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Antitrust Policy During the Clinton Administration

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1. Introduction

For at least twenty years, a broad, bi-partisan consensus has prevailed regarding the goal of U.S. antitrust policy: to foster competitive markets and to control monopoly power, not to protect smaller firms from tough competition by larger corporations. The interests of consumers in lower prices and improved products are paramount. When these interests are served by large, efficient firms, even firms with substantial shares of well-defined markets, the consensus view is that antitrust policy should applaud, not stand in the way. However, when those large and powerful firms wield their power to exclude rivals in unreasonable ways, antitrust policy should act to preserve competition, both on prices and regarding product improvements stemming from innovation. Since the 1970s, these principles have been widely accepted, and antitrust law and policy have fundamentally been about economics – promoting competition and consumer benefits – not about broader social objectives such as favoring domestic firms, preserving employment, or protecting small businesses.

Within these confines, antitrust policy turned more activist during the Clinton years than in the prior Bush Administration, and sharply more active than during the Reagan Administration. To the general public, the most visible symbol of this activism was surely the Microsoft antitrust trial, which led in May 2000 to a dramatic court order (reversed on appeal in June 2001) that Microsoft be broken up. To practicing antitrust lawyers and academicians who specialize in the field, the upturn in antitrust activity was evident in many more ways: in challenges to several large corporate mergers, in the uncovering and prosecution of some large

national and international price-fixing conspiracies, and in the many active investigations of monopolization practices by dominant firms other than Microsoft.

To a significant extent, the enhanced activity reflected a more activist philosophy of the officials in charge of the two major federal antitrust enforcement agencies -- the Antitrust Division of the Department of Justice (DOJ) and the Federal Trade Commission (FTC) -- than was on display during the preceding twelve years. This was most clearly true of enforcement activity directed at various business practices of dominant firms, although an observable shift was also evident regarding certain proposed corporate marriages, especially in comparison with the second term of the Reagan administration.

The Microsoft case illustrates one of the key shifts during the Clinton administration that explains in part the more aggressive approach taken at the DOJ and the FTC: greater attention was paid to long-term competition in the form of innovation, in comparison with the traditional focus of antitrust on shorter-term competition, namely pricing. We believe the increased emphasis on innovation can be attributed to the confluence of two fundamental factors.

First, the 1990s covered a period during which new technologies had a marked impact on a range of markets, with the Internet and information technology leading the way. Increasingly, the fruits of competition are seen in the form of new technologies which lead to new and improved products. At the same time, intellectual property rights, in the form of patents, copyrights, and trade secrets, increasingly have become a key source of competitive advantage for firms controlling such rights. How natural, then, that antitrust authorities have paid more attention to “innovation competition” and intellectual property rights.

Second, antitrust officials in the Clinton administration combined a willingness to predict the medium- to long-term effects of mergers and various commercial practices, a necessary

element of enforcing the antitrust laws in the area of innovation, with a confidence that they could correct market failures in the realm of innovation. Unlike traditional pricing competition, the effects of which can be seen on a day-to-day basis and occur in the short-term, innovation competition by its nature requires time to unfold and is far less amenable to quantification. Hence, the underlying philosophy of antitrust officials can greatly affect their actions (or inactions) in the area of innovation: the Clinton team's activism can be traced to its greater confidence regarding the ability of government officials to predict future outcomes in markets subject to technological change, along with greater skepticism that markets will correct problems over time and greater suspicion regarding the strategies employed by large or dominant firms.

Ultimately, the more active antitrust policy we have seen over the past eight years than we saw in the previous twelve years can be traced to a greater confidence of Clinton appointees in their ability to correct market failures by banning business practices and blocking mergers thought to harm competition. We fully expect to see a shift back to a more cautious antitrust enforcement effort over the next several years, all within the boundaries of the broad consensus described above.

We do not mean to suggest that a focus on innovation during the Clinton years in any way distracted from the most traditional, and least controversial, aspect of antitrust enforcement, namely the breaking up of cartels and conspiracies in restraint of trade. To the contrary, the Antitrust Division had unprecedented success during the Clinton years, and especially during the second Clinton administration, in prosecuting price fixers. We see this as an area where an apparently small change in policy had a major impact. The change in prosecutorial policy – little noticed at the time – was the introduction by DOJ in August 1993 of a corporate amnesty program. Under the corporate leniency or amnesty program, immunity was granted for criminal

prosecution to the first participant in a price fixing or other collusive conspiracy to turn itself in. This seemingly innocuous policy change helped identify some of the largest price-fixing conspiracies ever uncovered, and eventually led to far and away the largest fines for antitrust violations ever imposed.

Antitrust policy during the Clinton years also became much more international in scope, both by necessity and design. The necessity arose from the greater frequency of cross-border mergers and price fixing conspiracies brought to the attention of the American officials and their foreign counterparts (in part because of the corporate amnesty program). Cross-border antitrust cooperation – especially between American, Canadian and European antitrust enforcement officials – also intensified, especially after the enactment by the Congress (at the urging of the Justice Department and the FTC) of the International Antitrust Enforcement Cooperation Act of 1994. With few exceptions (such as temporary disagreements over how to analyze certain mergers), the Clinton years marked a major advance toward enhanced international antitrust cooperation. We forecast even more cross-border cooperation and interaction – and quite possibly conflict -- among antitrust enforcement agencies in the years ahead.

The Clinton years also saw significant increases in the antitrust enforcement budgets of both federal agencies. The increased resources allowed sizeable staffing increases among attorneys, economists, and staff support. In addition, DOJ in particular abandoned the prior practice of having staff attorneys handle all antitrust trials, and for its major cases – notably Microsoft, but also for certain other high-profile investigations – turned to highly experienced private attorneys to supervise these assignments. This change in tactics brought greater expertise to the prosecution of these cases and helped impart cutting edge trial skills to the government's permanent staff attorneys (who played major supporting roles in these trials and investigations).

The antitrust agencies during the Clinton years were also aided by state attorneys general and private litigants who brought information to the enforcement officials, and in some cases assisted with the prosecution of the cases. The increased involvement of the state attorneys general, however, has been a mixed blessing, in our view, since more prosecutors can complicate efforts to obtain prompt resolution of investigations, especially settlements that promise similar results to litigation but can achieve them much more quickly.

Looking ahead, a key challenge confronting antitrust enforcement is how to adapt to the increasingly rapid pace of technological change, with the concomitant expansion in the role played by intellectual property. On the one hand, technological change can reduce the need for prompt antitrust action, by eroding more quickly any market power held by dominant firms. On the other hand, patents and copyrights can serve as significant barriers to entry. We fully expect the enforcement agencies and the courts to continue to explore the antitrust limits on the use or abuse of intellectual property. The challenge of fashioning antitrust policy in a world of rapid technological change is heightened by the presence of “network effects,” primarily demand side economies derived from compatibility, in some high-tech markets. Network effects, in conjunction with intellectual property rights, can result in durable market power even in the presence of rapid technological change. A firm that achieves dominance by taking advantage of network externalities – a perfectly lawful vehicle – may be able to thwart challenges from new competitors and technologies by having large numbers of existing customers “locked-in” to the use of existing products and services. As a result, barriers to entry to new competitors can be significant in high-tech markets. In such situations, heightened antitrust scrutiny is needed to ensure that dominant positions are not being abused. Complicating the antitrust response, however, is the fact that the judicial process – even with quick disposition of pre-trial motions,

expedited discovery and trial – is often slower than ongoing market developments. How to deal with this disjunction between “technology time” and “judicial time,” so evident in the Microsoft case, is likely to be one of the central challenges to antitrust enforcement in the future.

We assume that readers of this chapter will come to the material with varying levels of background in antitrust. For those with relatively little experience in the subject, we begin by outlining the basic antitrust laws in Section 2, and the agencies that enforce them in Section 3; these Sections can be skipped by those already familiar with the basics of antitrust law and enforcement procedures. We then proceed in Section 4 to provide a brief history of antitrust enforcement, concentrating especially on the two decades preceding the 1990s. This discussion provides the predicate for the heart of the chapter, the discussion of the Clinton antitrust enforcement record. After an introduction to the Clinton record in Section 5, we explore the three key areas of antitrust enforcement: criminal prosecutions (Section 6), civil non-merger enforcement activity (Section 7), and review of mergers (Section 8). We then provide a discussion of the increased level of international cooperation and extraterritorial enforcement of U.S. antitrust laws in Section 9. We conclude in Section 10 with our assessment of the Clinton antitrust record and by offering some thoughts about the future of antitrust, intellectual property, and high-tech.

We caution readers at the outset that each of us brings to the subject our own experiences at the Antitrust Division at DOJ during two separate periods of the Clinton era, along with our private-sector experience on specific cases. We acknowledge that this has the potential for introducing bias, and because we are aware of this possibility, we make great efforts to avoid it by discussing the issues in what we believe is a neutral manner. How successful we are in this effort is for readers to judge.

2. Some Basics of Antitrust Law

Antitrust law in the United States dates from the passage in 1890 of the Sherman Act, which prohibited contracts, combinations, conspiracies in restraint of trade (Section 1) and actions taken to monopolize or attempt to monopolize markets (Section 2). Almost a generation later, the Congress added the Clayton Act of 1914, which, among other things, prohibited (a) firms with dominant power in one market from forcing consumers to buy entirely different products (tying); (b) competing firms from having overlapping boards of directors; and (c) mergers between firms that threatened to substantially reduce competition in any line of commerce.¹ In the 1930's, Congress supplemented these two basic statutes with the Robinson-Patman Act, aimed at preventing firms from charging different prices to different customers that were not based on costs (i.e., from engaging in price discrimination) when such pricing harmed competition. The Robinson-Patman Act, roundly criticized, has rarely been enforced by the government in the past twenty years. Indeed, selective price discounting has for the most part come to be welcomed by antitrust authorities.² Most states have their own versions of one or all of these federal statutes, and so do most other industrialized countries, including Australia, Canada, Europe and even Japan.

Broadly speaking, the antitrust laws punish conduct designed to impair the *competitive process* – that is, conduct likely to lead to higher prices and restricted output relative to a state of unfettered competition -- not the economic fortunes of *individual firms*. Of course, as a practical matter, information about potential violations often is brought to the attention of the enforcement authorities (discussed in the next section) by competitors of possible antitrust violators. The antitrust proscriptions can and often are categorized in different ways.

One categorization, for example, distinguishes among the proscription of *collective conduct* aimed at restraining competition (price fixing, bid rigging, dividing markets among competitors, boycotts, and the like); *unilateral conduct* (acts designed to entrench or establish a monopoly that have little or no legitimate business purpose and that are only profitable because of their tendency to exclude competitors); and *mergers*, which very often pose no threat to the competitive process (and often enhance it by producing more efficient combinations) but in some cases so reduce the number of players in a market that the most likely result is higher prices or reduced innovation after the merger is consummated (in which case the merger almost certainly will be challenged by one, or several, antitrust agencies).

Another common distinction is based on the different penalties that apply to antitrust violations, at least in the United States. Where juries are able to conclude *beyond a reasonable doubt* that two or more companies have conspired to restrain commerce, the law provides for criminal penalties: fines and potentially incarceration of the individuals involved. As a practical matter, criminal prosecutions tend to be brought primarily by the Justice Department, and then only for forming cartels to fix prices (perhaps the most naked form of anti-competitive conduct) or divide markets. Where the agencies, or private parties, cannot meet the high criminal standard of proof, antitrust violations are punishable by judicial decrees ordering the end of the offending conduct and actions that may resemble it (in cases brought by the government), by disgorgement of the unlawful gains from the violations (if the FTC has brought the action), or by treble damages to victims of the offensive conduct (in cases brought by private litigants). Unlawful mergers, meanwhile, can be prevented or undone by the courts; more often, they are restructured (often with divestitures of certain assets or activities) as part of a negotiation with the antitrust agencies. Other countries have different antitrust penalties. Notably, European Union law

provides for no criminal sanctions; enforcers typically resort to fines and/or injunctions against the offending conduct. Furthermore, while private antitrust lawsuits are available in Europe, they are not nearly as common as they are in the United States.

A final distinction that antitrust specialists often draw is between conduct that is deemed to be a *per se* violation and conduct that is judged under a “rule of reason.” The notion of *per se* offenses has been developed by the courts over time to eliminate the need for extensive proof of the anti-competitive effect of certain conduct that, on its face, has been determined to lack any legitimate justification, regardless of how much market power the actors may possess. Examples include such collective conduct as fixing prices, dividing markets, and a narrow range of group boycotts and tie-in sales. In virtually all other cases, courts take a case-by-case approach when examining the alleged unlawful behavior, requiring the plaintiff(s) to prove that the conduct, on balance, does more harm than good to the competitive process.

The standards for assessing the competitive impact of mergers have also become clearer over time with the development and refinement of Horizontal Merger Guidelines by the DOJ and the FTC, which set forth the methodology enforcement officials use to decide whether to challenge particular business combinations involving direct competitors. Although these decisions must still be made case by case, antitrust practitioners and the courts have come to value the use of a common framework for understanding and assessing these decisions – in particular, standards for defining the “relevant” markets in which the effects of the merger will be assessed and measures of market concentration – that are likely to effect whether the merger will be judged to lead to higher prices or reduced innovation, thus justifying a challenge.

3. Antitrust Enforcement Procedures and Institutions

In the antitrust chapter of the last exercise of this kind – the volume edited by Martin Feldstein for the National Bureau of Economic Research that assessed economic policy in the 1980s -- one of the then leading academic authorities in this field identified the courts as the key institution for developing, articulating and enforcing at least the federal antitrust laws.³ Because the words of the antitrust laws are inherently vague – and seemingly so all-encompassing – there is a sense in which this must be right. All contracts, for example, “restrain” trade; it has been left to the courts to identify which types of contracts do so unlawfully. The same applies to other “magic” words in the antitrust laws, such as “monopolization.”

In practice, however, as in so many other areas of the law, the day-to-day decisions about enforcement are made by government antitrust law enforcement officials – primarily at the federal level, but also in the states.⁴ Moreover, beyond appointing the key antitrust officials – the head of the Antitrust Division at Justice and the Members of the Federal Commission – the President and other members of the Executive Branch play essentially no role in day-to-day antitrust enforcement. On broad policy issues, it is possible that the President and his advisers may voice their views, but even these occasions are rare.

The key enforcement decisions are whether to launch an investigation, and then whether to file a formal legal complaint. Typically, right before formal action is taken, however, officials give targets of their investigations their “last rites”: a final chance to settle, analogous to a plea bargain in the criminal context. In fact, it is our experience from serving in the DOJ during the Clinton years that most serious antitrust investigations are settled without a formal trial; this is one reason that we believe so much enforcement power is actually lodged in the prosecutors.

At the same time, however, there was a discernible shift in the willingness of the DOJ, in particular, to settle or litigate – at least between the two Clinton terms. Settlements were more the rule than the exception during the tenure of Anne Bingaman, the first Clinton Assistant Attorney General for Antitrust at DOJ, for all types of antitrust matters. Both the Department and the FTC became more willing to litigate, at least with respect to some high profile matters, during the second term, under the direction of Joel Klein, the second Clinton appointee as Assistant Attorney General for Antitrust, and at the FTC, under the Chairmanship of Robert Pitofsky. In part we attribute this to the desire of Joel Klein and Robert Pitofsky to establish legal precedents, not “merely” to fix particular competition problems in specific matters that they happened to come across. As we shall see, both the DOJ and FTC met with mixed success when their cases were actually subjected to rigorous review by a trial court (and in several cases, appellate review as well).

