

# Folded Spindled and Mutilated

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## BOOK REVIEW

FOLDED, SPINDLED, AND MUTILATED. ECONOMIC ANALYSIS AND *U.S. v. IBM*. Franklin M. Fisher, John J. McGowan and Joen E. Greenwood. Cambridge, Mass.: The MIT Press. 1983. \$27.50 (cloth).

Regulation of strategic behavior by a dominant firm poses difficult problems for antitrust courts and policymakers. The problems are particularly acute if the market involved is dynamic, involving not only price competition but other dimensions such as product innovation. The government's gigantic Sherman Act monopolization case against IBM and the companion private cases highlight the issues concerning strategic behavior in their classic form. The effect of these cases on antitrust law has been profound. One commentator suggests that the IBM cases have transformed antitrust law.<sup>1</sup> A finding of monopoly power now requires more than a demonstration of strategic behavior intended to create or maintain such power. Instead, if conduct is to form the basis of a monopolization charge, the government must prove the conduct is not competition on the merits.

How did the IBM cases create such a profound reaction? What economic arguments did the plaintiffs and IBM make? Was the effort to regulate the conduct of IBM "without merit?"<sup>2</sup> *Folded, Spindled, and Mutilated. Economic Analysis and U.S. v. IBM* by Franklin M. Fisher, John J. McGowan and Joen E. Greenwood seeks to answer these questions. The authors, who were members of the team of economists that testified for IBM, present a detailed review of the litigation position of IBM.<sup>3</sup> Fisher and his colleagues<sup>4</sup> conclude that

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<sup>1</sup> Sullivan, *Monopolization: Corporate Strategy, the IBM Cases and the Transformation of the Law*, 60 TEX. L. REV. 587 (1982).

<sup>2</sup> See F. FISHER, J. MCGOWAN & J. GREENWOOD, *FOLDED, SPINDLED, AND MUTILATED. ECONOMIC ANALYSIS AND U.S. v. IBM* 368-69 (1983) (reproduction of the stipulation filed with the court stating that the case was "without merit"). In addition to dismissing the case and acquiescing in the stipulation, Assistant Attorney General William F. Baxter wrote a memorandum informing the Attorney General of the dismissal. See Sullivan, *supra* note 1, at 639-43. Rather than a complete apologia of IBM, Baxter's memorandum states that IBM may have had monopoly power in a segment of the computer market and that some of IBM's alleged "bad acts" may have occurred in the manner and with the intent alleged. In the face of these conclusions, Baxter decided to dismiss the case because (1) the law within the Second Circuit was unfavorable; (2) the most convincing evidence against IBM resulted in a substantial monetary settlement by IBM; (3) trial errors might result in a reversal of any government victory; and (4) no sensible relief was available to the government.

<sup>3</sup> *Folded, Spindled, and Mutilated* was derived largely from Fisher's direct testimony for IBM and is primarily an analytic work. Franklin Fisher also coauthored a book which

IBM did not have monopoly power in the data processing industry and that its conduct was a legitimate response to the dynamic nature of competition in that marketplace.

The book amounts to a classic "Harvard School" industry study.<sup>5</sup> It traces the history of the data processing industry, describes the competitive strategies of firms, and assesses the state of competition within the industry. Litigation made available to Fisher a wealth of data not normally accessible to an academic economist. As a consequence, the book provides the reader with a ring-side seat to thirty years of tumult in perhaps the most dynamic industry in the United States. For that reason alone, the book is worth reading. In addition, Fisher includes a concise, finely executed twenty-page theoretical description of antitrust economics.<sup>6</sup> This section provides the nonmathematical lawyer with a valuable description of the role of market definition and an analysis of market conduct in monopolization cases. Fisher warns the reader that static economic models often obscure the nature of competition in the real world. Markets often may be in disequilibrium and, in these markets, the use of static models is quite misleading. Profits derived from market disequilibrium are not monopoly profits.<sup>7</sup> Moreover, the presence of such profits drives investment in the right direction and this new investment creates entry (and falling prices which should not be misidentified as predatory pricing). Those of us who teach introductory antitrust law courses and struggle with explaining to non-

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is a companion volume to *Folded, Spindled, and Mutilated*. See F. FISHER, J. MCKIE & R. MANKE, *IBM AND THE U.S. DATA PROCESSING INDUSTRY* (1983). This companion work, derived from a jointly authored piece of trial testimony in *U.S. v. IBM*, DX 14,971 ("the Historical Narrative"), presents a chronology of the development of the computer industry. Although there is some repetition between the two books, the historical narrative enriches a full understanding of the analytic work.

<sup>4</sup> Although the two books are a joint effort of Fisher and many of his colleagues at the Charles River Associates, the authors will be referred to collectively as Fisher for the convenience of the reader.

<sup>5</sup> See, e.g., F. SHERER, *INDUSTRIAL MARKET STRUCTURES AND ECONOMIC PERFORMANCE* 1-7 (2d ed. 1980) (introduction to type of industrial organization analysis created by Harvard Business School professors). Furthermore, Carl Kaysen, dean of the Harvard school economists, wrote the preface to *Folded, Spindled, and Mutilated*. Kaysen points out Fisher's intellectual debt to Edward Mason and the tradition of industry studies based on the structure-conduct-performance paradigm.

<sup>6</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 19-41. Fisher notes that competition among firms has a variety of elements: price, product quality, service, innovations in product and production. According to Fisher, a proper assessment of the state of competition in any market must consider all these elements.

