes crucial to identify the network industries where positive external effects determine some degree of tipping, which in turn causes lock-in and path-dependency. Since the final aim of this chapter is to suggest the most efficient form, if any, of legal intervention, it is absolutely necessary that the markets in need of regulation be properly defined and analyzed.

### Unidirectional and Multidirectional Networks

Rather than relying on the dualism between actual and virtual networks, we believe that the likelihood of the surfacing of network externalities depends upon the kind of good that is exchanged in the focal network. This is why we propose to divide network industries into *unidirectional* and *multidirectional*.<sup>28</sup>

The former are typically distribution or broadcast networks, whose task is to render a certain service or good available to end consumers located in different geographical areas. In this case the network structure is adopted inasmuch as it proves to be the most efficient means of reaching different territorial locations and allows final consumption even by those consumers who are far away from the source of production. Such a structure is therefore exclusively determined on a supply-driven basis, since the selection of the best means to reach final customers is operated by a profit-maximizing producer of a good or service. TV broadcasting, railroad tracks, gas pipes, credit cards and electrical energy wires belong to this kind of market. More generally, almost every market effect observed in unidirectional networks is to be classified as a supply-side effect.

Multidirectional networks, on the contrary, are the only reticular structures in which end agents are not confined to the role of final consumers, but aim to interact and communicate with other agents located along the network. These are more than just networks – they are web structures. Here network externalities are very likely to arise, since the value of the network highly depends upon the number of agents that connect to it, and the network value of the

good is positively correlated with the value of the whole market.<sup>29</sup> The reticular structure is determined by final users' need to interact, and therefore may be defined as a demand-driven solution. Unlike unilateral ones, multilateral networks are conceived for decentralized communication, not for centralized distribution. The final task of these structures is not allowing final *consumption* by users located randomly in a geographical area, but ensuring that agents can *use* the network for communication with other users. In other words, *two-way access* to the network is what payoff-maximizing agents look for.

Examples of multidirectional networks are telephones (exceptionally, an actual network) and many markets related to cyberspace, such as operative systems, middleware and application software – indeed, virtual networks.

### User–User and System–User Interfaces

In our opinion, network effects might raise antitrust or regulatory concerns only in multidirectional networks, conceived for communication. The speed and scope of information exchange between individuals are constantly improved by the fast development of communication technologies. Correspondingly, individuals increasingly demand communication services, instead of choosing more costly means of exchanging information.

Positive externalities arising from the increased size of the network should not be deemed sufficient grounds for a regulatory intervention, insofar as they do not provide for any lock-in or path-dependency in the use of the network. No regulation was intended to hinder rational decision making by self-interested agents. Antitrust rules do not aim to punish successful firms, unless a dominant one abuses its power; and network externalities leave no scope for any reiterated abuse by dominant firms.

As a consequence, multidirectional networks experiencing the mere existence of network effects would not stand for the proposition that special treatment is needed; antitrust scholars should not be concerned with them more than they are with any other market, at least with regard to demand-side effects. However, when a multidirectional network involves some sort of sunk investments by agents longing to use it, network externalities become a crucial factor for the crystallization of dominant positions, since they enhance users' barriers to exit from the dominant *de facto* standard network.

Examples of multidirectional networks where sunk costs do not matter are telephones and fax services, together with other, more traditional communication systems, such as mail. The opposite obtains whenever the network good embodies *information goods*.<sup>30</sup> These goods regularly involve some sort of learning investments, yet do not always generate network externalities. The information goods used for communication imply both network and learning effects. Information is embodied as software into a hardware device, thus we

call the ensemble a *system*. Their users need to invest in getting familiar with it; the amount of the investment is called *wetware*.<sup>31</sup> Hardware, software and wetware are functionally linked and together determine a number of interesting consequences for the welfare and the market analysis.

It is very important to reason in terms of a communication system, that is a whole chain of products whose interaction allows individual use. In the next section, we will explore the issues concerning compatibility and complementarity of goods, whose purchase sometimes involves an additional sunk cost for final users.

As of now, it is worth stressing there are further requirements that have to be satisfied in order to identify relevant network externalities. First, the market must be a communication environment, that is a context in which individuals need to exchange information and choose the most efficient means to achieve this result. We label this feature ‘user–user interface’. Second, the interaction between individuals must take place by means of a *communication system*, consisting of hardware, software and wetware, therefore requiring some degree of learning and expertise on the side of users. We define this requirement as the need for a ‘system–user interface’.

### Halfway Remarks

Network externalities were defined as a ubiquitous phenomenon, yet we discovered that, while most networks do not experience such effects, some non-network markets do. If one takes into account that network effects may give rise to lock-in only where a system–user and a user–user interface are indispensable, the phenomenology of dangerous network effects is to focus on information goods, exchanged in the so-called ‘knowledge-based industries’.

Since network externalities, alone, are only positive (though second-best and self-reinforcing) effects, regulators should evoke them only when their interaction with other market effects generates peculiar market failures. Moreover, the need for a user–user and a system–user interface clarifies the demand-side nature of the market failure we are analyzing. There is no such effect in those stages of the production chain that do not imply any significant learning investment by users. As a consequence, they would play no significant role in cases like the *Intel* litigation, though the Pentium processor was considered a sort of essential facility generated, needless to say, by network externalities.<sup>32</sup>

Unidirectional networks, far from experiencing network effects, are created because of supply-side efficiency concerns. Their infrastructure will be at most considered as an essential facility, not a standard. In this case, antitrust and/or regulatory inquiries ought to concentrate on assuring that downstream firms have equal access to the facility, particularly when the latter is proprietary and the incumbent also competes in the downstream markets.

Telecommunications are multidirectional networks. Yet, since no learning effect (that is, a system–user interface) is observed, network externalities do not contribute to the crystallization of the incumbent’s market power. Final users may still experience some sort of switching costs, yet no technological lock-in or path-dependency arises on the demand side. Anyway, even if some significant barriers to exit might be detected in the telecommunication market, they will always derive from a supplier’s strategy that artificially fosters lock-in and ultimately harms consumer surplus in the market. Supply-side interventions, such as mandated interconnection and regulation of access pricing, are the best solution from a policy maker’s viewpoint.

On the contrary, knowledge-based industries are the only networks in which learning and network effects are simultaneously at work. Supply-side policies here can engender the serious risk of decreasing consumer surplus, since the dominant de facto standard is elected by final users amongst the competing ones. There is no real essential facility, in the sense that all hardware and software devices can be duplicated or replaced without incurring unaffordable costs. Invoking the doctrine of essential facilities, as was done in the *Intel* case, may be appealing from a functional standpoint, but does not seem to be the right approach.<sup>33</sup>

In the next section we will focus on the description of knowledge-based industries, in order to understand whether the antitrust concerns raised with respect to network externalities are justified, at least in this field.

## KNOWLEDGE-BASED INDUSTRIES: A WELFARE ANALYSIS

Network industries do not involve a single market. Indeed, they are chains of interrelated markets, whose links are essential to ensure a proper use of the network good. This peculiar aspect of networks becomes crucial when we turn our attention to knowledge-based industries, because of the characteristics of the goods that are exchanged in this context: information goods. Here network and learning effects interact in a way that can allegedly jeopardize the desirable process of competition on the merits. This section is dedicated to the description of the pathology that otherwise desirable, positive effects may bring into such markets.

### **Competing for the Standard: the ‘Gold Rush’ as a Winner-takes-all Game**

Network externalities, as we explained in the first section of this chapter, determine a neat tendency towards the selection of a de facto standard good

that dominates the market for a certain time length. Since learning investments generate a degree of path-dependency in users' choices, the market position of the de facto standard owner will be plausibly stronger than that achieved in other markets. Empirical evidence shows that firms often enjoy substantial extra profits once they conquer the dominant position in such markets.<sup>34</sup>

As a consequence, rival firms engage in a vigorous competitive race, investing resources in the development of a high quality product. When markets are characterized by a sufficient degree of inertia, this becomes a winner-take-all game, a sort of 'gold rush'. The higher the expected stake, the stronger the effort of the players.<sup>35</sup> At this stage, firms compete to conquer final users' preferences, therefore prices are likely to fall below average cost. In some extreme cases, empirical evidence shows that products are given away, just because firms seek to spread their products in order to overcome their rivals and achieve the dominant position. At this stage of the game, such a situation benefits consumers, whose surplus becomes larger as competition gets stronger.

Figure 11.4 illustrates this situation, where demand and supply match at point  $e^c$ , defined as 'pre-standard equilibrium'. The demand curve is  $D$ , total output produced is  $Q^c$  and the prevailing price  $p^c$ . Consumer surplus thus equals the area  $B$ . The pre-standard stage, anyway, yields only a short-run equilibrium. As one firm wins the game, the market will soon become monopolistic and the network will expand as a consequence of network and learning externalities.

### Competing for the Standard: after the Gold Rush

If we assume that the final payoff of the winner-takes-all game is sufficiently high, the winning player will be granted monopoly profits as long as she keeps controlling the market. The expansion of the network leads to substantial profits and benefits on the part both of the dominant firm and of final users. Point  $e^s$  in Figure 11.4 illustrates this new situation.<sup>36</sup> The demand curve changes slope, becomes more rigid and shifts upwards as a consequence of combined network and learning effects. In this simplified version of the welfare analysis, consumer surplus is represented by means of the area  $A$  and the deadweight loss arising from monopoly is measured by area  $C$ .

However, the peculiarities of such markets suggest that the deadweight loss shown in Figure 11.4 is far overestimated. Both demand-side effects, such as sharing or piracy, and supply-side effects, such as indirect network effects, contribute to the widespread diffusion of products among users. In particular, if they cannot afford purchasing an information good, an alternative strategy is to share it. Sharing is a highly common practice in such markets, since individuals may sum their willingness to pay for a product and together decide to



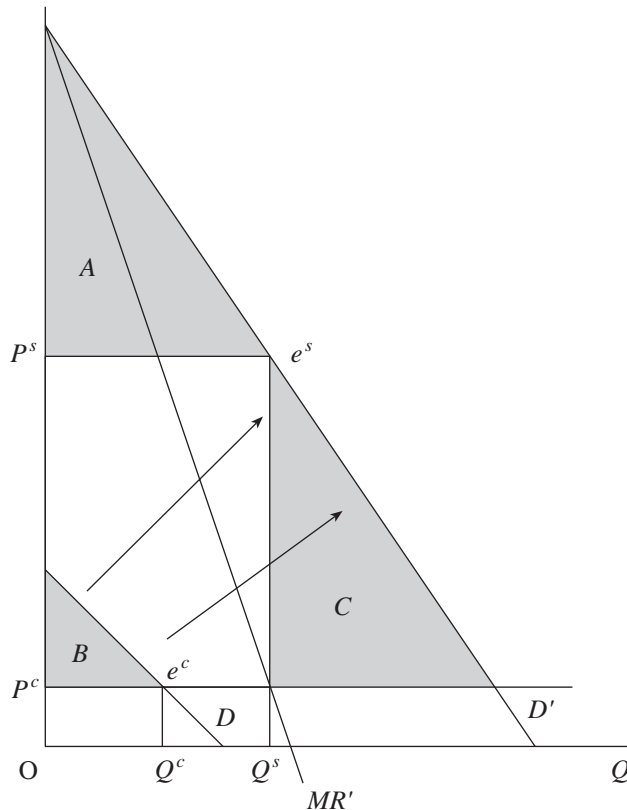


Figure 11.4 Welfare dynamic analysis of network and learning effects in markets for information goods

buy and use it. The price level,  $p^s$  in Figure 11.4, is hence set at an artificially high level, since dominant firms take sharing into account. If dominant firms manage to discriminate between consumers, for example, through ‘versioning’ of the information good,<sup>37</sup> then a separating equilibrium will arise in the market, which maximizes the firm’s profits even though the price is set at too high a level.<sup>38</sup>

When sharing is impossible, users may also rely on piracy, which is utterly widespread in knowledge-based industries. Modern technology allows the production of copies whose quality is exactly the same as that of the original product – digital devices are always a matter of numbers, more than materials.<sup>39</sup> As a consequence, there is no reason to condemn such monopoly on efficiency grounds. The whole market will be covered by one firm and consumers

may even be better-off under a monopoly than in a competitive market without tipping. Figure 11.4 shows that area *A* can be larger than former consumer surplus *B*.

Nonetheless, one may argue that, if rival products were made compatible with the *de facto* standard, users would enjoy competition in a large network, therefore deriving further utility from using the product. This situation is as likely as having your cake and eating it, since competition at the post-standard stage provides insufficient incentives for competitors to invest in innovation during the pre-standard race. We will deal with the delicate balance between innovation, intellectual property and regulation in the last section of this chapter.

### **Information Goods and the King's Throne: the Pros and Cons of Being a *de facto* Standard Owner**

The market dynamics described in Figure 11.4 show that final users derive utility from tipping, even if this process leads to a significant reduction in the number of suppliers providing the good. Final users elect the standard good and progressively get familiar with it; hence only final users will decide when to abandon the *de facto* standard in favor of a new one.

As a matter of fact, the market power acquired by the winning firm in knowledge-based industries differs from what antitrust enforcers are accustomed to regard as dominant position. Peculiar market effects tend to strengthen the winner's market power, while time and pattern of innovation rapidly erode it. In order to understand whether this situation leads to a market failure, and whether any regulatory path can solve this problem without incurring higher social costs, we still need to answer some crucial questions. Indeed, how safe is the king's throne? What can the king do to preserve his power in the long run? Will citizens benefit by a more stable power?

Knowledge-based industries often experience a frenetic pattern of innovation, to an extent that the life cycle of the products appears drastically reduced.<sup>40</sup> The winner-takes-all game that ends up with the election of the *de facto* standard is a multiperiod, constantly repeated game; by the time that a firm has become the *de facto* standard owner, a new game for the next product generation has already begun. As a consequence, firms operating in high-tech industries simultaneously work on products belonging to two or three different generations. The pattern of innovation limits the time length during which the *de facto* standard owner enjoys her profits.

This might call for no intervention in such markets, since dominant firms need to play and win the repeated game at every stage if they want to preserve their market power and consequently enjoy appealing payoffs, so that competition is assured by the constantly reiterated rounds of the winner-takes-all

game.<sup>41</sup> Yet this is only part of the story. Beyond the joint action of learning and network effects, the king's throne is rendered more solid by indirect, supply-side network effects. These effects generate a substantial degree of market friction, which ultimately grants the standard owner a first-mover advantage at the beginning of the next round of the winner-takes-all game. These supply-side effects arise from three different conditions: final users' technological lock-in, partner firms' economic dependency and rival products' incompatibility with the de facto standard. Indeed, an accurate management of customers' lock-in, a skillful cooperation with partner firms and a vigorous competition with potential rivals appear as the new fundamental chapters in the 'handbook of the perfect competitor'.<sup>42</sup>

### **Primary and Complementary Markets**

Information becomes a commodity only when embodied in a physical device, that we defined as an information good.<sup>43</sup> These goods typically require some sort of hardware supporting their use. Hence users need to buy and employ a complex set of products, ranging from hardware to software goods, and progressively get familiar with all of them, since only their simultaneous use yields the required communication system. These goods are usually called 'complementors'.<sup>44</sup>

Although a network industry is to be viewed as a chain of hardware and software markets, not all the links of such a chain should be bestowed with the same importance. Among the complementors, some are de facto standards and cannot be replaced with competing, compatible products; others are simply chosen out of a range of potentially viable alternatives. We call the former 'primary goods', and the corresponding markets 'primary markets' in the network. We also define the latter products as 'complementary products', and their markets as 'complementary markets' in the network.

The size of a network is determined by the diffusion of its primary good. When final users choose to enter the network, they actually decide to purchase the primary good, which is a de facto standard, and subsequently add their preferred complementary goods. It is with respect to the primary good that users may encounter substantial barriers to exit from the network.

In the case of knowledge-based industries, the de facto standard necessarily corresponds to a software good, since network externalities and learning effects emerge only where both a user-user and a system-user interface are needed. The leading complementor determines the success of the whole network: as far as it keeps being the de facto standard in its market, rival firms will not gain market shares and partner firms – that is, those producing other complementors – will have viable access to the market.

This leads to further considerations. First, the de facto standard owner may

enjoy a substantial contractual power with respect to partner firms that produce complementary products. Since information goods carry privately produced information, protected by intellectual property, dominant firms may enforce their property rights vis à vis competitors as well as all other firms located upstream or downstream in the network chain. As Ayres and Nalebuff put it, the primary good producer will likely take advantage over commercial partners by showing that her BATNA is more appealing than theirs.<sup>45</sup> This allows de facto standard owners to extract a *quasi rent* from each commercial relationship with locked-in partner firms.<sup>46</sup> As a consequence, the dominant firm may block all the network markets preventing potential competitors from eroding its market power in the medium to long run. Since commercial relations between firms located in different markets take place through information sharing, that is through the grant of licenses for use of the product, the de facto standard owner will be able to use withdrawal of the license as a threat advantage over every partner. Furthermore, a de facto standard owner will find it relatively easy to expand her power in a complementary market by leveraging her dominant position. One way or the other, weak partner firms could easily be kicked out of their market.

Finally, users wishing to exit the network in favor of a competing new entrant will think twice before doing so. Switching from a standard to a newly entered product might result in forgoing the sunk learning investments, the network value of the currently used good, some of the complementors actually employed together with the primary good, and eventually in bearing further sunk investments in order to get familiar with the new good. There is more than enough evidence to denote the existence of a friction in the market. If the de facto standard owner is subject to a sufficient competitive pressure, final users will enjoy the attractions of the ‘golden prison’ they were put into. But, if the king’s throne is firm and safe, they will find themselves unwillingly locked into a second-best standard.

### **The Three Dimensions of Intervention**

Though finding out that network externalities, in and of themselves, generate only an ephemeral tipping phenomenon, we stated that, when combined with learning effects, they might give rise to a worrying degree of lock-in and path-dependency on the demand side. This mostly happens when users wish to interact in a reticular structure by means of complex hardware–software systems. Therefore the focus of our analysis was on multidirectional networks, where a system–user and a user–user interface are both needed. As a matter of fact, knowledge-based industries are the only actualization of such a mode.<sup>47</sup>

When an information good becomes a de facto proprietary standard, its producer is likely to enjoy a conspicuous amount of profits. As a consequence,

the competitive struggle to achieve the dominant position is so vigorous that the price level might even fall below zero. Correspondingly, dominant firms exploit all their market power to perpetuate their market position. The coexistence of direct and indirect network effects, sunk learning investments and some peculiarities of information goods (such as licensing and the need for hardware/software complementors) often grants dominant firms some valid options in this direction. Leveraging, abuse of partners' economic dependency and an accurate management of final users' lock-in all may aptly contribute to strengthen the leading firm's dominant position, that is to safeguard the king's throne.

Looking at dominant standards from both a horizontal and a vertical perspective helps overcoming the narrow viewpoint of the single market. Nonetheless, it is far from easy to say whether, in which direction and to what extent regulators should intervene in such markets in order to avoid the crystallization of market power. Nowhere do issues concerning intellectual property, incentives to innovation, compatibility and competition merge and overlap as in knowledge-based industries.

## THE ALTERNATIVE PATHS FOR REGULATING KNOWLEDGE-BASED INDUSTRIES

### **Software and the Utopia of Mandatory Open Code**

Approaching the conclusion, we try to figure out whether the discipline applicable to knowledge-based industries offers any remedy to the potential source of inefficiencies and market distortions stemming from the existence of a de facto standard owner. Since final users' decision to enter a network coincides with selecting the primary good they want to purchase, complementary markets entirely depend on such initial choice and therefore are to be dealt with as aftermarkets. Moreover, as substantial tipping only emerges whenever both a user-user and a system-user interface are needed, it is very likely that software (or middleware, general purpose software) becomes the primary market. We will therefore turn our attention to software markets as the primary link of the market chains that build up multidirectional, knowledge-based networks.

Before canvassing the legal technicalities, some light should be shed on what, at a theoretical level, is often alluded to as the first-best goal to be pursued. In fact, a seemingly appealing market equilibrium for knowledge-based industries might be a world where one single standard prevails, yet all competitors have access to that standard in the form of open code and free use, or interoperability via various contractual safe-harbor mechanisms, such as de

jure standard setting, patent pooling, and open source and community source licensing is achieved.<sup>48</sup> In this world, consumers would derive a remarkable utility from the existence of a single network, whose value would then be maximized. Learning investments would no longer be viewed as switching costs, since there would be no alternative network to switch to. Moreover, intranetwork competition would drive prices well below the monopoly level.

Unfortunately, the fascination of this approach is largely dispelled by an obvious caveat.<sup>49</sup> Imposing an open standard in such markets might drastically reduce the incentives to creators, resulting in overt inefficiencies. Firms would no longer compete vigorously in the pre-standard stage of the game, since a low expected payoff from even a successful innovation would bring down the initial commitment to innovate. Common sense suggests (despite some remarkable exceptions, deserving closer inspection and in-depth analysis of a different structure of reputational, or other, incentives<sup>50</sup>) that firms do not invest resources in developing a new product to become the pride of its age; however disenchanting this may be, it is expected payoff that fosters competition to achieve the de facto standard.<sup>5</sup> As aptly stressed by an authoritative commentator, '[a] firm that manufactures one of the essential components of a network [. . .] would prefer to be the exclusive source of that component rather than be required to disclose the information that would enable competitors to duplicate it. If the component is subject to intellectual-property protection through patent, copyright, or contract (or can be held as a trade secret), then the requisite uniformity is more likely to be achieved by monopoly provision than by standardization' (meaning some sort of voluntary or mandatory process of convergence).<sup>52</sup>

Despite this warning, the question whether de facto standard owners should be forced to open their source code and let rival firms access the standard remains a popular<sup>53</sup> (though controversial<sup>54</sup>) one, which ends up in a debate hinging mainly on the abstract trade-off between internetwork and intranetwork competition.

In our view, intranetwork competition should be the target only when an essential facility, a bottle-neck infrastructure, chokes the development of an acceptable degree of competition. This being the case (which should be ascertained with extremely rigorous caution, since devising the existence of an essential facility should be no short-cut to mere inconveniences of competitors), consumers would certainly benefit from rival firms' access to the physical, non-duplicable infrastructure that governs the whole remaining market. To put it in the simplest way, imperative economies of scale call for mandatory access to the incumbent's actual network.<sup>55</sup>

On the contrary, whenever the de facto standard is elected by final users in a repeated winner-takes-all game, discouraging innovative efforts by rivals seems hardly appropriate. Scale economies here appear remarkably different

from those observed in actual networks, since they are caused by negligible marginal costs of reproduction, rather than by conspicuous fixed costs. In other words, even a rather small company could cover the whole market: firms in knowledge-based industries are likely to have a very low minimum efficient scale, and virtually no maximum limit,<sup>56</sup> that is, this is not a natural monopoly. Without competition in the pre-standard stage, neither innovation nor consumers' welfare would materialize. And such competition is reinforced by the perspective of substantial rewards from licensing the product once it has become a standard.

It should be clear, at this stage of the analysis, that promoting internetwork competition means allocating sufficient property rights to the winning firm; proprietary standards are expected to emerge. In and of itself, this is no evil: as will be seen, the crux is not with the mere existence of protection, but with its extent. Actually, as far as information goods, carrying privately produced information, are concerned, the discipline charged with the task of rewarding its creation is the copyright law.<sup>57</sup> The innovating firm is thus granted the power to exclude any other agent from (almost any) use of the product for a remarkable length of time. Copyright clearly allows for closed standards, as the spinoff of a set of rules deemed to promote social welfare through monopoly. The predictable consequence is the alluring opportunity, for the firm emerging as dominant, to extract higher tolls from everyone traversing the gateway than could be charged if there were multiple entry points, together with an allegedly lower incentive to innovate. We will revert to this quandary later.