This brief commentary highlights the fact that antitrust enforcement jurisdiction at the federal level is split between Justice and the FTC. This dual responsibility is unusual, but not completely atypical. In the tax field, for example, both the IRS and DOJ share jurisdiction. The same is true for civil rights enforcement, which is shared by the Equal Employment Opportunity Commission and the DOJ. In the antitrust field, the FTC was created by in 1914 because of a perception then that DOJ was insufficiently aggressive in pursuing antitrust violations. Over the years, the two agencies have informally divided enforcement responsibility by industry – DOJ has handled airlines and telecommunications matters, for example, while the FTC has specialized in the oil industry and pharmaceuticals – but in many cases there are overlaps. Where that occurs, responsibility is divided on a case by case basis, although sometimes with tension between staff or political appointees. We witnessed such tension during our tenure at DOJ, but

found it to be the exception rather than the rule, and usually most pronounced in high-profile cases such as the AOL/Time Warner merger where each agency could claim real industry or company expertise.

As we have noted, most states have antitrust statutes that parallel one or more of the federal statutes. This gives enforcement authority to state attorneys general. In the past, the states for the most part confined their antitrust enforcement activities to prosecuting local price-fixing conspiracies, often against competitors in bid-rigging schemes. During the 1990s, however, the states began to play a much higher profile role, not only bringing matters to the attention of the federal agencies, but also seeking a share of litigation responsibilities, as occurred during the Microsoft trial during the second Clinton term. One of the interesting developments to look for during the next Administration not only is whether the federal antitrust agencies will become less activist in any sense (a subject we address at the end of the chapter), but if they do, whether and to what extent to which the states will take up any of the slack by becoming more aggressive.

The 1990s also saw more cooperation between U.S. and foreign antitrust agencies, especially the European Union. This was due in large part to two factors: the EU significantly strengthened its merger enforcement procedures in the early 1990s, and the 1990s witnessed an increased number of mergers involving parties on both sides of the Atlantic, thus giving EU enforcement officials jurisdiction over the transaction along with U.S. officials. Except in rare cases (notably the Boeing-McDonnell Douglas and the General Electric-Honeywell mergers), the U.S. and EU agencies viewed transactions very similarly, with the EU taking the lead in some, the U.S. agencies in others.⁵

Since the Clayton Act of 1914, the U.S. antitrust laws have allowed – many would say encouraged – private parties injured by antitrust violations to sue for damages. Under Section 4 of the Clayton Act, winning plaintiffs are entitled to three times the amounts by which they can prove they were injured,⁶ a provision that provides very strong incentives for private litigants and their attorneys to investigate potential violations, and thus equally strong incentives for firms and individuals subject to treble damages to avoid violations of the antitrust laws.

We would like to emphasize the uniquely strong character of the U.S. system as regards financial penalties imposed on companies violating the antitrust laws. The U.S. has put into place a powerful combination of forces operating to benefit private antitrust plaintiffs: private antitrust cases are permitted and involve treble damages; private plaintiffs have extensive discovery rights; plaintiffs can demand a jury trial; and lawyers representing a class of plaintiffs often face a low hurdle to have their proposed class action certified. Antitrust hawks see these pro-plaintiff rules as a great virtue of the U.S. system. Others believe that the U.S. system allows plaintiffs' lawyers to extract substantial sums of money from corporations that have done nothing to violate the antitrust laws.

The unflattering view of private antitrust enforcement in the U.S. runs roughly as follows: lawyers for antitrust plaintiffs face a very low hurdle to obtain class certification. Once a class is certified, defendants face the possibility of a very large damages award (after trebling), such as claims based on over-charges from an alleged conspiracy. Plaintiffs then benefit from extensive rights to discovery of defendants' files and data, which often turns up at least a few unflattering statements or e-mails, perhaps written by low-level employees. These documents, in conjunction with the less-than-favorable views held by some jurors about large corporations, and the willingness of jurors to infer that a conspiracy may exist even absent direct supporting

evidence, imply that a perceived risk to the defendant of an adverse jury decision exists in virtually any case. Given this risk, many executives will be inclined to pay substantial sums of money rather than face a jury trial, even if they are confident that their company's conduct has not harmed competition. The net result is that many private antitrust lawsuits of dubious merit, imposing a type of tax on corporate America. Of course, there is an obvious counter-argument: U.S. laws empower an army of private antitrust enforcers who collectively have a pronounced effect on improving compliance with the antitrust laws, thus stifling cartels and preserving competitive markets.

In any event, the dual nature of antitrust enforcement – government actions against companies that violated the antitrust laws along with private actions to collect damages – leads to various complex interactions between public and private enforcement, for a number of reasons.

First, because antitrust litigation can be so expensive – especially when launched against defendants with deep pockets – private litigants often bring their complaints to the government and wait for official prosecutions in court, either civil or criminal, to provide proof of a violation. With such judgments in hand, as a practical matter private plaintiffs rarely need to prove more than damages. In part for this reason, defendants that are targets of government antitrust investigations often settle by signing consent decrees, which involve no admission of unlawful conduct but simply agreement to change conduct in some manner to meet the government's objections. In such instances, private plaintiffs must therefore prove that a violation has occurred as well as any damages they might have suffered.

Second, because of the importance of private antitrust actions in the U.S., confining attention to government enforcement actions, much less federal government enforcement actions, does not give a complete picture of the antitrust landscape. Enforcement of the antitrust laws is

more stable over time than is reflected in federal antitrust policy, in part because of lags between federal activity, subsequent court decisions, and the resulting payoffs to private plaintiffs in antitrust actions.

Third, federal antitrust policy tends to have a multiplier effect: targets of antitrust investigations understand well that a lawsuit with federal officials (or even a settlement, which then becomes public) will almost invariably trigger one or more private antitrust lawsuits. Since private actions can involve hundreds of millions of dollars (see below where we discuss the prices fixing cases involving the NASDAQ and the auction houses), increased enforcement activity by the FTC and the DOJ very quickly sends a message to companies throughout the economy that they are at real risk if they do not stay on the safe side of the line currently being drawn by federal antitrust officials.

4. Historical Cycles in Antitrust Enforcement

Before considering the antitrust enforcement record of the Clinton Administration in some detail, it is useful first to place it in some historical perspective. Accordingly, we review here very briefly some of the developments and waves in federal antitrust enforcement in particular over the last century.⁷ These cycles in enforcement reflect shifting views over time in public attitudes toward business as well as scholarly thinking about the appropriate role of government intervention in the market with the aim of ensuring competition. Although in the last several decades there has been convergence among antitrust legal scholars and economists on the basic structure prosecutors and courts should use for analyzing markets, differences in views remain. It is these differences that account for the continued fluctuations in antitrust enforcement philosophy and activity that persist to this day.

Given the vagueness of the first antitrust law, the Sherman Act, the courts spent considerable time in the first few decades after the Act was passed giving content to the meaning of words like “contract in restraint of trade” or “monopolization.” Broadly speaking, the courts condemned only those contracts under Section 1 of the Act where direct rivals agreed to restrict output and raise price, or in other words, agreed to act like a monopolist.⁸ The Supreme Court also condemned “vertical” agreements by manufacturers and their retailers on minimum prices above which retailers would sell.⁹

After some early cases in which the Supreme Court tolerated mergers that produced large or even dominant firms – examples being the Sugar Trust, General Electric, International Harvester, du Pont, Eastman Kodak, U.S. Steel and Standard Oil – the Court in 1904 finally blocked the merger between the Northern Pacific and Great Northern railroads on monopolization grounds. Seven years later, the Court found that Standard Oil had achieved monopoly status with 90 percent of the market for refined oil products and abused its dominance by various forms of exclusionary conduct (all thoroughly documented in Ron Chernow’s *Titan*). The following year, the Court handed down another anti-monopolization decision in *Terminal Railroad Association of St. Louis*, holding that various railroads could not use their control over terminal facilities at a main crossing of the Mississippi River to discriminate against rivals. Both *Standard Oil* and *Terminal Railroad* would be widely cited as important precedents in the Justice Department’s anti-monopolization case brought against Microsoft in the 1990s (discussed below).

The monopolization cases of the early 1900’s proved to be a temporary high water market for antitrust enforcement, however, as the next decades saw a movement by prosecutors and courts to adopt case-by-case “rule of reason” standards for assessing wrongdoing. The shift

in attitude was due to several sources: a widespread consensus after World War I that cooperation between business and government was a good way to organize the economy; a strong sentiment after the Depression began in 1929 that prices were *too low* rather than too high; and a narrow interpretation by courts of the antitrust enforcement mandate of the Federal Trade Commission (created in 1914 in response to fears of excessive concentration of enforcement power in the Executive branch).

The enforcement cycle turned in a different, more aggressive direction by the mid-1930s and continued on this path until the early 1970s. Interestingly, the shift in direction was prompted by Chicago-school economists – Henry Simons, Jacob Viner, and Frank Knight – who argued that that economic planning was not getting the United States out of the Depression and that antitrust enforcement was needed to de-concentrate American industry.¹⁰ Antitrust enforcement against various forms of collusive behavior – price-fixing, tying, non-price vertical restraints, group boycotts, and exclusive sales territories-- was revitalized and eventually condemned by the Supreme Court using *per se* rules. In contrast to a rule of reason standard, *per se* rules required proof only that the conduct took place, not of its anti-competitive effects. The courts also became more willing to find fault with excessively aggressive behavior by dominant firms, most notably in the famous Alcoa case in 1945, when Judge Learned Hand found that the preemptive addition of capacity by a firm with most of the aluminum market was wrongful. In subsequent cases, the Supreme Court condemned a locally dominant newspaper’s effort to destroy a small radio station by refusing to sell its advertising (*Lorrain Journal Co. v. United States*, 342 U.S. 143 [1951]); prevented the “lease only” policy of the United Shoe Company, which dominated the market in shoe-making equipment (eventually authorizing the breakup of the company); and found a nationally dominant bakery’s localized price cuts to be wrongful

(*Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685 [1967]). With the exception of *Lorrain Journal* and the price fixing and tying cases, it is not clear that many of the others would be brought by enforcement officials (or supported by the courts) today.

Antitrust enforcement also became much more aggressive against corporate mergers, inspired by the “structure, conduct, performance” paradigm associated with Harvard economist Joe Bain, which posited a strong correlation between even relatively low levels of market concentration and industry profitability, and thus potentially anti-consumer outcomes. In a series of decisions in the 1960s, in particular, the Supreme Court approved government challenges to horizontal mergers (those among competitors in the same geographic and product markets) whose combined market shares would fall well below those that would be challenged now. Indeed, in a famous dissent in *Von’s Grocery* (384 U.S. 270, 301 [1966]), in which the majority condemned a merger that would have generated a market share of only 7 percent in a generally unconcentrated market, Justice Potter Stewart summed up the prevailing judicial environment then with the declaration: “the Government always wins”.

Beginning in the 1970s, the three-decade long pattern of antitrust activism began to attract strong criticism from various law professors and economists associated with the University of Chicago (where a previous generation of scholars, as just indicated, ironically helped launched the very trend that this newer generation of scholars attacked). Among other things, the Chicago School critique was leveled at the Supreme Court’s *per se* rule against non-price vertical restraints (which were argued to be pro-competitive), and at the Court’s various merger decisions for failing to define markets accurately or for stopping transactions without proof of competitive harm. Over time, more judges were appointed to the federal bench who

were sympathetic to this line of argument, including Richard Posner and Frank Easterbrook, who were prominent contributors to the Chicago School critique of the earlier antitrust policy.

As a result, by the 1980s, the federal courts began to grow more skeptical of antitrust cases. Moreover, with the notable exception of the breakup of AT&T – where the evidence was clear that a dominant company had abused its market power – and various prosecutions against bid-rigging, government antitrust authorities became much more reticent to mount antitrust challenges of all types. The shift in attitude was also reflected in personnel and resources, especially at the Department of Justice, where the number of attorneys was significantly reduced through much of the 1980s. This trend began to be reversed under James Rill, the Assistant Attorney General during the Bush Administration of 1989-1992. As noted above, antitrust enforcement resources were augmented throughout the two Clinton terms.

Although the Clinton antitrust appointees became more aggressive in pursuit of antitrust violations of various types, it is fair to say that a “post-Chicago” synthesis has emerged, reflecting a significant degree of consensus among antitrust scholars and practitioners on two key items. One important area of agreement is on the framework used to analyze mergers, especially to define markets, which were totally revamped during the first Reagan term (under the guidance of Assistant Attorney General William Baxter). As we discuss below, the so-called “Horizontal Merger Guidelines” have since been revised under both the Bush and Clinton Administrations, but the revisions have been more in the nature of tweaking – and certainly not rejecting – the initial framework. The second area of agreement is that collusive activities are to be punished. As we discuss below, one of the important features of the Clinton antitrust years is how many large price fixing conspiracies were uncovered or investigated, often international in

scope. To us, this development was a surprise. Prior to coming to the Justice Department, neither of us would have suspected how extensive collusive practices turned out to be.

5. The Clinton Antitrust Record: Introduction

A. Measures of Enforcement Activity

Antitrust enforcement activity can be measured and described. Here we do both, first by presenting some summary statistics from the Antitrust Division of the Justice Department that confirm the overall impression of increased activity during the Clinton years. The data only begin, however, in 1991, and thus provide an incomplete picture of enforcement in the pre-Clinton era. Nonetheless, we will accept the conventional wisdom that the numbers of investigations and cases initiated in the 1980s was below that of the 1990s and thus use the data primarily to concentrate on the latter decade when the Clinton antitrust team was in place. In addition, the data reported here are only for Justice Department cases, not those launched by the FTC. We do not believe this limitation is significant, however, since both DOJ and the FTC during the Clinton years shared similar antitrust enforcement philosophies.¹¹

The pictures are shown in Charts 1 through 4 and pretty much speak for themselves. Chart 1 illustrates that although the simple number of criminal prosecutions filed in court actually declined somewhat from a peak in the early years of the 1990s, the magnitude of fines collected jumped sharply, especially toward the end of the decade. As we discuss shortly, this pattern reflects increased priority given by the DOJ to large national and international price-fixing conspiracies, leaving local bid-rigging cases to be investigated and prosecuted by the states.

Charts 2 and 3 illustrate the significant increase through much of the decade in both categories of civil non-merger cases – restraint of trade under Section 1 of the Sherman Act and

monopolization cases under Section 2 – that the DOJ has brought and won. These charts clearly evidence heightened activism on both these fronts during the Clinton era.

Chart 4 shows a more uneven pattern for merger enforcement activity. While the numbers of mergers requiring notification under the Hart-Scott-Rodino Act (any combination involving an entity with more than \$15 million in assets) increased throughout the decade, the percentage of those mergers that were actually investigated seriously rose briefly and then fell back by the end of the decade. Even more strikingly, the percentage of mergers actually challenged was small – less than one percent of the total – and relatively stable throughout the period. The falling share of mergers investigated most likely reflects the fact that even with more staff, the antitrust agencies had to ration their time in light of the substantial increase in the numbers of mergers at least to be preliminarily reviewed.