<sup>7</sup> See *id.* at 219-64. Fisher presents a useful discussion of the theoretical difficulties in using accounting profits as an indication of monopoly profits and persuasively critiques the government's attempt to prove IBM had market power because of the firm's rate of return. Fisher concedes, however, that IBM was a highly profitable firm. The reader ultimately must guess whether IBM's profit level, if properly calculated, would help to determine its market power.

economists the static models of pure competition and pure monopoly would do well to add Fisher's description of more dynamic markets as a needed antidote to our more conventional descriptions.

In addition to its theoretical explanations, Fisher's book provides the reader with an explanation of why IBM has been so successful in innovation competition, which has been the driving force of the computer industry.<sup>8</sup> Fisher leaves the reader with the impression that IBM's success in innovation competition is a combination of good science, good management, and good luck. IBM has devoted considerable resources to developing leading edge technology. Fisher points out that IBM's innovations extend not only to its products, but also to its methods of manufacturing. Fisher also recognizes that IBM is a world class marketer whose great strength has been in bringing its technological improvements to market as successful commercial products. Fisher also lists several instances where luck has had a role in IBM's success.<sup>9</sup> For example, IBM originally developed high quality printers to support its older punch card business. This gave IBM a significant competitive advantage in the late 1950s when printer technology became important in the computer industry.<sup>10</sup>

Fisher's main task, however, is neither historical nor theoretical. The major portion of the book attempts to substantiate Fisher's assertion that the government's case against IBM did not involve mere errors of judgment about which reasonable policymakers could differ, but rather that the case was one which no reasonable economist could support.<sup>11</sup> This Essay reviews that conclusion.

For the government, the IBM case was a disaster. The Antitrust Division devoted substantial resources to the case over a period of many years.<sup>12</sup> Nevertheless, no systematic, critical, top-level review of the legal and factual premises of the case occurred until late in the Carter administration. That review ultimately led the Division to dismiss the case, concluding that any further effort was futile.<sup>13</sup>

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<sup>8</sup> *Id.* at 5-11.

<sup>9</sup> *Id.*

<sup>10</sup> Industry structures in part may reflect random (stochastic) growth patterns, which lead to concentration in some markets. See F. SCHERER, *supra* note 5, at 145-50 (discussion of this process).

<sup>11</sup> See, e.g., F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 1, 96, 130, 218 & 258.

<sup>12</sup> The record in the case amounted to over 100,000 pages of trial transcript; thousands of documents were introduced at trial. Upon dismissal, 13 years after its filing, the case was several years from a definitive conclusion.

<sup>13</sup> See *supra* note 2 (describing reasons for dismissal). A lengthy European Economic Community proceeding under article 86 of the Treaty of Rome considered many of the practices underlying the government's case against IBM. The EEC action was predicated on IBM's failure to give sufficient lead time and data with respect to peripheral interface information and IBM's practice of bundling memory and systems software

As a participant in the early stages of the review, I read some 10,000 pages of the trial transcript, hundreds of trial exhibits, and intensively discussed the case with members of the trial team.

In many ways, the case demonstrated all that can go wrong with complex antitrust litigation. The government and the court never consolidated or refined the legal issues or the factual disputes. As a consequence, discovery ran amok and at trial, the parties wrangled over issues not central to the litigation and factual disputes that should have been the subject of stipulations. Nevertheless, the government's case, at its core, was a conventional piece of antitrust litigation. The government claimed that IBM had monopoly market power in large mainframe computers optimized for a wide range of business purposes, and that at least part of that power resulted from acts that were not acts of skill, industry, or foresight. Fisher attempts to convince the reader that the government's case was fundamentally flawed on both of these issues.

I will review two areas in some detail to test Fisher's proposition. Was the government's attempt to define a relevant market and measure IBM's power in the defined market at all reasonable? Were any of the bad acts the government alleged arguably anticompetitive? To examine the latter area of the case I will focus on the "fighting machine" evidence. My purpose is not to prove that the government should have persisted in prosecuting the case or to prove that had it done so it would have ultimately prevailed. Rather, my goal is more limited: to examine the question of whether under accepted antitrust doctrine, fair grounds existed for litigating the positions the government adopted.

## I

### MARKET DEFINITION AND MARKET POWER ISSUES

The government's approach to the issue of whether IBM monopolized any market followed conventional antitrust outlines. The government tried to define a relevant market and then assess IBM's power in that market primarily by reference to its share in the de-

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with the price of the CPU. In addition, the EEC challenged IBM's refusal to provide certain types of software for use on non-IBM CPUs.

Article 86 prohibits abuse of a dominant position within a relevant product market; the provision is analogous to § 2 of the Sherman Act. For a general description of the development of article 86, see ABA ANTITRUST SECTION, ANTITRUST LAW DEVELOPMENTS 578-75, 593-97 (2d ed. 1984). In August 1984, the EEC and IBM settled the article 86 action. The settlement provides that IBM will offer the system 370 CPUs on an unbundled basis within the EEC. IBM also must disclose certain technical data on interfacing with the system 370 units and with the systems network architecture, allowing communication among computer systems. For a description of the settlement and its potential business importance, see *N.Y. Times*, Aug. 3, 1984, at A1, col. 2.

finer market.<sup>14</sup> Fisher's theoretical approach to measuring market power differs from the usual antitrust model. Fisher suggests that the process of defining a market is not an end in itself, but rather is only a useful and convenient "analytic expository device."<sup>15</sup> According to Fisher, the real question is how constrained a firm is in its pricing, output and other competitive decisions. This question may be obscured by the bright line legal decisionmaking process that determines whether a particular product is "in" or "out" of the market. If a market definition places near substitutes outside the market, the definition might not be "wrong" but it will overstate the market shares of included firms. Thus, as a matter of theory, Fisher gives much less weight to market shares as a measure of market power than do antitrust judges.<sup>16</sup>

