

SOME EMPIRICAL EVIDENCE ON THE EFFECTIVENESS OF ANTIMERGER RELIEF IN THE UNITED STATES

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The extent of structural relief obtained by the government in a Section 7 settlement is modeled as an outcome of a bargaining game between the antitrust agency and parties to the merger. This framework is applied to data from 73 Section 7 cases settled during 1990–2000. The fraction of competitive overlap subject to divestiture is shown to depend on the extent of merger-specific efficiencies, the anticompetitive potential of the merger, and the hostage effect facing the merging firms, as well as the degree of media coverage of the case, the workload of the agency, and the partisan composition of Congress. (JEL L44, C24)

I. INTRODUCTION

Section 7 of the Clayton Act of 1914 made it illegal for two competitors to merge if such a merger would result in a significant restriction of competition. In 1950, the Celler-Kefauver amendment closed a significant loophole in the existing antimerger legislation by outlawing anticompetitive acquisitions of assets as well as acquisitions of stock. The law empowering the antitrust authorities to challenge anticompetitive mergers has been the same for over half a century now, although its interpretation has evolved over the years as the government and the courts gained experience from handling various cases.

Identifying the problem cases out of numerous mergers taking place each year eventually became a standardized process, as the Department of Justice (DOJ) issued its first Horizontal Merger Guidelines in 1968. These guidelines specified thresholds of market concentration that when exceeded, would likely trigger a more extensive investigation of a merger. As economic theory became more dominant in the analysis of antitrust cases, the Merger Guidelines were revised several times—in 1982, 1984, 1992, 1994, and 1997—adding emphasis to such important factors as barriers to entry,

efficiencies, and likelihood of collusion among competitors.¹

While the legal treatment of mergers improved steadily throughout the existence of antimerger enforcement, the remedies, or “fixes,” carried out under Section 7 were often ignored. Many researchers have pointed out that frequently the focus of merger investigations was on establishing the anticompetitive potential of the transaction. When such was found, the government can do no better than disallow the merger entirely. However, if there are substantial efficiencies foregone by prohibiting all (arguably) anticompetitive mergers, then such policy begs for improvement. Also, until the passage of the Hart-Scott-Rodino (HSR) Antitrust Improvements Act of 1976, the merger investigation typically did not commence until after the merger was consummated. Therefore, disallowing the transaction really meant dissolving the already-combined entities. This by itself can easily be seen to be problematic.

1. The latest version of this document is available on the DOJ, Antitrust Division Web site at www.usdoj.gov/atr/public.

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ABBREVIATIONS

DOJ: Department of Justice
FTC: Federal Trade Commission
GDP: Gross Domestic Product
HHI: Herfindahl-Hirschman Index
HSR: Hart-Scott-Rodino Act
OLS: Ordinary Least Squares

Resolving an anticompetitive situation arising out of a proposed merger became easier once the HSR Act gave the government the power to delay the merger while the investigation proceeds. Thus, dissolving potentially troublesome mergers after they have been consummated is usually no longer necessary. However, antimerger remedies only recently became the focal point of improvement of antimerger policy. Studies of merger challenges of the 1950s and 1960s (Elzinga 1969; Pfunder et al. 1972) and 1970s (Rogowsky 1982) found that the relief obtained by the government is unsuccessful in a great majority of cases. The problems identified plagued both the instruments of relief used by the antitrust agencies (partial divestitures, reliance on marketing or conduct orders, bans on further acquisitions, etc.) and the enforcement of consent orders. In other words, remedies were often poorly designed in the first place and hence doomed for failure; additionally, sometimes even a well-structured solution would prove unsuccessful because its execution was not properly monitored.

In recent decades, antimerger remedies have increasingly consisted of asset divestitures. However, as is evident from numerous cases reviewed by Elzinga and Rogowsky, as recently as in the 1980s relief obtained by the antitrust authorities in many cases was limited by the insistence of the agencies on relying on nondivestiture instruments, such as marketing orders, which simply prohibit certain types of conduct. Nevertheless, today divestiture of overlap assets is the preferred method of relief sought by the Federal Trade Commission (FTC) and the DOJ.

II. PURPOSE OF STUDY

It is worth pointing out that it is not the goal of this article to evaluate the U.S. merger policy as a whole or to make policy recommendations regarding such aspects of it as legislation, interpretation of the law, dual-agency enforcement, or case selection process. It is true, for example, that if the government tends to challenge some procompetitive mergers, then poor or no relief obtained in such cases may be better than carrying out a successful remedy, which repairs a nonexistent—but, perceived—injury to competition. For the purposes of the present study, I assume (perhaps naively) that the process of screening an-

ticompetitive mergers is efficient. In other words, we consider only relief sought in cases deemed problematic according to their anticompetitive potential while ignoring any Type I error—challenging too many harmless cases.