The low and stable share of mergers actually challenged reflects several aspects of merger enforcement. First, the DOJ was cautious in merger enforcement, insisting upon a solid factual and theoretical basis before bringing a challenge. Second, the Antitrust Division was inclined through much of the period to reach agreements with the parties to solve anti-competitive problems through divestitures of assets in markets where post-merger concentration was deemed to be excessive, or through consent decrees restricting the activities of the combined entity to prevent any future anti-competitive effects. Third, and perhaps most important, is the fact that companies contemplating a horizontal merger or acquisition can predict with reasonable accuracy how their proposed merger will be received at the DOJ and the FTC, based on the Horizontal Merger Guidelines. In other words, with enforcement policy well articulated, surprises at DOJ's enforcement stance, as well as the need for Court review to draw the line, are both relatively rare.

Numbers and trends provide only a glimpse of the true nature of antitrust enforcement activity. For a more in-depth look, we need to delve into some of the more important cases and developments surrounding them. We do that in the four subsequent sections of this paper.

B. Guidelines and Hearings

Since so few antitrust cases actually involve litigation, much less an actual trial, a great deal of antitrust policy is set through either consent decrees (settlements) or through the enforcement guidelines that the agencies publish to inform the business community of their policies.¹²

Probably the most influential antitrust guidelines are the Horizontal Merger Guidelines, which are issued and followed by both the Justice Department and the FTC. These “Merger Guidelines” were totally reworked in 1982 under the first Reagan administration, then revised in 1992 under the Bush Administration. The only change in the Horizontal Merger Guidelines during the Clinton years was the release in 1997 of an expanded explanation of how the agencies will treat efficiencies, namely the ability of the merged company to achieve lower costs, or improved product performance, as a result of the merger. While in principle the new treatment of efficiencies is more generous to merging companies than were the prior guidelines, practitioners generally believe that both agencies continue to apply a rather tough “screen” before they credit a merger with real efficiencies. In particular, both agencies are wary of efficiency *claims* that will not in fact be achieved, or that would be achieved even without the proposed merger. Only efficiencies that are “merger-specific” are given any weight.

Three major new sets of guidelines were issued during the Clinton administration.¹³ First came the Statements of Antitrust Enforcement Policy in Health Care, issued in 1994 (later revised in 1996), which explain, among other things, how physician networks will be treated.

Second were the Antitrust Guidelines for the Licensing of Intellectual Property, issued in 1995, which have been highly influential in mapping the role of antitrust policy in high-technology industries. Third came the Antitrust Guidelines for Collaborations Among Competitors, issued in 2000, which address the very complex issues that arise when direct rivals seek to cooperate in various ways such as to set standards or participate in joint ventures.

In addition to these Guidelines, Chairman Pitofsky revived an old tradition at the FTC of holding hearings on important current antitrust topics. Two sets of hearings stand out as offering rich and valuable information on topical issues: (1) Hearings in 1995 that led to a staff report, “Anticipating the 21st Century: Competition Policy in the New High-Tech Global Marketplace,” issued May 1996; and (2) hearings held June 29-30, 2000 that led to a staff report, “Competition Policy in the World of B2B Electronic Marketplaces,” issued in October 2000.

C. Competition Advocacy

The DOJ and the FTC have long played advisory roles, essentially acting as advocates within the federal government on behalf of market competition. As part of the executive branch, the DOJ (often along with the Council of Economic Advisers) takes the lead as the competition advocate in the context of inter-agency discussions, from trade issues to privatization to a range of regulatory issues. Both agencies also serve as sources of expert advice to Congress regarding legislation that has implications for competition and monopoly.

The DOJ played an especially large role in the developments and negotiations that led to the Telecommunication Act of 1996. DOJ’s role was natural because the Act was intended, in part, to replace the Court oversight of the Bell system, itself arising from the 1984 consent decree between AT&T and the DOJ, with regulatory oversight and deregulation. In particular, DOJ officials met regularly with other Administration officials, led by Vice President Gore, on

legislative strategy while the Act was being considered by the Congress. In addition, just prior to the Act's enactment, the Department negotiated a waiver of the consent decree to allow Ameritech to enter the long-distance market in Chicago, as a trial. The District Court never issued a ruling on the waiver, however, because the Act preempted that experiment. Nonetheless, many of the conditions set forth in that waiver for entry by the Regional Bell Operating Companies (RBOCs) into long-distance telecommunications – largely relating to the openness of the local markets to effective competition -- found their way into Section 251 of the Act.

In addition, the Act gave DOJ a special advisory role to the Federal Communications Commission on RBOC applications for entry (although the Department and the Administration had initially sought more – actual joint decision-making authority). Throughout the second Clinton term, DOJ took a relatively hard line on RBOC applications for permission to enter long-distance markets, recommending to the FCC denials in several cases because, in the view of the Department, the RBOC applicants had not sufficiently opened up their own local markets to competition, as required by the 1996 Act. Nonetheless, by the end of the Administration, even DOJ's opposition started to soften. DOJ recommended, and in December 1999 the FCC agreed, to allow Bell Atlantic (now Verizon) entry into long-distance in New York. The following year, the FCC permitted SBC to enter long-distance in Texas. Shortly after the Bush Administration came to office, in early 2001, the FCC granted Verizon's long-distance application in Massachusetts, and as this is written, it is widely expected that the FCC quickly will open up many more states to RBOC entry into long-distance service.¹⁴

DOJ also cooperated closely in the mid-1990s with the Securities and Exchange Commission during the investigation by both agencies into price-fixing by securities dealers on the “bid-ask spreads” on certain highly traded stocks listed on the NASDAQ (a case discussed

below). While the DOJ included in its consent decree with the dealers an injunction against certain practices that had the effect of facilitating collusion, the SEC also took important regulatory actions that compelled disclosure of “limit orders” (orders to buy or sell at, above, or below specific prices) that also helped ensure that collusion among market makers would not take place.

6. Cartel Enforcement in the Clinton Years

DOJ was extremely active during the Clinton years in investigating and prosecuting cases against companies and individuals involved in price fixing and bid rigging. While there is broad agreement across the political spectrum that such activities should be vigorously pursued, the Department in the two previous administrations had concentrated its enforcement activities in significant part on price fixing and bid rigging in limited geographic areas. The Clinton years saw a major pickup in enforcement uncovering not only national, but international, conspiracies, resulting in incarcerations of key company executives, record fines, and in the civil area, some major changes in the way key industries did business.

A. Criminal Price Fixing

The Antitrust Division got off to a very poor start in its battle against price fixing with an embarrassing loss in the case against General Electric for price fixing in industrial diamonds. The Government believed that a major reason for its failure was its inability to compel testimony of key foreign witnesses and to obtain documents abroad. The latter problem helped motivate the Department to seek broader authority to cooperate with antitrust prosecutors in other countries, discussed below. In any event, the DOJ’s setback in the GE case was not a portent of things to come.

To the contrary, as shown in the charts already referenced, the DOJ imposed far greater fines for price fixing during the Clinton administration that had ever been assessed before. Gary Spratling, the Deputy Assistant Attorney General in charge of Criminal Enforcement, was widely recognized for his expertise in guiding the Department's enforcement effort, aided by the amnesty program discussed above.¹⁵ Table 1 lists the price fixing violations leading to fines of \$10 million or more.

The citric acid and lysine cartels, which included Archer-Daniels Midland (ADM), led the way in FY97. ADM paid a fine of \$100 million, at that time by far the largest such fine ever assessed. Total fines collected in FY1997 were \$205 million, some five times the previous record. This number was exceeded in FY1998 with total fines of \$265 million. Then, in FY1999, a breathtaking \$1.1 billion in fines were obtained. During that year, the single largest fine ever assessed, \$500 million, was imposed on Hoffmann La-Roche in the vitamins price fixing case. This case involved an international cartel that operated from 1990 through 1999 covering certain vitamins used in human food, animal feed, and pharmaceuticals. The graphite electrodes case led to fines of over \$400 million.

These are merely the most visible of the many price fixing and bid rigging cases brought by the DOJ, ranging from school milk and highway bid rigging to electrodes. As noted earlier, more and more cases had an international scope. Cases against Canadian producers of plastic dinnerware and Japanese manufacturers of thermal fax paper cases provide additional examples in this regard. We return below to discuss more specifically the international component of cartel enforcement. The U.S. has been quite successful in exporting its version of cartel enforcement to other countries, with the exception that other countries remain unwilling to make price fixing a *criminal* violation.

To put these fines in perspective, the annual fines during the previous Bush administration (1990-1992) ranged from \$20 million to \$24 million. During the first Clinton administration (FY1993-FY1996), the annual fines collected ranged from \$27 million to \$42 million. From FY1997 through FY1999, the Division collected over \$1.5 billion in fines, of which over 90% was based on international cartel activity.¹⁶

Clearly, there has been a sea shift, with cartel enforcement more effective and more active than in recent memory. While it is unlikely that these dramatic numbers could be sustained under any administration, there is no doubt that cartel enforcement activity remains high. The most visible recent price fixing case is against the auction houses of Christies and Sotheby's. This case received a great deal of media attention, both because it occurred in the rarified world of art auctions in New York and because it led to a shakeup at both auction houses. Sotheby's has already agreed to pay a \$45 million fine, and in May 2001 a grand jury indicted the former chairmen of both auction houses.

B. Civil Price-Fixing Cases

There were also some very prominent *civil* price fixing cases brought by the DOJ during the Clinton years. While the penalty and deterrent – imprisonment – is plain for criminal price fixing cases, readers might wonder what penalty is associated with *civil* price fixing cases, where the companies involved typically agree to cease the alleged price fixing, a “sin no more” remedy, and perhaps some additional “fencing in” provisions designed to prevent related antitrust abuses in the future. An important part of the answer comes in the form of follow-on *private* antitrust actions. Virtually every DOJ case triggers a private case, in which customers asserting overcharges seek treble damages. These cases can be enormously costly to the companies involved. For example, in the NASDAQ case immediately following, the brokerage houses

ultimately agreed to pay nearly \$1 billion to settle the private cases that followed on DOJ and SEC enforcement actions.

The NASDAQ dealer case stands out as a signature case during Anne Bingaman's tenure. In this case, the DOJ alleged that the major brokerage houses had agreed to limit competition by only quoting NASDAQ stocks in even eighths, thus ensuring that spreads would not be any smaller than one-fourth. This investigation involved close cooperation between the DOJ and the SEC which was simultaneously bringing its own enforcement action against NASDAQ dealers. The NASDAQ case raised some very interesting issues of evidence (tape recordings of dealer conversations), focal point theories (odd eighths vs. even eighths), the role of academic research (an academic paper by Professors Christie and Schultz of Vanderbilt University initially brought this to the attention of the DOJ and SEC), and appropriate remedy (regulation vs. antitrust). The final remedy agreed to by NASDAQ, which led to an SEC rule opening up the "limit order" books, has had a revolutionary impact on the exchanges, as already noted.

A similar if less visible case involving the various exchanges that trade options involved an alleged agreement among the four options exchanges not to engage in multiple-listing at different exchanges of so-called "grandfathered" options.¹⁷ These grandfathered options were ones that had previously been exclusively assigned to individual exchanges by the SEC during an era when the SEC actively discouraged competition among exchanges, preferring instead that all trading take place at a given location. This case provides an interesting example of prior regulation being lifted and competition taking a long time to take root.

7. Civil Non-Merger Cases in the Clinton Years

The civil non-merger antitrust enforcement effort covers several types of possible violations: unlawful conduct by dominant firms, or monopolies; unlawful cooperation among

competitors (so-called horizontal conduct); and unlawful activities between firms in different levels of commerce, such as prices imposed by manufacturers on retailers (vertical conduct). The Clinton antitrust team was active on all these fronts, and we review the major efforts here.

A. Monopolization Cases: Microsoft, Intel and American Airlines

Antitrust cases challenging the unilateral conduct of dominant firms are among the most controversial, although they also resonate well with a large body of the public, which sometimes distrusts the activities of monopolies. Nonetheless, a major reason for the controversy is that antitrust attacks on dominant firms inevitably involve challenges to the businesses practices of some of our most successful firms. These criticisms are not new: they were heard when the government challenged Standard Oil, Kodak, Alcoa, IBM, and AT&T over the decades.

During the Clinton era, the most visible targets of antitrust activity in general were investigations or cases brought against the largest, most powerful firms. We explore three such cases in this sub-section: Microsoft, Intel, and American Airlines. But readers should recognize that several less visible monopolization cases were also brought against smaller companies who nonetheless were viewed as dominant in their own spheres by the DOJ or the FTC. These include DOJ's 1996 case against General Electric regarding GE's licenses for medical imaging equipment software, DOJ's 1999 exclusive dealing case against Dentsply, the leading supplier of artificial teeth, and the FTC's 1998 case against Mylan Laboratories regarding two anti-anxiety drugs.

1. U.S. v. Microsoft

As we hinted at the outset, the Clinton antitrust years probably will be most remembered for the DOJ's continued investigation and ultimately its court action taken against Microsoft for conduct the Department asserted constituted unlawful abuse of monopoly power.¹⁸ Although the litigated case during the second Clinton term brought by Joel Klein was the most visible effort in

this regard, the DOJ in the first term settled a less sweeping investigation with the company under the direction of Anne Bingaman. Because of its importance, we summarize here some of the key issues from the perspective of each side and then provide our own assessments of each of them. These issues are not unique to Microsoft, but also pose a challenge to competition policy generally with respect to high-technology industries.¹⁹ We include arguments and relevant decisions up through the Court of Appeals decision in July 2001, which upheld much of the district court's original ruling, but reversed it in part.²⁰ At this writing, it is possible the case will be settled; if not, then the litigation – primarily relating to the appropriate remedy – will continue.

From the government's perspective, the following propositions seemed evident and well supported by the evidence in the trial (a judgment the Court of Appeal essentially confirmed). First, Microsoft has a clear monopoly over desktop operating systems and that monopoly is protected by the "applications barrier to entry," which makes other operating systems (such as the Apple OS or Linux) far less attractive because many fewer applications are written to run on those operating systems: this is network effects in action. Second, Microsoft saw a threat to its operating system in the form of the Netscape browser combined with Sun's Java, which together offered the promise of "cross-platform" middleware that would provide a neutral platform to which applications could be written, thus paving the way (in a two-step entry process) for other operating systems to overcome the applications barrier to entry. Third, Microsoft acted during 1995-1998 at least to eliminate the threat to its monopoly by engaging in a series of practices with the intent and effect of limiting the distribution and use of Netscape's browser and of Sun's Java. These practices, such as exclusive dealing arrangements and tying, involved the use of Microsoft's monopoly power over operating systems to stifle the adoption of Netscape and Sun

software. Microsoft realized that it would be sufficient to prevent these middleware products from becoming ubiquitous and thus serving as an alternative platform that could “commoditize the operating system.” Finally, as a result of Microsoft’s conduct, consumers were deprived of a chance to pry open the Microsoft monopoly, which instead persists. While we do not know just how competition would have played out in the absence of Microsoft’s conduct, we do know that one major threat to the monopoly (and these do not come along all that often) was eliminated through conduct that did not lead to benefit consumers, and thus cannot be construed as competition on the merits.