In practice, the differences between the conventional model and Fisher's approach are not dramatic. If the definition of the market reflects all real demand and supply substitutes, market share analysis does tell the factfinder something significant about market power, particularly if the analysis considers barriers to entry. Demand substitutes are products seen by purchasers as reasonable economic substitutes. Supply substitutes describe the production capacity of rivals which could be diverted to production of the product in question if present producers attempted to exercise monopoly power. Barriers to entry reflect the ease of converting or producing new capacity in the industry. The presence of demand and supply substitutes and the conditions of entry constrain the market power of producers.<sup>17</sup> The reliance of courts on market share within this framework reflects a sensible concern for judicial administrability. After a court reaches a reasonable market definition, relying almost exclusively on market share (shaded by an analysis of barriers to entry) to determine market power simplifies decisionmaking by limiting the number of factors under consideration. The court identifies firms that meaningfully affect competitive conditions and measures power only with regard to those actors. Moreover, the approach does not create a substantial risk of errone-

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<sup>14</sup> See, e.g., *United States v. Grinnell Corp.*, 384 U.S. 563 (1963); *United States v. E.I. Du Pont de Nemours & Co.*, 351 U.S. 377 (1956); *United States v. Aluminum Co. of Am.*, 148 F.2d 416 (2d Cir. 1945) (all three cases use traditional antitrust model of review).

<sup>15</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 43.

<sup>16</sup> *Id.* at 43-46 & 99-100.

<sup>17</sup> The Justice Department has adopted this approach to market definition. Department of Justice Antitrust Division Merger Guidelines, 47 Fed. Reg. 28,493 (1982), reprinted in Sullivan, *The New Merger Guidelines: An Afterword*, 71 CALIF. L. REV. 632, 649 (1983). The guidelines were produced while William Baxter was in charge of the Antitrust Division.

ous decisions as long as the court identifies the proper demand and supply substitutes.

The bulk of Fisher's analysis attempts to prove that both demand and supply substitutes significantly constrained IBM's competitive strategies, and that as a consequence IBM did not have monopoly power.<sup>18</sup> The government contended that IBM monopolized the market for computer systems with multimodal capacity optimized for a wide range of business operations—in short, large mainframe computers sold for business purposes, the heart of IBM's business. At trial, the government alleged that only three other United States companies produced such a product. The government's market definition, however, excluded producers of parts of mainframe computer systems (plug compatible manufacturers of peripherals and CPUs ("PCMs")), minicomputer manufacturers, scientific computer manufacturers, service bureaus, and leasing companies. Fisher argues that these excluded firms restrained IBM and that any attempt to measure IBM's market power must consider all such sources of competition.<sup>19</sup>

The government supported its proposed market definition with internal IBM documents, testimony of industry participants, and expert economic testimony<sup>20</sup>—evidence that is the traditional grist for the antitrust mill. Internal IBM documents tracked IBM's competition on the same basis as the government's definition. Industry participants recognized the market as the government defined it.<sup>21</sup>

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<sup>18</sup> Out of *Folded, Spindled, and Mutilated's* 352 pages, Fisher devotes 220 pages to discussing the market definition and market power issues. In contrast, Fisher explicitly devotes 69 pages to discussing IBM's alleged bad acts. This balance appears to reflect IBM's trial tactics. If IBM could prove that it did not have market power, the court would not have to analyze its conduct. Of course, because the market power discussion includes issues such as barriers to entry, Fisher also critiques the government's attack on IBM's marketing practices.

<sup>19</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 60-64; *see, e.g.*, *Trans-america Computer Co. v. IBM Corp.*, 698 F.2d 1377 (9th Cir.), *cert. denied*, 104 S. Ct. 370 (1983); *ILC Peripherals Leasing Corp. v. IBM Corp.*, 458 F. Supp. 423 (N.D. Cal. 1978), *aff'd sub nom. Memorex Corp. v. IBM Corp.*, 636 F.2d 1188 (9th Cir. 1980) (private cases supporting broader view of product market involved).

<sup>20</sup> *Cf. Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d 488, 493 (9th Cir. 1977) (provides some support for government's market definition by stating that "the market for general purpose computers [could be] distinguishable economically from the market for . . . other general purpose systems").

<sup>21</sup> Fisher's presentation does not discuss much of this information. Fisher discounts, however, the applicability of "the everyday language of businessmen or even industry reporters" as a reliable guide to market definition. F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 46. Nevertheless, preexisting documentation used by businesses in making important marketing decisions seems to be the best evidence of actual competitive conditions in an industry. In addition, the 1982 Justice Department Guidelines attach relevance to practical indicia such as customer perceptions and the *Brown Shoe* test. Department of Justice Antitrust Division Merger, Guidelines, 47 Fed. Reg. 28,493 (1982), *reprinted in Sullivan, supra* note 17, at 649.

IBM, however, presented persuasive evidence supporting its view of competition within the data processing industry. Fisher cites examples where systems denominated as commercial were used primarily for scientific purposes and where the opposite occurred.<sup>22</sup> He notes that in lieu of purchasing new, more powerful systems, initial system purchasers and customers seeking additions to existing systems purchased non-IBM ("PCM")<sup>23</sup> peripherals. Because peripherals can amount to seventy per cent of the system's cost, Fisher argues that IBM had to react to PCMs in marketing its own systems. Fisher makes similar arguments concerning minicomputers. Through networking, a string of minicomputers can perform much of the work of a larger mainframe. Purchasing a minicomputer might also delay the need to purchase a larger, more sophisticated system to handle a growing data processing work load.