Section 7 relief continues to be problematic today. The antitrust agencies have committed to improving their approach and performance,² but there is evidence of inadequate remedies being used to address serious competitive issues related to recent merger activity. For example, Coate and Kleit (2001), who review 113 recent FTC consent decrees, report that 31 of them were “compromise” or problematic settlements. They identify six cases in which divestiture was inadequate to address all of the likely competitive issues and five cases with no structural remedy at all. Clearly, a study of the underlying process would contribute to a deeper understanding of the causes of such shortcomings and ultimately suggest a “diagnosis” that can be used to devise a “cure” for the ailing system.

The effectiveness of antimerger relief has not been adequately addressed in the empirical economics literature.³ Following the pioneering work by Elzinga (1969), Pfunder et al. (1972) and Rogowsky (1982, 1986), little has been done to assess the appropriateness of structural remedies. These studies reached a common conclusion that relief obtained by the antitrust authorities in the vast majority of Section 7 cases was unsuccessful.

Application of econometric techniques is also rather rare. The few studies that exist aim to address some particular aspect of merger policy. For example, stock market event studies, popular in the 1980s and early 1990s, seek to explain the abnormal stock returns that accrue to firms planning to merge as the financial markets interpret the announcement of the acquisition as “efficiency-enhancing” or “market-power-creating.”⁴

2. See Parker and Balto (2000) and Scheffman et al. (2002). See also the report to the American Bar Association by George C. Cary of the FTC on the commission’s study (1997) of merger remedies.

3. It is also worth noting that all of the existing studies of Section 7 enforcement were done by current or former staff members of the FTC or the DOJ. The present article is, to my knowledge, the first attempt to shed light on the mechanics of the antimerger review process using only publicly available sources.

4. See, for example, Eckbo (1992), McGuckin et al. (1992), Eckbo and Weir (1985), Schumann (1983), and Stillman (1993).

Several papers attempt to quantify the impact of premerger notification (under the HSR) on the agencies' decisions to challenge a particular merger (see Johnson and Parkman 1991; Lopatka and Mongoven 1995). A large portion of the recent literature on merger policy deals with simulating the effects of acquisitions on prices in various markets.⁵

This article's main goal is threefold. First, it seeks to address the obvious void in the literature on the economics of merger policy by examining the effectiveness of remedies used in recent Section 7 cases. Second, it suggests and applies a new empirical approach to measuring the degree of success achieved in a particular merger challenge. Third, it demonstrates that a great deal of information potentially useful to the firms contemplating a merger can be gleaned from the data made public by the antitrust authorities.

The present study focuses on cases reviewed by the DOJ, mainly because the Antitrust Division staff are typically more forthcoming about disclosing the details of their economic analysis than the Bureau of Economics at the FTC. However, a priori, there is no reason to expect that choosing only DOJ cases introduces any sample selection bias: whereas mergers in some industries are frequently reviewed by the same agency,⁶ generally who handles the case is decided on a case-by-case basis. Rogowsky (1982) discusses the benefits and costs of dual-agency antimerger enforcement and finds that there are very subtle differences in the outcomes achieved by the two agencies.

The remainder of the article is organized as follows: section III briefly discusses the theoretical foundation; section IV presents the empirical approach; section V discusses the sources and construction of the data; estimation techniques and results are presented in sections VI and VII; section VIII presents and discusses the results of out-of-sample prediction; and section IX concludes.

5. An exhaustive list of relevant work is obviously too long to be reproduced here, but see, for instance, Werden and Froeb (1994, 1996), Werden (1996), Crooke et al. (1999), Froeb and Tschantz (2001), Jayaratne and Shapiro (2000), and Epstein and Rubinfeld (2001) for recent examples of advances in merger simulations.

6. For instance, airline mergers are typically handled by the DOJ, whereas mergers of healthcare providers and acquisitions of firms producing equipment for the Department of Defense and the military lie in the domain of the FTC.

III. THEORETICAL BACKGROUND

A summary of antimerger activity at the DOJ is presented in Table 1. As is evident from the table, the vast majority of Section 7 cases are settled rather than litigated. Consequently, the remedies implemented in such cases are results of negotiations.

The process of determination of appropriate structural relief can be viewed as a bargaining game between two players: the Firm proposing to merge with a competitor and the Agency (government's antitrust authority). The proposed merger is assumed to result in some potential for harm to competition in the *overlap* markets. The bargaining game is a negotiation over the division of assets involved in this overlap: any divestiture of assets obtained by the Agency resolves some of the anticompetitive issues (a complete divestiture—i.e., elimination of overlap—would resolve such issues completely), whereas the portion of assets retained by the Firm contributes to competitive injury.