Microsoft challenged each of the government’s propositions and counters with those of its own. First, the company argued that the software industry is extremely dynamic and fluid, making any monopoly power fleeting and insignificant. Microsoft asserted that it was forced to price competitively because of a multitude of threats that are ever-present, since there can be no monopoly over software programming skills, which is all that is needed to design and sell an operating system. The so-called “applications barriers to entry” allegedly is a fiction: applications companies often write software for multiple platforms and would readily do so if those platforms offered superior value to the Microsoft operating system. For example, the Apple system runs a great deal of software, and in fact Microsoft itself ports Office to the Mac OS. Second, Microsoft argued that Netscape and Java were not any unique threat to the company, and in fact did not even constitute a rival operating system as such. Netscape was a competitor in providing browser functionality, but did not offer a substitute to Windows. Third, Microsoft maintained it had done nothing more than innovate, improving the functionality of the operating system by incorporating browser functionality into Windows. This is a natural extension of the operating system, one that all other operating systems have also made as the

Internet and computer networking has become important. Microsoft saw the government's attack on its design decisions for Windows as a direct attack on Microsoft's ability to innovate in ways that clearly benefit consumers. Finally, Microsoft claimed there was no consumer harm from any of its conduct, pointing to the fact that Netscape in fact achieved widespread distribution, and Internet Explorer has been able to gain share (against Netscape's initially dominant position) only by offering superior functionality and by leading the way in making its browser available for free. All of this has led to significant consumer benefits, in the company's view.

So, how did these respective arguments play out, in the District Court and ultimately at the Court of Appeals? We consider each argument in turn, beginning with the first point, whether or not Microsoft has monopoly power. No doubt Microsoft software has improved over time; no doubt, either, that the mere cost of writing an operating system is modest in comparison with Microsoft's market capitalization (in the hundreds of billions of dollars) and perhaps even in comparison with the annual revenues from Windows. And Microsoft's pricing for Windows – which Microsoft said indicated that entry was an ever-present threat – presented something of a puzzle for the government. But many antitrust economists would agree that Microsoft's durable and very high share of sales of personal computer operating systems, in conjunction with the compatibility issues that hinder Apple and Linux (for example), give Microsoft meaningful monopoly power. And the trial record left little doubt that Microsoft wielded significant power over personal computer makers such as Gateway or Compaq, who have no practical alternative to Microsoft if they want to actually ship personal computers to their customers. In short, software markets, like some other high-technology markets, involve a different set of entry barriers: here, compatibility and copyright, not traditional entry barriers such as specialized

manufacturing facilities or trade restrictions. In June 2001, the Court of Appeals of the District of Columbia (CADDC) upheld the District Court's conclusion that Microsoft did indeed have a monopoly over desktop operating systems.

What about the second point – whether or not Netscape and Java posed a real threat to Windows? Here we get into some of the thorniest issues in “high-tech antitrust.” We may imagine as a general principle that a high-tech company – monopoly or not – will be better placed than antitrust officials to identify at an early stage the threats to its position. Especially in software, which is inherently so malleable, the greatest threat may not come from a frontal assault, but rather from a complementary product that can be transformed into at least a partial substitute over time. Let us suppose that the high-tech monopolist, seeing a possible threat, acts to block it before it matures into a full-fledged and “obvious” direct threat. Surely sound competition policy cannot conclude that such behavior is immune from antitrust challenge merely because the threat was immature at the time it was eliminated. And surely it makes sense, as a matter of enforcement policy, to give considerable weight to the company's own documents and views about the likely market evolution. But is it equally clear that predictions of market effects will be very difficult if the threat is in its early stages and the market is inherently dynamic. Thus we have an unavoidable policy dilemma: if antitrust officials act early to prevent the incumbent from eliminating the threat, they will necessarily have a difficult time showing definite harm to competition; but if they wait until the harm is shown, it will be too late to correct the problem and far less likely to deter such conduct in the future. On this issue, the Court of Appeals came down squarely on the government's side, ruling that “..it would be inimical to the purpose of the Sherman Act to allow monopolists free reign to squash nascent, albeit unproven,

competitors at will – particularly in industries marked by rapid technology advance and frequent paradigm shifts.” (CADC, p. 61)

The third point – evaluating the actual economic effects of Microsoft’s conduct – suffers the same problem just described with respect to the identification of anti-competitive effects. This problem has always been present in monopolization cases, although it is arguably exacerbated in the high-tech setting. The most heated debate revolves around the government’s claim that Microsoft “tied” Internet Explorer to Windows. Many commentators harbor considerable unease about having the courts “second guess” product design decisions, even those by dominant firms. And the antitrust law revolving around tying has always had problems stemming from the necessity of defining just when two “functions” constitute two separate “products,” which can be tied, rather than a single product. All of the long-standing thorny issues surrounding the law of tying are brought into sharp relief when software is involved, since the boundaries of one piece of software, or one piece of code, and another are inherently hard to define. In fact, the Court of Appeals remanded the District Court’s tying decision against Microsoft, indicating that the application of a *per se* rule was inappropriate here, but offering the government the chance to make its tying case again using the rule of reason, which would require a balancing of the exclusionary effects and the beneficial effects of Microsoft’s tying of Internet Explorer to Windows.

There is less debate surrounding Microsoft’s contractual practices, such as exclusivity provisions in various contracts, although even there the effectiveness of these contracts to actually impede Netscape was hotly disputed. The Court of Appeals fully supported the District Court’s ruling that Microsoft violated the Sherman Act by defending its monopoly using exclusive contracts with a range of parties.

Finally, we face here the tricky question of whether Microsoft was defending its operating system monopoly or attacking Netscape's browser monopoly (or both). If we take network effects and compatibility seriously, as Microsoft clearly does, Netscape's browser posed a threat to Microsoft precisely because it was the *dominant* browser, and thus an attractive "platform" to which other software could be written. Thus, by attacking Netscape's "monopoly" – something normally encouraged under the antitrust laws – Microsoft was eliminating a threat to its own monopoly – actions which can amount to illegal "monopoly maintenance." Indeed, Microsoft documents indicate that Microsoft's primary goal was simply to match Netscape in browser share, not necessarily to "win" the browser war. Viewed this way, and looking for general principles beyond this particular case, limits on the conduct of one incumbent monopolist can potentially strengthen the position of *another* incumbent monopolist. The Court of Appeals fully accepted the findings of the District Court that Microsoft engaged in "monopoly maintenance" by preventing Netscape's browser and Sun's Java from gaining sufficient acceptance to become an alternative software "platform." Furthermore, the Appeals Court held that it was an act of monopolization for Microsoft to meld the computer code for the browser and the operating system, given the potential of the browser (plus Java) to become a competing platform for a wide range of applications programs. As a practical matter, this part of the appellate ruling means at the very least that Microsoft must enable consumers and computer manufacturers to remove Internet Explorer from Windows. At this writing, one state (New Mexico) has settled with Microsoft requiring just that outcome.

In sum, the June 2001 Court of Appeals decision sends a clear message, especially since it was written by a 7-0 Court: high-technology companies are not immune from antitrust scrutiny. Even if Microsoft ultimately survives with a settlement or court-imposed remedy that

is no more than a slap on the wrist – an outcome we consider unlikely in the light of the appellate ruling -- we believe few dominant companies in the future will want to take on the legal risks, and face the public relations problems, that Microsoft has endured by acting so aggressively in wielding its economic power. Whatever happens next, we believe that the legacy of the Microsoft case is clear: powerful companies, even in industries experiencing rapid technological change, must compete on the merits, not by using their power to exclude competition, even competition offered by nascent technologies.

2. FTC v. Intel

The case brought against Intel by the Federal Trade Commission in 1998 is a useful contrast to the Microsoft case.²¹ When Intel was faced by patent infringement suits by some of its customers (Intergraph and Digital being the leading examples), Intel withdrew certain valuable Intel intellectual property (including trade secrets valuable to customers building systems incorporating Intel microprocessors) from those customers. The FTC viewed this conduct as a monopolistic abuse by Intel, since these customers would suffer significant economic harm if deprived of the Intel intellectual property. The FTC took the view that Intel should not be able to engage in “self-help” to resolve patent claims brought against it, but rather should resolve such claims in court. Intel viewed its conduct as a natural defensive response, refusing to share its intellectual property with companies that were bringing their own intellectual property cases against Intel.

The parallels between the Microsoft and Intel cases are clear enough: Intel, like Microsoft, is a powerful company in the personal computer business; Intel, like Microsoft, sells a critical component (microprocessors) of personal computers and has a very large share of the sales of this component. Intel, like Microsoft, has enjoyed this large share for years.

But the similarities end there. The Intel conduct challenged by the FTC was very narrow, confined to Intel's response in situations in which an Intel customer sued Intel for patent infringement. Intel's conduct was directed at certain customers, not at Intel's competitors (such as AMD, Intel's primary competitor in making x86 compatible microprocessors, or IBM and Sun, two of Intel's leading competitors in making microprocessors for servers). Unlike the Microsoft case, the FTC never identified any evidence that Intel was attempting to do anything more than defend itself, and reduce its exposure, in the face of patent infringement cases brought against it. Nor was the FTC able to point to any adverse effect of Intel's conduct on competition in microprocessors. The final difference is the disposition of the two cases: shortly before trial, Intel settled its case with the FTC, agreeing to partially alter its business practices to meet the FTC's concerns. The Intel case is now seen as a leading example of the boundary between intellectual property and antitrust, as well as a good example of how a leading company can minimize its antitrust exposure by compromising with antitrust enforcers.

Both the Intel and Microsoft cases illustrate the willingness of Clinton antitrust officials to make predictions about how specific business practices will affect competition well into the future. In the Microsoft case, the DOJ necessarily was predicting that Netscape's browser and Sun's Java could, in time, have posed a genuine threat to Microsoft's monopoly position. One reason the government case was so strong in Court is that Microsoft itself took precisely this view. Some would say that Microsoft over-reacted to the Netscape/Java threat, but who was better placed to judge the severity of the threat than Microsoft itself? Clearly, the efforts of Microsoft executives to distance themselves from their own earlier documents and e-mails undermined their credibility with Judge Jackson. In the Intel case, the FTC predicted that Intel's conduct would inevitably have a chilling effect on companies who might otherwise engage in

innovation to challenge Intel's position in microprocessors. But again we see the importance of the documents and internal assessments of the company itself: the FTC had an underlying theory but virtually no evidence, either from Intel or from third parties, in support of their position. Intel's own documents showed that it was fighting back in the context of patent litigation in an effort to limit its exposure to patent infringement suits. Intel's stated objective was to reduce the royalties it might have to pay and thus lower its costs. And Intel's actions were primarily directed at its customers, not its competitors.

What lessons can we learn from these two signature cases at the intersection of antitrust, intellectual property, and high-technology? The lesson for powerful companies subjected to antitrust scrutiny is clear: they must be prepared to defend themselves based on their contemporaneous assessment of their own actions combined with economic analysis of the likely effects of those actions, not based on a reconstruction of why they pursued the strategies they did. The lesson for antitrust officials: court challenges to the conduct of dominant firms based on predictions about future effects on competition and innovation are unlikely to have much force without a solid evidentiary basis for those predictions combined with a sound economic theory of harm to competition.

3. U.S. v. American Airlines

A third monopolization case stands out from the Clinton years: the predatory pricing case brought against American Airlines in 1999 by the DOJ. The government challenged American's strategy of cutting prices on flights into and out of its Dallas-Fort Worth (DFW) hub in response to competition from new entrant airlines seeking to serve certain spokes out of that hub.²²

What was remarkable about the American Airlines case is that the DOJ sued even though there was no evidence that the airline was pricing below average variable cost or marginal cost, the conventional test for assessing whether predatory pricing was present that is applied by

courts, as recommended by antitrust scholars Philip Areeda and Donald Turner. The government nonetheless asserted in its complaint that American Airlines intended to drive new entrants out of business with extraordinarily low fares and expected success precisely because marginal costs in the industry – the cost of filling an additional seat on an airplane -- were so low.²³ In late April of 2001, however, the federal district court in Wichita, Kansas that was hearing the case threw it out on summary judgment, in effect affirming the Areeda-Turner test. As a result, predatory pricing law remains where it was before the American Airlines case was brought.²⁴ In our view, it is unlikely we will see many such cases in the future.²⁵

B. Horizontal Activity

Whatever one may believe about the wisdom of government challenges of conduct by dominant firms, there is much more consensus among antitrust scholars and practitioners that the government should be vigilant in prosecuting various types of horizontal, or collusive, arrangements to fix prices and divide markets. Nonetheless, even this consensus can break down when confronted with the facts of particular cases. The Clinton antitrust years were marked by some rather novel investigations and prosecutions of horizontal conduct, not merely plain vanilla price fixing. A review of the most notable efforts follows.

1. DOJ's Credit Card Case

DOJ sued Visa and MasterCard in October 1998 for their rules regarding dual governance and exclusivity. Dual governance refers to the fact that many of the banks in control of Visa also play a lead role in running the MasterCard system. Exclusivity refers to the rules that prohibit banks that are members of Visa or MasterCard from issuing rival cards such as American Express or Discover. DOJ asserted that dual governance and exclusivity had impeded competition among and innovation by credit card systems (such as Visa, MasterCard, American Express, Discover). A trial was held in the Summer of 2000 in this case. The district court judge

who heard the case expressed some skepticism during the trial about some of the government's positions. Her decision was pending at this writing.

2. FTC Cases Challenging Patent Settlements by Drug Companies

Starting in 1999, the FTC moved aggressively to challenge agreements reached between incumbent companies holding pharmaceutical patents and would-be challengers offering generic drugs. Several of these cases display variations on the same fact pattern. First, the challenger files with the FDA for permission to introduce a generic version of a popular branded drug. Next, the incumbent supplier, who holds a patent, asserts that the challenger would infringe the patent, which (under the Hatch-Waxman Act) freezes the generic challenger for 30 months while the patent infringement issues are sorted out in court. Then the incumbent and the challenger reach a settlement, which specifies a date at which the challenger is licensed to enter the market.

The FTC has objected strongly when these patent settlements involve a cash payment from the patent holder to the challenger. The FTC asserts that incumbents are effectively paying to delay the entry by the generic challenger, thereby depriving consumers of the benefits of generic competition, which typically involves much lower prices than are charged by the branded incumbent supplier. In some cases, due to the operation of the Hatch-Waxman Act, a settlement between the patent holder and the first company to file with the FDA to offer a generic can also freeze *other* generic suppliers out of the market. The FTC has filed several of these cases, and has opened a broader industry investigation into this type of settlement agreement.²⁶

3. Patent Pools

As intellectual property becomes a more and more important element of competition, the antitrust limits on agreements involving intellectual property loom larger in the antitrust enforcement world. The FTC generic drug cases just described fit into this category. So does the Intel case, which was in many respects about cross-licensing: Intel would not license its

patents trade secrets unless the licensee also shared its intellectual property with Intel. As explained in Shapiro (2000), the surge in patenting activity has created a “patent thicket” that companies must cut through to commercialize products in a number of high-tech industries, inevitably leading to more licensing and cross-licensing activity.