Fisher also maintains that service bureaus and leasing companies are competitors with system manufacturers.<sup>24</sup> Leasing companies serve as intermediaries between manufacturers and the ultimate user; they purchase equipment from the manufacturer and then lease it to end users. Because a leasing company may have more flexibility in arranging financing than a manufacturer and may have assumptions as to the useful life of the leased equipment, it may offer a lower rent for equipment than does the manufacturer. A leasing company may also create a multi-vendor system using lower-priced PCM peripherals that enable it to create a lower lease price than that offered by the manufacturer. Further, the leasing firms' portfolio of existing equipment overhangs the market and might constrain the prices a seller of new equipment can charge.<sup>25</sup> In addition to leasing companies, computer manufacturers face competition from service bureaus. A service bureau actually controls the computer and provides the end user with a finished product such as a completed payroll. Such a service can be an alternative to making an initial purchase of a computer system or buying a more powerful system.<sup>26</sup>

All of Fisher's attacks on the government's market definition are plausible. Some customers used all of the alternatives Fisher cites for the reasons Fisher presents.<sup>27</sup> The mere presence of

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<sup>22</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 75-76.

<sup>23</sup> The government's position, that PCM purchases were used only for system augmentation and not for initial systems, is factually incorrect. Furthermore, it ignores the possibility that augmentation sales of PCM equipment can affect new system sales.

<sup>24</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 83-89.

<sup>25</sup> *Id.* at 84. *But see* Greyhound Computer Corp v. IBM Corp., 559 F.2d 488, 493-96 (9th Cir. 1977) (excluding leased equipment from market definition).

<sup>26</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 86-88.

<sup>27</sup> A major difficulty in approaching *Folded, Spindled and Mutilated* as an independent



Fisher's alternatives, however, is not determinative. The more important questions are how often users turned to these alternatives, and whether IBM in fact significantly tempered its competitive response in systems sales because of the presence of this competition. Even assuming such substitutions occurred, did IBM retain its market power through control of operating systems software and/or CPUs?<sup>28</sup> These questions show that the issue of market definition is one of degree. Fisher seems to give all of the modes of performing data processing equal weight. The government, however, seems to have given weight to only one method of performing data processing. The opposing litigation positions produced just the type of "zero-sum" line drawing that Fisher's theoretical discussion deplores. The proposed framework promised a solution to this dilemma. But Fisher's status as an advocate for IBM leaves the reader without that solution.

Even with an agreed market definition, measuring a firm's market power by market share presents unusual analytic problems in the computer industry. Difficulties arise because machines are both sold outright and leased and at the same time new machines go into service, leases expire and lessees return old machines to the lessor. Many participants in the computer industry (including IBM) use installed base in measuring market share. This technique reflects a phenomenon in the computer industry called "software lock-in." According to this theory, customers purchasing new machines have a tendency to stay with the same vendor in order to avoid the costs of rewriting programs.<sup>29</sup> Past sales or leases, therefore, are some

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work without reference to the historical narrative or other historical information is the problem of time frame. Consider the example of the minicomputer; products presently denominated as minicomputers have capabilities that exceed those of earlier generations' mainframes. A mainframe producer today might consider minicomputer prices in setting its prices. Similarly, IBM now faces more competition from PCM CPUs than it did in the 1970s. Thus, the government was forced to shoot at a moving target with respect to market definition. Its arguments had more force when first made than they do now. In part, the case was dismissed because of fundamental changes in the market from the time the case was first filed. Without question, IBM faces more competition today than it did at the time of the CDC incident. Fisher gives a good account of the innovative nature of the industry. But the reader should not be misled into believing that the constraints IBM operates under today have always existed to the same extent that they do now.

<sup>28</sup> The government asserted that IBM was able to shift its monopoly profits from peripherals to CPUs to operating systems as the nature of its competition changed. The importance of IBM's control of the system software grew with the unbundling of fees for the use of the operating system. Although Fisher responds to the government's claim on operating systems, he argues as a matter of fact that IBM never recouped losses on peripherals with gains on CPUs.

<sup>29</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 123. Fisher believes that the costs of software conversion are not significant and do not create absolute barriers to entry. *Id.* at 199-204. The government's position, however, is supported by evidence similar to that cited in *Greyhound*, 559 F.2d at 495.

measure of future sales. The government used installed base as its primary measure of IBM's market position.

Fisher criticizes the government's approach to market share measurement on several grounds. First, he argues that the installed base method overstates the status of the early leaders of the industry by failing to properly account for trends in production capacity or shipments.<sup>30</sup> Moreover, the method is particularly inaccurate because of the leasing company effect. Installed base includes in a firm's market share systems sold to leasing companies for which the firm receives no revenue. These systems, however, constitute actual or potential competition to that firm.<sup>31</sup> Second, Fisher maintains that the government even failed to measure installed base properly because it did not reduce the value of older machines still in the installed base to their present value in the market.<sup>32</sup> In sum, Fisher argues that no single measure of market share accurately reflects market share in a lease and purchase market. Instead, all potential measurement techniques (net shipments, total revenue, installed base at present value, value added) must be considered. Using these methods, Fisher claims that IBM's market share in the early 1970s was between 33% and 43.4%,<sup>33</sup> substantially lower than the government's claim of a market share in excess of 67%.

Fisher's approach to measuring market share hits the weakest part of the government's case. The government's approach appears incomplete and contrived. Installed base is only one of many market share measures, and the government's calculations of this statistic appear incorrect.<sup>34</sup> Fisher's multivariant approach is much richer; the comparison of several measures gives a clearer picture of present competitive conditions and likely trends. Nevertheless, Fisher's numerical presentations cannot be taken at face value. They are dependent on his market definition. The reader is left to guess what IBM's market share would be if Fisher's multivariant approach were applied together with the government's market definition. Fisher's 43% figure, which only represents hardware production, is closest to the government's market share figure. If products such as minicomputers are excluded, IBM's market share might approach the figure used by antitrust courts as an index of monopoly power. Even though this crucial measurement presuma-

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<sup>30</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 108.