### **Antitrust in Knowledge-based Industries: a Bladeless Knife with No Handle?**

Network externalities have been defined as 'the major antitrust battleground of our contemporary *fin de siècle*'.<sup>58</sup> Yet that these market effects dictate antitrust enforcement is a highly debatable question, exacerbated by a recent record studded with striking episodes of clumsiness in coping with the peculiarities of knowledge-based industries. Such impasse mainly derives from the common creed that rules such as those contained in the Sherman Act, or for that matter in the EU Treaty, can be applied without more to information-driven markets and redress their alleged distortions. The underlying idea would seem to be that the basic paradigm continues to be the classic one, so that some sort of corrective manipulation should guarantee a fine revamping of the otherwise declining competitive virtues. But this is precisely the bias we have tried to reject with the preceding analysis. Accordingly, the story should go the other way around: the peculiar features that differentiate knowledge-based industries from the working of mainstream neoclassical markets should

be recognized and duly regarded while evaluating the feasibility and soundness of antitrust intervention.<sup>59</sup>

On the one hand, responsibility for the aforementioned impasse may be, at least partially, traced back to confusing definitions of the ‘relevant markets’, mostly missing the fact that the ones we are dealing with are more amorphous than we were accustomed to.<sup>60</sup> Evidence of such a confusion surfaces in each of the resounding cases that have been under antitrust scrutiny over the last few years, such as *Kodak*, *Intel* or *Microsoft*. In the former, Kodak was found to hold a dominant position in the aftermarkets for spare parts and after-sale services on its own produced goods, even though its market share in the primary market was marginal.<sup>61</sup> Seemingly, and maybe more paradoxically, Intel was declared to be a monopolist in the market for Intel processors, even if a less tautological approach would have led to a different outcome.<sup>62</sup> Finally, Microsoft, portrayed at once as a ‘near monopolist’ and a ‘fierce competitor’ in the market for Intel-based PC operative systems, has been damned for imposing its Internet Explorer as the standard for browsing.<sup>63</sup> Focus on primary markets, therefore treating other complementors as though they were aftermarkets, would have helped to skip ambiguities and misunderstandings.

Yet the very problem lies elsewhere. In the limited range of situations where network externalities actually exert their impact, there will be an inevitable drive toward the creation of a standard, which implies that its owner will be the taking-all winner, at least for some time. This is no way different from the destiny of a firm emerging as the sole actor in the field just because it has ‘outplayed’ the rivals on the merits. The typical antitrust armory, contrasting restrictive practices and monopolization through coercive methods or the like, does not interfere with such a Darwinian process. The trick is represented by the fact that, while the disruptive selection of the participants in the competitive arena seldom comes to the extreme consequence, this is doomed to be the physiological, though temporary, end of the story in knowledge-based industries, for tipping is a necessary precondition to maximization of final users’ welfare and a degree of market power constitutes the reward for developing innovation. There will be a monopolist (though, possibly, ‘fragile’<sup>64</sup>); and, since under every antitrust sky, becoming a monopolist because of skill, business acumen or luck cannot be a wrong, there is simply nothing that antitrust could (and should) do about it, as long as the dominant firm keeps respecting the qualities that have propitiated its success.<sup>65</sup> The magic formula for antitrust to step in is abuse, which might obviously – and often does – materialize, but plays no necessary role in the complex mechanism of network effects leading to a monopoly setting. Therefore, were we to answer the rhetorical question whether it makes sense for antitrust to play a significant role in preventing the entrenchment of monopoly power in knowledge-based industries, we would



say: yes, provided that the intervention aims to condemn the monopolist's conduct directed at chilling independent and competing innovation, not its mere emerging as a monopolist.

Needless to say, this holds true until the basic provisions of antitrust, that is those relating to firms' behavior in the market, are considered. Switching to the other 'soul' of antitrust, the structural one concerning merger control, would open an entirely different set of evaluations. When asked whether to give leeway to a proposed concentration, the pertinent authorities are to make a prognosis about the future development of the market, in order to avoid growth by acquisition (rather than by physiological expansion) opening a lazy and shorter way to its monopolization. Arguably, this process, with the discretionary power stemming from the possibility of negotiating the terms of a permissible merger, can offer important opportunities to protect both pre- and post-adoption standard competition, as was the case in the *AOL/Netscape* case,<sup>66</sup> and might have happened, on the other side of the Atlantic, with the *Microsoft/Liberty Media/Telewest* transaction (where the EC Commission was inclined to perceive the submitted acquisition by Microsoft of a minority stake in a key UK cable network both as a part of a wider strategy aiming to closely monitor and influence the strategic decisions of software adoption by cable companies, and as a further increase in the chances that the Microsoft package would dominate the future market for set-top box software of the new generation).<sup>67</sup> But the ultimate outcome of the case – which was dropped because the parties withdrew the transaction, though pursuing their goal with the expedient of restructuring Microsoft's stake so that it would not fall under merger regulation – makes it clear that this kind of control, with its regulatory flavor, is too episodic a way of tackling the issue. Occasional regulation is no promising way of curing a market failure still waiting to be identified as such.

Back to our point. Markets relating to knowledge-based industries should be dealt with according to their peculiarities. If the ultimate goal of antitrust rules is maximizing consumer benefit in the long run, which also means promoting innovation,<sup>68</sup> any chosen pattern of intervention should assume consumers' long-run interests as its primary issue. And, since tipping is generated by demand-side effects, it seems sound to recommend a cautious approach to supply-side remedies, such as reshaping the markets or breaking up dominant positions by requiring leading firms to open their code.

Even if antitrust turns out to be of little help, there is no reason to raise the white flag and sadly conclude that conduct by the de facto standard owner necessarily, falling in a legal vacuum, skips any scrutiny. To some extent, such behavior may still be effectively addressed by means of other disciplines, whose application, though exhibiting a narrower scope than that of antitrust rules, helps to stigmatize the inefficient features of software markets' dynamics.

### **The Need for Intervention outside the Scope of Antitrust: Trojan Horses and Quasi Rents**

We have already explained why competing firms should be left free to choose the architecture of their network good, while taking part in the pre-standard winner-takes-all game: closed standards do not necessarily yield a market failure.

It is plausible to assume, anyway, that final users would prefer an interoperable product to a closed one, since the former minimizes their switching costs and maximizes the value of a network, increasing their choice of complementors together with the chances that it will survive the pre-standard gold rush. On the other hand, while selecting their initial strategy, firms clearly have an incentive to let their product be almost free-ridden, resorting to liberal licensing. This, of course, does not mean that they commit themselves to keeping it freely accessible in the long run, abiding by this tenet also when the good will have become the *de facto* standard. This sort of ‘Trojan horse’ strategy implies giving away a network good at the pre-standard stage, conquering consumers’ preference (and reliance), winning the game and eventually switching to a closed policy by the strict enforcement of previously disregarded property rights. Once final users have become sufficiently locked in and the tipping point has been reached, a profit-maximizing strategy implies the exploitation of the huge profits available to the monopolist. Since this policy switching leads to inefficient reliance on the part of consumers, one might claim this is to be considered as an undesirable market failure, which is by no means justified by the need to provide incentives for competing firms.

Switching to a strict enforcement of the closed standard, its owner substantially reduces final users’ choice of primary goods and complementors, allowing for a very limited set of alternatives at each stage of the market chain. Final users would certainly suffer from this about-turn. Since they are already locked in, the leading firm will be able to raise prices, at least to a limited extent, without suffering drawbacks in terms of installed base. Admittedly, there is no way to address this problem directly focusing on consumer protection. Somebody has proposed to construe licenses as though they were adhesion contracts, containing the openness of the standard as an implied term, which would play the role of a warranty.<sup>69</sup> But this modified version of ‘copy-left’ seems too tentative a way to fit the needs of a market still looking for identity.

It is worth stressing, however, that a change in the *de facto* standard owner’s conduct in the market does have other undesirable consequences, particularly as far as vertical relationships are concerned. Final users are not the only agents involved by the switch from a liberal policy to the strict exploitation of the standard. Partner firms are put in exactly the same condition, since they are to forestall the opposite party’s moves and adjust their

expected payoff according to the chance that the latter misbehaves in the long run. They would do better to enter into agreements with 'open' players, in order to preserve their chances of dealing with an alternative counterpart and therefore enhance their contractual power along with their BATNA. Suppose the initial story unfolds according to this plot: a later, unexpected 'ambush' by the (meanwhile emerged) standard owner, such as the one experienced by the participants to the standard-setting process in the *Dell Computer* case,<sup>70</sup> with Dell revealing its patent claim only after the involved local bus for VESA (Video Electronics Standard Association) had become highly successful, would overturn their expectations.

Moreover, as was already mentioned, copyright protection allows dominant firms to exploit a substantial degree of bargaining power to the disadvantage of partner firms. This leads to primary goods producers extracting a quasi-rent from their vertical relationships. Indirect network effects and final users' lock-in bestow upon the primary good producer the possibility of blackmailing the opposite party, by threatening to withdraw its license.

Such paradigms are not reasonably constrained and governed by antitrust, even though the enforcing agencies have tried, from time to time, to expand thus far the reach of their action: yet, in order to achieve this outcome, they always had to configure such conduct as inspired by an attempt to monopolize, and eventually to introduce compulsory licensing by wrongfully applying approaches such as monopoly or essential facilities, which, as we do know by now, absolutely do not fit knowledge-based industries.<sup>71</sup> A less strained alternative for opposing policy switching and quasi-rent extraction may be looked for in the realm of contract law. Primary goods producers usually enter a close net of relational contracts with partner firms at the pre-standard stage of the winner-takes-all game. Hence any non-cooperative behavior adopted in the later stage of the game may come under scrutiny as a possible violation of the general requirement of loyalty and good faith in contractual relations. In the case of policy switching, closing the standard in the post-adoption stage of the game arbitrarily reduces the value of the initial investment and causes a sudden enhancement of the barriers to exit from the contract. An analogue evaluation is to be adopted for abrupt license withdrawal (or non-renewal). It is formally true that such behaviors could have been anticipated, and prevented, at the time the contract was originally signed, with the parties operating in a still competitive market. Yet, if it cannot be automatically assumed that a change in practice is unfair, to conclude that holdups and the like are always irrelevant would fly in the face of reality. In a host of circumstances, these strategic behaviors might comprise the *reappropriation of opportunities forgone at the time of contract formation*, which is commonly held as a violation of the requirement of good faith in the execution of the contract.<sup>72</sup>

Obviously, this remedy turns out to be inapplicable whenever the parties

are not bound by any contractual agreement. Its rationale could nonetheless be implemented by other tools. Some legal systems, such as in Italy, have introduced rules whose application range, though still conceived of as linked to interfirm relational contracting, goes well beyond the boundaries of contractual terms, involving commercial relations at large.<sup>73</sup> These rules address the problem of abuse of either economic dependency, or (according to another definitional strand) a relative dominant position, which exactly fits the pathology we have described as quasi-rent extraction. The comparative advantage of such a remedy stems from the fact that it does not require the existence of a contract between cooperating firms. Consequently, it may also prove useful in coping with the policy switching issue.

But even where one cannot rely on so specific a rule, the underlying suggestion – inducing people to rely on an open policy and then renegeing on it when consumers have become locked in is not a merit, it is a wrong – may lead to envisioning an unfair method of competition. Involved firms indeed played the pre-standard stage of the game also relying on the would-be winner's commitment to leave the good open, whatever the outcome, and did not have the chance to compete on the merits. Disappointment of these reasonable expectations might constitute sufficient ground for invoking the prohibition of unfair practices.

### **Abuse of Misuse?**

At this final stage, there is room for an ambitious question, already foreshadowed. Can intervention in software markets preserve both the incentives to innovate and the value-maximizing tipping sources such as network and learning effects? Given the premised analysis, the question echoes the attempt of squaring the circle. But, by now, it is, we hope, clear where the main difficulty lies; and policy suggestions should be shaped according to this learning.

Software industries are mostly resorting to copyright protection.<sup>74</sup> It is worth remembering, however, that copyright law was originally conceived to deal neither with software, nor with tipping or path-dependency on the part of final users. Its traditional subject matter were literary and artistic works, where large-scale market power was, to say the least, an unlikely development; its coverage did not involve functional works, whose value inheres in what they do for human beings rather than in what they say or how they appear to human beings. The extension of copyright protection to computer programs, with the obvious difficulties of inventing around an innovative code, represents a dramatic change, which has spawned a host of problems, much more intriguing than those it has contributed to solve. After all, that the same set of rules is applied to the timeless plays of Shakespeare as well as to the ephemeral dominance of spreadsheets such as Lotus 1-2-3 is, let us concede, strange

enough; their ability to propitiate a satisfactory tradeoff in the new, unexpected setting to which it has been transplanted would be even more surprising.

Indeed, this kind of intellectual property right was introduced to protect authors from free-riding. When applied to de facto standard goods in knowledge-based industries, it shelters dominant firms from competitors and generates a threat advantage vis à vis partner firms. Network externalities and learning effects simply transform the problem of protecting the author's work into a means to enhance the barriers to entry in the market – or, alternatively, a barrier to switch away from the current de facto standard: a good reason, according to some commentators, for limiting the extent to which standard owners may profit from such protection to the disadvantage of partners, competitors and final users.

It should be conceded that a more balanced view would reveal plenty of nuances. Copyright enforcement appears at once too pervasive and too fragile to fit the peculiarities of knowledge-based industries.<sup>75</sup> No doubt, it provides for an exceedingly long protection, as attached to products whose life cycle is often a matter of months, not years. On the other side, intellectual property protection, being bound fast to the application of a hard-to-handle criterion such as the idea/expression dichotomy, inevitably leads to an undesirable degree of uncertainty – a strong tipping might be, and actually was, judged to transform an expression into an idea, hence leading to the denial of redress – springing excess litigation between rival firms. Turning again to the opposite view, copyright law does not contemplate protection of improvements on a secured product: should a rival firm develop an improvement on a closed standard product, no incentive to negotiation, such as blocking patents, would be available. Even worse, though beyond the point at hand, the methods of distributing software often establish direct contact with the holder of the right and the ultimate purchaser, so that the former is offered the opportunity of imposing, via contract, restrictions overcoming the faculties conferred by the law. In sum, the *cahier de doléances* can be easily extended; but motives for denouncing the improper stance of copyright, as applied to the dynamic features of knowledge-based industries, are already consistent.

This is why applying such an out-of-date discipline to a brand new economic stream seems a far from happy choice. Incentives for innovators were desperately needed in order to preserve the vigor of pre-standard innovation and bring down innovation. But too much protection is no clear advantage. The copyright long-lasting umbrella, with the connected power of impeding incremental improvement, was not designed for the protection of functional works of technology: its extension to software has precipitated an in-depth modification of the intellectual property scenario, whose negative by-products are being perceived only as of this time, despite early warnings about the opportunity to devise an alternative *sui generis* approach.

In this perspective, the intersection of antitrust and intellectual property laws, which has always presented difficult issues and pointed to a border ‘field of dissonance, yet to be harmonized’,<sup>76</sup> might prove even more challenging. This difficulty is highlighted by the uncontrolled expansion of the ‘copyright misuse’ doctrine observed in the last decade, starting with the *Lasercomb* case.<sup>77</sup> By stating that enforcement is excluded whenever copyright is ‘used in a manner violative of the public policy embodied in the grant of a copyright’, the court in *Lasercomb* merely meant to uphold such a measure as a defense to an infringement claim. Yet the repeated and growing application of such defense in later cases ultimately reveals that copyright misuse is becoming something more than a defense, even though, thus far, no court has upheld it as an independent claim.<sup>78</sup> According to many commentators, copyright misuse represents a ‘middle ground’ way toward efficient enforcement of intellectual property rights in software markets. In our opinion, by applying such defense, judges overtly obey a logic of emergency and admit that the tidal wave of network industries has overturned the original scope of intellectual property protection, piercing the veil over its ill-concealed inadequacy. Since this doctrine leads to an enormous degree of discretion on the part of judging courts, the intensive application of copyright misuse may lead software markets toward an even higher degree of uncertainty, with the risk of confusing once and for all the rules of the winner-takes-all game and the soundness of incentives to innovate. One could even assert that abusing copyright misuse is in itself a mistake, because of its predictable spillover in other, more orthodox fields, deserving no destabilization; but it is a mistake aiming to redress another mistake, which does not absolve the former, yet invites us not to forget the latter.

## CONCLUDING REMARKS

Since the antitrust laws, as they stand, are not much concerned with monopoly as such, the most promising move toward a better handling of the problems we have been considering thus far would be, presumably, to reshape the legal protection granted to software, tailoring it according to the real needs perceived in the field. The most promising, we said, but, by the same token, the most unlikely: erasing a 25-year, well-entrenched development seems simply too titanic an effort to gather the required overall consensus. At any rate, this would be the province of legislators.

Nonetheless, if properly pursued, narrow-scope forms of intervention, such as contractual remedies, rules on the abuse of economic dependency and on unfair methods of competition, can contribute to short-circuiting the vicious spiral toward which information-based industries are inclined.

As a consequence, software markets would experience the coexistence of open and closed policies at the preliminary stage of the winner-take-all game. Since copyright protection, leaving aside the question whether conceptually appropriate or not, is fully granted, players would have to decide beforehand about the opportunity to propose an open or a closed product, therefore entering on such a basis into licensing arrangements with partner firms and final users. Absent the chance to exploit unduly a pre-existing dominant position, no inefficient first-mover advantage would distort the working of the winner-takes-all game. In this context, it will be more likely that competition on the merits is reached. As both partner firms and final users prefer open standards, and the former are, to some extent, protected against the risk of Trojan horse strategies, one might bet that an unraveling result obtains, with open standards becoming the take-all winners.

## NOTES

1. See Katz and Shapiro (1985).
2. Network externalities are defined as ‘ubiquitous’ in Kolasky (1999, 577).
3. For what concerns the peculiarities of the *post-Chicagoan* approach to antitrust, see Hovenkamp (2001). Amongst many others, the most important decisions mentioning network externalities as a cause of anticompetitive distortions in the market are *Intergraph v. Intel* (see *infra*, note 62) and *U.S. v. Microsoft*. In the latter, Judge Jackson stated that the ‘special economics’ of the relevant market – including economies of scale on the supply side and network effects on the demand side – deserved special treatment. On this point, see the skeptical approach adopted by McKenzie (2000).
4. Information is not a commodity in the mainstream economic sense: when it is not embodied in a physical device, it may be treated as a mere precondition of human decision making. Furthermore, we believe that information should not be defined as a public good, since its production is totally decentralized and – at least in most cases – its value is tightly linked to its scarce diffusion. See Pardolesi (1988) and Pardolesi and Motti (1990). Information goods embody privately produced information, and to a certain extent may be treated as commodities, even though these goods preserve some of the peculiarities of information, such as easy sharing and copying: that is, negligible marginal costs of reproduction. For an accurate description of such peculiarities, see Bakos and Brynjolfsson (1999).
5. The definition is given by Katz and Shapiro (1985, 424), and then refined by Lemley and McGowan (1998, 483).
6. The existence and importance of external effects and undesired consequences of intended actions was already theorized in Popper (1967).
7. Indeed, the economic analysis of the impact of external effects on market equilibria can be traced back to Pigou (1920) and was attributed great success during the 1970s. A whole branch of law and economics deals with the internalization of negative externalities such as those arising from pollution or from dangerous activities, therefore calling for a comparison between different remedies such as strict liability, insurance and negligence rules. The need to internalize positive externalities has been stressed with less emphasis, if not for issues such as free-riding and public goods. Copyright enforcement may be seen as a means to achieve the internalization of positive externalities arising from innovation.
8. See Lemley and McGowan (1998).
9. For a similar description of the coexistence of network and intrinsic values in the same good, see also McGowan (1999).

10. The seminal work on hedonic pricing is due to Sherwin Rosen, 'Hedonic Prices and Implicit Markets', *Journal of Political Economy* 82(1), 34–55. For a more recent application, see Robert H. Frank, 'Why is Cost-Benefit Analysis so Controversial?', 913 *Journal of Legal Studies*, June, 2000, 919ff.
11. According to the so-called 'Metcalfe's law', the pattern of growth for a network value is proportional to  $n^2 - n$ , where  $n$  represents the number of users actually connected to the network. See Shapiro and Varian (1999, 224).
12. The extent to which consumers benefit from the upward shift in the demand curve highly depends upon the elasticity of such curve: the steeper it is, the smaller will be the share of total surplus enjoyed by consumers.
13. See, for example, James B. Speta, 'Handicapping the Race for the Last Mile?: A Critique of Open Access Rules for Broadband Platform', 17 *Yale Journal on Regulation* 39 (Winter 2000).
14. According to some authors, networks give rise to standardization only when they reach the so-called 'tipping point', that is when their size reaches the 'critical mass'. When tipping is excessively strong, however, it becomes very likely that in the short and medium run inefficient standards prevail; this situation is usually referred to as 'excess inertia'.
15. Voting with the feet is substantially easier in virtual markets such as cyberspace than in other, non-virtual environments. See also Elkin-Koren and Salzberger (2000). The theory of clubs, anyway, cannot be usefully applied to virtual networks such as the market for operative systems, where learning effects hamper the immediate switching towards the best network. Furthermore, when consumers' preferences are substantially heterogeneous, network effects will not drive the market towards complete standardization, and as a consequence more than one good will survive.
16. Judge Jackson, for instance, in the *Microsoft* case, points the finger at the 'special economics' of the software market, as characterized by network effects on the demand side and economies of scale on the supply side.
17. While we mention path-dependency, we indeed refer to cases of *enhanced path-dependency*, since a degree of lock-in by historical events is ever-present in human decision making. Such a hint was rendered explicit by Arthur (1989), but see also earlier works by Hayek (1965) or David (1985), and completes the scenario of individuals' bounded rationality as developed by the economic literature during the last four decades.
18. As a matter of fact, there exist other phenomena whose effect is to enhance the value of consumption though building up barriers to switch to other goods. One such effect is the attachment of an idiosyncratic value to a durable good. Yet all these effects are insufficiently strong to endanger competition on the merits in the long run.
19. For a famous overview of the Qwerty–Dvorak quest and many other anecdotes, and a skeptical view of the possibility that a better standard is driven out of the market by a lower-quality one, see both David (1985) and Liebowitz and Margolis (1990).
20. See *supra*, note 8.
21. A closer look reveals that consumers may easily be affected by the aggregate values of consumption, yet this only happens through supply-side efficiency-oriented decisions. As an example, you will be more likely to watch your favorite soap opera if many other consumers wish to watch it. The higher the number of potential *aficionados*, the higher the chance to have it broadcast. But, apart from the chance of consumption, the value of the product will not change along with the number of other agents consuming it. This is the difference between network externalities and *indirect network effects*, as defined by Lemley and McGowan (1998), which belong to supply-side effects, and emerge as a consequence of the increase in consumers' demand for a good.
22. See *supra*, note 9.
23. According to Rubinfeld (1998), 'While interest in network industries has grown recently because of increasing economic activity involving dynamic industries where there has been substantial innovation and rapid technological change (such as computers and communications), more traditional industries where fads or bandwagon effects may arise (such as designer jeans) are also characterized to some degree by a form of the same phenomenon.'