Patent pools are yet another type of intellectual property agreement. Under this form, two or more companies contribute their patents to the pool, which then licenses out a package of patents to companies seeking to manufacturer products using those patents. Patent pools have long raised red flags in antitrust circles, as they can easily involve an agreement on pricing (at least to set the price charged by the pool) between actual or potential competitors.²⁷

The Clinton Justice Department was quite supportive of patent pools, with suitable protections. The DOJ recognized that pooling the *complementary* patents necessary for a product or technology can be highly pro-competitive. In theory, forming a patent pool can lower licensing costs for two reasons: by offering convenient, one-stop shopping for licensees whose products make use of several patents, and by internalizing the “Cournot complements” problems that leads to inefficiently high prices when two complementary monopolists price their products (or patents) independently. Using this sound economic reasoning, DOJ issued favorable business review letters for a patent pool involving the MPEG video compression technology and for two patent pools involving DVD technology.

In contrast, the FTC took a distinctly more hostile approach to patent pools, challenging the patent pool formed by Summit and VisX, the two key suppliers of technology for laser eye surgery. Despite the fact that Summit and VisX appeared to have held complementary blocking patents (this being the standard used by the DOJ for allowing the formation of a pool), the FTC challenged their pool, Pillar Point Partners. In the Summit/VisX case, the parties agreed to

abolish their pool and give each other royalty-free cross-licenses. While this served the short-run interests of consumers, the FTC approach may discourage the formation of efficient and pro-competitive patent pools in the future, and may discourage innovation by failing to give sufficient returns to innovators who must deal with others holding complementary blocking patents.

4. Standard Setting

The FTC's case against Dell Computer articulated an important principle regarding the use of intellectual property in the standard-setting process: after Dell had agreed not to assert any patents against other companies for the purpose of complying with a certain hardware standard, Dell indeed tried to assert such patents. The FTC challenged this practice, and Dell agreed not to assert its patents on this standard. The key principle here is that companies must meet the promises they make in a standard-setting context with respect to the licensing of their patents necessary to comply with the standard. For a further discussion of the antitrust treatment of standard-setting activities, see Shapiro (2000).

8. Merger Control Policy During the Clinton Years

For reasons having nothing to do with antitrust policy, there was a massive merger wave during the mid- to late-1990s. The merger wave washed over large sections of the economy, ranging from banking to telephones, from defense to health care, from railroads to radio. Inevitably, many of these mergers involved dominant firms, or direct competitors, and thus triggered antitrust review. As shown above in Chart 4, the number of Hart-Scott-Rodino merger notifications received by the FTC and the DOJ more than tripled from the early 1990s to the late 1990s.²⁸ Even more dramatic was the increase in the *value* of U.S. merger activity. During the 1990-1992 time period, the average annual value of U.S. merger activity was \$151 billion.

During the 1998-1999 time period, this average had jumped more than tenfold to \$1.7 trillion. While some of this increase reflects the overheated stock market valuations of 1998-1999, the real economic value of merger activity clearly rose dramatically during the 1990s. Naturally, this put more pressure on the resources of the DOJ and the FTC and increased their crucial role insuring that mergers and acquisitions do not substantially reduce competition.²⁹

We find it notable, however, that the rate of *challenges* of mergers as a percentage of HSR filings (again, see Chart 4) did not rise significantly from the early 1990s to the late 1990s. In fact, despite the huge number of mergers proposed and consummated, virtually none of these mergers were challenged and litigated on antitrust grounds. In large part, the dearth of litigation reflects a clear articulation of merger control policy – less uncertainty means less litigation. In no year were more than 6% of proposed mergers subjected to a full investigation (second request for information); in no year were more than one-half of one percent of proposed mergers challenged in Court. And, in the vast majority of deals that were modified as a result of the HSR review, these modifications (usually divestitures) were achieved through a settlement with the DOJ or the FTC.

We also should note a reality of today's capital markets: few companies are prepared to fight in Court a DOJ or FTC challenge to their merger: the ensuing litigation inevitably takes several months, if not more, during which time the target company is likely to suffer, both in terms of its stock price and in terms of its ability to operate effectively. As a result, merging parties often abandon their mergers once DOJ or the FTC makes it clear that a challenge will ensue and if the agency's requirements to "fix" the deal are unacceptable to the merging parties.

A. The Predictable Nature of Merger Enforcement Policy

We attribute the low level of merger litigation in no small part to the relatively predictable nature of merger enforcement, at least as regards horizontal mergers, following the 1992 Horizontal Merger Guidelines. Recall that the guidelines have been largely in place now for nearly 20 years. In other words, the small amount of litigation should not be taken as indicating that antitrust policy was somehow lax or irrelevant. To the contrary, companies are continually counseled on which proposed mergers will pass, or fail, antitrust scrutiny. In this very real sense, merger control policy has an ongoing, profound if largely hidden effect on the very structure of American industry.

As noted above, the economic principles behind merger control policy have not shifted since the Reagan administration. Rather, the differences across administrations have been one of judgment and emphasis. For example, in the Reagan years, antitrust officials were quite receptive to “entry arguments,” namely arguments put forward by merging parties that they could not exercise market power post-merger because any attempt to do so would be met with easy and rapid entry into the market. Clinton administration officials also acknowledged that entry *can* eliminate concerns, but have tended to require much more solid evidence of ease of entry before giving significant weight to these arguments.

There has been one clear shift in merging thinking throughout the 1990s. Early on, the primary theory used by lawyers at the DOJ and FTC was a collusion theory: after the merger, with one fewer player in the market, the remaining suppliers would find it easier either to form a cartel (explicit collusion) or simply to adopt “live and let live” strategies (tacit collusion) rather than to compete actively and aggressively. By the mid-1990s, an alternative theory, known in antitrust circles as “unilateral effects,” became much more common in merger analysis. This is effectively the theory that the new, non-cooperative oligopoly equilibrium (formally, some type

of Nash Equilibrium) after the merger would involve reduced output and higher prices than before the merger. Based as it is on non-cooperative oligopoly theory, unilateral effects analysis is highly amenable to economic modeling and estimation. As a result, the emphasis on unilateral effects has led to a great expansion in the role of oligopoly theory and econometric analysis in merger review. This is especially true in cases where there is considerable data available, such as mergers involving consumer goods where supermarket (or comparable) scanner data is available. Some of the most detailed empirical work on differentiated products, pricing, and oligopoly now takes place in the context of merger analysis, in part because economists conducting such analysis have exceptional access to detailed company records as well as high-frequency, disaggregated price and quantity data.

B. General Approach to Remedies

We did see some general shifts in the approach taken at the FTC and the DOJ regarding three broad classes of merger “remedies”: (1) blockage of the merger; (2) requiring the merged firms to divest certain assets to preserve competition (a so-called “structural” remedy); or (3) requiring the merged entity to operate its business subject to certain limitations (a so-called “behavioral” remedy).

As a general rule, both agencies have long been unwilling to enter into behavioral remedies in horizontal mergers. For example, an agreement to lower prices 5% per year after the merger would typically not be accepted as a substitute for pre-merger competition between the merging parties. Underlying this view is the judgment that the benefits of competition cannot be replicated through consent agreements: perhaps competition would lead to much better products, or to prices falling at a rate greater than 5% per year. Concerns about enforceability also argue against behavioral remedies, especially in horizontal mergers.

In contrast, behavioral remedies are often accepted in vertical mergers. For example, in the Time Warner/Turner merger, the FTC accepted a commitment by Time Warner to provide access on the Time Warner cable systems to either MSNBC or Fox News, the two leading competitors to CNN, which was part of Turner Broadcasting and was being acquired by Time Warner. This behavioral remedy was intended to address the concern that Time Warner might use its cable properties to exclude rivals to CNN from obtaining needed cable distribution.

Returning to horizontal merger cases, where divestitures are the typical remedy, there still remains the question of how big a package of assets must be divested. The operative rule at both agencies is that the divestiture should create a viable competitor so that there is no significant loss of competition in comparison with the pre-merger state of affairs. In most cases, the competitive vitality of the divested assets depends both on the package of assets that is divested *and* the identity of the company acquiring those assets. For example, in the proposed acquisition of Intuit by Microsoft, which the DOJ asserted would have reduced competition in the market for financial software (Intuit's Quicken competed against Microsoft's Money), the divestiture offered by Microsoft was rejected by the DOJ. Simply spinning off Money (even if a full package of assets had been offered) was inadequate, since it was unlikely that any firm picking up the Money assets would be as strong a competitor in the financial software market as Microsoft was viewed to be prior to the proposed merger.

The implication: before accepting a divestiture remedy in a merger case, antitrust officials not unreasonably are interested in knowing not just what assets will be divested but also the likely identity of the firm acquiring the divested assets. On this score, we observe the DOJ, and especially the FTC, taking a tougher stance in the second Clinton term than during the first. The FTC went so far as to issue a report in 1999 on the divestiture process, reaching the

conclusion that certain “partial” remedies had not been as effective as hoped. The unavoidable policy conclusion: divestitures should be more complete, and the FTC should make sure that the buyer of any divested assets will be a highly capable competitor in the relevant markets at issue. In shorthand, the prevailing approach during first term was to accept surgical fixes, while a “clean sweep” of assets was more likely to be required during the second term. Leading examples in which the agencies required the divestiture to be a full-fledged, viable business on its own were Exxon/Mobil, BP/Amoco, BP/ARCO, Time Warner/Turner, and Worldcom/MCI.

C. Major Merger Challenges

We cannot do justice here to the many mergers investigated and challenged during the Clinton years. Rather, we will simply mention a handful of the more visible cases at each agency, with very brief commentary on the substance of these cases, what they tell us about merger enforcement policy during the Clinton years, and their implications for future merger enforcement.

1. Department of Justice

The Antitrust Division challenged Microsoft’s acquisition of Intuit in 1995. Intuit’s Quicken financial planning software was a direct competitor to Microsoft’s Money software. Microsoft and Intuit abandoned the deal prior to litigation. This case shows the DOJ rejecting arguments that entry barriers into software markets are inevitably low, and viewing Microsoft as a strong force capable of adding significant competition in an area where Intuit was the leader. The case also shows an unwillingness of the DOJ to accept a partial divestiture of Money assets by Microsoft.

In 1996, the Division urged the Surface Transportation Board (STB) not to approve the proposed merger between the Union Pacific and Southern Pacific railroads, two of the three major railroads in the Western U.S. Analysis of this merger at DOJ involved extensive

econometric work to define relevant railroad markets and the impact of competition from trucking and waterborne freight transportation. The DOJ also expressed skepticism over the large efficiency claims put forward by the merging parties. The STB approved the merger over DOJ objections. After the merger, Union Pacific experienced very substantial disruptions to its operations – effectively an anti-efficiency. Later, following a complex deal by which CSX and Norfolk Southern split up Conrail, the STB imposed a ban on railroad mergers, which was only lifted by the Bush administration in the Summer of 2001. This case shows how resting final authority over mergers in the STB, rather than DOJ, is likely to lead to a more lenient policy, just as it did during the 1980s when the Department of Transportation approved several airline mergers over DOJ objections.

DOJ challenged several hospital mergers during the first Clinton term, but was less active in controlling hospital mergers after facing several defeats in Court, including a 1994 setback in the merger of the only two hospitals in Dubuque, Iowa, Mercy Health Center and Finley Hospital, and a 1997 defeat in the merger of Long Island Jewish Medical Center and North Shore Health System.

Throughout the Clinton administration, and especially after the passage of the Telecommunications Act of 1996, the Antitrust Division was faced with a series of proposed mergers in the telecommunications sector. The radio industry experienced a wave of consolidations, with the DOJ (not the FCC) serving as the gatekeeper limiting concentration of radio assets in various cities. Likewise, DOJ faced several huge telephone mergers, including SBC/Pacific Bell, SBC/Ameritech, Bell Atlantic/Nynex, Bell Atlantic/GTE, and Qwest/U.S. West. Generally, DOJ approved these mergers with relatively minor divestitures or other conditions. DOJ effectively took the view that adjacent Regional Bell Operating Companies

(RBOCs), such as Bell Atlantic and Nynex, either were not significant potential competitors in each other's regions or that the merging parties were only one of several potential competitors. One telecom merger in which the DOJ required a significant divestiture was the merger between Worldcom and MCI in 1998: the DOJ required the sale of a major MCI unit to preserve competition in Internet backbone services. Various antitrust observers have noted that preserving competition among the various underlying pipes which comprise the Internet – itself often viewed as a technology that breaks down entry barriers and enables wide-open competition – requires vigilant antitrust enforcement.

During the second Clinton term, several very large mergers or acquisitions were abandoned in the face of DOJ challenges: Alcoa and Reynolds in aluminum (1997); Lockheed Martin and Northrop Grumman in defense contracting, at \$11.6 billion the largest merger ever blocked on antitrust grounds at that time (1998); the acquisition of Primestar, a direct broadcast satellite service, by several cable companies (1998); and the merger of Worldcom MCI and Sprint in telephone and Internet services (2000). In some respects, these are the most visible merger enforcement actions of all: major deals that are not merely restructured, but flat-out abandoned due to antitrust problems.

2. Federal Trade Commission

One of the most important merger cases brought by the FTC was against Staples and Office Depot, two office supply “superstores” that sought to merge in 1997. The case was a significant test of the “unilateral effects” theory described above. The FTC, relying on extensive econometric evidence showing that prices were lower in cities served by multiple office superstores, claimed that this was a three-to-two merger in a market for office supply superstores. The parties asserted that the market included all suppliers of office supplies, and that their combined share was too small to pose a serious antitrust problem. By winning this

case, FTC strengthened merger enforcement by convincing a Court that direct evidence of pricing effects could overcome more qualitative arguments about “reasonable substitutes” and that have often been used by Courts to define antitrust markets.

One of the most sensitive mergers reviewed by the FTC was Boeing’s acquisition of McDonnell Douglas. In 1997, the FTC cleared this merger, despite the fact that Boeing’s share of the market for large commercial aircraft was roughly 60%, and McDonnell Douglas was one of only two rivals, the other being Airbus Industrie. In a statement explaining their decision, three Commissioners explained that they had not acted to further a “national champion,” but rather had simply concluded that “McDonnell Douglas, looking to the future, no longer constitutes a meaningful competitive force in the commercial aircraft market.”³⁰ The case caused some tension across the Atlantic when the European Commission required that Boeing modify some of its exclusive contracts with airlines as a condition for approving the merger.

Like the DOJ, the FTC experienced an acceleration of its merger enforcement duties in the second Clinton term. Generally speaking, the FTC displayed a far greater appetite to look for behavior remedies in vertical cases than the DOJ, which was more inclined to simply let vertical deals proceed forward. Two of the most significant vertical mergers reviewed by the FTC were the acquisition of Turner Broadcasting by Time Warner (1997) and the merger of AOL and Time Warner in 2000. In both cases, the FTC insisted on behavioral provisions before approving these deals.