<sup>31</sup> *Id.* at 107-08 & 123.

<sup>32</sup> *Id.* at 124-27.

<sup>33</sup> *Id.* at 111-19.

<sup>34</sup> In determining IBM's market share, the government included PCM production and leasing company machines and failed to discount older machines still in the installed base. These decisions tended to overstate IBM's market position, particularly in latter years.

bly is available, neither the litigation documents nor Fisher's presentation address it.

## II

### BAD ACTS—THE FIGHTING MACHINE ISSUES

Central to the government's case in its attempt to prove that IBM abused its market power was IBM's introduction of two products in the 1960s,<sup>35</sup> the series 360/90 scientific "supercomputer" and the series 360/67 time-sharing computer. The government labeled each of these products "a fighting ship," a product whose primary purpose was not to maximize IBM's short run profits, but rather to injure IBM's competitors and preserve IBM's market power.

One of the most significant industrial innovations in American economic history was IBM's introduction of the series 360 line of computers in the mid-1960s.<sup>36</sup> The 360 line included a series of compatible computers providing business with a range of capabilities that significantly advanced the state of the art. The products were a huge commercial success and are largely responsible even today for IBM's dominant position in the computer industry.<sup>37</sup> The 360 line, however, left open several market niches that IBM's competitors attempted to exploit.

One niche was the scientific supercomputer. Control Data Cor-

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<sup>35</sup> The government challenged several other practices of IBM. First, the government claimed that IBM's practice of bundling hardware, software, and service for a single price raised entry barriers. Bundling formed the basis of liability in *United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295 (D. Mass. 1953), *aff'd*, 347 U.S. 521 (1954) (per curiam). In the computer industry, however, the practice seemed to result from customer demand. Customers in the computer industry are buying more than hardware. They are seeking solutions to particular business problems, *i.e.*, a complete package. The government *factually* never linked the bundling practice to IBM's market power. The government also attacked the IBM practice of giving educational institutions substantial discounts. This practice is supported by national policy as expressed in the Robinson-Patman Act, 15 U.S.C. § 13(c) (1982). Another asserted bad act was IBM's pricing practice with respect to PCM peripherals. The pricing allegations on peripherals formed the core of the unsuccessful private actions against IBM. Although the government introduced strong evidence of IBM's intent to monopolize the peripherals business, it never proved that IBM ever priced its peripherals below total cost. Finally, the government claimed that IBM's changes in the relative price of leasing and purchasing systems represented an act of monopolization. In part this claim formed the basis of the private action in *Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d 488 (9th Cir. 1977). The government also asserted that IBM periodically encouraged leasing to increase barriers to entry into the market. Again, however, increased leasing seemed to result from customer demand. Customers wanted to shift the risk of technological obsolescence to the manufacturer or to use leasing as a way of financing equipment procurement. Without the fighting ship incidents, therefore, the government's case rested on marginal factual allegations.

<sup>36</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 6.

<sup>37</sup> *Id.*

poration ("CDC") filled this market segment with its 6600/6700 systems. These CDC products were the most powerful computers then available. They enjoyed considerable commercial success, making sales to the leading edge prestige university and government purchasers.<sup>38</sup> IBM perceived such accounts as particularly important; the manufacturer of the industry's most powerful computer gained considerable sales and promotional advantages and attracted the best young talent. In addition, development of such a product created innovative techniques that might be used profitably on subsequent products.<sup>39</sup>

The CDC supercomputer threat attracted the attention of IBM's top management. At the direction of the company's chairman, Thomas J. Watson, IBM gave the development of a competing supercomputer top priority. IBM developed the series 90 computers and began to offer these products to selected customers when they were at a rather preliminary stage of development. Even when IBM formally announced the series 90 products, the product remained virtually untested. As a consequence, IBM's legal and product test departments did not concur with the product announcement.<sup>40</sup> In addition, the record is unclear as to whether, at introduction, IBM intended to make a profit with the series 90 product. The government claimed that artificial sales estimates led the IBM accounting department to conclude that the supercomputer project would be profitable. The government argued that at realistic sales levels the accounting department would have predicted that the series 90 project would operate at a net loss.

As commercial products, the series 90 computers were failures.<sup>41</sup> Technological difficulties hampered development of a key integrated circuit, deliveries fell substantially behind schedule, and sales were low. The only computer in the line that sold in any numbers, the model 91, produced losses in excess of \$100,000,000. In the two years after IBM introduced the series 90 computers, however, CDC also lost money.<sup>42</sup> The government claimed CDC's

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<sup>38</sup> *Id.* at 277-79.

<sup>39</sup> *Id.* at 280.

<sup>40</sup> Fisher excuses this action as reflecting the industry norm. Fisher also asserts that IBM only intended the product test department to play a "devil's advocate" role in the company.

<sup>41</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 278.