24. The characteristics that yield the overall quality of a good are usually divided into three categories: search, experience and credence qualities of a good. For a thorough explanation, mostly applied to issues of consumer protection, see Darby and Karni, 'Free Competition and the Optimal Amount of Fraud', 16 *Journal of Law and Economics*, 69 (1973), and Nelson, 'Information and Consumer Behaviour', 78 *Journal of Political Economy*, 311 (1970). Consumers' rational ignorance may be substantially justified by the impossibility of gathering sufficient information on experience and credence qualities of both the good and the contract terms they sign to purchase it.
25. For an explanation of quality signaling as an efficient response to consumers' imperfect information, see George A. Akerlof, 'The Market for Lemons: Quality Uncertainty and the Market Mechanism', 84 *Quarterly Journal of Economics* 488 (1970) and – more generally – Baird *et al.* (1994).
26. See Brian Arthur, 'Competing Technologies, Increasing Returns, and Lock-in by Historical Events', *Economic Journal*, 99, March 1989, pp. 116-31. Arthur suggests that lock-in can result when the following are important: (a) fixed costs, (b) learning effects, (c) coordination effects, and (d) adaptive expectations.
27. The importance of past decisions as factors affecting future actions has been recently reaffirmed by the growing branch that applies behavioralism to law and economics. As some authors have recently stressed, the idea of a rational human being as the pivot upon which the whole analysis is turned should be rejected as wholly misleading. A wider scope for describing the many phenomena that lead human decision making away from the modeled efficiency-path is therefore found. See, for example, Korobkin and Ulen (2000).
28. Such distinction echoes that proposed by Daniel Rubinfeld in a speech addressed to the Software Publishers' Association on March 24 1998. However, Rubinfeld only referred to 'communication networks' as opposed to 'hardware–software (virtual) networks'. Our use of the terms 'unidirectional' and 'multidirectional' is borrowed from the engineers' jargon and reflects a different approach, since it aims at isolating those markets where communication and learning are jointly observed. The speech is available at <http://www.usdoj.gov/atr/public/speeches/1611.htm>.
29. Metcalfe's law, as explained *supra*, in note 11, is applicable only to communication networks, since it links the increase of a network value to the potential interconnections users can realize inside the given network. Each of the  $n$  users will be able to communicate with  $(n - 1)$  users, therefore the aggregate possible interconnections will be  $n(n - 1) = n^2 - n$ .
30. See *supra*, note 4.
31. On the relevance of installed customer base and wetware, see Shapiro and Varian (1999).
32. The *Intel* case is probably the best example regarding the danger of an uncontrolled expansion of discretionary power on the part of antitrust enforcers. We will briefly explain the dynamics of the case in the last section of this work. For a thorough analysis, see Picker (1999) and Papciak (1999).
33. See *supra*, note 32.
34. Richard McKenzie gives a clear example of the abnormal market capitalization some dominant firms enjoy in the so-called 'new markets', focusing on Microsoft's record: 'Far from being the largest American company in terms of sales or physical plants or employees', Microsoft's market value in November 1999 was 17 times its book value, and its market capitalization was five times that of Wal-Mart and twice that of GE. See McKenzie, 2000, p. 11). Such outstanding values determine the fierce competition observed between Microsoft and its rivals in order to achieve a dominant position in the market.
35. Since the chances of winning the game are not altered, increasing the final payoff means correspondingly raising the expected payoff of each player. Players will therefore be rationally more inclined to invest resources in the development of would-be standard products. They will also consider the possibility of collusion and coalitions, if they believe that joint efforts can substantially improve their chance to win the game.
36. The figure represents a simplified version of what can truly happen in most markets. Since it will be applied to knowledge-based industries, where marginal costs of reproduction are negligible, assuming constant marginal costs under monopoly does not involve an exceeding simplification in the analysis.

37. 'Versioning' is a highly common praxis in most markets. The peculiarities of information goods account for an expansion of such marketing strategy. See Shapiro and Varian (1999).
38. Bakos and Brynjolfsson (1999) show that, when dealing with information goods, firms can extract some share of consumer surplus by charging an artificially high price and exploiting consumers' sharing. See also Varian (2000 p. 475).
39. The development of digital technologies now turned every representation of information into 1s and 0s. Once their sequential combination is known, reproduction becomes immediate. See, amongst many others, McKenzie (2000, 22).
40. Internet operators usually measure time in 'Internet years', whose length is seven times less than that of a calendar year.
41. Of course, such a conclusion does not apply to cases in which a monopolist unlawfully tries to preserve its power extending it to the successive stages of the game, therefore endangering the desirable goal of competition on the merits.
42. One such handbook is without any doubt that of Brandenburger and Nalebuff (1996).
43. See *supra*, note 4.
44. See Shapiro and Varian (1999).
45. BATNA stands for Best Alternative To Negotiated Agreement, which represents the threshold under which contracting parties find it efficient to stay inside the commercial relationship. See Ayres and Nalebuff (1997, pp. 631ff).
46. The seminal contribution on quasi-rent extraction is that of Klein *et al.* (1978), showing that opportunistic behavior that exploits partners lock-in inevitably leads to a deadweight loss at intermediate stages of the production chain and to a distortion in the tradeoff between *make* and *buy*, that is between vertical integration and market contracting. See also Renda (2000).
47. We refer to knowledge-based industries for ease of definition. Indeed, not all knowledge-based industries lead to the scenario we depict in this work. The term 'knowledge-based industry' therefore stands here for 'knowledge-based multidirectional networks'.
48. For an overly enthusiastic assessment of the benefits deriving from open source software development, see Maher (2000) and, in part, Lerner and Tirole (2000); a more balanced overview is in Schallop (2000) and in McGowan (2000).
49. Needless to say, this caveat does not hold whenever the market exhibits no inclination toward the emergence of a dominant de facto standard (for example, because no single firm controls or owns all the necessary technology IPR (intellectual property rights) pieces of the puzzle: Schallop, 2000, p. 212). Which setting will prevail in a significant number of network computing situations is still unclear.
50. Maher (2000), p. 626ff). An attempt to scrutinize 'the production of commercially viable software under a regime of free copying, modification, and distribution', aiming to verify whether 'existing legal rules could produce socially desirable results at a lower cost' is in McGowan (2000).
51. Kobayashi and Burtis (2000) refer to this tradeoff as to the use-creation dilemma.
52. Posner (2000).
53. Cf. Lemley and McGowan (1998, p. 533).
54. Among the most recent examples, the pending antitrust appeal involving Xerox Corporation's right to refuse to license their patents and copyrights, which has generated significant publicity and amicus brief activity. See *In re Independent Serv. Org. Antitrust Litig.* *CSU*, 203 F.3d 1322 (Fed. Cir. 2000) (the amicus briefs filed by, among others, the Intellectual Property Organization, argue that IPR owners have a right to exclude that is not limited by economic markets and that exercising such granted IPR rights cannot in itself violate antitrust laws).
55. Final Report of the National Commission on New Technological Uses of Copyright Work (CONTU) (1978). See Samuelson *et al.*, 'A Manifesto Concerning the Legal Protection of Computer Programs', 94 *Columbia Law Review* 2308 (1994).
56. Evans (2000).
57. On the reward model of IPR, see Schallop (2000).
58. Kolasky (1999).
59. 'Only time will tell whether the courts will recognize that new-economy industries have

- features that have to be considered for sound antitrust analysis': (Evans, 2000, p. 72). But see Posner (2000), according to whom 'there is indeed a problem with the application of antitrust law to the new economy, but that is not a doctrinal problem [. . .]. The real problem lies on the institutional side: the enforcement agencies and the courts do not have adequate technical resources, and do not move fast enough, to cope effectively with a very complex business sector that changes very rapidly'.
60. See McKenzie (2000).
  61. See *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992).
  62. See *Intergraph Corp. v. Intel Corp.*, 3 F. Supp. 2d 1255 (N.D. Ala., 1998), *vacated*, 1999 U.S. App. LEXIS 29199 (Fed. Cir., 1999).
  63. Amongst the endless literature on the *Microsoft* case, see McKenzie (2000), Fisher and Rubinfeld (2000), Biebowitz and Margolis (1999).
  64. 'For example, in 1999 Cisco had over 80 per cent of the market for the high-speed routers that direct traffic on the Internet, Oracle software managed databases on over 60 per cent of Unix networks, the Palm operating system ran about 80 per cent of the handheld computers in the exploding market for "personal digital assistants," and Intel had 80 per cent-plus of the PC microprocessor market. And although AOL provides links to the Internet and proprietary content to a mere 25 million consumers, it enjoys the lion's share of the market for non-business access to the Web' (Evans, 2000, pp. 72–3).
  65. Appearances to the contrary notwithstanding, the antitrust laws are not much concerned with monopoly as such [. . .]. The fact that a monopolist buttressed by network externalities may be hard to dislodge even by a firm with a superior technology has no antitrust significance in itself' (Posner, 2000).
  66. Merger complete in 1999.
  67. See 'Merger Control in "New Markets"', Lexecon Competition Memo (Sept. 1, 2000).
  68. This proposition is open to disagreement. See Posner (2000): 'economic theory and empirical evidence have yet to generate a consensus on whether monopoly is on balance good or bad for innovation'.
  69. See Patterson (2000).
  70. *In the Matter of Dell Computer, Co.*, 121 F.T.C. 616 (1996). For a different evaluation of the case, cf. Schallop (2000).
  71. See Muris (2000, pp. 703ff.)
  72. Burton (1980).
  73. See Art. 9 of Public Law n. 192/1998.
  74. This is true even for so-called 'open source' software, which is not produced in a true commons, since property rights are held in reserve to discipline violations of community norms. See McGowan (2000). On the other hand, a significant trend toward resorting back to patent protection is being registered. The implications of such a trend are canvassed by Cohen and Lemley, 'Patent Scope and Innovation in the Software Industry', 89 *California Law Review* 1 (2001).
  75. See Karjala (2000).
  76. *Image Technical*, at 1217.
  77. *Lasercomb America, Inc. v. Reynolds*, 911 F. 2d 970 (4th Cir. 1990).
  78. For a detailed analysis of the developments alluded to in the text, see Fellmeth, 'Copyright Misuse and the Limits of Intellectual Property Monopoly', 6 *Journal of Intellectual Property Law*, 1, 25 (1998).

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## 12. The vertical price fixing controversy

**Antonio Cucinotta**

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It is, alas, characteristic of the desiccated formalism which for half a century has dominated economic thought that those who unguardedly imbibed its atmosphere soon lost their ability to distinguish between solving a problem of human action and devising a formal scheme within which it can be made to vanish from our sight. (Ludwig Lachmann)

### CHAMBERLIN

This is not a piece of economic theory. Antitrust students ask economic theorists questions getting, more often than not, too many answers not entirely consistent one with another. Since the vertical price fixing problem is so theoretically controversial (or, as it might equally be said, since the vertical price fixing controversy is so highly theoretical), this chapter gathers some economists' answers on the issue together with some points of view on the foundations of these answers, hoping that a better understanding of the problems being examined may help. It treats both as (more or less relevant) evidence about the sources of the controversy. Hence this is a piece *on* economic theory. But, as far as the more general level of the economic discourse is concerned, collected evidence does not claim to corroborate any thesis. The chapter will look at the evidence *as if* a starting assumption about a crisis in economic theory could prove to be sound.

Until recent years, vertical price fixing (resale price maintenance or RPM) analysis moved from the assumption that this business practice is a fact of economic life quite difficult to explain. Taussig outlined this approach in 1911: 'If there is one thing which is laid down in all the books, it is that a decline in price leads to an increase in quantity demanded and sold . . . Yet the endeavor to keep up retail prices would seem to be based on a contrary supposition.'<sup>1</sup> Still, the course of the debate might have later taken a different direction. Indeed, one of the greatest economists of the twentieth century introduced an entirely new view of the issue through a seemingly slight modification of the latter construction: RPM is a business practice showing to what extent the instruments of mainstream economic theory inadequately explain the facts of economic life. Edward H. Chamberlin expressly included the guaranteed



margin in a more general class of problems. The reported judgment makes reference to that broader category. And Chamberlin told us even more.

It is perhaps unfortunate that the discussion on RPM in antitrust literature did not match the controversy on selling costs in economic literature. Truly, the Chamberlinian category of selling costs (as distinct from production costs) immediately brings to mind advertising expenses. And we know that Chamberlin himself later conceded that the *distinction* between production and selling costs emphasized in *The Theory of Monopolistic Competition* was partly misleading. Yet, as we will see, these circumstances, far from weakening, strengthen the claim that the theoretical problem faced by Chamberlin was precisely the same as that which so long afflicted antitrust analysis.

What is a 'selling cost' for Chamberlin? He gave us many slightly different definitions. For our purposes, let us take as good the following: 'of all the costs incurred in the manufacture and sale of a given product, those which alter the demand curve for it are selling costs, and those which do not are costs of production' (Chamberlin, 1933, p. 123). Any example besides advertising expenses? 'Salesmen's salaries and the expenses of sales departments, *margins granted to dealers (retail and wholesale) in order to increase their efforts in favor of particular goods, window displays, demonstration of new goods*' (ibid., p. 117, emphasis added). As everybody knows, at the very heart of the massive antitrust literature on vertical price fixing we have what has been called an 'impressive piece of geometry . . . which has undoubtedly appeared 10,000 times in hornbooks, law review articles and antitrust classrooms' (Hovenkamp, 1987, pp. 908, 909). What was the greatest virtue of that celebrated diagram? It showed how a demand curve shift upward and to the right can make it advantageous for manufacturers deliberately to increase their distribution costs; in other words, it disclosed that RPM is a selling cost: that is, an expense manufacturers may want to sustain in order to alter, in Chamberlinian terms, 'the position or shape of the demand curve for a product' (Chamberlin, 1933, p. 117).

As it is well known, that 'impressive piece of geometry' did not close the controversy but, on the contrary, inflated it. Perhaps such an impact of what notoriously became for the orthodox economics' partisans the favorite RPM explanation has something to do with Chamberlin's more general criticism of the category as a class of expenditures, with which the problem of dealing theoretically 'seems never even to have been conceived of, let alone answered' (ibid., p. 126). Hence our problem is at the core of the Chamberlinian attempt to make a synthesis between monopoly and competition theory, to the extent that, if more widely noticed, some of his appraisals would have certainly deserved (and gained) plenty of mention in antitrust literature: 'Often the granting of a little higher margin is the most effective kind of advertising' (Chamberlin, 1933).

Can we summarize why the problem of selling costs performed such an important theoretical function in the genesis of monopolistic competition theory? According to Chamberlin, price theoreticians faultily neglected selling costs; and they neglected selling costs because dominant economic models completely overlooked industrial manufacturer's selling *problems*. That explains why economic models of Chamberlin's time were not apt to give a trustworthy account of the facts of economic life. Why should a manufacturer want to bear a selling expense if, as in the pure competition model, he can sell however much output he wants to at the current market price? To look at the manufacturer simply as a producer, leaving out of the picture his role as vendor, means missing a key characteristic of the working of the economic system. In modern consumer goods markets, however, 'the tremendous possibilities of making profits by demand creation have been more and more appreciated, technical methods of exploiting them have been perfected, and selling has come to the fore as a business activity coordinate with production. Indeed, the typical businessman of today is probably more concerned with the former than with the latter. Meanwhile theoretical economics continues to regard him as a producer only, and as *enjoying a demand which is already there and which has cost nothing*. The theory of pure competition tacitly assumes that all costs are incurred in order to increase the supply of goods and that these goods are sold with neither effort nor expense. *It is by neglecting selling costs that it most obviously falls short of explaining the facts of economic life*' (Chamberlin, 1933, p. 127, emphasis added).

Some of the most interesting current understanding of manufacturer/distributors interaction can be traced back to Chamberlin and be seen as developments of his earlier conceptualizations of the issues. Porter's seminal study on vertical relationships, for instance, which tried to shift the focus of the inquiry from conditions of supply to characteristics of demand and consumer habits, can be considered as a refinement of the Chamberlinian heritage. Porter's aim was to improve the way we look at differentiation processes: 'In building the model the nature of the *process* of product differentiation can be illuminated. Product differentiation (commonly "measured and associated with the industry's level of advertising") is a process because it is the outcome of firm selling behavior. The manufacturer-retailer interaction will determine a mix of selling outlays, and it will be shown that the manufacturing and retail stages interact in an important way in determining product differentiation' (Porter, 1976, pp. 2, 10).

Including the RPM option in a broader category of selling choices is not without theoretical consequences: although Chamberlin's analysis, like the ensuing debate on selling costs in the economic literature, was centered on the *typical* selling cost – namely, advertising expenses – in *The Theory of Monopolistic Competition* some substantial implications of the more general

problem were clearly underlined. Therefore Steiner's insights on the interface between consumers' brand franchise generated by manufacturers' advertising investments and retailers' gross margin,<sup>2</sup> and his account of the dynamic conflict between firms acting at different vertical stages, can be read as an expansion of the original Chamberlinian reasoning. To be sure, Chamberlin not only rendered a more realistic description of the distributive trade; he called attention to the 'complexities introduced by the chain of dealers intervening between him and the manufacturer. (. . .) The manufacturer must divide his efforts between the consumer and the dealer, often devoting most or all of them to the latter. It would be disastrous for him to create a consumer's demand and trust this to be communicated to him automatically through the intervening middlemen. (. . .) The manufacturer's connections with retailer and wholesaler do not come of themselves' (Chamberlin, 1933, p. 120).<sup>3</sup>

Hence these are Chamberlinian themes, and it is probably correct to say that Chamberlin's warnings to the economic profession had a less disputable impact than his own elaboration of the subject. Therefore, if the antitrust analysts' answers to the manufacturers' selling problems are still so highly intricate and controversial, should we not need to question the theoretical foundations of these answers – including the Chamberlinian attempt to improve them?

## BOWMAN AND FRIEDMAN: MORE ON CHAMBERLIN VERSUS FRIEDMAN

Mr. Brace: *Economists almost by definition disagree, isn't that correct?* Dr. Stigler: *No, although it's a popular cliché.* Mr. Brace: *Well, it's one that you have expressed in some of your writing, is it not?* Dr. Stigler: *Not the right writings. Maybe when I was youthful and irresponsible.* (Stigler, 1986, pp. 53–4)

Who in antitrust literature was the best and most faithful reader of the Chamberlinian analysis? Paradoxical as it might appear, it was a Chicago School scholar: Ward Bowman. He wrote on the topic in 1952, headlining his article: 'Resale Price Maintenance: A Monopoly Problem'. At that time, probably, such a view on the issue had still not been isolated in the American Midwest. To be sure, Milton Friedman admitted: 'I originally did regard resale price maintenance as *clearly* a sign of monopolistic practice. The work at Chicago (of Director and Telser) did persuade me that I was wrong and that resale price maintenance could, under some circumstances, serve a useful function' (Breit, 1991, p. 85). If, after Telser's account of the problem, which was published in 1960, Friedman thought that RPM could, *in some circumstances*, serve a useful function, he made a careful reading of Telser's article.

The fact is, however, that in Telser's paper a monopolistic explanation of the practice was not ruled out: it was confined to a footnote.<sup>4</sup> And if, in a seminal article on a topic, one of the concurring explanations of the problem goes almost unnoticed, this is not a matter of careful reading. It could be a matter of careful writing.

However, the bizarre case of footnote five does not lessen the formal value of Telser's paper. And, in any case, we have Bowman. Telser and Bowman's accounts are not incompatible. Their problem was the same: how to relate dominant parameters of price theory to the RPM dilemma. So the point of Telser footnote five was the topic of Bowman's paper. Conversely, Telser's main argument was already basically developed by Bowman (even if not so rigorously formalized). Therefore, it is fair to say that the two pieces can be read together: and carefully reading them jointly, we can perhaps attain a satisfactory traditional price theory report on the issue. Furthermore, if we read jointly Bowman's paper and Chamberlin's pages dedicated to the introduction of the problem of selling costs as a step toward a more general theory of value, we realize that what Bowman made was only a diligent, yet sharp transposition of the Chamberlinian analysis. Bowman's first warning was the same as Telser's: voluntary RPM must involve some 'degree of monopoly control over the price' by manufacturers (Telser, 1960, p. 87); price-maintained items must be identifiable, that is, trade marked or branded. There is a substitution effect to take into account: hence 'the ability to successfully maintain price for resale (or for sale) depends upon the ability to differentiate the product so that any price which is set will not be undermined by the competition of substitutes' (Bowman, 1952, p. 145). Since the point is undisputed in literature it is enough here to make a short reference to it.<sup>5</sup>

The second Bowman point is open to discussion and it plainly relied on the Chamberlinian illustration of the problem of selling costs, along with numerous quotations from the source of inspiration. It is essentially founded on a basic recognition: 'Competition is neither perfect nor pure in many fields of retailing' (*ibid.*, p. 153). Distributive markets are local, and in various degrees retailers can control the commercial traffic in their geographical area of trade, they can expand the demand for a product or create new demand for it; 'this control – the ability to divert or channel sales – signifies the existence of monopoly power on the retail level in exactly the same manner as the ability to differentiate product does on a manufacturing level. In fact, the power of manufacturers to maintain the differentiation may depend upon the co-operation of retailers possessing this kind of power' (*ibid.*, pp. 147–8). Since Bowman's explanation is accurate and clear, in a general survey like this we can safely make reference to the original exposition. What we need here is to emphasize some points of Bowman's analysis whose significance is worth noticing in a comprehensive appraisal.

According to Bowman, price theory, once applied to the RPM dilemma, leads to a strong inference: ‘resale price maintenance can be an effective device only where there is a substantial departure from competitive standards both on the producing or manufacturing level *and* on the reselling level’ (ibid.). Reaching this understanding, Bowman answered what, so far, has been the first question of almost any RPM investigation, that bizarre dilemma popularized by Telser’s question mark (why should?) which Bowman encountered through Taussig’s earliest outline. Indeed, Bowman stressed the purely apparent nature of the paradox: that is, merely extending Taussig’s introductory remarks, it should be easy to understand that the dilemma about the manufacturer’s rational motivation for RPM fits ‘the situation in which the absence of any significant monopoly characterizes distribution, especially retailing. It should be not surprising that different conclusions are possible when this assumption is discarded’ (Bowman, 1952, p. 153). That is to say, perfect or pure competition models simply are not able to explain the existence of a manufacturer’s cost directed to ensure a market for the product, a point for which Bowman is clearly indebted to Chamberlin, who expressed an even more radical judgment: ‘In applying purely competitive theory beyond its proper province, the disposition of selling costs is a perplexing problem. To make the theory consistent with itself, they should be excluded’ (Chamberlin, 1933, p. 128).

Bowman’s final conceptualization could be appreciated as his most valuable and farsighted contribution to the RPM debate. Having identified a market power problem at manufacturing *and* retailing levels, which makes ‘the producer dependent upon the servicing retailers for the maintenance of his monopoly revenue arising from his differentiated product, and the dealers dependent upon the manufacturer to protect their margins so that they can effectively exercise their power’ (Bowman, 1952, p. 152), Bowman calls for a ‘mutual dependence between two insecure, partial monopolists’ as the correct, general price theory rule for RPM.<sup>6</sup> Here, the most appealing part of Bowman’s formula is that concerning the *uncertainty* of the decision maker possessing economic power tempered by the working of competitive forces.

Hence antitrust literature on RPM met Chamberlin through Bowman. But Bowman’s contribution was neglected by Friedman and Director’s disciples; it was Telser, not Bowman, who provided the ‘Chicago explanation’ of RPM.<sup>7</sup> Since this intersection of the history of antitrust analysis parallels a well-known chapter of the history of economic thought, where the Chicago–Chamberlin confrontation was centered on the monopolistic competition attempt to rectify price theory, a short digression toward this upper level historical intersection could be judged, if not helpful, at least legitimate. Chamberlin firmly rejected a methodological prejudice against

his theory, whose ‘starting point is surely professor Knight’s extreme views on the nature of economic theory as being literally identical with, and restricted to, the theory of perfect competition’. According to those who share this point of view, ‘the phenomena of monopolistic competition are “unsystematic”, and merely an indistinguishable part of a great jumble of deviations from perfect competition which cannot be generalized about at all. (. . .)’ If, for Chicago School advocates, ‘perfect competition is synonymous with “theory”’, and ‘perfect rationality’ is ‘one of the prerequisites to economic theory’, then it is clearly understandable why ‘imperfect’ competition can be explained by the phrase ‘imperfect economic behavior’ (Knight, 1946, p. 103), and must be interpreted in part in terms of ‘irrationality’, and identified ‘with the detailed and special, the unsystematic and even “descriptive”, the “photographic reproduction”; whereas meaningful and important generalizations are those where the firms can be treated *as if* they were perfect competitors – or perhaps as Marshallian monopolists’. (See Chamberlin, 1960, p. 297.)