The FTC also found itself in the middle of a major consolidation in the oil industry during the second Clinton term. After extensive reviews, the FTC insisted on major divestitures in the BP/Amoco merger (1998), the Exxon Mobil merger (1999) and the BP/ARCO merger (2000). The entire vertical chain in the oil industry was implicated in these various mergers,

from exploration and drilling (BP/ARCO in Alaska) to retail gasoline stations. As usual, oil industry mergers are highly visible and politically sensitive. The FTC did not block any of these mergers outright, but was aggressive in the divestitures sought. For example, in the BP/ARCO deal, the FTC insisted that BP divest ARCO's entire Alaskan operations, on the theory that BP had monopoly power in the sale of Alaskan North Slope crude oil on the U.S. West Coast, even though the State of Alaska was satisfied that a much smaller divestiture would preserve competition in bidding for exploration rights on the Alaska North Slope, and despite a consensus among experts that the market for crude oil is a worldwide market, with no separate market for Alaskan crude oil used on the U.S. West Coast. After entering into litigation with the FTC, BP agreed to the divestiture sought by the FTC, averting a trial.³¹

A final FTC case worthy of note is the FTC's challenge to the proposed acquisition of Beechnut's baby food business by Heinz. The FTC challenged this merger in 2000, expressing concern that Heinz and Beechnut were the only two rivals to Gerber, the dominant supplier of baby food in the U.S. The merging parties argued that they would achieve significant efficiencies by joining forces and thus be better able to take on Gerber. The District Court agreed with the parties on this point, and refused to grant a preliminary injunction blocking the merger. However, the FTC appealed this decision. Such appeals are very rare, since most merging parties lack the patience to appeal unfavorable merger decisions by the lower courts, and the agencies at times choose not to appeal if the merger in question is consummated after a request for preliminary injunction is denied. Because they are so rare, decisions by the appeals court on merger matters are highly influential. In this case, Heinz and Beechnut were able to hold their merger together through the appeals process. In a blow to the "efficiencies defense" in mergers, the appeals court ruled that the merging parties had *not* established sufficient

efficiencies to offset the presumed reduction in competition based on the increase in concentration in the market for baby food. This case is significant because it raises the hurdle even further for companies seeking to justify their merger based on achieving efficiencies.

Several major mergers were also abandoned in the face of a potential FTC challenge, including Barnes & Noble's proposed marriage with Ingram and the Air Liquide-Air Products merger. As with threatened actions by the DOJ, the potential for challenge by the FTC also discourages some anticompetitive mergers from ever seeing the light of day.

9. The Rise in International Antitrust Enforcement in the Clinton Years

There is no doubt that antitrust enforcement became more international in scope during the Clinton years. For more detail on how U.S. companies and U.S. antitrust officials must be mindful of international issues, see the final report of the International Competition Policy Advisory Committee (ICPAC), which was issued in February 2000. The ICPAC was established by the Attorney General in November 1997 to address global antitrust problems.³²

The increasingly global nature of antitrust enforcement should be somewhat expected, since the U.S. economy itself was become more integrated during these years – as measured by rising shares of imports and exports and capital flows as a share of total output (for more details, see the chapter by Robert Lawrence in this volume). Nonetheless, the international nature of the enforcement agenda was surprising in one respect. Normally, one would assume that the greater the competition from foreign imports, in particular, the more competitive pressure that would be applied to domestic firms, and thus the need for antitrust scrutiny would be reduced. But while this effect almost certainly did materialize, increasing cross-border economic activity led to a more active international agenda for at least four important reasons.

First, there were mounting numbers of highly visible mergers involving companies that had international operations, and thus which triggered antitrust review in multiple jurisdictions – especially Europe, where antitrust enforcement had been centralized since the early 1990s in the European Commission. Some of the best known examples included several major telecommunications alliances --British Telecom and MCI, and then with AT&T; Deutsche Telecom and France Telecom with Sprint; MCI's marriage with Worldcom; Boeing's purchase of McDonnell Douglas; and most recently, General Electric's plan to acquire Honeywell (which was blocked by the European Commission in July 2001).

Second, as we indicated earlier, the U.S. corporate amnesty program eventually uncovered a number of price fixing conspiracies that were international in scope. Indeed, the vitamins case – which resulted in the largest criminal antitrust fine in U.S. history – had a number foreign defendants. However, there were other price fixing cases – notably, fax paper involving Japanese defendants and dinner flatware involving Canadian defendants – where U.S. authorities successfully mounted a court challenge (or agreed to a settlement) even though most, if not all, of the evidence and illegal activity were located abroad. Nonetheless, U.S. law is sweeping in scope: well-established cases allow U.S. antitrust prosecution as long as the offending activity adversely affects U.S. consumers. The problem of international cartels is not simply a problem for the United States, but has been recognized as an important global issue [WTO, 1997].

Third, both European and U.S. antitrust authorities have become involved in investigating and prosecuting dominant firm abuses where the target of the investigation conducts business and engages in similar activities in both jurisdictions. A prominent example is the first Microsoft investigation during 1993-94. In that case, Microsoft actually consented to a joint investigation –

and ultimately to a joint settlement – because the company did not want potentially inconsistent rulings from both authorities [see Litan, 2000]. A more recent example is the initiation of an investigation of Intel by the EC in 2001 after the FTC had conducted and then closed its own investigation. In this instance, the EC investigation apparently is proceeding without much U.S. involvement or cooperation – a possible harbinger of things to come, as we note shortly.

Finally, the Clinton Justice Department carved out new ground in the international arena when it acted on a potentially important policy change that was announced in 1992 under Assistant Attorney General Rill: the prosecution of foreign defendants for taking steps outside the U.S. that violated our antitrust laws in a way that harmed U.S. *exporters*, not just importers. The initial target of this change in policy was a British company, Pilkington, which the DOJ asserted had a dominant position worldwide in the provision of technology for the manufacturing of glass. The Justice Department charged Pilkington with using exclusive territories and other restrictive licensing practices to entrench its monopoly position. Eventually, the company agreed to a consent decree to abandon these practices.

Where antitrust investigations or matters involve multiple jurisdictions it is appropriate – indeed necessary – for U.S. authorities to cooperate with their counterparts in other countries. As early as 1967, the OECD went on record urging such cooperation, a recommendation that has been modified a number of times since [OECD, 1995]. U.S. antitrust authorities have followed up this recommendation by entering into a number of bilateral cooperation agreements with similar authorities in other countries, including Australia, Canada, the European Commission, and Germany. During the Clinton years, Brazil, Israel, Japan, and Mexico were added to this list. Each of these agreements obligates the parties to notify the other of a pending investigation, contemplates the sharing of information about planned actions that may affect the interests of the

other party, and outlines efforts to cooperate in actual investigations, to the extent permitted by applicable law. None of these agreements, however, overrides domestic laws that prohibit the sharing of confidential information without the consent of the target of the investigation. The United States does have one other agreement, however, with Canada – a so-called “Mutual Legal Assistance Treaty” (or MLAT) – that allows the sharing of information obtained in criminal investigations that otherwise might be confidential.

While these bilateral agreements have been important, they do not require the sharing of all information nor can they compel testimony of foreign witnesses and any documents they may have in their possession, unless home country authorities compel such production. The latter shortcoming was arguably the main reason why the Justice Department failed to survive a motion for directed verdict in the criminal price-fixing case it brought against General Electric in 1993-94 involving industrial diamonds. Shortly after that case, however, the Department was more successful in persuading the Congress to authorize U.S. antitrust agencies to enter into bilateral MLATs to share otherwise confidential information in *civil* cases. That authority was granted in the International Antitrust Assistance Act, and the government has since entered into such an agreement with Australia.

Given the relatively heavy volume of mergers and other investigations involving joint jurisdiction with the European Commission (EC), much of the cooperative activity of the U.S. authorities during the Clinton years was with the EC’s competition directorate, DG IV (now known as DG-Comp). By and large, the U.S. and the EC authorities saw eye-to-eye, with perhaps the notable exception of the Boeing-McDonnell Douglas merger, where the EC was more insistent on conditions (which it eventually got, in the form of a ban on exclusive contracts between Boeing and certain airlines). In the first Microsoft investigation, Justice and EC

officials sat side-by-side in the negotiations with Microsoft that led to the first consent decree. In other cases, notably the MCI-Worldcom merger, the U.S. authorities let the EC take the lead in imposing conditions (a divestiture of Internet backbone operations).

While the trend toward increasing cooperation with foreign authorities exists, some rough spots remain. In our view, the Justice Department during our tenure was somewhat frustrated with what it saw as a less-than-aggressive posture by the Japanese Fair Trade Commission. The Department also ruffled feathers abroad with its insistence on extraterritorial application of our antitrust laws, not just in the Japanese fax paper case, but also in the Pilkington matter, where the primary harm was to U.S. exporters in third-country markets rather than to U.S. consumers. Meanwhile, European officials appear to be frustrated with the resistance of our antitrust authorities to add antitrust harmonization to the list of issues to be negotiated under the auspices of the World Trade Organization (WTO). The main reason for recalcitrance on our part has been a fear of U.S. officials that any international agreement could water down our own antitrust standards. Nonetheless, shortly before he left office, Assistant Attorney General Joel Klein endorsed a recommendation by an advisory board report that the U.S. seek to harmonize merger reporting requirements so as to facilitate the review, approval, or where necessary, opposition of authorities to mergers invoking the jurisdiction of multiple countries.³³

Both antitrust and trade officials in the U.S. government have also been extremely hesitant about putting antidumping reform on the trade agenda. Intellectually speaking, this is difficult to justify. The antidumping law punishes behavior by foreign companies – selling below average cost and engaging in price discrimination – that is lawful for domestic firms selling in the U.S. market and certainly not in violation of U.S. antitrust law. Less developed countries, in particular, have been fond of pointing this out and have insisted that antidumping policy reform

be added to the agenda of any future trade negotiating round. U.S. trade officials, in both Democratic or Republican Administrations, so far have strongly resisted such a course, almost certainly because of the widespread political support that the antidumping laws have in Congress. In our view, this is the reason that U.S. antitrust officials also have not pressed for antidumping reform, or even not come close to suggesting any change in antidumping policy.³⁴

Finally, it is possible that any material changes in antitrust policy during the current Bush Administration will lead to more friction with antitrust officials abroad, especially in Europe, where the Competition Directorate in recent years appears to have become even more aggressive in antitrust enforcement. If this friction emerges, then major multinational companies that might have anticipated benefits from a more relaxed antitrust enforcement policy in this country could end up being sorely disappointed. At the same time, disagreements over antitrust policy between the U.S. and Europe could make an already difficult trade relationship even more contentious. Most recently, the July 2001 opposition of the EU to the proposed General Electric and Honeywell merger – a deal that was cleared by the DOJ with selected divestitures – has occasioned significant comment, most of it adverse, from the U.S. press and political leaders. Since the EC's concerns are difficult to justify on traditional antitrust grounds,³⁵ the events surrounding the GE/Honeywell merger could be the harbinger of further tensions between the U.S. and European antitrust authorities in the future.

10.Challenges Ahead: Antitrust in an Era of High-Tech³⁶

Looking ahead, questions have been raised about whether antitrust enforcement is up to the challenges posed by certain aspects of what has come to be called the “new economy.” One challenge grows out of the sheer speed of technological change, especially in the information technology sector, where new generations of microprocessors have been doubling the speed of

computers every 12 to 18 months. Ever faster computer chips lead to the creation and production of every powerful personal computers and other chip-based devices, which in turn, require new and more powerful software. Technological change in the biotech sector also seems extraordinarily rapid, with potentially even more far-reaching benefits for society.

It is tempting to conclude that the quickened pace of technological change makes antitrust irrelevant. If technology, firms and markets can change so rapidly, how long can any single firm retain monopoly power? More to the point, given the relatively slow pace of the judicial process – even after the relatively rapid trial in the Microsoft case, more than three years elapsed between the filing of the government complaint and a decision by the Appeals Court, and we still have no definitive judgment – how can antitrust enforcers expect to contribute more good than harm when litigating?

There are several answers to this techno-pessimism about antitrust. One is that even in face of rapid technological change, incumbent monopolies enjoy tremendous advantages that make it difficult for new entrants to dislodge them even when technology advances. Microsoft, for example, has maintained a monopoly in operating systems for personal computers for over a decade. Likewise, Intel has enjoyed a high share of desktop microprocessor sales for over a decade. Incumbents not only have the advantage of deep pockets, but they also can take advantage of lead time in designing upgrades or new products that are “backward compatible” with their preexisting versions. Accordingly, there is time for litigation – and often early settlement – to make a real difference where monopolies are believed to be abusing their market power. The Appeals Court in the Microsoft case certainly did not back away from the application of the antitrust laws in the rapidly changing software industry.

A second answer is that rapid technological change underscores the *importance* of antitrust in the review of mergers among firms in high-technology markets. An ounce of prevention is worth more than a pound of cure when market conditions are subject to change. Accordingly, mergers in high-tech markets should face an extra degree of scrutiny precisely because the relative sluggishness of the judicial process makes it more difficult after-the-fact to unscramble in a timely and meaningful fashion concentrations of market made possible by merger power.

A third answer concedes the problem that rapid change poses for antitrust enforcement but then seeks to speed up the judicial process so that resolution of antitrust litigation can occur much more quickly. One approach, which is difficult to legislate but nonetheless should be copied, is to conduct trials in the streamlined way in which the Microsoft trial was conducted. That is, discovery can be limited, the parties can be confronted with a real, early trial date, and the trial itself can be streamlined by limiting the number of witnesses each side is able to present. Requiring all judges to conduct their litigations this way is difficult, if not impossible, to mandate, as the experience with the Civil Justice Reform Act of 1990 has demonstrated.³⁷ But Judge Jackson demonstrated in the Microsoft case that a major antitrust liability trial could be conducted relatively quickly (even if he then got himself into trouble by attempting to impose a structural remedy without sufficient evidentiary hearings and discussing the case with the press after his decision). Nonetheless, it is not clear that a lag of more than three years from complaint to final judgment is truly workable and effective in high-tech industries.

Continued advances in technology undoubtedly will raise many more fascinating antitrust issues in the years ahead. One of them is how the emerging business-to-business (“B2B”) exchanges – many of which are joint ventures among competing firms -- on the Internet will be

treated by the antitrust authorities. In theory, of course, joint ventures of this type pose the dangers of collusion, not just among the competing buyers but also among the suppliers from whom bids are sought, and so need to be scrutinized carefully. To give another current example, American, Continental, Delta, Northwest, and United Airlines recently launched their Orbitz venture to sell tickets on-line, over the strong objections of travel agents. Will this venture streamline ticket sales and cut out middlemen, or will it serve as a mechanism for collusion among the airlines?

The Federal Trade Commission staff indicated in its October 2000 staff report that antitrust concerns over B2B exchanges can usually be eliminated by adopting well-crafted operating rules. B2B exchanges are likely to pass muster as long as they meet a number of conditions designed to ensure that pricing is transparent, that the price quotes are “firm” (and not signals of what suppliers intend to charge), that confidential information is protected, and that exchanges avoid being “over-inclusive” while also making sure that they are not used to exclude buyers or suppliers from the market. At this writing, we are aware of no exchange that has failed to meet these conditions.

We close simply by flagging two potentially broader and deeper issues that we believe the antitrust authorities will inevitably be forced to deal with more and more frequently in the years ahead: tying and intellectual property rights.