<sup>42</sup> Fisher fails to inform the reader about the CDC loss. He only cites the fact that from 1965 to 1969 CDC's EDP revenues tripled. *Id.* at 279. My point is not that a factfinder would invariably conclude that the CDC losses were the consequence of IBM's marketing strategy, but rather that Fisher should have included some discussion of the problem. Another difficult issue that Fisher does not discuss fully is the government's apparently conflicting claims that scientific computers were outside the systems market and that IBM's conduct directed at a scientific computer manufacturer was an exertion

losses were a consequence of IBM's conduct. CDC also sued IBM, alleging predatory pricing. IBM settled the CDC suit for an estimated \$100,000,000.<sup>43</sup>

Fisher argues that the introduction of the series 90 was not a predatory act. First, he suggests that in measuring profit and loss from any project, proper accounting methods should consider technological fallout benefits. IBM's accounting system did not recognize such gains. Even without fallout benefits, IBM's witnesses thought that IBM intended to make a profit on the series 90 project. Fisher maintains that if technological gains had been included in the series 90 accounting, IBM's anticipated profit would have been even greater. Second, Fisher asserts that the series 90 project might have gone forward in a competitive market with an accounting loss because of the necessity of undertaking the attendant research and development costs. Finally, Fisher suggests that even if the government claim that IBM's sales projections were unreasonably high was correct, the competitive harm that CDC suffered as a consequence of the series 90 introduction was not substantial.<sup>44</sup>

Introduction of the series 360/67 time-sharing system presents a similar fact pattern. In late 1964, General Electric ("GE") offered an advanced time-sharing system, an important new capability that allowed a number of users to operate simultaneously on the computer, each user appearing to have access to the capabilities of the entire system. IBM received considerable pressure from sophisticated users to develop a comparable product. IBM embarked on a major program to meet the need for advanced time-sharing. By spring 1965, IBM was bidding a time-sharing product to selected customers, and in August 1965, it made a full-scale announcement of the product, again without the approval of the product test department.<sup>45</sup>

Whether IBM intended to make a profit on the model 67 is unclear. Production of this machine certainly displaced production of other machines that were very profitable and heavily backordered.<sup>46</sup> The model 67 was an undisputed marketing failure. The development of time-sharing software was much more complicated than an-

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of monopoly power over the business systems market. One answer that might link the two claims is that companies like CDC were the best potential entrants into the business systems market. This theory also might have buttressed the government's peripherals case.

<sup>43</sup> IBM Chairman, Thomas Watson, wrote on his copy of the CDC complaint that the charges were not true, except with respect to the model 91.

<sup>44</sup> F. FISHER, J. MCCOWAN & J. GREENWOOD, *supra* note 2, at 279-82.

<sup>45</sup> *Id.* at 298.

<sup>46</sup> Assuming that sales were deferred and not lost, Fisher argues that the only loss IBM could have suffered from the fact that other more profitable machines were back-ordered was a small loss of putative interest on deferred sales. *Id.* at 281.

anticipated, and production of the model 67 was delayed. IBM apparently lost some \$80,000,000 on the project and paid substantial damages to selected customers for the product's shortcomings. Fisher's defense of the marketing of the model 67 is similar to his defense of the series 90. IBM was responding only to the imperatives of innovation competition. The company anticipated making a profit on model 67 sales and in any event obtained substantial technological fallout benefits from the project.<sup>47</sup>

Whether the series 90 or model 67 incidents constituted anti-trust violations raises difficult factual and legal issues which Fisher's analysis does not completely address. For example, what legal standard should courts apply to new product announcements by firms with market power? Can inaccurate and premature product announcements be acts of monopolization? In the computer industry, preannouncement of products is a way of life. Customers may benefit from the practice by being able to plan future purchases with more reliability. Yet a factfinder might have found that the tale told here was not wholly the product of accidental misstatement and excusable industry tradition.

In the core area of selling large systems designed primarily for business use, CDC was a significant potential competitor and GE was a significant actual competitor of IBM. The government might have been able to prove that the premature announcement of the two products in question significantly affected the growth potential of CDC and GE. Under these circumstances, a legal rule that imposed a special duty on a monopoly with respect to advance product announcements might be warranted, particularly if the announcements lock actual or potential competitors out of a market. One way lock-up occurs is when a customer foregoes or delays the purchase of a competing firm's product and awaits the availability of a comparable product from the dominant firm. Antitrust doctrine places some restraint on firms with power that other competitors do not have. Market power, therefore, could justify imposing a higher duty regarding product announcements on a dominant firm.

Imposition of a legal obligation with respect to product announcements is dependent on a finding of market power and a nexus between that power and the effect of erroneous preannouncements. Innovation is a process that the antitrust laws should not hinder. But intentionally (or recklessly) false statements that have demonstrable anticompetitive effects are not the stuff of skill, industry, or foresight.<sup>48</sup> The sensitive legal problem is to structure a legal

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<sup>47</sup> *Id.* at 284-88.

<sup>48</sup> See Ordovery & Willig, *An Economic Definition of Predation*, 91 YALE L.J. 8 (1981); Comment, *Innovation Competition: Beyond Telex v. IBM*, 28 STAN. L. REV. 285 (1976) (in-

rule that catches truly anticompetitive conduct without creating disincentives to innovate. Because of the necessity to find some nexus with the maintenance or creation of market power, preannouncement will rarely have a significant anticompetitive effect reachable under the antitrust laws. In those instances where it does, however, a legal rule that inhibits the intentional or reckless use of the prac-

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novation competition can form basis of § 2 claim). For a contrary view, see Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981). Professor Easterbrook believes that neither pricing strategies nor innovation strategies should give rise to § 2 liability. The crux of his argument on innovation competition is that "[a]ll innovations involve some short-term sacrifice—the amount invested in research and development. . . . In fact, the most desirable innovations would seem to be the most predatory, for R&D costs (the sacrifice) and market share (the result) both may be high." *Id.* at 306 (emphasis in original). In Professor Easterbrook's view, courts are not competent to determine either the technological reasonableness of the innovation or the net consumer wealth effects of the strategy. Moreover, allegedly predatory conduct is frequently self-detering because the claimed predatory strategy is unprofitable. As a result, the legal system should not devote additional resources to regulate conduct that penalizes itself, particularly when the adopted legal rule might also deter socially beneficial activity. Professor Easterbrook's argument has some force when applied to pricing suits. The substantial loss attendant with the initial investment in a predatory strategy is easily measured. This loss must be weighed against the possible gain associated with future monopoly profit. Modern managerial theory suggests that managers should and do discount speculative future profits substantially in making investment decisions. If managers follow this model of decisionmaking in pricing decisions, predatory pricing should be a relatively infrequent practice.