A condensed characterization of this conflict might assume that the Chicago orthodoxy professed to bring into contrast not the relevance of themes and phenomena pointed out by Chamberlin in his effort to make mainstream price theory more realistic – yet ‘the relevant question to ask about the “assumption” of theories, we were told, is not whether they are descriptively “realistic”, for they never are, but whether they are sufficiently good approximations for the purpose at hand’ (Friedman, 1953, p. 15) – but his treatment of the subject, through a set of generalizations deemed neither apt nor practical to ameliorate the received theory.

It would be highly desirable to have a more general theory than Marshall’s, one that would cover at the same time both those cases in which differentiation of product or fewness of numbers makes an essential difference and those in which it does not. Such a theory would enable us to handle problems we now cannot and, in addition, facilitate determination of the range of circumstances under which the simpler theory can be regarded as a good enough approximation. To perform this function, the more general theory must have content and substance; it must have implications susceptible to empirical contradiction and of substantive interest and importance. The theory of imperfect or monopolistic competition developed by Chamberlin and Robinson is an attempt to construct such a more general theory. Unfortunately, it possesses none of the attributes that would make it a truly useful general theory. (Ibid., p. 38)

Hence this is a theoretical attitude which surely played an important role in the subsequent history of RPM analysis. It was from this perspective that Telser’s answer to the vertical price fixing dilemma has been deemed persuasive. So the question is: can Telser’s model be regarded as an approximation good enough to handle the problem?

## TELSER AND HAYEK

Straining after precision where to be precise is necessarily to be wrong. (William T. Thornton)

The answer, I guess, depends on how we use Telser's model, and how we read it. And the way we use and read it is not a matter of carefulness. It is a matter of what we mean – as specialists or laymen – by 'economic theory'. Let me briefly intensify this opinion. What is the chief value of Telser's analysis? Its correctness. In fact, most of the discussion on Telser's often scrutinized diagram was not concerned with correctness. It was concerned with relevance: empirical and theoretical relevance of a formal analysis tool, which is structured in a more general approach to the explanation of the facts of economic life. In economic science, however, 'one effect of the difficulty of testing substantive economic hypotheses has been to foster a retreat into purely formal or tautological analysis' (Friedman, 1953, p. 11). And this is what the layman could fear face to face with an apparently correct piece of geometry, still dubious in its empirical significance.

How can we avoid the very harmful tendency of formalism? Let me evoke an authority on the point, whose lesson, as many hold, has not yet been fully assimilated in the economic discipline. Hayek's intention in *Economics and Knowledge* was to mark a borderline between formal analysis and empirical theory in economics, trying to set strict use limits for equilibrium models. Hayek argued: 'My criticism of the recent tendencies to make economic theory more and more formal is not that they have gone too far but that they have not yet been carried far enough to complete the isolation of this branch of logic and to restore to its rightful place the investigation of causal processes, using formal economic theory as a tool in the same way as mathematics' (Hayek, 1936, p. 35). Telser provided us with a model which correctly elaborated the logical implications of its initial assumptions: and Hayek's label for economic analysis' instruments of this class, 'pure logic of choice', fits very well with Telser's representation. Telser modeled the purely logical problem of producers' choice when retailers provide 'services' which can increase the quantity of products sold.

The formal value of such an analysis, according to Hayek, has to be taken very seriously. Yet, in the literature, the theoretical basis of Telser's *special service argument* did not enjoy the same good luck as his main argument. In fact, trying to restrain the domain of his well-known explanation, Telser distinguished *special services* and *retailers' methods of generally doing business*, emphasizing that the free-riding thesis applies to the former, not to the latter. Illustrating the category of *retailers' methods of generally doing business*, Telser held that, in this regard, 'there is no need for the protection of resale

price maintenance on the particular commodity to be sold jointly with these services' (Telser, 1960, p. 89). To explain why, Telser outlined what would happen in a *perfectly competitive* distributive market when retailers' methods of generally doing business are at stake: 'In the absence of resale price maintenance we can expect many kinds of retailers offering all kinds of different services to sell the product at prices that differ by the cost of providing these services. The fact that many retailers offer different kinds and combinations of services is a reflection of the diversity of consumers' tastes' (ibid., p. 90). The point is certainly correct and we can easily refer to the original demonstration. To be sure, in a perfectly competitive market consumers (and producers, as well) would get all the general services they may need from distributive firms and for these services they would pay a price that equals the lowest production cost: therefore, in the distributive trade, the very existence of different categories of business enterprises, adopting various methods of doing business, would purely reflect the diversity of consumers' tastes. Resellers 'will not deprive their customers of these services on any sale regardless of whether or not the product in question is protected by a resale price maintenance agreement with the manufacturer' (ibid.).

This is the perfect competition model account of the problem. However, if distributive markets are not perfectly competitive the 'argument needs modification', as we read in Telser's footnote five, where Telser's analysis meets the Bowman account of the issue. Of course, we know that here we have one of the sources of later disagreements: because, if, like Bowman, you hold that 'competition is neither perfect nor pure in many fields of retailing', your line of research may lead you far from those believing that 'retailing is about as close to an atomistic market as you can get' (Easterbrook, 1984, p. 141). These divergences, anyway, cannot decrease the formal value of Telser's analysis, whose coherence could be easily confirmed. Take the following as a representative example of a polemic argument against free-riding theory: 'It should be made clear who these *free-riders* really are. They are the discounters of modern American marketing: low overhead, high volume sellers who aggressively compete on price . . . They may offer lower prices not because they fail to provide desired services, but because they provide them more efficiently. Resale price maintenance prevents these sellers from passing efficiencies – translated into cost savings – on to consumers' (Pitofsky, 1983, p. 1493). If what Pitofsky had in mind here was the way in which, *in some cases*, Telser's article has been read and applied, his objection can be considered fair; but such a challenge does not implicate the formal correctness of Telser's explanation, which forestalled that exact objection, once more in a footnote.<sup>8</sup>

The theoretical structure of Telser's exposition, however, was merely aimed to set boundaries to the main argument. To appraise Telser's contribution to the controversy, it is not enough to notice that he may have failed to highlight



clearly the prospective retailers' economic power. Much more important is to stress that his speculation on retailers' general business methods assumed a *perfectly competitive equilibrium* in the distributive market. And to assume a perfect equilibrium in the market implies much more than simply disregarding the likely market power of some competitors. It is exactly here that Hayek's warnings become very pertinent to our survey. Hayek asked why economists are concerned with the admittedly fictitious state of equilibrium. 'The only justification for this is the supposed existence of a tendency toward equilibrium. It is only by this assertion that such a tendency exists that economics ceases to be an exercise in pure logic and becomes an empirical science' (Hayek, 1936, p. 35). That is to say, an empirical economic theory cannot simply *assume* a state of equilibrium: it has to explain how the allocation of individual plans and resources can be coordinated through the market. According to Hayek, the empirical content of economic theory should be made of hypotheses concerning the nature of the process through which coordination can be achieved, and the conditions that make this achievement possible. Nevertheless, 'in the usual presentation of equilibrium analysis it is generally made to appear as if these questions of how the equilibrium comes about were solved. But, if we look closer, it soon becomes evident that these apparent demonstrations amount to no more than the apparent proof of what is already assumed. The device generally adopted for this purpose is the assumption of a perfect market'; to assume a perfect market, however, 'is just another way of saying that equilibrium exists but does not get us any nearer an explanation of when and how such a state will come about' (Hayek, 1937, pp. 45–6).

It is surely legitimate to disclose that, owing to the existence of a positive externality, the price mechanism, in some cases, may fail as guidance to an efficient market coordination: and it is still correct (even if, in a way, unfair) to emphasize the consequences of this market failure characterizing as 'parasitic' the price competition of those who take advantage of some rivals' supply without incurring the relative costs. Should this assessment end the inquiry on the meaning of price competition in the distributive trade? Surely not. One way to close the story here is to postulate that when manufacturers terminate price competition among dealers they are always anticipating a market failure due to a 'free ride' on some retailers' services. To reach this understanding means not to respect the formal value of Telser's analysis; and a sort of undue generalization of the 'free riding' explanation making too many price competitors appear 'parasitic' was something against which Telser himself reacted: 'It is a mistake to think that every case in which manufacturers adopt RPM is explained by a free riding on some special services provided jointly with the product. I didn't make this mistake' (Telser, 1990). Yet the most serious question about readings as such is that they are entirely tautological: indeed, it is not correct to assume a *perfect equilibrium* in the distributive markets, and to

draw from this assumption the consequence that in this trade the invisible hand of the market and the more discernible manufacturers' hands act as one. To do that means to give empirical content to equilibrium analysis tautologies, as was explained by Hayek, and this misconception is at the very core of that retreat into purely formal or tautological analysis which Friedman complained about.

Hence some interpretations and uses of the suggestions of equilibrium models can be misleading, and this could hardly be considered as novel. But this very fact does not imply that models of 'pure logic of choice' could not be helpful tools of analysis. It depends on how we use them. Since they are virtually devoid of empirical content, we can use them as heuristic tools apt to give a first account of a question or to provide assistance in making the analytical treatment of a subject less approximate; and we may learn from equilibrium analysis where to look for a positive solution to a particular problem. For example, it could be useful to understand what a truly fictional abstraction such as a perfectly competitive equilibrium in the market for 'general' resellers' services can tell us about vertical interactions between manufacturers and retailers. One way to use the clues of this inquiry is to understand the *importance* of retailers' methods of generally doing business, and to investigate more in depth how differences among these 'methods' may affect vertical relationships. Of course, to start this investigation we would need not to forget that the formal model we applied not only assumed that economic agents have no power over the price: it assumed sellers' and buyers' perfect knowledge, it completely throws time out of the scene, and so on. If we keep these assumptions clearly in mind, perhaps the equilibrium analysis, used as a heuristic tool, could lead us to study the relevance of precisely those characteristics of the real world (usually labeled 'imperfections') which the simplifying assumptions of the model removed.

Yet the story of this investigation may not even start. If, for instance, you believe that, since the access to distribution is usually easy and there are so many firms in the business, when a new kind of service, a more efficient method of production, are introduced into the market, *sooner or later*, they will prevail in such a competitive environment. So it can be judged worthless to invest intellectual resources in research whose results are known from the start. Telser, for example, seems to have believed it would have been a mistake to do it.

However, one of the most powerful inferences that Hayek drew from his methodological criticism is that the concept 'sooner or later' is absolutely critical for economic investigations. 'Sooner or later' is, in a way, what economics is all about: and if it was a purpose of the economic profession that lasted two centuries to give a sound foundation to the *invisible hand* rationale – that is, why the free interaction of individual decisions in the economic system

produces order (a concept more convenient than the equilibrium one, according to the later Hayek) rather than chaos – the economists’ explanations of this central issue was often judged lacking in persuasion by the other social scientists because economists, failing to fully appreciate the meaning of time and knowledge in the working of the system, ‘have not based them on the right grounds’ (Hayek, 1937, p. 54).

## CHANDLER, SCHUMPETER, PALAMOUNTAIN

The essential point to grasp is that in dealing with capitalism we are dealing with an evolutionary process. (Joseph A. Schumpeter)

According to Hayek, economic theory should have placed at the core of its research program the problem of the ‘division of knowledge, which is quite analogous to, and at least as important as, the problem of division of labour; but, while the latter has been one of the main subjects of investigation even since the beginning of our science, the former has been as completely neglected’ (Hayek, 1937, p. 50). Yet the division of labor matters: in the economics profession, as in all the social sciences, one of the consequences of the extraordinary developments of recent times is the increased division of investigation among the different fields of research. And scientists engaged in distinct fields store different stocks of knowledge. Studying the connections among themes investigated by various disciplines (or by different branches of the same discipline) brings, of course, a natural entrepreneurial risk for the social scientist. Each research choice is a move in a zero sum game: to gain one piece of knowledge ultimately means to miss another.

Looking at equilibrium models we clearly see the *visible hand* of mainstream economics at work. For example, in Telser’s famous footnote five we read: ‘A wise manufacturer weighs [the net effect of these forces . . .]’. Such a statement may raise a question: what is a *wise* manufacturer? Is the manufacturer wise who does not make mistakes? Of course not (strictly speaking, we can imagine just one example of such an Infallible Manufacturer: but the received view tells us that He gives and never sells). Since Telser was speculating about a computational problem, it is sound to say that an entrepreneur who is no good at sums cannot be deemed *wise*. The question, however, is that entrepreneurship does not implicate mere computational problems, simply because entrepreneurship rises precisely from the impossibility to reduce all economic choices to simple computational operations. To depict otherwise the economic decision maker involves the risk, to quote once again *Economics and Knowledge*, that ‘that skeleton in our cupboard, the “economic man”, whom we have exorcised with prayer and fasting, has

returned through the back door in the form of a quasi-omniscient individual' (Hayek, 1937, p. 46).

Telser's analysis, in a way, attracted our attention to the importance of differences among various kinds of distributive enterprises. Of course, even if Telser dedicated to the issue very few lines of formal theory, scholars may find literally thousands upon thousands of pages on the topic in different sections of their libraries. And it is fair to say that those who wanted to grasp the evolution of business methods, firm functions and market order in the distributive trade all shared a disregard for the depiction of the economic actor usually found in economics textbooks. Still Chandler's historical account of the rise of the modern enterprise, for instance, has been charged with a 'technological determinism' claim. Contrasted to Chandler's findings, a 'determinism' allegation against some neoclassical approaches to the issue would be absolutely foolish: giving substance to the perfect market assumption, these models simply rule most of the relevant problems out of the picture.

Chandler's historical inquiry brings to light the significance of one of the most important factors in the rise of modern enterprises and mass markets of consumers' goods: that is, the spread of scale and scope economies in manufacturing and distribution, made possible by the late nineteenth-century revolutions in communication and transportation systems (railroads, telegraph, telephone). Encompassing the process of volume distribution, Chandler explains, is an essential step toward understanding the rise of modern enterprise (not only in distribution but in manufacturing as well). The distributive institutions had a cost advantage – whose influence on performance can be measured by the 'stock-turn' index<sup>9</sup> – which 'resulted from exploiting the economies of both scale and scope. Because they handled the products of many manufacturers, they achieved a greater volume and lower costs per unit than did any manufacturer in the marketing and distribution of a *single* line of products (scale). Moreover, they increased this advantage by the broader scope of their operation – that is, by handling a number of related product lines through a single set of facilities (scope). This was true of the new volume wholesalers and the new mass retailers – the department store, the mail order house, and the chain store' (Chandler, 1990, p. 29).

However, the cost advantages of the various intermediaries standing between the manufacturer and the final consumers were not steady but connected to the competitive dynamics of the mass production/mass distribution interaction: Chandler's researches highlight here the source of a substantial factor of growth of modern industrial enterprises (which brought Chamberlin to emphasize the importance of their selling activities). Indeed, as the scale of manufacturing operation increased, some commercial intermediaries lost their competitive advantage vis-à-vis several producers, who had a strong incentive to integrate forward, building a sales force of their own and

making investments in distribution facilities. This was true for many new capital-intensive industries, and for the internalization of wholesalers' functions by firms acting in those markets, since 'a manufacturer of a single product rarely achieved such a volume' to be able to integrate forward in retailing (*ibid.*). Still other incentives to vertical expansion arose from the specialized facilities and skills requested in the distribution of some products, and from the new type of competition that prevailed in capital-intensive oligopolistic industries.<sup>10</sup>

What we learn from Chandler's plentiful harvest of data is that, in the evolution of mass production/mass distribution interaction, the vertical mobility of most selling functions and operations was very high and of a strategic significance. With the rise of the mass market of consumers' goods, western countries witnessed the consolidation of new methods of doing business both at manufacturing and retailing levels. The maintenance of a costs advantage by the new mass retailers settled the boundaries for forward integration by giant manufacturers and the ground of mass retailers' contractual dominance over producers of less concentrated industries. The coordinating forces of the market – namely, the adjustment process (which takes place in *time*) – surely dominated these developments, and in the course of the process an intensive struggle between enterprises of different kinds came about along a horizontal and a vertical dimension as well.

Surely, this is not the familiar description of a conflict 'within a rigid pattern of invariable conditions' marking the 'textbook picture' of competition, in which 'the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them' (Schumpeter, 1947, p. 84). Chandler's portrait of the function of industrial pioneers resembles very closely the Schumpeterian celebration of entrepreneurship. And Schumpeter wrote: 'As soon as quality competition and sales effort are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position' (*ibid.*). Truly, from the producer's point of view, the price is just one variable of the competitive strategy. Hence, when striving to create a demand for their products, manufacturers may well decide to get a more effective collaboration from resellers improving or protecting their markup. Anyway, as far as the market process in the distributive markets is concerned, price competition has to be correctly appreciated. For, if we look at business methods in the distributive process, where innovations were 'primarily organizational rather than technological' (Chandler, 1990, p. 58), and hence did not demand venturesome investments, we can understand how price was a primary weapon in the competitive conflict between new and old enterprises. It is enough to think how the mass retailing institutions – the department store, the chain store, the mail order house – could exploit their cost advantage ensured by scale and scope economies and by the internalization of some wholesale functions, and so prevail in the competitive struggle (see Chandler, 1977, chap. 7).

Chandler's account of this evolution cannot easily be labeled as 'deterministic': especially in *Scale and Scope's* comparative perspective,<sup>11</sup> we sense how the market process cannot assure foregone results. To be sure, some outstanding 'determinants' may help us to understand the direction of the process.<sup>12</sup> But the investigation into several interwoven causal relationships within an historical account on the *Dynamics of Industrial Capitalism* will definitely be very far from the static approach of 'pure logic of choice' models.

Hence we met here *dynamics*, beyond question one of the most disputable terms of economic analysis. And here the problem of competition (and the question of the most convenient theoretical treatment of the subject) is clearly interlocked with that of entrepreneurship (and the most convenient treatment of the economic decision maker). What could be the best analytical approach, in an evolutionary perspective,<sup>13</sup> to competitive problems (such as those arising from vertical relationships) betraying so many relevant, dynamic aspects? 'A theory of competition as dynamic process', wrote J.M. Clark, 'must be not a model but a framework within which many models may find their places, including equilibrium models as limiting hypothetical cases.'<sup>14</sup>

Actually, a conceptual framework of such a kind had some influence on antitrust analysis of vertical restraints, mostly through the work of late scholars. Palamountain's inquiry into the *Politics of Distribution* approached the distributive process from an interdisciplinary perspective, blending political and economic analysis, in what he proffered as at the same time a 'political economy' and an 'economic polity'.<sup>15</sup> From this methodological viewpoint, once approaching competition in distribution, Palamountain distinguished three relevant forms of the economic conflict: that is, *horizontal competition* (the conflict among 'competitors of the same type'), *intertype competition* (the conflict among 'different methods of distribution') and the *vertical struggle* (the conflict 'among different stages in the same line of distribution') (Palamountain, 1955, p. 24).

Asking for a distinction among different forms of competition is not an unfamiliar learning procedure in economics: Schumpeter's call for the competition 'that matters' produced such a result, generating a huge literature on 'Schumpeterian competition', along with its related, evaluative tradeoff between static versus dynamic efficiency. But what is worth emphasizing is the purely stipulative nature of such distinctions: 'Whatever heuristic advantages the idea of two kinds of competition may have, it is to a large degree misleading. A far better way to put it, it seems to me, is that there are two ways of looking at competition, not two different forms of competition. These two ways are mutually exclusive' (Langlois, 1986, p. 11). Whether different ways to look at competition (for example, competition as a state of affairs or a situation, and competition as a process) are truly mutually exclusive or not is, of course, a matter of our theoretical construction of the subject: and the question

is basically centered on the value, use limits and significance of equilibrium analysis. If, however, we postulate that ‘pure logic of choice’ models may find their place in our analysis of competitive problems, then a stipulative distinction can be useful to approach different sides of the same phenomenon: a conceptual framework like Palamountain’s could here prove beneficial. Indeed, his tripartition of the conflict in the distributive process – horizontal, intertype, vertical – identifies a sequence that, if carefully read, matches increasingly serious deficiencies of mainstream economics treatment of the issue.

As for the first kind of competition (horizontal), which is the pivotal concern of traditional economic theory, Palamountain follows Chamberlin and his complaint against the limits of pure and perfect competition theory in the analysis of distributive markets,<sup>16</sup> still adding, as we shall see later, a crucial objection on the limits of the monopolistic competition approach. ‘Intertype competition’ is ‘a special application to distribution of what Schumpeter calls the process of Creative Destruction’. It was this conflict that ‘played a creative role’ in the market, introducing ‘technological advances’ and producing ‘lasting price reductions’ (lasting because based on cost savings), and performing ‘another duty usually assigned to horizontal competition – protecting the consumers from monopolistic exploitation’, since ‘in the good old days retail markets were often monopolistic’ (Palamountain, 1955, pp. 38–41). The first weapon of this conflict considered by Palamountain is (masked or open) boycott. Boycott ‘resembles a strike or a lockout in that it indicates a state of *mutual dependency*; hence intertype competition tends to raise, and often to run concurrently with, vertical conflict (. . .), the one which has been most neglected by economic theoreticians’ (ibid., p. 48).

## SCHERER AND COMANOR, PORTER AND STEINER

It has been properly objected that mainstream economics tends to disregard the market process in the distributive trade.<sup>17</sup> However, this was not always the case, as is true for some authoritative contributions. Chamberlin is, of course, one of them, and we learn directly from him that at the origins of his theoretical undertaking there were ‘substantial readings in the literature of Business Economics in general, but also with some special reference to “distribution”,<sup>18</sup> to retail markets and to the phenomenon of advertising’ (Chamberlin, 1961). Another case is surely that of Galbraith, who was well aware of the importance of the same literature familiar to Chamberlin:

One of the seemingly harmless simplifications of formal economic theory has been the assumption that producers of consumer goods sell their product directly to

consumers. All business units are held, for this reason, to have broadly parallel interests. (. . .) It is recognized that this is, indeed, a simplification; courses in marketing in the universities deal with what is excluded by this assumption. (Galbraith, 1956, p. 117)

And in the few, very famous, pages of *Capitalism, Socialism and Democracy* dedicated to the process of 'Creative Destruction', Schumpeter, far from avoiding any reference to distribution, dedicated his closing remarks to the market process in retailing:

In the case of retail trade the competition that matters arises not from additional shops of the same type, but from the department store, the chain store, the mail-order house and the supermarket which are bound to destroy those pyramids sooner or later. Now a theoretical construction which neglects this essential element of the case neglects all that is most typically capitalist about it; even if correct in logic as well in fact, it is like *Hamlet* without the Danish prince. (Schumpeter, 1947, pp. 85–6)

To understand the manufacturers–retailers interactions it is necessary to grasp the characteristics of the market process in distribution: and giving empirical content to a perfect market assumption for distributive 'services' means removing the process entirely. Hence, if 'vertical relationships were once rather a minority interest in industrial economics' and a more formal treatment of vertical restraints appeared in textbooks only in the early 1990s (see Vickers and Waterson, 1991, p. 445), this cultural gap has much to do with the more general attitude of mainstream economics, which tends to eliminate 'the wholesale/retail channels of distribution that in real life intervene between manufacturers and household consumers (. . .) Manufacturers appear to deal directly with consumers or to sell to them through an inert distribution segment that simply adds the bare-bones cost of distribution, including a perfectly competitive rate of return, to factory price' (Steiner, 1991, p. 196).