Tying is a storied topic in antitrust law and policy. Traditionally, the courts and the enforcement agencies have been very wary of commercial tying, whereby a company with a dominant product (the tying product) sells that product only on the condition that buyers take another of its products (the tied product). The Microsoft case involved allegations of tying the browser to the operating system. At this writing, Microsoft is nearing the launch of its new

operating system, XP, that integrates additional features, including Microsoft's own audio and video player, a "single passport" identification system for doing commerce on the Net, and other features. The problem posed for antitrust authorities by such efforts at integration is to find justifiable and easily administrable ways of distinguishing between a single, integrated product (in which case there can be no tying) and two distinct products (in which case tying is possible). The courts have struggled to fashion a broadly applicable rule to determine whether two distinct "functions" are one product or two. Is the browser part of the operating system? Is the car radio part of the car? What about the tires or the engine? The decision by the Appeals Court in the Microsoft case offers considerable guidance regarding tying cases, even while sending the Microsoft case itself back to the lower court on the tying claim. Inevitably, however, by calling for a rule of reason inquiry rather than a per se treatment, the Microsoft Court is insisting upon a more complex, exhaustive, and time-consuming inquiry to be conducted.

Unfortunately, as recognized by the Microsoft Court, longstanding difficulties with tying doctrine are likely to become more pronounced in various high-tech industries, especially given the trends toward *integrated* products.³⁸ For example, Intel's microprocessors and chipsets now handle the functions that were handled by many more parts ten or twenty years ago. Indeed, the name "Intel" stands for "integrated electronics." The Microsoft court explicitly noted the example of integration of the microprocessor with the math co-processor as an example of apparently beneficial integration of two products into one. If customers value integration, and technology makes integration efficient, surely the antitrust laws should not stand in the way. Worse yet, the boundary between one "functionality" and another is especially fussy in the software industry. We predict a number of sharp antitrust issues in the years ahead will revolve around integrated products, interfaces, and the meaning of "tying" under antitrust law.

Finally, we see a continuation of the clear trend towards a greater role for intellectual property within antitrust.³⁹ As we noted above, patents, copyright, and trade secrets – not production facilities or access to raw materials – increasingly are the key sources of competitive advantage in the “knowledge economy.” This being the case, it is inevitable that owners of intellectual property rights will push to the limit the advantages such rights confer upon them. These limits are defined not only by the scope of the intellectual property rights themselves, but by antitrust principles. While former FTC Chairman Robert Pitofsky and former Assistant Attorney General Joel Klein were both keen to point out that the laws governing intellectual property serve the same underlying goal as the antitrust laws – to promote innovation and thus benefit our economy – there is no getting around the fact that tensions arise between these two bodies of law. We expect those tensions to be actively explored in the years ahead, either by the private litigants or by the antitrust enforcement agencies.

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[Charts 1, 2, 3, and 4 and Table 1 Follow]

Endnotes

* Prepared for “American Economic Policy in the 1990s,” June 27-30, 2001, Harvard University, Center for Business and Government, John F. Kennedy School of Government.

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¹ The Clayton Act was amended in 1950, mostly to broaden its coverage of mergers. The Hart-Scott-Rodino Act further strengthened merger enforcement procedures in the 1970s.

² In contrast, discounting by foreign suppliers selling into the U.S. market has often been attacked as illegal “dumping.” Conflicts between trade policy and antitrust policy are not uncommon, with antitrust officials welcoming import competition as a check on the market power of domestic firms.

³ Areeda, at 575.

⁴ The competition policy laws in most foreign countries, while distinct, are no less vague. Officials in other jurisdictions, most notably the European Union, are actively exploring the limits of their enforcement authority and interpreting their own statutes as they fashion Competition Policy. Since more and more firms, American and foreign, are doing business both in the U.S. and abroad, and since the very same business practices (ranging from Intel’s pricing and licensing strategies to the merger of Boeing and McDonnell Douglas) affect commerce around the world, companies increasingly must be mindful of competition policy rules in multiple countries as they conduct their business affairs.

⁵ See Evenett, et al. 2000. We discuss the substantive nature of this international antitrust enforcement activity later in the chapter.

6 As developed by the courts, only those plaintiffs who have suffered “antitrust injury” – such as having had to pay higher prices – can sue for damages. Under some circumstances, this limitation means that competitors of a defendant may not have standing to sue.

⁷ This section draws heavily on Kovacic and Shapiro (2000).

⁸ A notable example is *United States v. Addyston Pipe & Steel Co.* (85 Fed. 271 [6th Cir. 1898]).

⁹ *Dr. Miles Medical Co. v. John D. Park & Sons Co.* (220 U.S. 373 [1911]). This case has since been much criticized. A general problem with the development of the law regarding vertical restraints of trade is that the courts have attempted to take a distinction that makes sense in the horizontal realm – that between unilateral conduct and “agreements” – and apply it in the vertical area, where buyers and sellers necessarily “agree” to do business. In the area of “vertical price fixing” the courts have struggled long and hard to draw a line between conduct that constitutes an “agreement” between a manufacturer and a retailer versus conduct that is “unilaterally” imposed by the manufacturer.

¹⁰ See Kovacic (1989) at 1134.

¹¹ We do have some FTC data, but we lack a time series of FTC enforcement actions. The FTC data are from “Summary of Bureau of Competition Activity: Fiscal Year 1996 Through March 31, 2000,” pages 52-58. During this three and one-half year period, the FTC reports the following merger enforcement activity: nine preliminary injunctions authorized, two Part III administrative complaints, 89 Part II consent agreements, 14 civil penalty actions, and 34 transactions abandoned after a second request was issued, for a total of 148 merger actions. On the non-merger side, there were five Part III administrative complaints, 31 Part II consent agreements, one civil penalty action, and one injunction, for a total of 38 non-merger actions. This same document lists all of these cases and describes a number of them. See <http://www.ftc.gov/bc/abafy96thru00.pdf>. During the subsequent year ending March 31, 2001, the FTC reports the following activity in the merger area: four preliminary injunctions, twenty consent agreements, and seven mergers abandoned during the FTC investigation. On the non-merger side, the FTC obtained a \$100 million consent judgment in one case (*Mylan*) and entered into eight consent agreements. See <http://www.ftc.gov/speeches/other/boastmollys.htm>.

¹² All of the FTC and DOJ guidelines and reports are available at their web sites, www.ftc.gov and www.usdoj.gov/atr. These sites also offer a wealth of information about specific antitrust cases brought by these two agencies.

¹³ In addition, the Antitrust Enforcement Guidelines for International Operations were updated in 1995.

¹⁴ If the FCC does not approve a number of these applications in the near future, several influential Members of Congress have vowed to seek legislation that would speed up such entry.

¹⁵ Indeed, the Department noted in its 1999 annual report [at 8] that the amnesty program at that point was generating applications for amnesty at the rate of two per month.

¹⁶ Starting in FY1990, here are the total annual price-fixing fines collected by the Antitrust Division, rounded to the nearest million dollars: \$24, \$20, \$24, \$40, \$42, \$40, \$27, \$205, \$267, \$1,107.

¹⁷ U.S. v. American Stock Exchange, Chicago Board Options Exchange, Pacific Exchange and Philadelphia Stock Exchange, September 2000. See <http://www.usdoj.gov/atr/cases/indx262.htm>.

¹⁸ Both authors were involved in investigations of Microsoft when at the Antitrust Division, and Shapiro has offered testimony as an expert witness for the government in the remedy phase of the trial.

¹⁹ For excellent overviews of the economics of the Microsoft case from different perspectives, see Gilbert and Katz; Klein; and Whinston, all in the Spring 2001 issues of the *Journal of Economic Perspectives*.

²⁰ The decision of the Court of Appeals for the District of Columbia in the Microsoft case is one of the most significant antitrust decisions in recent years, and will have lasting implications for the application of the antitrust laws in the software industry and beyond. See <http://msft.cadc.uscourts.gov/cadc/00-5212a.pdf>.

²¹ Shapiro served as an expert witness on behalf of Intel in this proceeding.

²² Earlier, the Department of Transportation had proposed promulgating rules regarding the pricing and frequency decisions of airlines at their hubs. Meeting resistance by the larger carriers, these rules were never put into place. The DOJ case against American Airlines was an attempt to control aggressive behavior by hub airlines using antitrust rather than regulation.

²³ As usual in predatory pricing cases, the measurement of “marginal cost” or “average variable cost” is both contentious and tricky. In this case, the treatment of the cost of aircraft was a central issue. DOJ sought to have the opportunity cost of an aircraft, namely the profits that could be earned by flying that aircraft on an

alternative route, included in the measurement of variable cost (at least when evaluating decisions to add more flights to the routes in question). Courts historically have been reluctant to include opportunity costs in their measurement of incremental costs.

²⁴ In June 2001, the DOJ announced that it would appeal the District Court's ruling in the American Airlines case.

²⁵ Prior to the American Airlines case, the government had not brought a predatory pricing case for years. Generally, the courts have become less and less receptive to predatory pricing cases over the past 25 years.

²⁶ For a more complete discussion of these cases, see Gilbert and Tom (2001). On the broader question of the antitrust limits on settlements of patent disputes between direct rivals, see Shapiro (2001).

²⁷ See Klein (1997) for a discussion of cross-licensing and patent pools, including a nice description of airplane patent pool dating back to World War I, which was approved by the Justice Department.

²⁸ During 1990-1992, an average of 1366 HSR filings were made per year. During 1998-2000, an average of 4584 HSR filings were made.

²⁹ Data are taken from the Antitrust Division's Annual Report for FY99.

³⁰ See the Statement by Chairman Pitofsky and Commissioners Steiger, Starek and Varney at <http://www.ftc.gov/opa/1997/9707/boeingsta.htm>. Shapiro served as an outside economic consultant to the Commission on the Boeing/McDonnell Douglas merger.

³¹ Shapiro served as an expert witness for BP and ARCO in this case.

³² The report is available on-line at <http://www.usdoj.gov/atr/icpac/icpac.htm>.

³³ Cite to International Advisory Report and to Klein's endorsement.

³⁴ One of us (Litan) has suggested a reform of the antidumping laws that would not require their repeal (and replacement with just antitrust law): eliminating the cost of production test or changing it to penalize only sales below average *variable* cost for goods bought from countries that have reasonably adequate antitrust enforcement and that do not maintain significant barriers to the imports of the same goods. This modification is designed to satisfy those who claim that an antidumping law is necessary to prevent firms in countries with closed markets from "dumping" their goods abroad, and especially in our market. But if foreign markets are not really closed, then arguably a different (more reasonable) antidumping test should apply. See Burtless, et al., 1998.

³⁵ The European Commission opposed the merger in part on the grounds that GE would be able to offer Boeing, Airbus, and others discounts on packages of GE engines and Honeywell avionics and other products. The Commission feared that this discounting would put pressure on rivals and ultimately create or strengthen a dominant position by GE. Needless to say, blocking a merger based on concerns that it will lead to discounting is not in the mainstream of economic thinking about merger control policies, nor in keeping with U.S. antitrust law. Shapiro has provided economic assistance to GE and Honeywell during their merger review process.

³⁶ This section draws on Litan (2001) and Shapiro (2000).

³⁷ There was uneven adoption of expedited procedures in the ten “model” district courts that were funded to experiment with ways to streamline their cases. The CJRA experience highlights the fact that procedural reform depends almost exclusively on the willingness of particular judges to adopt such approaches as early trial dates and limits on discovery and witnesses.

³⁸ For one recent survey of the antitrust issues surrounding bundling in high-tech markets, see Sidak, 2001.

³⁹ Gilbert and Tom (2001) document this trend nicely in the enforcement actions taken by the DOJ and the FTC during the Clinton years.

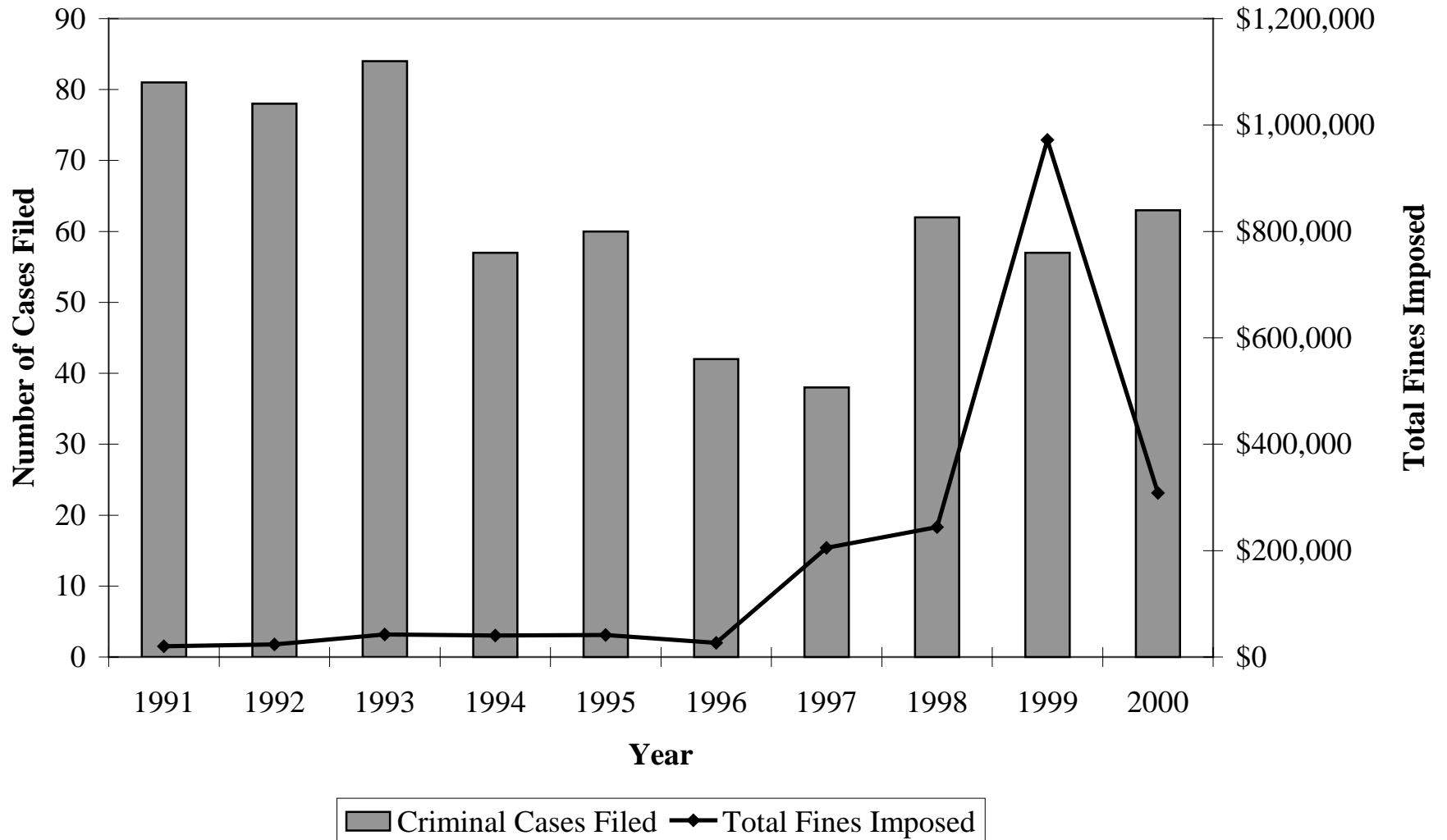
TABLE 1:
Sherman Act Violations Yielding a Fine of \$10 Million or More