In my view, however, the Easterbrook argument is incomplete in the context of computer industry preannouncements. At first blush, in an industry where preannouncement is an important factor in customer decisionmaking, unjustified preannouncement might be thought to operate against self-interest. If a firm develops a reputation for unreliable preannouncements, rather than holding the market against potential rivals, the strategy should place the perceived illegitimate user of preannouncements at a competitive disadvantage. The problem is that the risk of unjustified preannouncement by IBM is different for IBM and for its customers. IBM's size allows it to make mistakes, even substantial ones, and to correct those mistakes over time (if not for specific customers, then for the community of customers). For other firms, a single major error with respect to product development may be fatal. Other firms may not have a variety of different products that allows IBM to diversify its risk. Customers may believe that IBM's superior size will allow it to experiment with and support marginal products that a smaller firm would be forced to abandon. Thus, IBM does not stand to lose as much in customer support as would other firms as a consequence of faulty preannouncement. Moreover, the adverse effect on smaller rivals of holding a relatively small percentage of its customers by preannouncement might outweigh any potential loss to IBM.

Finally, consider the psychology of the industry regarding purchasing decisions. Although computer systems have become crucial to business operations, they remain peripheral to the main business of the purchaser. The person within a business making a purchasing decision, therefore, faces a critical choice; the risk to the firm and to that decisionmaker of a wrong decision is substantial. The purchase of IBM equipment may not turn out to be optimal, but the down side risk to the purchasing firm and to the purchasing decisionmaker is smaller than for other purchasing decisions. I suspect that no EDP manager has ever been fired for buying IBM rather than some other vendor. Thus size does make a difference. Only for a dominant firm like IBM may unjustified preannouncement have pernicious effects and only for a firm in IBM's peculiar marketing position may strategic preannouncement be worth the risk.

tice could benefit competition without significantly reducing the incentive to innovate. The requirement of finding some anticompetitive intent, which normally would be shown through objective evidence that the preannouncement was unjustified even considering the risk of delay in new product development, substantially limits the risk that the antitrust laws could be used to reduce consumer welfare. If, in industries like the computer industry, innovation is a necessary business strategy, innovative behavior would proceed with this modest legal rule on preannouncement.

Legal issues regarding the series 90 and the model 67 also include what rules courts should adopt with respect to the price-cost relationships for measuring predatory pricing. The initial factual question is whether IBM intended to make an accounting profit on these products. With leading edge products not previously marketed, projecting the costs of development and the number of sales is tricky business. The circumstances of the introduction of the series 90 and the model 67, IBM's reaction to the CDC suit, and the customer complaints on the model 67, however, raise at least the inference that a genuine dispute existed as to what IBM intended to accomplish with these products. Observers of current antitrust scholarship know that the proper legal test for predatory pricing is the subject of an ongoing debate among commentators. Fisher apparently relies only on the Areeda-Turner position to support his conclusion of innocence.<sup>49</sup> The analysis might be different if, instead, a court adopted the Scherer<sup>50</sup> or Joskow-Klevorick<sup>51</sup> position and accepted the government's figures on the reasonable number of anticipated sales.<sup>52</sup>

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<sup>49</sup> Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975). In a footnote Fisher maintains that the debate over the proper test for predatory pricing need not be resolved to find IBM innocent. Yet the text only presents the Areeda-Turner position. F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 273-76. The debate over the proper test *does* become crucial if the government's methods of calculating IBM's costs are accepted.

<sup>50</sup> See Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976) (proposing full rule of reason analysis for pricing practices of monopoly firm).

<sup>51</sup> See Joskow & Klevorick, *A Framework for Analyzing Predatory Pricing*, 89 YALE L.J. 213 (1979) (arguing that pricing patterns of firm should be subjected to heightened scrutiny if structural conditions conducive to predation exist); *see also* Sullivan, *supra* note 1; Brodley & Hay, *Predatory Pricing: Competing Economic Theories and the Evolution of Legal Standards*, 66 CORNELL L. REV. 738 (1981).

<sup>52</sup> The scientific segment of the market was a particularly attractive area in which to undertake strategic behavior on price. As a relatively small marketing niche, the costs of predatory pricing to IBM would be small. IBM would not be sacrificing revenue across any substantial fraction of its product lines. Yet the demonstration effect of predation against a potential competitor to IBM in its core businesses such as CDC or other significant potential competitors could be large. Predatory pricing behavior can have two benefits to the predator: its direct effects on the competitors harmed and the establishment of a credible threat to pursue the same policy against other potential entrants.