It is exactly this neglect which makes antitrust law and economics literature so controversial and divided, as was quite recently acknowledged by William Comanor, who wrote about the existence of 'two economics' of vertical restraints: while, in the 'first economics', 'any market power present at the distribution stage is ignored', in the 'second economics', which 'deals primarily with the distribution side of the relationships', are stressed 'particular features of the distribution sector' which 'point in the opposite direction'. But the most substantive difference between the two economics is that the 'second' offers a 'very different perception of the distributive sector' (Comanor, 1992, pp. 1277, 1279). Coming from one of the most distinguished vertical restraints scholars, Comanor's judgment is pregnant and very appreciable. Yet we need to explain why conspicuous industrial organization approaches to antitrust analysis failed to offer a 'perception' of the distributive sector as persuasive as



that provided by Porter and Steiner, who shaped the foundations of what Comanor called the *second* economics, which provides ‘a more valid account’ of the issues to the extent that ‘antitrust standards should follow’ in its wake. What makes a difference here is the distinctive training and scholarly background of these two scholars, which kept them in touch with the empirical reality of the markets, at the same time immunizing their theoretical approach from misleading uses of equilibrium models,<sup>19</sup> to the extent that the seemingly provocative argument can be made that, far from being at odds, Porter and Steiner’s researches can be deemed even more consistent with equilibrium analysis than most orthodox studies.

In Telser’s model, for example, what logically provided a rationale for RPM was the initial *assumption* that retailers’ services may produce a shift to the right of the demand curve. Even if the model postulated a perfect competitive market for retailers’ ‘services’, Telser himself formally inferred from price theory – and Bowman (thanks to Chamberlin’s understanding) clearly explained – that, once the pure competition assumptions are disregarded, it becomes clear that the distributive sector may generally affect manufacturers’ sales. Hence, used as a heuristic tool for economic inquiry, pure competition models disclose that, as far as manufacturers’ selling choices are concerned, the distributors’ contribution to product differentiation and the structure of distributive markets ‘makes an essential difference’, to quote Friedman’s words. ‘If products were homogeneous and if the retail stage was atomistic, the outcome of the manufacturer–retailer interaction would be determined by the interaction of manufacturers with purely competitive buyers. In this world the retail stage would not affect the selling strategy of the manufacturer’ (Porter, 1976, p. 9).

Moreover: if we use the more restrictive assumptions of the perfect competition model as a heuristic tool of analysis, we can understand that here some other ‘imperfections’ (that is to say, real-world characteristics) equally make an essential difference: consumers’ and producers’ knowledge, for example, and the changes that their knowledge may experience through a process that takes place in time. Therefore Porter was able to build a model which ‘is in essence a bargaining model’, trying to ‘predict the outcome of the bargaining process which takes place between the manufacturing and retail stages in a world of “imperfections” ’ (ibid., p. 10). As far as the distributive side of vertical relationships is concerned, the model takes into account structural conditions of ‘imperfect’ retail markets and the contribution of distributors to differentiation processes, holding that the latter is the most important source of bargaining power on the side of the retailers in vertical relationships.

Porter lists some characteristics of distributive markets which tend, other things being equal, to decrease the rate of return of the manufacturing industry, mostly centered on the basic acknowledgment that ‘retailers never sell

consumer goods in a national market'<sup>20</sup> (ibid., p. 13). Understanding that distributive markets of consumer goods are *local*, it is easier to see how a straightforward application of oligopoly theory can improve our comprehension of the conduct and performance of firms in these markets.

In his bargaining model, Porter adds still other structural characteristics of retail markets improving and refining Ward Bowman's bilateral monopoly model, which 'offers the most convincing theoretical structure for explaining the incidence' of RPM (ibid., p. 64). A retailer oligopsony model may help to understand why manufacturers prefer to adopt RPM instead of simply reducing the factory price: because 'the maintained price provides a *focal point* for agreement that is not present otherwise' (ibid., p. 66). In fact, if the retail sector is competitive, competition would eliminate any factory price reduction operated by the manufacturer; hence, adopting RPM is a kind of second-best solution to remunerating retailers for their partial monopoly power. Further, when various distributive enterprises have different cost structures (multiple outlet types sell the product) there could be the tendency for the least-cost distributor (the discounter) to prevail: here, again, vertical price fixing may provide the focal point for an agreement 'which allows the higher cost outlets to enjoy a comfortable margin on sales of the product'. Consequently, as suggested by Yamey (1966), and Steiner with his 'critical mass market share concept', the equilibrium outcome in a multiple outlet types market – especially in the case of convenience goods – may retard the emergence of more efficient retail chains.

Confronting Bowman's and Porter's approaches to RPM, we understand how Porter qualifies Bowman's analysis, explaining that the partial monopoly power possessed by distributive firms relevant for the voluntary vertical price fixing is mostly due to retailers' ability to influence the purchase of the product and only secondly to the structure of retail markets. A bargaining model can help to grasp the market process in the distributive sector, describing the complexities and the variability of the conditions faced by firms operating at both sides of vertical relationships and the inherent uncertainty of their decisional processes. Ye, it was Bowman who anticipated an oligopolistic reading of the practice with his reference to the uncertainty of the two partial monopolists.

Nevertheless, Bowman's formula set the limit of his own chief source of inspiration to the explanation of this 'atypical' selling cost, namely RPM; that is to say, Chamberlin's monopolistic competition approach. It was Palamountain who stressed that some characteristics of the distributive market mark the limits of relevance of monopolistic competition equilibrium analysis. That is, the 'large group' assumption – which postulates that, owing to the large number of sellers, each competitor action will have insubstantial effects on others, and therefore will not bring about any reaction – is untenable for

retail markets. In fact, Chamberlin applied to them the ‘chain linking’ concept,<sup>21</sup> stressing that ‘considerations relative to small numbers hold even though the “group” be large, since each seller is in close competition with only a few others’ (Chamberlin, 1933). Hence we have here interdependence among competitors’ actions, which is the domain of oligopoly theory: Palamountain holds that economic theory (equilibrium analysis), being unable to provide in this case a determinate solution, does not explain ‘a crucial feature of horizontal competition in distribution’. However, faced with the typical indeterminacy of competitive interactions among few competitors, at least a *modus vivendi* in the market becomes apparent’: so, as it is not difficult to notice, ‘retail price lines, uniform and conventional mark ups’ may prevail in retail markets ‘partly to escape the uncertainties of these interrelationships and partly to avoid price competition’ (Palamountain, 1955, pp. 30–31).

In fact, with the chain linking concept applied to retail markets, the problem of indeterminacy faced by Chamberlinian ‘group analysis’ probably reached its utmost limits: and it is surely worth remembering that this was precisely the first target of the Chicago criticisms against Chamberlin’s attempt to build a theory more general than Marshall’s: Stigler stressed the ad hoc nature of group analysis (Stigler, 1961, p. 63) and Friedman explained that such shortcomings made clear the inadequacy of Chamberlinian theory, which ‘offers no tools for the analysis of an industry and so no stopping place between the firm at one extreme and general equilibrium at the other’.<sup>22</sup>

## KIRZNER AND LATSIS

It was Chamberlin’s crime to pretend to handle imperfect competition with tools only applicable to perfect competition. (Latsis, 1976, p. 27)

In his seminal essay on ‘The nature of the firm’, Coase quoted Robertson’s image of how firms are conceived within the orthodox paradigm: ‘islands of conscious power in this ocean of un-conscious cooperation like lumps of butter coagulating in a pail of buttermilk’. In his turn, Israel Kirzner quoted Shackle to describe the mainstream economics view of the economic conflict in the market: ‘a smooth sea of perfectly competitive firms in equilibrium, interrupted here and there by a few monopolist whirlpools obeying a different law’.

What makes these two metaphors similar is the basic assumptions of a static environment and a perfect knowledge characterizing the orthodox approach to the nature of firm and competition. On the contrary, the market process approach to the operations of the economic system starts from truly opposite presumptions: a dynamic conception of time – which necessarily

involves change of the data available to each decision maker (and hence permanent disequilibrium)<sup>23</sup> – and ignorance, here intended to mean ‘radical’ or ‘utter’ ignorance. That is, lack of knowledge of various states of the world, which is not the outcome of a conscious computational calculus of the agents, as happens in orthodox models of ‘rational ignorance’. Unifying these two perspectives on time and ignorance, Kirzner and the new Austrian school of economics were able to develop the Hayekian and Misesian heritage versus a market process approach to microeconomics, where entrepreneurship and competition are seen as the two sides of the same coin.

In his seminal book *Competition and Entrepreneurship*, Kirzner deemed that his perspective immediately placed the selling cost problem in ‘an entirely new light’. To understand why it is necessary to grasp the inadequacy of the distinction between production and selling costs, which was acknowledged by Chamberlin himself, who became for Kirzner one of the most acute critics of the dichotomy, Kirzner explains: ‘As part of his *entrepreneurial* role, it is the function of the producer to go beyond the mere fabrication and delivery of a commodity to be available for the consumer. He must also *alert* the consumer to the availability of the product, and sometimes he must even alert the consumer to the *desirability* of an already known product’ (Kirzner, 1973, p. 136). The traditional (Walrasian) equilibrium analysis fails to explain how the market originates the products’ attributes and the quality of what is produced. But, as was acknowledged by Chamberlin himself, the product has to be conceived as an economic variable and the decision concerning what to produce and the attributes of the products is an entrepreneurial decision within the competitive market process.

With the decision on what to produce assumed to have been somehow made elsewhere, all the producer needs to do is undertake the outlays required to fabricate the product. In this faulty way of seeing things, the producer is viewed as producing a product for an *already guaranteed market* (or at least for a market that can be ensured through separate ‘selling’ activity); (. . .) such a view of the producer is appropriate only to a state of equilibrium. When we perceive the need for entrepreneurial decision-making by the producer, it is no longer possible to overlook the truth that all costs are selling costs. (Kirzner, 1973, pp. 144–5)

Confronting the problem of expenses which may alter the demand curve of the product, traditional economic analysis tacitly assumes that the product (and the industry identified by it) is a *datum*, making it possible to distinguish between outlays necessary to produce the physical merchandise and expenses which may alter the demand for it. But, as Chamberlin later acknowledged,

when the variability of the product is recognized (as it must be), possible confusion arises from the fact that *changing* it in general changes the demand for it (since it is then a different product). To point out that an expenditure ‘changes the demand’,

therefore, does not establish that it is a selling cost. On the contrary, if an expenditure shifts the demand curve to the right, it remains an open question (so far) whether the expenditure has resulted in a new product for which there is a stronger demand (and is therefore a production cost for the new product) or whether it has merely increased the demand for the old one (and is therefore a selling cost of the latter). Indeed the possibility appears that it may quite arbitrarily be regarded as either the one or the other. (Chamberlin, 1964, p. 59)

Porter and Steiner's close attention to the meaning of the market process in retailing clarified in what sense direct producers' advertising and selling promotion made possible by retailing establishments' efforts are complementary activities which may 'change the demand' for the product. But to overcome the intricacies of vertical relationships the product should be assumed to be an economic variable; consequently, the major source of bargaining power on the part of distributors in vertical relationships is the retailers' contribution to differentiation and product positioning in the market, that is the influence they can exert on the purchase decision of the consumers. 'This influence is applied in two major and interacting ways: the retailer controls or embodies some of the attributes the consumer may desire in the product (or) the retailer can influence the sale of the product through the provision of information' (Porter, 1976, p. 21). Thus, facing the problem of *positioning* the product in a market that is never *already guaranteed* for the producer, microeconomics meets marketing science and the managerial approach to the economic decision maker (as in the Lancaster model: see Lancaster, 1966), whereas decisional processes concerning the product's attributes, including those controlled by the retailers, become part of the entrepreneurial role of the producer in the dynamic scenario of the firms' selling activities. In sum, the product as an economic variable leads to a view of the competitive market process which is essentially entrepreneurial, because market participants, according to Kirzner's description, must be alert to detect opportunities not already discovered in an environment characterized by a permanent disequilibrium. In this process, competition is literally, according to Hayek's appropriate formula, a procedure for discovering new opportunities in the market necessarily interrelated with the entrepreneurial component of the human action.

Therefore the producers' decision to fix vertically the price of the product cannot be reduced to a purely logical (computational) problem of choice, because RPM is constitutionally inherent to the uncertainty which occurs where there is a mutual dependence between firms operating at different stages of the production process and both possessing partial monopoly power. Commenting on the Chamberlinian dichotomy, however, Kirzner was speculating on the *typical* selling outlay, namely producers' advertising. Vertical price fixing is a much more difficult problem to explain, because it involves

bargaining relationships between two levels of entrepreneurial conduct. Industrial organization cultural lag on the analysis of vertical restraints is basically due to this complexity. If, for example, in Scherer and Ross's handbook a chapter on the topic was added to the 1990 edition only, the location of this addition is revealing, because the chapter was inserted between the treatment of buyer power in vertical pricing relationships and the analysis of product differentiation: the source of the theoretical paradox pointed out by Scherer and Ross is precisely the fact that vertical price restraints is a complex problem involving both levels of firm conduct and strategy: partial monopoly power on the buyer side and differentiation processes.

Kirzner's analysis of the selling costs problem was part of a general appraisal of Chamberlin's monopolistic competition theory, which 'does provide a more faithful representation of the real world'; but

it appears that the very plausibility with which the new theory accounted for phenomena unexplained by the theory of perfect competition diverted attention from the real inadequacies of the older theory. The truth is that these inadequacies are fully shared by the theory of monopolistic competition. (. . .) It attempted to replace one equilibrium theory, in which the assumed conditions clearly violate the conditions of the real world, with another equilibrium theory in which the assumed condition appears to be in closer conformity with those encountered in the marketplace.' (Kirzner, 1973, pp. 113,114)

In sum, perfect and monopolistic competition theories share the limit of being equilibrium models, in which the relevant market process was completely ruled out.

Another way of underlining the paramount characteristics of equilibrium models is Latsis' label of 'situational determinism' for the hardcore of the neoclassical scientific research program (see Latsis, 1976, p. 1): perfect and monopolistic competition theories partake of the common feature of being driven by 'single exit situation' models; that is, accounts of the rationality of conduct where the agent is not involved in a genuine process of choice but simply reacts, in a highly constrained way, to situational consideration. Being an equilibrium theory, monopolistic competition tried to incorporate into the heuristic of situational determinism facts of economic life (such as differentiation and even variability of products) that it is not possible to trace back to 'single exit situations' models. 'The solution to several problems was expected from this modification, for instance, the problem of selling costs,' Latsis observed (*ibid.*, p. 28), but the expectation failed to materialize.

In other words, when differentiation processes are involved in bargaining relationships, and when the product is no longer a *datum* for economic inquiry, we come closer to 'multiple exit situations', where the actor choices are not highly constrained by situational considerations, the environment surrounding

these decisional process is dynamic, and there is a high level of interdependence among the actions of different agents. The vertical price fixing controversy is dominated by the attempt to reduce to a 'single exit' model facts of contractual relationships where the uncertainty of the outcome is an almost inescapable condition of real life. For example, Marvel and McCafferty's model (1984, 1985) of 'quality certification' is a typical product of this neoclassical heuristic: indeed, Marvel and McCafferty assumed that the high-quality distributor's intervention can make the demand for a product less elastic (in other words, improve its differentiation), but their conclusion regarding a free-riding effect more widespread than that postulated in Telser's model is founded on a perfect market assumption for distributive services (and, consequently, a lack of market power by distributive enterprises). Price theory, as applied to the vertical price fixing problem by the formal analysis developed by Telser and Bowman, dictates strict boundaries to the free-riding thesis: the lasting, obstinate attempt to evade this perimeter is clearly due to the degenerating features of the neoclassical research program, founded on the firm conviction, to follow Latsis' critique, that only the heuristic of 'single exit model' may confer a 'scientific' status on economic studies and investigations.

Yet distributive markets are not 'perfect' and 'each imperfection partially frees distributors from market constraints. To the extent that they are thus freed, they have some bargaining power over those with whom they deal. A manufacturer who has created consumer preference for his brands enjoys a bargaining advantage in his dealing with distributors. A dealer who benefits from consumer habit and from location is strengthened in his relations with wholesalers.<sup>24</sup> Monopolistic and oligopolistic elements in horizontal competition add uncertainties to vertical relationships and cause their outcome to rest in part on relative bargaining strength' (Palamountain, 1955, pp. 51–2). Thus, as Porter and Steiner strongly emphasize, 'the retailing sector for a product is in a position to bargain away rents from the manufacturing stage' (Porter, 1976, p. 22). So there is a conflictual dimension in the linkage between firms acting at different stages and, more generally, mutual dependency, and relative power relationships, leaves room for a complex texture of a bargaining process which can vary from a cooperative (even collusive) form to a conflictual and competitive one (see Steiner, 2000).

In its attempt to comprehend the intricacies of mutual dependence among different stages of the distributive process, antitrust analysis must be supported by the background of a renovated *political economy*, much more than by a degenerating, formalistic research program in *economics*. Indeed, it was Palamountain, actually the forefather of a second (or alternative) economics of vertical restraint, who drew attention to a crucial dualism in the analysis of classical economists: that which exists between the natural harmony of interests in the laissez-faire depiction of the impersonal market, where each agent

pursuing his self-interests acts for the advantage of society as a whole, and a theory of artificial harmony 'a theory of the way in which the total product was divided among interdependent yet opposing factors of production, a theory of rent, profits and wages, a theory of power relations' (Palamountain, 1955, p. 49). Understanding the vertical dimension of the economic conflict means grasping the different sides of a power struggle which governs, and at the same time is controlled by, the legal rules whose economic foundations antitrust analysis is called to explain.

## NOTES

1. In all this price fixing, the price received by the manufacturer is in no way restricted or even directly affected. His own price to the trade remains no less and no more. It is only the *resale* price that is sought to be controlled. Now, the manufacturer's interest, and indeed his only interest, would seem to be in his own receipts. So long as he settles the price which comes to him, why should he concern himself with the terms of further sale by jobber or retailer? Nay, his interest would seem to be that these middlemen, and especially the retailers, should sell as cheaply as possible, and advertise as much as possible their cheap sales. (Tauszig, 1916)
2. 'One of the most robust relationships in consumer goods economy is the inverse association between a brand's popularity, which often tends to be closely associated with manufacturer's advertising, and its retail gross margin. That is, dealers make much narrower percentage margins on strongly advertised brands than on less popular manufacturers' items and on their own private labels' (Steiner, 1985, pp. 151–2).
3. 'Dealers may expend on the product any amount of sales effort from the very minimum of indifference to the maximum of skillful and aggressive salesmanship. The manufacturer must be as attentive to winning their favor as to winning that of consumers through direct advertising. Especially the price of the product must be high enough to reward adequately, even generously, all those who control the distributive outlets. A large slice of these "margins" must be regarded as the cost of securing a demand (cost of selling) rather than as the cost of satisfying it (cost of production)' (Chamberlin, 1933, p. 122).
4. Note 5 of the Telser article reads: 'The argument in the text assumes perfect competition in retailing. However, if individual retailers are monopolists the argument needs modification. By protecting the minimum mark-up the manufacturer offers retailers more inducement to handle the product. This results in wider retail distribution, which may increase retail sales; simultaneously the average retail price is somewhat higher and that tends to decrease retail sales. A wise manufacturer weighs the net effect of these forces and adopts resale price maintenance only if greater net revenue results. In the rest of the paper, the argument is valid irrespective of the state of retailing competition.' (Telser, 1960, pp. 90–91)
5. It could be worth noticing that only Bowman used the same Chamberlin argument for this demonstration: that is, a comparison to the effects of manufacturers' price maintenance in markets, like farmers' markets for wheat, where the pure competition model holds; and we have got here what probably is the first mention of a 'free-riding effect' in antitrust literature on the topic: Bowman's reference to the pure competitor 'free ride' on the unlikely advertising expenses of a farmer producing an undifferentiated good (wheat) (Bowman, 1952, p. 144).
6. 'Mutual dependence of retailers on manufacturers and manufacturers on retailers to establish or maintain the partial monopoly power of each' (Bowman, 1952, p. 151).
7. Cf. Stigler (1988, p. 163), Posner.
8. In footnote 8, Telser cautioned the reader: 'The special service argument does not imply that the rise of discount houses was a reaction to widespread use of resale price maintenance. A



- discount house offers its costumers a less costly bundle of services and therefore lower prices. However, these services are typically unrelated to particular commodities and are not special according to the usage in this paper. (...) Their success is to be attributed to consumers' demand for this type of retailing' (Telser, 1960, p. 94, n.8).
9. The stock turn weighs the competitive advantage of the new distributive institutions in handling and coordinating a high-volume flow of goods, and it refers to 'the volume of goods processed in relation to inventory by a single set of facilities and personnel within a specified period of time. (...) The greater the stock-turn, the more intensive the use of existing personnel, facilities, and capital investment in inventory; therefore the lower the cost per unit' (Chandler, 1990, p. 29). Hence, for example, in 1887, *Macy's* six-monthly stock-turn was 6, an index which doubles the medium performance of contemporary department stores. (See Chandler, 1977, chap. VII.)
  10. Where a few large plants could meet existing demand, the 'cost advantages of scale reflected a manufacturer's market share. Normally, loss of share to a competitor not only increased his production costs but also decreased those of his competitors. (...) A sales force became the most dependable instrument for obtaining and holding a market share large enough to assure the cost advantages of scale. In addition, it provided a steady flow of information about markets and customers' needs and tastes' (Chandler, 1990, pp. 30–31).
  11. In *Scale and Scope*, Chandler chronicles the various achievements and failures of the mass production/mass distribution interaction in the United States, Germany and Great Britain.
  12. Chandler, for example, quoted Scott Moss' essay on dynamics without equilibrium: 'Provided that such a minimum efficient scale in transactions exists, the intermediary will have a cost advantage over its customers and suppliers only as long as the volume of transactions in which he engages comes closer to that scale than do the transactions volumes of his customers and suppliers' (Moss, 1981, pp. 110–11).
  13. In an evolutionary approach 'the nature of the "economic problem" is fundamentally different from that depicted in contemporary orthodox theory. The latter views choice sets as known and given. (...) In evolutionary theory, choice sets are not given and the consequences of any choice are unknown. Although some choices may be clearly worse than others, there is no choice that is clearly best *ex ante*. Firms facing the same market signals respond differently, and moreso if the signals are relatively novel' (Nelson and Winter, p. 1982, 276).
  14. Perhaps, it is worth partly quoting what Clark meant by 'theory': 'Theory must be the department of oversimplification; but dynamic simplifications are at least different from static. They include the tendencies toward equilibrium. But because these tendencies never reach their static limits, dynamic theory cannot use any features which are needed only to enable a model to attain this impossibly precise completeness. It follows that fully dynamic theory is bound to lack certain characteristics which are, to many theorists, the essential earmarks of theory' (Clark, 1955, p. 450).
  15. 'Ours is a political economy in the sense that economic processes are often channeled and influenced by acts of government and in the sense that power often is an important part of economic relationships; and ours is an economic policy in the sense that the economy, in turn, importantly affects political and governmental processes and in the sense that economic power is often translated into political power. Both power and competition play their roles in distributive markets; neither alone is sufficient to explain market processes' (Palamountain, 1955, pp. 2–3).
  16. Location, convenience, habits, personal ties between retailers and customer gives to the seller some control over the price beyond the 'price taking' assumption of the perfect competition model; differentiation – both as differentiation of the products handled and of the services offered to buyers – is, according to Palamountain, 'an even more obvious characteristic of distribution'. Distributive markets, furthermore, 'afford an excellent demonstration of Chamberlin's thesis even with regard to the way in which competitive forces constrain monopoly elements: because any control the seller may exert over the market is further limited by intertype and vertical conflict' (cf. *ibid.*, pp. 25–9).
  17. Steiner gives some examples of this attitude: the 1987 edition of the very prestigious *The New Palgrave Dictionary of Economics* 'contains no entries under "retailing", "wholesaling" or

- “distribution”. Even in introductory textbooks there is usually no reference to the topic, except for ‘distribution’, but ‘one finds that it does not have the usual meaning’, as is well illustrated by this warning found in Samuelson’s leading text, *Economics*: ‘Usually when an economist is talking about “distribution” he means the distribution of income (. . .) the man on the street usually means, by distribution, wholesaling and retailing – how goods once produced get into the hands of consumers. Try to avoid this last usage’ (Steiner, 1991, pp. 199–200).
18. Try to avoid here any reference to Samuelson’s warning (see previous note).
  19. Michael Porter comes from the Harvard Business School and is known as a world-wide master of Corporate Strategy. The methodology of business managerial instruction, with its ‘case study’ approach, created (or, perhaps, preserved) a scholarly tradition markedly distinct from industrial organization, and Porter’s contribution to the ‘second economics’ of vertical restraints go back to a book of some 25 years ago, which tried to ‘combine the two perspectives’, providing that ‘to advance, applied microeconomics needs to capture the richness and complexity of decision making in individual firms, investigate relations among vertical stages of economic units, and model the pervasive information constraints under which economic agents act’ (Porter, 1976, p. xi). Robert Steiner is a kind of irregular economist, very much skilled in marketing studies (usually high-hatted by the economic profession), and assisted by a managerial experience of his own: ‘As a former consumer goods marketing executive, Steiner has unusually perceptive insights’ (Scherer and Ross, 1990, p. 553).
  20. ‘Because the consumer must travel to the retail establishment it must be in reasonable proximity to him. Hence the relevant market for consumer goods may be as large as a city or small region, but certainly not larger and in many cases much smaller’ (Porter, 1976, p. 13).
  21. When each seller is in *close* competition with few rivals, but the markets are so overlapped and ‘intricately interwoven’ in a larger network, it would be arbitrary to mark off any area of the market.
  22. ‘The deficiencies of the theory are revealed most clearly in its treatment of, or inability to treat, problems involving groups of firm – marshallian industries. (. . .) Definition in terms of “close” substitutes or a “substantial” gap in cross-elasticities evades the issue, introduces fuzziness and undefinable terms into the abstract model where they have no place, and serves only to make the theory analytically meaningless – “close” and “substantial” are in the same category as “small” air pressure’ (Friedman, 1953).
  23. ‘The passage of time involves “creative evolution”; that is, processes produce unpredictable change. A process is not a mere rearrangement of *given* factors, as it is portrayed in deterministic models of “change”. If change is real, it cannot be completely deterministic: there must be scope for surprise’ (O’ Driscoll and Rizzo, 1985, p. 62).
  24. See Steiner (2000): ‘When consumers are willing to switch brands within store rather than stores within brand retailers will have high margins and manufactures low margins. When the strength of these preferences is reversed, so are the relative margins of manufacturers and retailers.’