Defendant (FY)	Product	Fine (\$ Millions)	Geographic Scope	Country
F. Hoffmann-La Roche, Ltd. (1999)	Vitamins	\$500	International	Switzerland
BASF AG (1999)	Vitamins	\$225	International	Germany
SGL Carbon AG (1999)	Graphite Electrodes	\$135	International	Germany
Mitsubishi Corp. (2001)	Graphite Electrodes	\$134	International	Japan
UCAR International, Inc. (1998)	Graphite Electrodes	\$110	International	U.S.
Archer Daniels Midland Co. (1997)	Lysine & Citric Acid	\$100	International	U.S.
Takeda Chemical Industries, Ltd. (1999)	Vitamins	\$72	International	Japan
Daicel Chemical Industries, Ltd. (2000)	Sorbates	\$53	International	Japan
ABB Middle East & Africa Participations AG (2001)	Construction	\$53	International	Switzerland
Haarmann & Reimer Corp. (1997)	Citric Acid	\$50	International	German Parent
HeereMac v.o.f. (1998)	Marine Construction	\$49	International	Netherlands
Sotheby's Holdings Inc. (2001)	Fine Arts Auctions	\$45	International	U.S.
Eisai Co., Ltd. (1999)	Vitamins	\$40	International	Japan
Hoechst AG (1999)	Sorbates	\$36	International	Germany
Showa Denko Carbon, Inc. (1998)	Graphite Electrodes	\$32.5	International	Japan
Philipp Holzmann AG (2000)	Construction	\$30	International	Germany

**TABLE 1:
Sherman Act Violations Yielding a Fine of \$10 Million or More**

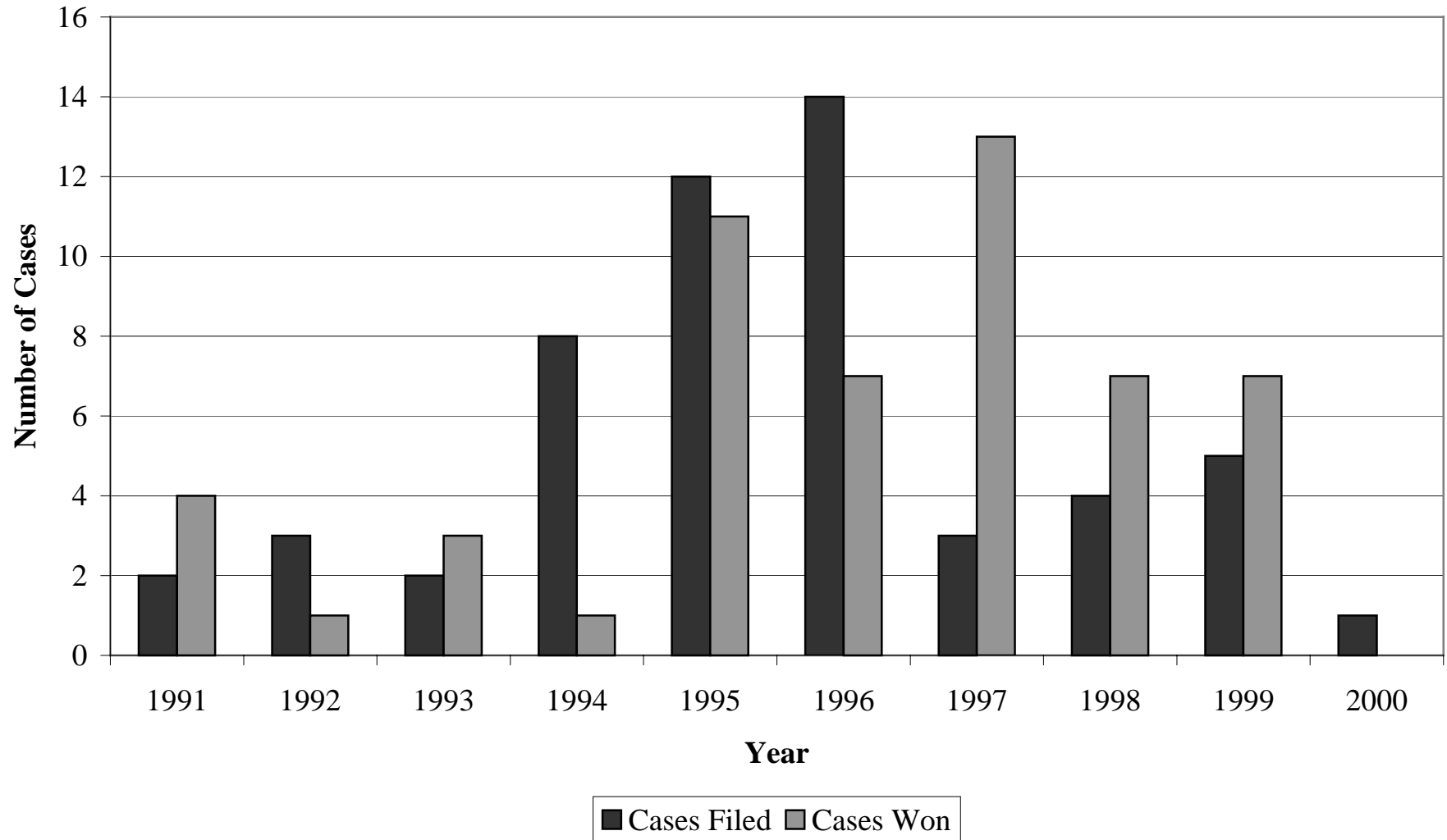
Daiichi Pharmaceutical Co., Ltd. (1999)	Vitamins	\$25	International	Japan
Nippon Gohsei (1999)	Sorbates	\$21	International	Japan
Pfizer Inc. (1999)	Maltol/Sodium Erythorbate	\$20	International	U.S.
Fujisawa Pharmaceuticals Co. (1998)	Sodium Gluconate	\$20	International	Japan
Dockwise N.V. (1998)	Marine Transportation	\$15	International	Belgium
Dyno Nobel (1996)	Explosives	\$15	Domestic	Norwegian Parent
F. Hoffmann-La Roche, Ltd. (1997)	Citric Acid	\$14	International	Switzerland
Merck KgaA (2000)	Vitamins	\$14	International	Germany
Degussa-Huls AG (2000)	Vitamins	\$13	International	Germany
Ueno Fine Chemicals Industry, Ltd. (2001)	Sorbates	\$11	International	Japan
Eastman Chemical Co. (1998)	Sorbates	\$11	International	U.S.
Jungbunzlauer International AG (1997)	Citric Acid	\$11	International	Switzerland
Lonza AG (1998)	Vitamins	\$10.5	International	Switzerland
Akzo Nobel Chemicals, BV & Glucona, BV (1997)	Sodium Gluconate	\$10	International	Netherlands
ICI Explosives (1995)	Explosives	\$10	Domestic	British Parent
Mrs. Baird's Bakeries (1996)	Bread	\$10	Domestic	U.S.
Ajinomoto Co., Inc. (1996)	Lysine	\$10	International	Japan
Kyowa Hakko Kogyo, Co., Ltd. (1996)	Lysine	\$10	International	Japan

**Chart 1:
Criminal Investigations**



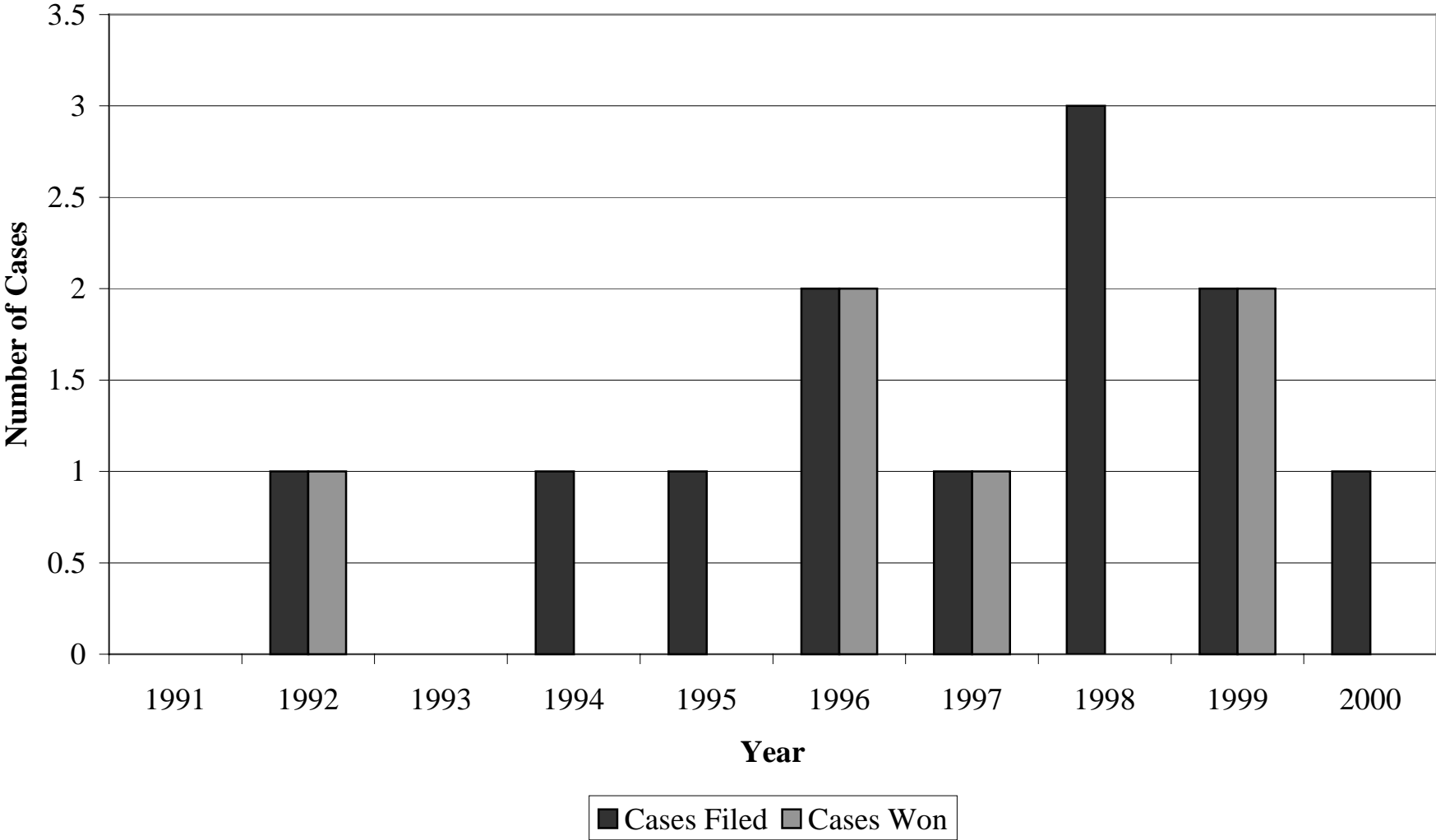
Source: U.S. Department of Justice. Antitrust Division. Workload Statistics FY 1991-2000.

**Chart 2:
Restraint of Trade Cases (Sherman Act Section 1)**



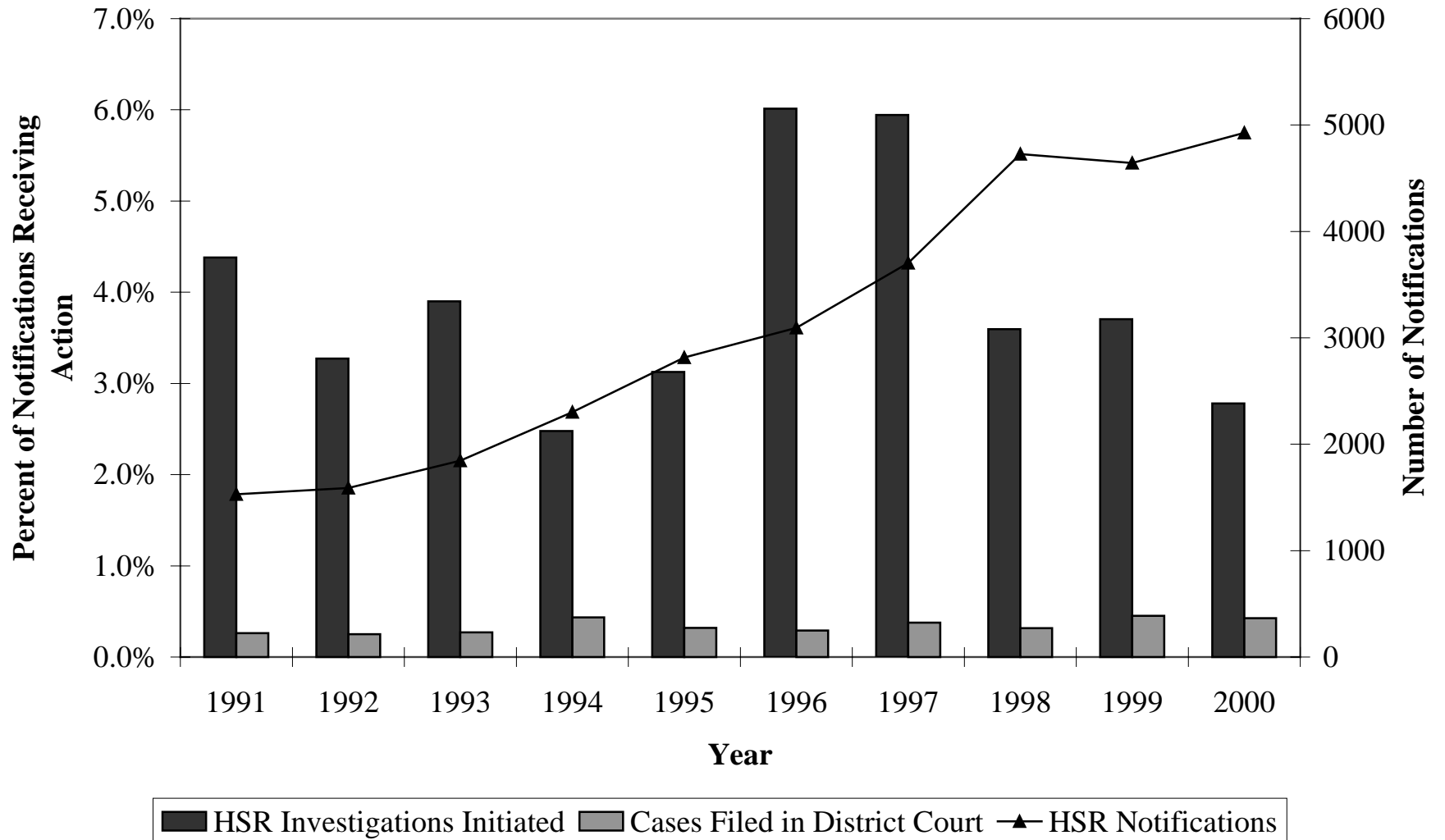
Source: U.S. Department of Justice. Antitrust Division. Workload Statistics FY 1991-2000.

**Chart 3:
Monopoly Cases (Sherman Act Section 2)**



Source: U.S. Department of Justice. Antitrust Division. Workload Statistics FY 1991-2000.

**Chart 4:
Hart-Scott-Rodino Merger Notifications and Actions**



Source: U.S. Department of Justice. Antitrust Division. Workload Statistics FY 1991-2000.