The fighting machine incidents also raise the question of whether intent should play a role in monopolization litigation. This important issue remains unresolved in antitrust jurisprudence.<sup>53</sup> Fisher suggests that subjective evidence of exclusionary intent has almost no role in determining whether particular conduct by a dominant firm should be regulated.<sup>54</sup> The argument is that all firms desire to obtain business from their competitors, and that courts are ill equipped to distinguish between desirable natural competitive intent and predatory conduct. Thus, Fisher maintains that documents showing corporate intent are virtually useless unless the defendant's acts themselves are wrongful.<sup>55</sup>

Fisher's view of the judicial process in antitrust litigation is too narrow. Consider again the issue of predatory pricing in the context of the series 90 incident. This strategy only makes sense, and therefore is only likely to occur if the predator can recoup its losses by charging a post-predation monopoly price. The ability to charge a monopoly price depends on the conditions of entry in the target market. Several commentators have argued that the rules with respect to regulating pricing under section 2 of the Sherman Act should depend on the measured strength of entry barriers. Yet the measure of entry barriers is a difficult evidentiary task, subject to considerable uncertainty and dispute even when limited to only objective economic evidence. In such instances, the best evidence might be the subjective views of the relevant corporate decisionmakers; they are intimately familiar with market conditions, and their perceptions and expectations constitute probative evidence of the reasons behind a marketing strategy and its likely outcome. If the corporate actors believed that predation was a profitable long run strategy, courts should consider that belief relevant in determining whether the proper preconditions for predation exist. Similar arguments make intent relevant to the preannouncement issue.

### III

#### THE FUTURE

An important remaining issue is how to improve the management structures of the Antitrust Division to ensure that its cases make economic sense and its litigation efforts are efficiently and expeditiously prosecuted. Fisher suggests establishing an Economic Review Board within the Division that is independent of the trial

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<sup>53</sup> Compare Sullivan, *supra* note 1, at 631-37, (intent relevant to analysis of allegedly predatory behavior) with P. AREEDA, *ANTITRUST ANALYSIS* ¶ 214(c) (3d ed. 1981) (supporting Fisher).

<sup>54</sup> F. FISHER, J. MCGOWAN & J. GREENWOOD, *supra* note 2, at 347.

<sup>55</sup> *Id.*

staff and the economists preparing cases. This Board routinely and systematically would consider whether the factual and economic foundation of an action remains sound.<sup>56</sup> Some mechanisms along that line already exist. The Economic Policy Office, the Office of Policy Planning, the Evaluation Section, and the Assistant Attorney General's personal staff all play a review role within the Antitrust Division.<sup>57</sup>

With existing review mechanisms, however, why systematic review of the IBM litigation did not occur until the latter stages of the Carter administration is mysterious. Changes in the legal environment and the basic conditions of the industry while the case was pending would seem to have warranted ongoing review. I believe the answer lies with the senior Divisional managers' perception of their role. Before filing a case, the Division's managers review in detail the legal, economic, and factual bases of the case. After filing, however, review traditionally becomes attenuated. Senior managers leave tactical trial decisions to the trial staff. This passive model works well in the conventional price fixing case where discovery is relatively straightforward and policy questions usually are not difficult.

The massive monopolization case is a different animal. The legal, economic, and factual issues are interrelated and very complex. Development of sound policy in this context requires increased involvement by top Division management in the day-to-day operation of the case. The only way top Division management can properly supervise an IBM-type case is by maintaining intimate familiarity with a case's legal theories and factual support. Without this day-to-day effort, the trial staff has an in-house monopoly on information relevant to litigation decisions. For significant time periods while the IBM case was pending, I sensed that the trial staff had such a monopoly. Top management was in no position to critically review either the tactics adopted by the trial staff or the staff's legal theories and factual support. As a consequence, decisions with respect to what discovery program to undertake, what evidence to present, and what relief to seek had to be left essentially to the staff's good judgment.

Fisher's review board would only exacerbate the management problem; the Division head would have to sit as an appellate judge with respect to disputed positions. In this context, fundamental er-

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<sup>56</sup> *Id.* at 348-50.

<sup>57</sup> For a formal description of the management structures of the Antitrust Division, see UNITED STATES DEP'T OF JUST., ANTITRUST DIVISION MANUAL, 114-128 (1979). See also WEAVER, DECISION TO PROSECUTE: ORGANIZATION AND PUBLIC POLICY IN THE ANTITRUST DIVISION 87-136 (1977) (discussing staff oversight by management).

rors could be corrected only at great cost. A better approach is consistent active management. Massive monopolization cases raise issues that are among the most important political questions an administration can face. The administration's political appointees should be in a position to make informed decisions.

Case management in complex litigation is also the responsibility of the court. Defendants have substantial incentives to delay such litigation; the stakes for the litigants are enormous. Modern notions of notice pleading and liberal discovery aggravate the problem. In addition to these incentives, the traditional model of judicial control positions the judge as referee. The scope of the litigation and its management has been left to the parties. Within this environment, that the IBM case became an uncontrolled juggernaut is not surprising.

The lesson is that major monopolization cases require a more active model of judicial control. When an active, informed judge also becomes responsible for the day-to-day management of a case, even the most complex matter can be brought efficiently and promptly to trial. Other cases with active judges, e.g., the government's case against A.T. & T., demonstrate that, at a minimum, the judiciary can control the resources needed to litigate a major monopolization case.

#### CONCLUSION

*Folded, Spindled, and Mutilated* is an important book. It is the only readily available source which fully sets out IBM's litigation positions in one of the most important antitrust actions ever. The book is also a significant contribution to the literature on innovation competition. In addition, Fisher presents a unique and useful discussion of the utility of accounting profits as an indication of monopoly profits. The major purpose of the book, however, is to show that the government's effort was totally misguided. In that respect, I believe the book failed. Fisher and his colleagues wear the mantle of advocates for IBM, pointing out many foibles in the government's case. But in two key areas, the definition of the market and the analysis of the fighting machines, the discussion does not present the government's case in its best light. As a consequence, Fisher misses an opportunity to advance our thinking on the difficult issue raised by IBM: when should antitrust doctrine prevent a firm with substantial market power from using all the competitive strategies of a

nondominant firm. The answer to that question remains unresolved in section 2 litigation.

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