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# 13. The competitive dynamics of distribution restraints: efficiency versus rent seeking

**Peter C. Carstensen**

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Forty years ago, Professor Telser (1960) asked why a manufacturer would want resale price maintenance. This raises two issues: why would a manufacturer want any restraint on distribution of its goods, and why would any economically independent distributor of goods accept any restraint on its discretion in reselling goods?

For 20 years following the Supreme Court's decision in *Sylvania*, the standard answer was that the manufacturer probably wanted to achieve efficiency in distribution. In *Monsanto*, the court adopted a very strict standard of proof for the conspiracy element of the violation because it believed distribution restraints were usually benign efforts to enhance the efficiency of the distribution process.

Such explanations were most enthusiastically embraced when the restraints were not explicitly price controlling. This line of thought reached its apotheosis in *Sharp Electronics* where the Supreme Court declared that vertical price fixing might have an anticompetitive objective, but 'Similar support [that is, scholarly authorities] for the cartel-facilitating effect of vertical non-price restraints was and remains lacking' (p. 726).

In a 1990 decision (*Atlantic Richfield*), the Supreme Court suggested in dicta that non-price restraints on retailers might facilitate anticompetitive strategic objectives. These dicta became the basis for the *Khan* decision in 1998. In upholding reasonable maximum resale price restraints, the court declared (*Khan*, pp. 15–16) that non-price distribution restraints could produce significant anticompetitive consequences. Thus the court has now returned to the pre-*Sylvania* proposition that vertical distribution restraints including non-price ones can be anticompetitive. Although it now accepts the idea that such restraints may result in opportunistic or strategic exploitation of consumers, the court is not clear about why or how such behavior would occur.

Legal-economic analysis of distribution restraints faces a serious problem resulting from the absence of a systematic description of the ways that

distribution restraints can serve non-efficiency goals. This chapter addresses that need by identifying a range of anticompetitive, strategic explanations for distribution restraints. The goal is to state the hypotheses that, if proven, could make such restraints unreasonable. The first step is to identify theoretically how distribution restraints can serve anticompetitive, strategic objectives. The second step is to show that these explanations provide plausible accounts of the facts set forth in some of the leading cases. In combination, these steps provide a powerful rebuttal to the conventional view that distributional restraints are very likely to be efficient or at least benign. They also provide a basis for developing more plausible tests of observed restrictive conduct in distribution.

The first section of this paper identifies some basic assumptions about economic behavior. The second sets forth a relatively comprehensive set of theories about how restraints on distribution might serve anticompetitive, strategic economic functions and applies these theories to the reported facts of one or more leading cases or other examples to show the explanatory power of each theory. The final section will advance a theory to explain why significant potential efficiency gains vulnerable to free-riding rarely depend primarily on contractual restraint to protect such efficiency from opportunism.

Although this analysis implies that the economic function of restraints on distribution is more likely to be strategic than one of promoting efficiency, the policy conclusion is not that the old *per se* rules should necessarily be restored. The goal of this analysis is primarily to demonstrate the inherently problematic nature of such restraints. Awareness of and attention to this perspective can in turn guide the formulation of legal standards, including when and why courts interpreting antitrust law might presume such restraints to be lawful or unlawful.

## SOME CENTRAL CONCEPTIONS OF ECONOMIC CONDUCT

Two propositions about business behavior seem uncontestable. First, businesses seek profits, not abstract efficiency. Second, every business must consider its future stream of profits as well as the immediate prospect of profit. Hence a basic question central to the choice of any particular strategy is whether it will add to long-run profit.

This profit-oriented, forward-looking approach to business decisions translates into the following choice: whether it is better to follow a course of conduct that entails less than optimally efficient distribution, but that is more likely to create and retain the largest profit, or whether it is preferable to seek

the most efficient present distribution even if that results in greater competition and potential loss of market position and profit. As stated, the answer to this question is obvious. Indeed, Posner has recognized that monopoly-seeking behavior is economically inefficient and undesirable but entirely rational from the perspective of the individual firm (Posner, 1976, pp. 8–22). Further, the more general learning from public choice analysis is that economic interest groups will usually seek protectionist and cost-inflating regulation rather than that which would produce efficient markets.

The tradeoff between present and future is also important. Once tomorrow's profit is a concern of the business decision maker today, there is a basis for taking less than the maximum possible profit today in order to retain above-average profits in the future. The great economic lesson of a repeated 'prisoners' dilemma' game arising from Axelrod's (1984) path-breaking work on cooperation is that the future usually casts a 'long shadow over the present'. Hence short-run profit 'satisfizing' (that is, cooperation with one's rival) is in fact often the best route to long-run profit maximization (Axelrod, 1984, p. 12). Further, the inherent logic of profit seeking is that businesses are indifferent as to how they achieve that profit. Facilitating the strategic goals of another enterprise, or implementing a cost-reducing strategy in a way that also enhances its capacity to exclude others is as good a way to make profit as lowering the cost of production or distribution.

The focus of this analysis is the interaction between economically independent firms operating at different levels of the process of production and distribution to the final consumer. In buying/selling the goods to be resold to consumers, such firms enter into agreements explicitly restricting the economically relevant discretion of one or both enterprises. Nonetheless, they retain the essential functional characteristics of independent enterprises.

Finally, three points need elaboration. First, the degree of market control that makes anticompetitive behavior rational is quite modest. The run-of-the-mill price-fixing case involves a local conspiracy covering a limited set of products or services in a small geographic area. Competition is not as general in practice as it can be in theory. Search and transaction costs are major barriers to achieving the competitive ideal. Hence parties in a vertical arrangement may well anticipate gains from restricting intrabrand competition in a geographically limited area. 'Monopolistic competition' provides a good overall description of the market for most consumer goods and services (Chamberlin, 1962). Brand names, special product characteristics, location and a host of other factors ensure that homogeneity will be lacking. Moreover, by promoting differences, firms achieve some pricing discretion: that is, imperfect monopolistic competition. Indeed, the existence of some market power in the retail market is an essential predicate to any use of distributional restraint. Without such power, the restraint will not constrain the reseller

because perfect competition ensures that perfect substitutes exist. A second implication of the fact that differentiated goods have a downward-sloping demand curve is that the producer and/or distributor can achieve profit (short-term and long-term) by manipulating demand as much as or more than by increasing productive efficiency (Carstensen, 1983, p. 500).

Second, to classify a restraint as cartelistic, whether on the producer or dealer level, does not require the parties to have a classic agreement to suppress competition. What is necessary is some level of understanding – tacit or expressed – about controlling competition. Such controls can take many forms, including setting the terms of competition, such as no price discounts. Lande and Marvel (2000) call these ‘category three restraints’.

Lastly, efficiency itself is an ambiguous notion. As used in this discussion, the concern will be with productive efficiency in both static and dynamic terms.

## EXPLAINING RESTRAINTS ON DISTRIBUTION

This section is divided into two parts. The first surveys briefly the efficiency-enhancing explanations for such restraints; the second offers a series of strategic explanations for producers and retailers entering into restraints on distribution.

### **Enhancing Efficiency in Distribution**

Discussions of distribution restraints do not distinguish among the relationships used to distribute products to consumers. This has contributed to the confusion in this area of legal and economic analysis. The ‘vertical restraint’ category lumps together two types of relationships. One involves functionally *independent* businesses in a buyer–seller relationship. Absent a contractual restraint, each party would be capable of making all necessary decisions about how to deal with the other level. Absent some market power at one or both levels, restraints would be pointless because independent firms would look elsewhere for comparable goods.

The usual efficiency explanations for restraints focus on the risks of free-riding or opportunism in connection with joint efforts by independent producers and distributors to market a good or service. The retailer has incurred costs or risks in reliance on a future price that is above its out-of-pocket, short-run selling costs. Thus it may be vulnerable to strategic behavior by other dealers who did not make the same investment. Conversely, if a producer makes investments in a dealer that the dealer can appropriate, such as special training, the producer may want to insist on a restraint on the use of that skill so



that the producer can recover its investment. A third potential risk is that the manufacturer can exploit the dealer by inducing the dealer to incur expenses such as those associated with market development and then betray the dealer by engaging a new dealer who has no need to recover the start-up expenses. These are the classic ancillary explanations for such restraints. Such restraints serve the limited function of ensuring that those who have incurred risks or made investments that are vulnerable to appropriation by others in the venture will be protected from such contingencies.

The other type of relationship is a *dependent* one in which one party acts as the agent for or has an independent contractor relationship with the other level. When the dealer functions as the agent or employee of the producer, it is not an independent actor, but rather must be constituted and directed by the employer/principle. The ‘restraint’ on price, customers, territory, or other dimensions of competition is no more than the reciprocal of the primary command that the agent–employee do specific tasks. Franchise and other partially integrated distribution arrangements are prime examples of this category. A significant group of cases involving distribution restraints in fact involve such functionally dependent relationships. Regrettably, neither the courts nor the academic theorists have developed a set of generally recognized functional categories that differentiate among relationships based on the degree of dependence.

No market power is required to explain restraints arising from dependent relationships. Of course, if a party has market power it may also find using such distribution strategies to be an effective way to exploit its power. Thus market power does not provide a good test for differentiating between such restraints and those involving functionally independent enterprises. The absence of market power, however, strongly suggests that any observed restraints reflect a dependent relationship.

### **The Non-efficiency Strategic Explanations for Distribution Restraints**

This subsection presents seven non-efficiency enhancing explanations for restraints. The list is not exhaustive, but is, I believe, reasonably inclusive.

#### **Facilitating a retailers’ cartel**

This is the most common anticompetitive theory of distribution restraints. A group of retailers seek to establish a price-fixing and/or market-allocating cartel, but they face serious problems of implementation and enforcement. A supplier is better positioned than the retailers collectively or individually to enforce the underlying restraints. Denying non-conforming dealer access to necessary supplies creates a strong deterrent to cheating. Moreover, the supplier can provide continuous oversight of conduct through access to dealer

records. This will reduce the cost and increase the effectiveness of determining whether a dealer has deviated from the agreement.

The motivation for most established dealers to join such an arrangement is not hard to discern. They expect to collect supracompetitive prices. Of course, to make above-market profits there should be some limits on entry and sufficient inelasticity in the demand for the products being controlled for supracompetitive pricing to be rational. If those two conditions are satisfied, then we could predict that dealers generally would desire a cartel that allowed them to collude over prices and/or output.

Why would producers agree to support such conduct which necessarily will reduce total sales volume? Consider first the preconditions for dealer preference. If entry into retailing in a sufficiently large area or scale to provide an alternative market is not easy and demand is somewhat price inelastic in the relevant range, the producer will not sacrifice very much if it agrees to support the cartel. Its expected gain from resisting will be slight, while the costs are likely to be substantial.

Coercion is not the only reason that a producer might facilitate a retail cartel. If a producer recognized that a cartel would be valuable to dealers, it could offer a cartel as an extra 'service' and collect a fee imbedded in the price of the goods used to facilitate the cartel arrangement. No case in the distribution area explicitly illustrates this aspect of the dealer cartel hypothesis, but some conventional horizontal cartels involved an organizer and administrator who promoted and administered the arrangement for a fee (see, for example, *American Linseed Oil*). In addition, some of the statements in Sylvania's promotion of its restraints on dealers are consistent with this theory (Carstensen, 1978, pp. 17–21). In addition, as discussed below, it may be rational for a producer cartel to share some of its monopoly profit with a retailer cartel as a means of creating a greater commitment to supporting the foreclosure of competition at both levels, thereby enhancing the barriers to entry.

The earliest Supreme Court case on restricted distribution is *Montague v. Lowry*. In that case retailers used the threat of a collective boycott to ensure that producers would deal with their cartel on very favorable terms allowing substantial dealer profits. Non-participants had to pay much higher wholesale prices and so were unable to be effective competitors. Similarly, the Retail Pharmacy Association induced over-the-counter pharmaceutical makers to engage in resale price maintenance. This was the most plausible explanation for the resale price maintenance in the *Dr. Miles* case (Bowman, 1955, pp. 826–32; Telser, 1960, pp. 96–104).

The Supreme Court treated *U.S. v. General Motors* as an example of horizontal dealer boycott (that is, cartel). The dealers in downtown Los Angeles threatened GM with a refusal to deal if suburban dealers continued to sell cars to or through unfranchised, discount stores. This collective action was consistent

with a dealer cartel that set higher prices for buyers in the city center inducing arbitrage by non-colluding dealers who undercut the cartel price. But there was a counter-hypothesis: if the city dealers made substantial investments in product demonstration and/or post-sales service, the out-of-area dealers were appropriating it through their discount sales (Forbes, 1981). Either way, the manufacturer made the sale and in fact it stood to gain at the margin if the lower price induced a few more sales taken from its rivals. Thus, assuming that an inquiry into the function of the restraint were relevant, a more focused evaluation of the evidence would seem essential to determine which hypothesis better explains GM's observed conduct.

### **Facilitating a manufacturers' cartel**

A major problem for any upstream cartel in consumer goods is that, if competition occurs at the retail level, it is hard to tell whether a co-conspirator is cheating or a retailer is engaging in independent conduct. Hence a producer cartel may restrain resale competition to reduce the ability of retailers to engage in behavior that would threaten the cartel. Such constraints make more transparent the source of any changes in price or other dimensions of competition. Public commitment to resale controls 'bond' each party in the cartel by ensuring that any dealer deviation is as an act of the upstream cartel participant.

Further, by restricting resale competition, the upstream conspirators can share some of the cartel profits with their dealers through inflated resale prices, protected territories or customer groups or limits on the methods of competition. Such sharing invites dealers to act as enforcers of the industry norms. Resale restraints also help ensure that the dealers do not compete away their share of the cartel profit.

Such a manufacturers' cartel implies dominance by a group of producers over a line of goods relatively free from direct competition and a dealer network that is sufficiently discrete that it can be controlled and regulated through such distributional contracts. As with any cartel, one would predict that demand should be relatively price-inelastic.

*Simpson v. Union Oil* may illustrate such a producer cartel situation. The record, while anything but coherent, suggests that the refiners were controlling retail prices to avoid price competition risks (*Simpson*, p. 19; Roth, 1981). A few petroleum refiners controlled a substantial share of retail outlets in California but would have faced the problem of detecting cheating in a low-cost and certain way. By directly controlling retail prices through the consignment device, they signaled that any deviation in resale price was cheating. Similarly, the exclusive dealing contracts also in California gasoline retailing in the earlier *Standard Stations* case are consistent with such a policing effort. Indeed, cases exist of gasoline refiner control of resale prices as a step in policing the upstream cartel relationships (*Crown Central*).

**Buying access to and/or facilitating exploitation of dealer relational power**

This is one of the more important but least well recognized ways that restraints can help producers make profits at the expense of consumers and economic efficiency. In the sale of many types of goods, retailers have a substantial amount of relational power with respect to customers. The easiest way to understand this power is that the seller has the position of an expert in the goods. Hence, when in doubt, a buyer asks for advice. This allows the seller to recommend which product is preferable.

If a producer can assure retailers with relational power that they will not face active price competition, such retailers have a strong incentive to promote that particular good. The manufacturer gets increased volume as retailers favor its goods. Hence the restraint may appear ‘pro-competitive’ because of the manufacturer’s higher sales. In fact, sales are being transferred from lower-priced to higher-priced goods probably with a decrease in the total volume of similar goods sold. Here the downstream ‘restraint’, it should be noted, empowers retailers to charge higher prices either because such prices are directly provided for or because competition has been so restricted that no other sellers challenge the retailer’s price.

In addition, several theorists have postulated that suppliers may rationally tie up retail capacity to make new entry more costly, thereby deterring it (Rasmussen *et al.*, 1991; Segal and Whinston, 2000). Here the foreclosure is the retailer’s selling capacity. Discounts based on volume or the percentage of sales made of the specific product line induce the retailer to limit its dealings with other producers. In an oligopolistic supply market, parallel behavior by producers can both be a rational self-protective response to a competitor’s practices and also serve the goal of raising potential rivals’ costs of entry.

Conversely, large retailers have the reciprocal capacity to cause their rivals to be foreclosed or restricted. Major manufacturers need large volumes of sales. If the leading retailers have substantial shares of national sales, a manufacturer may need access to those outlets. As a result it will regulate its dealings with less essential outlets to ensure favorable treatment by the essential ones. This can take the form of side-payments to the major retailer (slotting allowances), refusals to deal with competitors of the major retailer, or imposition of conditions that make the lesser firms less able and effective competitors (for example, *Toys ‘R’ Us*).

**Competitive response to efforts by others to buy access to dealer power**

This is the logical implication of the previous theory. If one manufacturer facilitates exploitation of relational power, its competitors may seek to retain their position by meeting or topping the first producer’s offer. If a producer has a different channel through which it markets its goods, or if it has created a distinct

demand for its products such that retailers feel obliged to stock the brand, it will not need to pursue this kind of strategy. But in many other situations, competitive pressures will be likely to force other sellers to adopt the same strategy.

This theory and the previous one are most usefully illustrated in combination because it is very difficult in practice to tell whether a specific restraint initiated or responded to attempts to get access to or facilitate exploitation of relational power. The *Parke, Davis* case is consistent with this theory. Parke, Davis might have sought to have retail druggists use their power to recommend over-the-counter type drugs to customers by ensuring them a high rate of return on each sale including repeat purchases. The discounters would have undermined this plan because, once the retail druggist had convinced a customer of the merits of a particular product, the customer would be able to buy the same thing at a much lower price by patronizing the discounter. Parke, Davis's concern for price advertising suggests that its concern was to keep the customers who patronized local pharmacies from engaging in price comparisons (*Parke, Davis*, pp. 35–6). Other customers, already price-oriented, who regularly used the discounters, were not the primary concern.

The *Schwinn* case also is consistent with this theory. In *Schwinn*, the bicycle maker imposed territorial and resale restraints on its retailers. Thus a bike shop would be the only Schwinn dealer in an area assured that it would not face competition in that product line. This encouraged the retailer to prefer Schwinn even though it had no inherent advantage over other bicycles. Having the Schwinn line ensured that the retailer would not lose a sale to another retailer willing to discount the product. The basic Schwinn bike was neither a complex machine nor did it require extensive pre- or post-sale service. Moreover, display did not involve a specialized investment. This suggests that any prima facie free-riding explanation for the restraints is weak.

The evidence in the *Sylvania* case is also suggestive of a relational power situation. Sylvania was a marginal producer of television sets in the 1960s, but it had one advantage – it had the capacity to produce color tubes which had become the preferred product line. In revising its distribution plan, Sylvania emphasized that it would provide its retailers with ‘elbow room’ in which to sell the product (Carstensen, 1978, pp. 17–21). The clear message was that the retailer would not face significant competition in the brand. The retailer can promote the Sylvania brand as a high-quality type of product (better than the popularly priced Zenith and RCA sets which all dealers had) uniquely available from this retailer. Given Sylvania's effort to present its product as a superior one, the symbiotic potential is evident.

### **Price discrimination among classes of consumers or territories**

A very important use for resale restraints is to facilitate price discrimination among ultimate buyers. The most important restraint in such situations is a

customer limitation. This can keep the lower-priced goods from leaking into the high-price markets. The retailers in such situations face quite different wholesale prices because the object of the discrimination is to maximize the profits of producers.

Price discrimination is effective only if the classes of customers can be kept reasonably discrete. The challenge is to differentiate among customers in ways that are enforceable and relatively invulnerable to arbitrage. The 1923 electric lightbulb case is a classic illustration (*General Electric*, 1926; Bowman, 1955; Telser, 1960). GE set a high price for ordinary consumers because their demand was price-insensitive. It then gave discounts to mid-sized buyers and very substantial discounts to very large users whose willingness to buy and use a greater quantity of lights was more directly related to price. GE prohibited resale of the bulbs, thus trying to reduce the risk of arbitrage. This system stayed in place into the 1970s. When GE was finally forced to abandon it (*General Electric*, 1973), the price of bulbs to consumers dropped substantially.

Discrimination in price can also be done on a territorial basis. This is a cruder way to differentiate among customers, but often it can be effective where demand or supply conditions vary systematically with territory. For example, the wholesale gasoline prices of brand-name refiners vary greatly within quite small territories, based on the refiners' control over the station's buying of gasoline and the micro-facts about the station location (Barrionuevo, 2000). By use of strict territorial assignments a producer can charge different prices to different retailers. The constraints on the freedom of station operators to buy gas from other suppliers (the franchise contract) and the difficulty of pumping gas in large volumes from retail storage tanks for resale to other franchised dealers precludes intrabrand arbitrage.

Beer provides another example of territorial price discrimination. Two forces affect the price of beer. First, there is the presence of competition and, second, the price elasticity of demand for the product itself (Carstensen and Dahlson, 1986). By restricting the beer wholesaler to a set geographic territory and forbidding other wholesalers from selling in that territory, the brewer can create separate retail zones for its product. It can then raise the prices it charges its wholesalers in those areas where its brands face little competition. At the same time, it can offer lower prices to other wholesalers who either face effective competition or who serve areas, such as college communities, where price may more significantly affect the quantity taken. Several unsuccessful litigations concerning the industry demonstrate this pattern (*Anheuser-Busch; Assam Drug Co.*).

### **Buying future loyalty to entrench an existing market position**

Another common explanation for a naked restraint is that it may help the producer acquire loyalty from dealers. The dealers agree not to use their power

to stimulate competition in the future (Rasmussen *et al.*, 1991; Segal and Whinston, 2000). The mutual advantage of such a strategy is clear. The producer gives up some of its current overcharge to the dealer and the dealer in turn provides the producer with protection against new entry and future price competition. This is different from the buying of relational power. There the dealer delivers specific present market exploitation capacity. Here the retailer has the capacity to threaten the longer-run viability of the manufacturer's power. Hence sharing with the dealers provides some insurance for the producer that its power will survive for a longer period of time. This is most attractive when entry into distribution, especially on the scale necessary to support competition at the upstream production levels is difficult. Then the loyalty of the existing dealer pool is significant to blocking or retarding entry.

McCraw's (1996) analysis of General Electric's program of enforcing resale price maintenance in the 1950s and 1960s provides a suggestive illustration. GE and the large department stores had a mutual interest in control over the market for small household appliances. GE enforced RPM (resale price maintenance) and the major retailers focused their sales efforts on GE products, thus creating barriers to new entry by other appliance producers. GE's insistence on RPM in turn created a barrier to effective entry by competing retailers because they could not compete on price with the established firms. Ultimately, entry occurred at both levels and GE abandoned its program. The cost of enforcement exceeded the expected gains.

Two additional illustrations suggest how restraints may buy loyalty against future competition. Standard Fashions was the dominant dress pattern producer, yet it protected its retailers from price competition while demanding exclusive dealing contracts in return (*Standard Fashions*). The quid pro quo here would seem to be that it shared some of its monopoly profit with the retailers if the retailers would help keep the monopoly power intact by not dealing with competitors. Because dress patterns are not complex, do not require extensive pre- or post-sale service and can be sold from a relatively compact display and inventory set-up, the efficiency hypothesis is questionable. However, the use of exclusive contracts would make sense if they had a foreclosure effect, and the price restraints ensured that the retailer would share in exploitation of the customer.

The *Monsanto* case provides a better documented illustration. Monsanto imposed resale price controls on wholesalers of its patented herbicide. As soon as that patent expired, competitors could produce the same product. Hence the challenge for the post-patent period was to reduce the incentives of the large dealers (the wholesalers) to look for alternative sources of supply. By ensuring that their prices remain high relative to their costs, Monsanto would give its wholesalers an incentive to keep its product dominant in the post-patent era. Even if new entry would occur eventually, if it were retarded by a few years,

both Monsanto and its wholesalers stood to make extra income. In this scenario, the price restraint proved Monsanto's commitment to sharing profits with its key allies and created an incentive that the wholesalers not seek alternatives (Schneider, 1984, pp. 1268–70).

### **Exploiting market power**

Several theorists have postulated that distribution restraints can facilitate direct exploitation of market power. This assumes a producer has market power, but has a problem in extracting the full gain potentially available. Two alternative scenarios have been suggested.

First, in the context of bilateral monopoly, the producer may face myopic monopoly resellers who set their prices based on their cost of the goods and their own monopoly profit. If the price of the goods already contains the producer's monopoly profit, the effect of cumulative monopoly profit is to drive price substantially above the optimal monopoly level. In such a situation, maximum resale price restraints, volume discounts or other requirements can cause the reseller to price appropriately in terms of the optimal monopoly price. This is the argument for the Supreme Court's decision in *Khan* upholding maximum resale price setting. Even more likely, given that the optimal monopoly price falls in the elastic part of the demand curve, both producer and retailer may 'under price' relative to the optimal monopoly price, that is, consumers will pay less and get a greater quantity (Friedman, 1986). Again the solution to this market exploitation problem is to restrict pricing discretion. The more closely the two (or more) levels cooperate, the more exactly they can price at the optimal level.

A different exploitation theory suggests that the producer may be unable to exploit fully its monopoly power (Gilo, 2000). It can then require dealers to take other goods or services essential to their business, thereby recapturing its unused monopoly power in the pricing of these other components.

The price discrimination examples also illustrate restraints that enhance the exploitation of latent market power. Customer resale restrictions in other cases may also have served this function. The best and clearest illustration, however, comes from a bilateral monopoly case, *Paschal v. Kansas City Star*. The *Star* terminated its independent dealers and proposed to rehire them as dependent agents in order to control their retail prices. The paper and the government as amicus argued the myopic bilateral monopoly theory; that is, that the independent carriers were charging a second monopoly price, thus reducing the *Star's* sales. However, the evidence showed that, for the overwhelming majority of subscribers, the *Star* would raise prices (*Paschal*, pp. 703, 705) By eliminating retail price uncertainty, the *Star* would be able to 'reap the full monopoly profit' (ibid., p. 703). Regrettably, the court upheld the *Star's* conduct because it failed to appreciate the explicitly anti-competitive,



exploitative objective of this change in distribution. Despite the flawed conclusion, the underlying facts clearly illustrate how a monopolist can manipulate its distribution to exploit its customers.

## Conclusion

Other studies provide additional support for the proposition that economic efficiency gains are not the only plausible explanations for the restraints on competition in distribution (for example, Overstreet, 1984). The Supreme Court was undoubtedly correct when it surmised in *Kahn* that such restraints may well serve anticompetitive functions.

The argument of this section is not that the anticompetitive, strategic explanations for the restraints discussed in the cases are necessarily correct. In some cases, such as *Simpson, GE, Dr. Miles, Parke, Davis* and *Monsanto*, there is little or no evidence to support a contrary conclusion. In other cases, such as *White Motor, Sylvania, GM* and *Sharp*, there is some greater possibility that the observed restraints might have facilitated some legitimate, efficiency-enhancing aspect of the understanding.

## WHY EFFICIENCY-PROMOTING RESTRAINTS ARE UNLIKELY

A contractual restraint is a fragile and vulnerable device. It works only if those subject to the restraint voluntarily respect it most of the time. Once it must be actively enforced against any but a handful of deviants it becomes a costly and unreliable method of controlling conduct. GE's experience enforcing its RPM program is a good illustration. Because GE's RPM created a substantial opportunity for price cutting as discount stores grew, it faced the necessity of vigorously enforcing its RPM. Ultimately, GE found it was simply too expensive to enforce these restrictions.

If achieving costly but real and substantial efficiencies also involves significant risks of free-riding or opportunism, the vulnerable economic actors are unlikely to incur the necessary costs or risks. Contractual restraints are too easily evaded or ignored when the gains to cheating are substantial, and restoring the status quo when such betrayal occurs is unlikely. Hence the more easily a significant value can be appropriated, the less likely that any contractual restraint would protect it effectively.

Such situations call for an innovative solution that transforms the vulnerable efficiency into an invulnerable one. The basic analysis is one of externality or spillover effects where one set of actors incur costs that can benefit others who have made no economic contribution. The fundamental solution is

to structure the overall project so that those who benefit necessarily pay, and pay in proportion as they benefit.

Such strategies will internalize the efficiency-enhancing dimension of the activity eliminating opportunistic risks. In the broader literature of industrial organization, we see this analysis used to explain vertical integration in production and the choice of a single enterprise rather than reliance on markets or contracts (Coase, 1937; Williamson, 1975).

The best exemplar of this internalization strategy at work in a well-known case comes from the *Sealy* litigation (*Sealy*, 1967, 1983; Mueller, 1989). Admittedly, *Sealy* is not exactly a distribution case, but it involves an analogous situation. The important point about the *Sealy* restraints is that they went to marginal issues of quality and sales efforts, if they addressed any efficiency issues at all. The key elements of component quality and advertising, the primary bases of the success of *Sealy*, but also the sources of potentially substantial free-riding or opportunism, were centralized in the *Sealy* organization (Mueller, 1989). All participants shared these costs and no one had the opportunity to shirk or free-ride. Hence, despite the relatively large number of participants, the internalization of key efficiency sources meant that the risk of traditional free-riding did not exist with respect to these elements.

While it is not necessarily impossible that joint enterprises will be driven to use restraints to control substantial free-riding risks, the most plausible response will remain that of internalizing the activity in such a way that free-riding is made unfeasible altogether. Then there is no need to rely on voluntary, discretionary adherence to a contract in the face of obvious economic temptation. One observes similar strategies in the context of workplace injury risk. Sophisticated employers redesign jobs and facilities to make accidental injury less possible despite careless conduct that violates safety rules.

In sum, the first and most efficient response to the risk of opportunistic behavior is to reframe the activity so that the gains are internalized or otherwise imbedded in a way that eliminates such risks. Only rarely and even then primarily with only modest or minor sources of efficiency will a contractual restraint be a reasonable means to avoid opportunistic risks associated with efficiency gains.

On the other hand, market exploitation strategies including the creation and allocation of market power are potentially more likely to use restraints. If separate operation of independent businesses is economically more efficient than further ownership integration, then the more likely source of gain from collaboration is in market exploitation. If integration produced no serious inefficiency, it would have ensured more effective creation and exploitation of power. However, if further integration yielded economic inefficiency, such enterprises would be particularly vulnerable if they sought to raise prices. Thus firms already have a particular incentive to engage in restrictive agreements that would preserve their economic efficiency and facilitate their market exploitation.

## CONCLUSION

I have not spoken here directly of the law or legal policy. Implicitly, I have suggested that finding anticompetitive, rent-seeking explanations for restraints on distribution makes such restraints less attractive and desirable from the perspective of public policy. There are, however, reasons why such restraints might not be generally condemned or that antitrust law should generally presume their lawfulness rather than insist on a hard look at each restraint or even presume their illegality. I leave such questions of law and policy to another day. My insistence here is a more limited but essential opening point: there is no reason to assume that a restraint on distribution is likely to be either benign or efficiency-enhancing. If anything, as this analysis has shown, the opposite inference is more likely. A fuller treatment can be found in Carstensen (2001).

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## 14. Cooperation, competition and collusion among firms at successive stages

**Robert L. Steiner**

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This chapter identifies and examines three relationships among firms at successive stages, focusing on those between consumer goods manufacturers and their retailers. The relationships are *cooperative*, *competitive* and *collusive* – the three Cs. Typically, a manufacturer–retailer relationship will contain at least the first two of these. I examine each of the three relationships as prologue to the last section of the chapter, which deals with category management. This is a fascinating, rapidly expanding format that has swept across the consumer goods economy. Category management potentially contains all of the three Cs and deserves the attention of competition authorities.

### COOPERATIVE

It is hardly necessary to enumerate the ways in which firms at successive stages can cooperate to their mutual benefit and that of society. The Chicago literature, especially, provides an efficiency explanation for virtually all instances of voluntarily adopted vertical restraints. The following is a good statement of this position by two economists at the Department of Justice's Antitrust Division (Schwartz and Eisenstadt, 1982, p. 4):

The fact that firms in a vertical relationship engage in complementary rather than competing activities strongly suggests that the motivation for employing vertical restraints is radically different from that for horizontal restraints. Competitors naturally will try to restrict each other's output either by forming a collusive combination or by driving one another out. Consequently, antitrust is rightly suspicious of any horizontal 'restraint of trade'. In contrast, *firms in a vertical relationship thrive on one another's efficiency*. Each desires increased output and lower prices of the other. It should therefore be clear that the interest of parties imposing vertical restraints are generally not antithetical to those of ultimate consumers. (Emphasis added)

## Vertical Channel Partnerships

In the past some manufacturers might have adopted vertical restraints in hopes of achieving these efficiencies while others sought to achieve that goal through franchising or downstream integration. But in many circumstances none of these policies is likely to be profitable or even feasible. Starting a little over a decade ago a new format emerged involving a different type of cooperation between pairs of independent manufacturers and retailers. So-called ‘vertical’ or ‘channel’ partnerships promised to bring cost savings at all stages of the vertical goods flow. *The key insight behind this movement was the realization that many costs in the distribution channel could only be slashed by information sharing and vertical cooperation.*

There were a number of preconditions to successful vertical partnering that were in place prior to the 1990s. First, there had been widespread adoption of bar coding, scanning and the development of sophisticated computer programs that enabled leading-edge retailers, such as Wal-Mart, to record sales of each individual stock-keeping unit (SKU) at the cash register and make the data available on a real-time basis to store managers and executives at headquarters. Moreover, both wholesalers and retailers began to recognize that their traditional method of computing item profitability – based principally on its gross margin – was inadequate. Aided by new cost-accounting programs, some leading wholesalers and retail chains began to allocate non-invoice variable costs and assignable direct costs against individual items and categories of goods. These programs, referred to as activity-based costing and direct product pricing, were essentially counterparts of the contribution margin pricing methodology long used by major consumer goods manufacturers.<sup>1</sup> Analyzing the results produced by this new costing algorithm, downstream firms such as Marsh Supermarkets often discovered to their surprise that the high gross margin item categories that they had assumed were the most profitable often were not. (See Burke, 1995.) Finally, the success of ‘just in time’ delivery, pioneered by Japanese automobile manufacturers, suggested that these techniques could also generate efficiencies in the distribution of lower-price mass-consumption goods.

Thus many of the largest chain retailers were now positioned to look upstream and enter into partnerships with major consumer goods manufacturers. With the recognition that data sharing on product movement, retail prices, inventory levels and other parameters was necessary to analyze potential savings in the distribution channel, Wal-Mart and Procter and Gamble were said to be the first to institute electronic data interchange (EDI) in their pioneering 1985 channel partnership. Through EDI, P&G had access to real-time daily sales, pricing and inventory levels of every Procter SKU at every Wal-Mart store in certain product categories. Soon Procter was to set up a

permanent staff cadre in Bentonville, Arkansas to interface with their counterparts at Wal-Mart. The vertical partnership was said to reduce out-of-stocks, eliminate redundant operations, reduce average inventories, speed up delivery times and enable Procter to plan its production schedules more intelligently (Drucker, 1992).

Through the early 1990s, channel partnering spread rapidly across the US consumer goods economy. Some major retailers and manufacturers had literally hundreds of partnership arrangements. For instance, by 1993, K-Mart had some 300 suppliers in its 'Partnerships in Merchandise Flows' program and the large apparel manufacturer, VF Corporation, had a like number of channel partners (Buzzell and Ortmeier, 1994). The authors describe the various areas in which savings have been achieved by such partnerships and reproduce an arresting VF trade paper advertisement promoting the partnership idea and proclaiming its superiority over the traditional adversarial relationship between manufacturers and retailers.

While most channel partnerships concentrated 'on the tasks of replenishment, order processing, and receiving and distribution' (*ibid.*, p. 15), other types of cost savings were often realized. For instance, in categories such as toys and apparel, where the major producers introduce a multitude of new items annually, the buyer at the retail level and the responsible executive at the manufacturing firm could quickly track the rate of turnover of new items. Under the old system the parties would wait until the end of the season, when the retailer counted his inventory. They would then bargain over the amount of excess stock the retailer could return or, in some industries such as apparel, the amount of the markdown money the retailer would receive so that he could close out the overstock. But with EDI both parties could identify the slow-sellers early on and could promptly negotiate a markdown allowance that enabled the retailer to sell off the excess inventory at a cut price while it was still in season (see Steiner, 1997).

The new vertical partnering arrangements encountered many organizational and cultural problems. The literature repeatedly identifies top management's most urgent task in building and maintaining partnership arrangements as the creation of a climate of mutual trust to replace the traditional attitude in which the parties regarded themselves as adversaries rather than partners. At the same time, firms began to ask how many vertical partners they could reasonably take on – doubtless one of the reasons that the individual partnership system gave way to the category management format in the mid-1990s (see the final section of this chapter). Still, as seen in the presentations at a 1992 conference sponsored by the Marketing Science Institute, most of the participating manufacturers and retailers reported that they had achieved efficiencies and looked forward to deepening the vertical partnerships to obtain additional types of savings.

## COMPETITIVE

That there is a strong competitive dimension to the relationship between consumer goods makers and their retailers (and wholesalers) is a recurrent theme in the channel partnership literature and a matter of repetitive experience among individuals with operating business experience. It has seemed incredible to this former consumer goods manufacturer that in law and economics only firms at the same stage are considered to be competitors. This view, mirrored in the Schwartz and Eisenstadt citation above and by other economists, also finds expression in the pronouncements of leading legal thinkers (Bork, 1966), in the Department of Justice and Federal Trade Commission (DOJ/FTC) Horizontal Merger Guidelines (revised 8 April 1997) and even in utterances by our Supreme Court (*Business Electronics v. Sharp Electronics*, 1988).

In fact, there are three areas of vertical competition. The first is over price, the second over the performance of functions whose exercise creates market power for the manufacturer or the retailer and the third is the vertical and horizontal product competition that characterizes the rivalry between leading national brands and chain store private labels.

### Vertical Price Competition

To determine whether two firms are competitors I have proposed this simple test: firms are competitors if they can take sales, margins or market shares from each other (Steiner, 1991, 2000). The vertical price competition between a manufacturer and his retailers is over their respective shares of the brand's final price. The vertical market share (VMS) of the retailer is his gross margin (RGM), roughly the difference between his selling price and the invoice cost of the goods he pays to the manufacturer. The manufacturer's vertical market share is  $1 - \text{RGM}$ .<sup>2</sup>

The simplest way to see that manufacturers and retailers are competitors by this definition is to picture a monopolist manufacturer who by definition has no horizontal competitors. Without any change in consumer utility functions, such a manufacturer can increase his sales and margins if intrabrand competition among his retailers becomes intensified as it would, for example, if substantial improvements in an area's transportation infrastructure lowered consumer search costs and thereby drove down the brand's RGM. Since the brand's retail price is now lower than any factory price, the manufacturer's demand curve shifts out, increasing his sales. Under most configurations of his demand and cost schedules, the manufacturer's new profit-maximizing retail price is higher, for example, his margin is also raised and that of his retailers is reduced. The manufacturer's good fortune was solely due to the capture of



vertical market share from his retailers. (See Steiner, 1991 and 2000 for a more detailed exposition, including a diagram of the process.)

This pure case is seldom encountered in imperfectly competitive, real-world consumer goods markets where both horizontal and vertical competition exist side-by-side. Here, the chief determinant of the relative vertical market shares of manufacturers and retailers is the strength of the brand's consumer franchise which depends on the behavior of consumers and can be expressed in a simple maxim. *When consumers are willing to switch brands within store rather than stores within brand, retailers will have high margins and manufacturers low margins. When the strength of these preferences is reversed, so are the relative margins of manufacturers and retailers.* Manufacturers' brand advertising has been the chief tool employed by consumer goods producers to strengthen their brands' consumer franchise, thereby driving down the margins of their retailers and increasing their own. Alfred Marshall, himself (1920, pp. 301–3), in commenting on the new phenomenon of brand advertising, noted that it tended to drive down retailers' margins while suggesting that it often raised manufacturers' margins – an observation that impliedly contradicted his own derived demand theorem. A host of empirical studies now confirm the tendency for leading advertised brands to have thinner retail gross margins. There is also evidence of the inverse association between margins at the two stages for brands with strong consumer franchises – where the VMS of the manufacturer is high and that of his retailers low – and for weak brands, where the vertical market share relationship is reversed. See Steiner (1973, 1978, 1993), Albion (1983), Albion and Farris (1981), Kopp and Sheffet, 1997).<sup>3</sup>

The above relationships are far more familiar to participants in consumer goods industries than to scholars in academia. My own education was greatly advanced when our toy manufacturing firm began in 1968 to advertise our Girder and Panel Building Sets – a product line that had then been on the market for several years. We were delighted and surprised to discover that in markets where the Building Sets had been televised retail price cutting suddenly erupted and retailers' margins and consumer prices plunged. *I also came to recognize that the dollar we took from our vertical competitors (our retailers) when the TV advertising drove down their margins was just as good as the dollar we took from our horizontal competitors (rival producers of construction sets) when consumers began to chose our sets over theirs.* This experience is discussed in more detail, and with diagrams in Steiner (1993).

Resale price maintenance (RPM) and to a lesser degree vertical distribution restrictions may be interpreted as strategies to call a truce on vertical competition. Under (minimum) RPM the manufacturer sets both his own price and the minimum resale price of his dealers and thereby establishes the vertical market shares of both parties. Retailers who cut below the price are terminated. Under maximum RPM, the manufacturer sets his own price and a maximum price at

which his dealers or franchisees may sell, again establishing the vertical market shares of the two parties. Consumers can be winners or losers when vertical competition is eliminated by vertical restraints. They have been benefited when vertical restraints have been used by producers of weak brands to enable their retailers to compete more successfully against the dominant brands in the category and to encourage retailers to do 'missionary work' on behalf of new product concepts. Perhaps more frequently such restraints have had harmful effects, especially in a dynamic efficiency context, by retarding the growth of innovative new forms of retailing with lower costs, a smaller market share and (typically) a different, but not overall inferior, package of services than incumbent retailers (Steiner, 1985, 1997).

Probably the greatest boon to consumers from vertical price competition in today's economy occurs when large retail chains bargain down the selling prices of dominant manufacturers, as they continually do, and must then pass the savings through to consumers because of the vigorous price competition at the retail level. Indeed, such vertical competition tends to exert a more powerful price depressing effect on the factory prices of leading national brands in a category than does horizontal competition among the brands.

### **Competition over the Performance of Functions**

Despite the views of Schwartz and Eisenstadt (1982), it is not universally true that 'firms in a vertical relationship engage in complementary rather than competing activities'. Many functions are vertically mobile. Either a manufacturer or his large retail accounts can hold stocks in its warehouse and ship it to the individual stores. Either 'detail men' working for the manufacturer or employees of the retailer can check store inventories, straighten up the shelves and erect displays in the stores. Depending on the dating terms, either party can shoulder the costs of financing the inventory, and so on.

There are two particular functions whose performance enhances market power, so that firms at different stages have often competed to perform them. These are the provision of product-specific information and of certification. While these functions are costly, they permit the party that performs them to take a good markup over the cost of providing them. Where consumers enter retail stores with the information they need to make their choices and believe that the brand's reputable manufacturer will stand behind his wares, manufacturers will have a higher VMS and retailers a lower one than when retailers perform these functions.

### **Direct Product Competition**

The third dimension of vertical competition takes the form of competition between leading national brands and the private labels of large market share

chains. This is one of the most effective forms of competition in the consumer goods economy (Steiner, 1993). We have noted that, depending on the strength of the consumer brand franchises, either manufacturers or retailers are likely to have wide margins. But when strong national brands face stiff vertical competition from the private label brands of dominant retailers, the two types of brands ‘keep each other honest’, and margins at both stages are constrained. The fierce intrabrand competition on the national brands depresses retailers’ margins and provides a price ceiling below which the private labels must sell to obtain consumer acceptance. At the same time the low retail prices of the established private label brands of the large retail chains and the chains’ ability to provide them with favorable shelf facings puts more downward pressure on the factory prices of a popular national brand than does horizontal competition from rival national brands.

## COLLUSIVE

Collusion between manufacturers and retailers to exclude competitors at one or both levels has taken various forms. Slotting fees are one of the latest manifestations that sometimes have this effect. This practice has come under increased scrutiny at the Federal Trade Commission (FTC), which recently negotiated a consent order with McCormick & Co., the dominant supplier of spice products to the grocery trade (FTC, 2000). McCormick was charged with granting up-front slotting fees and other discounts that required the retailer to devote a large portion – up to 90 per cent in some cases – of the space devoted to spice products to McCormick. Not only did this exclusionary conduct buffer McCormick against rival producers, but, since the payments were more generous to large ‘favored customers’, smaller retailers were disadvantaged (see Skitol, 2000).

Vertical and horizontal restraints tend to reinforce each other, so anticompetitive effects virtually always result where the two kinds of restraints have been combined. As the result of a complaint to it by warehouse clubs, the FTC commenced an investigation of the conduct of Toys ‘R’ Us, then the largest retailer of toys. The Commission found that the retailer had used its bargaining muscle as a large power buyer to induce even the largest toy manufacturers not to sell the season’s ‘hot’ new toys to the warehouse clubs, who sold toys at far lower prices than Toys ‘R’ Us. The text of the FTC’s Final Order (October 13, 1998) also suggested that the vertical deal had been cemented by a horizontal understanding, brokered by Toys ‘R’ Us, among the (somewhat reluctant) major toy makers, to adopt the restrictions on their dealings with the warehouse clubs that Toys ‘R’ Us had demanded.<sup>4</sup>

The light bulb industry furnishes a fascinating earlier example in which the

desired exclusionary result involved a combination of the buying-off of food retailers by offering them an enormous margin on the leading brands, something like *McCormick*, and a mixture of vertical and horizontal agreements, as in *Toys 'R' Us*. In 1973, after an extensive period of litigation, the Justice Department succeeded in breaking up a horizontal cartel in the manufacturing sector of the electric light business. However, certain distribution provisions of the cartel arrangements survived in practice and enabled supermarkets, then the leading outlet for ordinary incandescent light bulbs, to maintain for many years an extraordinary 55 per cent retail gross margin in that department, compared to the overall store-wide margin of about 22 per cent (*Chain Store Age Supermarkets*, 1977–82).

The collusive rules that produced this result required a supermarket to stock only one manufacturer's line, generally that of the leading brand, General Electric, or else that of one of the other 'Big Three' producers – Westinghouse and Sylvania. Alone among major categories, even the largest supermarket chains did not offer a private label light bulb, although such bulbs of good quality were available from reliable sources at much lower cost. Given that light bulbs are a relatively low-cost, infrequently bought, impulse purchase, intrabrand competition among stores was not sufficiently vibrant to cause rival supermarkets to cut the manufacturers' suggested resale prices, and interbrand competition within store was eliminated by the exclusive distribution rules.

In the early 1980s, in good part as a result of growing price competition from discount stores, some major supermarkets at last introduced a lower-priced private label. Its success caused rival supermarkets to lower the price of GE bulbs, which was soon matched by the first supermarket. In Washington, DC (and in some other markets where private label light bulb competition was introduced) the price of a 4-pack of GE bulbs in the major supermarkets fell from \$3.49 to \$1.99, while the private label bulbs were being sold at \$1.49. In other markets checked by FTC staff where no private labels were introduced, GE bulbs continued to sell in the range of \$3.40–\$3.60. (Steiner, 1985).

## CATEGORY MANAGEMENT: COOPERATIVE, COMPETITIVE AND COLLUSIVE

In the mid-1990s in the USA and slightly later in Europe and elsewhere, a new type of vertical/horizontal relationship became firmly established in the consumer goods economy. Known as category management, it has a great potential for creating efficiencies and a substantial opportunity for anticompetitive mischief. While it is closely and voluminously reported in the retail trade press, there are few if any articles in the academic literature in either law or economics that examine this new phenomenon.

In fact, there had been some earlier precedents in the tobacco and refrigerated products categories in which the leading producers, Philip Morris and Kraft, respectively, essentially selected the SKUs from among those offered by the category's manufacturers that their retailers would stock and furnished a 'plan-o-gram' which showed the space and position occupied by each item (Buzzell and Ortmeier, 1994). But the pervasive switch from the myriad of channel partnerships between a single manufacturer and a single retailer to a category-wide vertical and horizontal arrangement sprung from the supermarket industry and has now spread to discount stores, drug stores and various other types of non-food retailers. This development was doubtless facilitated by the decision of Procter and Gamble in the mid-1980s to abandon the brand management system, which it had pioneered, and to replace it with a category management structure (*Progressive Grocer*, 1995).

Supermarkets had been losing share to various 'category killers', warehouse clubs, supercenters and discount stores. Facing up to these challenges, and acting through its trade organization, the Food Marketing Institute (FMI) and its academic consultants at Northwestern University's Center for Retail Management, the supermarket industry produced a massive five-volume set of 'Category Management Implementation Guides' (Blattberg and Fox, 1995). The 140-page volume 3, 'The Category Plan', p. 1, defines category management as 'The distributor/supplier process of managing categories as strategic business units, producing enhanced business results by focusing on delivering consumer value.' It then sets out that a supermarket will generally select a single manufacturer (or sometimes a food broker) to serve as category captain. Typically, the captain is from a firm with sophisticated marketing know how and a large market share, such as Procter and Gamble, Kraft or General Mills. While recognizing that some retailers will use several co-captains to gain 'a more balanced input', the Category Plan (p.15) warns that 'This can backfire, however, because suppliers will withhold proprietary information and analysis to keep it out of their competitors' hands.'

The captain and his staff from the manufacturer would interface with a category manager and his team from the supermarket chain. Together they would fashion a strategic category plan for the supermarket that would hopefully cut costs at both stages, yet enable the retailer to offer a generally reduced assortment of SKUs that more closely reflected consumer preferences. Using better information, state-of-the-art cost accounting methodologies and sophisticated software programs, category management endeavors to provide a comprehensive procedure for selecting and pricing the SKUs the store will carry, for allocating shelf-space among them, and for detailing the store's promotional efforts so as to maximize category profits as defined by such benchmarks as gross profit dollars per linear feet of shelf space and gross margin per dollar invested in inventory. As with all good planning disciplines,

the category plan provides mechanisms for implementing the plan and a formal 'Scorecard' to assess how the targets were achieved.

The category planning discipline, as laid out by FMI, is extraordinarily data and labor-intensive and is almost always simplified in practice. Reading through the category management literature it is clear that lowering consumer prices is not one of its goals. Thus, where successful, category management might well increase total surplus without raising consumer surplus. The extent to which the efficiencies are passed through into retail price will of course depend on the vigor of competition at the retailing stage. In most categories stocked by supermarkets, competition in the US market has been keen, owing especially to 'intertype competition' from other retail formats, whose strong price-depressing role has long since been identified (Schumpeter, 1942, Palamountain, 1968).

The retail trade press and the speeches of consultants in the field repeatedly recite two mantras that are prerequisite to the success of category management programs. First, the traditional adversarial relationship between manufacturers and retailers must be replaced by a cooperative relationship. Second, there must be mutual trust that confidential information shared by the parties will remain confidential. As one author put it, a manufacturer who has shared confidential information with a retailing partner fears that 'this *traditional enemy* will reveal the secrets to rival manufacturers' (emphasis added); while the retailer is afraid that the manufacturer will pass on his confidences to competing retailers (McCauley, 1996, p. 19).

### **The Captain's Domain**

There are many variations in the basic structure. However, a central and pervasive feature is the powerful role of the category captain. As laid out in the FMI Category Plan referred to earlier, the leading consumer goods producers have analytical and technological resources that the retailer lacks. They have higher gross margins and can afford to purchase more marketing research and to assign more people to analyze data. They may also have sophisticated analytical tools, such as space management software, promotion planners and SKU-optimization packages. Such manufacturers are far better staffed than even the largest retailers with personnel holding advanced degrees in business and marketing who are skilled in advertising, consumer behavior, market research and so on. This high-powered staff is devoted to a relatively small number of product categories.

The supermarket generates an enormous amount of valuable scanner data. This can include information from the store's 'loyalty programs' that reveals why consumers shop at the store and the characteristics of store-loyal shoppers, and so on. And, of course, the retailer's staff benefits from first-hand

contact with the consumer. But no retailer can bring to the party the kinds of knowledge possessed by the large and sophisticated marketing staffs of the leading consumer goods manufacturers. Moreover, because a supermarket will carry perhaps 250 categories, its management is spread thin. Even in the largest food and non-food chains the retailers' category managers, who interface with the manufacturers' category captains, are invariably responsible for numerous categories.

To decide upon the profit-maximizing product mix, shelf space devoted to each SKU and the promotional program for the category, the captain must inform himself of each item's invoice cost, going retail price and gross margin, rate of turnover, linear feet of shelf space it has occupied and other performance indicators. The retail chain can usually provide such parameters for its own stores on the items it has stocked. Market research firms, such as A.C. Nielsen and IRI, sell the manufacturer much of this information on a nationwide basis for all items in a category. But their information may not be complete. So rival producers may be asked to turn over to the category captain supplementary data not available from the above sources. As one would expect, there appears to be a continuing issue over how much data competitors are expected to make available to the captain. Especially sensitive is information on upcoming promotions and on new product introductions. Yet this information must be forthcoming to construct an intelligent category plan.

In what might be termed the 'strong form' of category management, 'the retailer places the well-being of the entire category in the hands of a single supplier to the category' (Gruen, 1998, p 6). Robert Reynolds, a leading consultant in the field, told an FTC workshop earlier this year that a single category captain regimen has often characterized such categories as greeting cards, books, foil wear, hosiery, tobacco and freezer compartment products. In one structure, known as 'Vendor Managed Inventory' (VMI), the retailer entrusts all stocking decisions to the manufacturer, much as is done in dealing with a rack jobber.

By no means all retailers delegate such sweeping powers to a single captain. To counterbalance the natural bias of the captain towards his own products, some retailers formally arrange for second opinions from another category manufacturer or engage a 'third-party' advisor with no vested interest in the particular category (Fried, 1996; Hill, 1997). Executives of the north-eastern supermarket chain, Stop & Shop, related at the FTC Workshop (31 May and 1 June 2000) that their category managers consult several category manufacturers rather than appointing a single captain.

Captains are expected to be 'fair' in their selection of SKUs and in their plan-o-gram layouts. If they behave 'opportunistically', they are certain to 'catch hell' from both their horizontal competitors and their retail partners. To demonstrate this even-handedness, a captain must often de-list some of his

own SKUs in favor of a competitor's items. The product manager whose items were de-listed will often demand of the captain, 'Which side are you on anyway?' (Gruen and Shah, 2000, p. 9). Clearly, category management goes against the deeply ingrained culture of major consumer goods manufacturers, and the literature stresses that top management must take a very firm stance to change the culture. One wonders just what new compensation systems manufacturers have adopted to reward its captains for making recommendations to increase total category sales, which is a stated goal of category management, even when that means decreasing their own firm's sales.

For the retailer, the prerogatives of the buyer, who had always been responsible for selecting the items his chain would carry, have been severely circumscribed. He is likely to play a subordinate role on the category manager's team. But at least category management does not saddle the retailer's team with the handicap of 'being fair' to rival retailers. The retailer's category manager remains free to pursue the traditional objectives of increasing his firm's profitability and market share at the expense of rival stores.

## Efficiencies

The trade press and presentations given at annual conferences on category management and 'Efficient Consumer Response'<sup>5</sup> in the USA and in Europe report impressive cost savings so far achieved (mainly for retailers) and point to the potential for further efficiencies. The following is a sampling.

Some researchers have estimated that full implementation of 'Efficient Consumer Response' could produce savings of over \$40 billion in the grocery industry alone (Kurt Salmon Associates, 1993). The H.E. Butt Grocery Co., one of the leading practitioners of category management, reported that by improving its product assortment and trimming slow-selling SKUs it has saved \$12 million annually (*Food Institute Report*, 1999). Wal-Mart and P&G announced that a category management test in 15 stores with a control group of 25 stores showed a 32.5 per cent sales increase, a 46 per cent inventory reduction and an 11 per cent faster turnover rate (Fallon, 1999). A six-month test of category management in the cat box category found that retailers' sales were up 12.5 per cent, gross profit dollars rose by 9.5 per cent, and average inventory and warehouse space associated with the category were both slashed. The manufacturer was said to have gained by the increase in sales to the retailer (Domin, 1997).

In Europe, *Retail Systems Alert* (1998) provided a synopsis of category management results in Spain, the Netherlands and Sweden. In Spain, the tests resulted in a 28–46 per cent reduction in out-of-stocks and more efficient (fewer and larger per-load) handling of deliveries as well as a 0.5 per cent reduction in retail prices. In the Netherlands, a large supermarket chain and a



leading manufacturer in a category that includes margarine and other spreads initiated category management with the result that the supermarket increased its market share by 5 per cent while reducing its SKUs by 20 per cent and achieving other savings. In Sweden, partnering between the grocery chain ICA Handlarnas and Unilever in detergents produced a 9 per cent increase in turnover, a 22 per cent shrinkage in SKUs and a 16 per cent increase in the grocery chain's profits. The manufacturer and the retailer collaborated in generating a category plan that included promotions of both the manufacturer's brand and the chain's private label. From this and tests in other categories, the grocery chain concluded that 'joint plans were more valuable than individual plans' and has therefore begun to implement category management throughout its business.

The consulting firm Coopers and Lybrand reported that European food retailers had recently increased their expected savings from category management to 6.1 per cent of sales (*Retail Systems Alert*, 1997). Yet the same article and other observers have stated that the progress of category management in Europe has been slowed because manufacturers and retailers are finding it more difficult to shed their traditional adversarial relationships than their counterparts in the USA.

A study by Milton Merl & Associates and Deloitte & Touche, sponsored by 14 manufacturer, distributor and retailer trade groups, focuses on the savings yet to be achieved by re-engineering store-level procedures. Working together with upstream suppliers, retailers could make store-level changes aimed at reducing labor intensity through raising capital intensity. Half of the estimated savings would be achieved by re-engineering store fixtures, reducing shelf-stocking time and working together to create 'store-friendly' packages and 'store-ready' pallets. The study estimates that an 18.3 per cent saving in the cost of product handling, which would produce annual operational savings of \$16 billion, could be achieved by making capital expenditures of \$1.8 billion. Commenting on the study, a vice president-logistics for Fleming Companies, a large grocery distributor-retailer, stressed that cost reduction in the supply channel required 'joint industry cooperation' and a recognition that 'We can take a lot of costs out of the system if everybody understands what the other needs' (Reese, 1997, p. 50).

## **Doubts**

Despite the foregoing, many marketing academics, retailers and manufacturers are not sold on the benefits of category management. A 1997 survey of supermarket executives issued by Ernst & Young found that 73 per cent of supermarket executives opined that category management 'has brought little industry improvement and 40% believe its benefits have been exaggerated'.

The key impediments to its success are that it is ‘a nightmare to implement’ and the difficulties in overcoming ‘the historically strained relationships between retailers and suppliers and the organizational issues involved in transforming a retailer’s buying office into a category management team’ (Fleischer, 1997, p. 48). Many observers agree that the Achilles heel of category management is poor execution by retailers. Another criticism is that the tight focus on a category prevents retailers from examining cross-category opportunities, such as merchandising cold cereal with milk or frankfurters with buns and with mustard.

Manufacturers, too, often have doubts. An individual with a large consultant firm, whose clients include manufacturers that hold category captaincies, observed that the manufacturer does most of the work, yet is often forced to pay a good price for the privilege. She complained that some supermarkets were auctioning off captaincies and considered them as profit centers, just as they do with slotting fees. Reports in the trade press confirm this view and reveal that the fee for a captaincy may go as high as \$50 000–\$100 000 (Tenser, 1996). A survey by Silvermine Associates, reported in *Progressive Grocer* (1996), found that 21 per cent of respondents had been asked to pay a fee. In one-half of the cases the captaincy fee amounted to \$50 000 or more. In announcing its category management program, Wild Oats Markets, a natural foods retailer, stated that, to qualify as category captains, manufacturers will be required to pay \$15 000 (Nachman-Hunt, 1998). Winston Weber, a prominent consultant in the field, views charging for captaincies and charging slotting fees as practices that undermine a basic goal of category management which aims to discover and provide consumers with the items they want rather than those of suppliers willing to pay such fees to retailers (Griffin, 1997).

Other manufacturers are concerned that the captain and his team are becoming too close to their retailers and are putting the latter’s interests ahead of those of their own firm. Finally, a McKinsey Co. survey found that, between 1994 and 1997, in 17 food and non-food categories the brands of rival producers outperformed the brands of category captains in respect to unit and dollar growth in a significant number of cases. ‘These startling results raise an important question about the future of category management: can it really work both for the manufacturer and the retailer in view of their different objectives and their traditional disparity of interests?’ (Alldredge *et al.*, 1999, p. 18).

### **Potential for Collusive and Exclusionary Conduct**

Manufacturers abhor the idea of paying for category captaincies, and some of the most powerful of them refuse to do so (as with slotting fees). That many producers are nonetheless willing to pay for the privilege attests that the captaincy must be an advantageous role to play. But smaller producers state

that they cannot compete for captaincies. They are unable to afford the sophisticated software programs, nor can they spare the funds to buy the necessary data from the likes of IRI and Nielsen. Most of all, they cannot spare the services of key marketing executives and their support staff to man the captaincies. Moreover, retailers generally feel that manufacturers who are not major players in almost all segments of a category lack the requisite experience and information to serve as category captains.

On the other hand, even the largest and most sophisticated retailers cannot match the manpower available to a moderate-size manufacturer operating in only a few categories. According to a knowledgeable source, Wal-Mart recently required U.S. Tobacco (UST), the dominant manufacturer in the smokeless tobacco category, to compensate it for lost sales that resulted from Wal-Mart's acceptance of a UST rack that unfairly minimized the space accorded to non-UST brands. In essence, Wal-Mart felt that UST had abused its captaincy to favor its own product line at the expense of both its competitors and Wal-Mart. The retailer's category manager in smokeless tobacco was responsible for numerous categories. She was spread so thin that she was sometimes unable to exercise effective oversight in all of the categories for which she was responsible.

Small manufacturers also fear that the always difficult task of obtaining entry to the retail shelves of large market-share chains is exacerbated when the keys to that kingdom are in the hands of their more powerful competitors. The fears of smaller manufacturers and retailers are expressed in numerous articles in the trade press in the USA and Europe in respect to both food and non-food categories. For example, see the quotations from the 30 interviews reported in *Drug Store News* (1997) in its cover story on category management and those in the Parks and Fried story in the same issue. *The Economist* (1997) found that some smaller British producers were 'terrified' that category management would lead to stores using only one supplier. At the FTC workshop earlier this year, the CEO of a smaller tortilla manufacturer related in great detail the problems her firm had encountered owing to the discriminatory stocking and display decisions by the category captain from the dominant producer.

Some small and mid-size US drug retailers fear that the closeness of category management relationships forged between the leading manufacturers and retailers 'will make it harder for them to get new products quickly, have back orders filled swiftly or generally maintain a competitive edge' (Parks and Fried, 1997, p. 16). Still, in the grocery business, at least, food brokers and leading wholesalers often serve as category captains for smaller chains or independents.

An underlying objective of category management is to rein in the supposedly undesirable effects of vertical competition. This often brings the private label-national brand rivalry into sharp focus. Again, there are numerous ways

in which this matter is dealt with. These range from cases in which the category captain actually makes the key stocking, display and pricing decisions as to the retailer's private label, which threatens to smother the welfare-enhancing role of national brand-private label competition, to those where the retailer retains exclusive control over these decisions in the category management program. In the latter spirit, Wal-Mart recently introduced with much fanfare its private label imitation of Tide, despite its close vertical relationships with P&G. Some industry observers have even raised the possibility that certain leading private label producers might reasonably be selected as category captains (Cannondale Associates, 1996).

Given the widespread sharing of what once was considered proprietary information among competing manufacturers and the power over the fate of his competitor's items vested in the category captain, the opportunities for collusive and exclusionary conduct are clearly there. It is also worrisome that the geographic domain of captains from leading package goods manufacturers is very wide. A recent survey found that the three leading manufacturers in category management were 'plan-o-gram captains' in over 50 per cent of retail stores in the grocery and mass merchandiser sectors, in 67 per cent of the stores in the drug store and convenience store sectors and in 33 per cent of the stores in the warehouse club sector. The percentages for the 27 non-leading manufacturers in the survey were far lower. Yet in the grocery sector, almost half of the time the other 27 manufacturers were plan-o-gram captains in over 50 per cent of the stores (DeVincentis and Kotcher, 1995).

Taken as a whole, the evidence underscores the potential for exclusionary conduct that could increase concentration and market power in the upstream manufacturing sector of various industries. It also highlights the potential for horizontal collusion in the downstream retailing sector – perhaps effected through a 'hub and spoke' structure. Competing retailers with a common captain might in combination be sufficiently powerful to persuade a reluctant captain to administer a price-fixing conspiracy on their behalf. It is not at present known whether any of these anticompetitive outcomes have actually occurred. Indeed, most antitrust economists and lawyers in the USA are unaware of the existence of category management. That may be because, to my knowledge, there have been few if any articles on this topic in the scholarly journals they are likely to read. The extant information is from trade magazines plus a few articles in the retailing literature that focus on management implementation rather than on competition issues.

However, category management has just appeared on the radar screen of competition agencies in England and the USA. The UK Competition Commission is examining category management practices in its investigation of the supermarket industry. In its Remedies Statement (Feb. 2000) it puts forth and asks for comments upon numerous 'Hypothetical remedies on which

views are sought'. Remedy number 14x reads: 'no supplier to be given control of access to, or management of, supermarket shelf space'. In the USA, the FTC included a pioneering session on category management in its well-attended May 30–June 1 2000 workshop devoted primarily to slotting fees.

## **Conclusion**

Category management is the latest important venue in which the frequently encountered conflict between potential efficiencies and potential anticompetitive effects is being played out. While it has demonstrated that it can produce efficiencies, the very structure of category management is cause for concern, especially in its 'strong form' with a single category captain. Therefore lawyers and economists in academia, in private practice and in competition agencies must familiarize themselves with this pervasive and fascinating new structure. There is much yet to learn.

## **NOTES**

1. In the contribution margin pricing exercise, the multi-item manufacturer seeks to price a new item so as to maximize its contribution to the firm's overhead and profit by maximizing the excess of average revenue over the sum of its average variable costs and its direct assignable costs (such as the cost of artwork for the new item's package). This method produces almost the same optimal price as would be obtained by operating at the intersection of the firm's marginal cost and marginal revenue schedules, which procedure is easy to plot in an economics text but virtually impossible for business people to operationalize. For examples of this approach to pricing by manufacturers and the similar 'activity-based costing' algorithms now used by many wholesalers and retailers, see Steiner (2001).
2. For simplicity we assume here a dual-stage industry in which manufacturers sell their output directly to retailers who resell to consumers. The competitive relationships are not materially changed in a triple-stage world in which manufacturers sell a large part of their output through wholesalers (Steiner, 2001).
3. When a brand becomes popular, consumers readily recognize it wherever it is sold and it becomes an important item of consumption. Therefore retailers are forced to sell it at a competitive price and a low margin lest shoppers walk out of the store. Consumers not only expect retailers to stock their favorite brands, but they are generally unwilling to switch brands within store. Hence retailers have low elasticities of substitution with the makers of famous brands, permitting such manufacturers to enjoy relatively high margins. With a brand that lacks a following among consumers, shoppers are generally willing to switch brands within store rather than seeking it out at another store. The lax intrabrand competition produces a relatively high RGM, while permitting retailers to play one manufacturer off against another and forcing manufacturers to sell at low markups. See Steiner (1993, 2000) for a fuller exposition and Lynch (1986) for a formal model of this inverse association between margins at the two stages. However, both authors identify situations where, with a different pattern of consumer brand and store-switching behavior, margins at the two stages may be positively related or uncorrelated.
4. The Order was appealed by Toys 'R' Us to the 7th Circuit, which unanimously upheld the FTC's verdict on 1 August 2000. The writer served as a consultant to the FTC in this matter.
5. 'Efficient Consumer Response' is an umbrella concept initiated in the supermarket industry that requires a vertical partnership with suppliers to obtain the necessary information to

achieve its objective of increasing logistic efficiency. The information-sharing partner may be an individual manufacturer, although a category focus has recently become much more typical, as has been related.

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