The standard bargaining theory results (see the classic paper by Rubinstein 1982) suggest that the player with a relatively lower cost of delay gets the larger share of the pie. In the following section, I propose a new approach to empirically test whether such predictions are consistent with the observed patterns of divestitures. Specifically, the following question is posed and answered: What (merger-specific and other) factors affect the outcome of the bargaining situation in each particular case?

IV. EMPIRICAL APPROACH

The players' degrees of patience are not empirically observable. However, the magnitudes of these discount rates are not important, because the payoff to Agency depends only on its cost of delay *relative* to that of the Firm, not on the absolute magnitudes of these costs. A useful analogy is suggested by Muthoo (1999): In a boxing match, the stronger of the two athletes wins, whereas their absolute strengths are irrelevant.

The outcome of the negotiation is determined by the *bargaining strength* parameter τ defined by

$$\tau = r_A / r_F,$$

where r_A and r_F are the Agency's and the Firm's discount rates, respectively. This bargaining strength parameter is modeled here

TABLE 1
Summary of Antimerger Activity at the Antitrust Division of the DOJ

FY	Number of Challenges	Number of Complaints	Outcome		
			Settled (% of Complaints)	Restructured or Abandoned	Litigated
1990	13	11	5 (45.5)	2	6
1991 ^a	13	4	3 (75)	9	0
1992	7	4	4 (100)	3	0
1993	10	5	4 (80)	5	0
1994	22	10	7 (70)	14	1
1995	18	9	6 (66.7)	10	2
1996 ^b	30	10	9 (90)	20	0
1997	31	14	13 (92.9)	17	1
1998	51	15	10 (66.7)	41	0
1999	47	21	20 (95.2)	26	1
2000	48	21	18 (85.7)	2	1

^aOne case was dismissed after the court denied a preliminary injunction.

^bOne transaction challenged by the DOJ was subsequently approved by a regulatory agency.

Source: FTC Annual Reports to Congress pursuant to the HSR Act, FY 1990–2000.

empirically as an unknown function $f(V_A, V_F)$ of the vectors V_A and V_F of exogenous factors affecting each player’s degree of patience. As will be discussed, each vector is player-specific in the sense that V_i ’s components are determinants only of player i ’s cost of delay for $i = A, F$. However, it is possible to interpret the impact of any individual variable as the net effect on the outcome.

The cost of prolonged negotiation to the Agency is determined by several factors. For example, Agency’s cost of delay with respect to any particular case is expected to be greater whenever it has a relatively heavy workload. In other words, one would expect the Agency to accept more quick settlements—which tend to be weaker—when it must deal with many pending matters at the same time.

Merger-specific efficiencies are also expected to increase the Agency’s cost of delay, making it more impatient. The more the society stands to

benefit from a particular merger, the greater is the cost of delaying it because of antitrust review. This assumes, of course, that the Agency seeks to maximize consumer welfare and thus finds it costly to delay a welfare-enhancing merger. Such an assumption is consistent with modeling the antitrust agencies as benevolent government authorities, which is the approach used here, but is inconsistent with the results from public choice literature.⁷

The antitrust agencies are not immune to political pressure from the legislative and/or executive branches. To the extent that there are partisan ideological differences in the approach to merger policy among influential political figures, the Agency is likely to be affected by the current regime’s attitude to antitrust actions. Coate et al. (1995) suggested that a heavily Democratic Congress could expect the antitrust agencies to challenge and litigate more cases, whereas a more Republican Congress would prefer settlements. On the other hand, the Republican-dominated Congress may insist on litigation so as to avoid allowing the antitrust agency to assume the role of an unofficial regulator, whereas Democrats would opt for some type of settlement. The overall effect on either case selection or outcomes is uncertain; consequently, the impact on the Agency’s degree of patience in dealing with *only* settled cases is also ambiguous. One possibility is that demanding successful litigation in the majority of cases

7. The public choice theory of antitrust enforcement, which gained popularity in the 1970s, views the agencies’ staffs (attorneys) as individual utility maximizers. Rather than pursue the intended objectives of preserving competition and enforcing the antitrust laws, the lawyers often see public service as a stepping stone toward more lucrative careers in private practice. Therefore, they tend to seek to maximize the visible “output” of their agency by, for instance, bringing as many easily winnable cases as possible. See, for example, Rogowsky (1986, 1987); MacKay et al. (1987) is a good collection of papers on public choice.

diverts the Agency's and Congress's attention away from the few remaining settlements, where the Agency is highly impatient.

The severity of anticompetitive concerns associated with the proposed merger is likely to affect the degree of patience of the Agency. An acquisition that would tend to cause substantial competitive harm if not properly remedied will increase the return to prolonged bargaining for the Agency; hence its cost of delay will be lower.

Finally, a merger that receives a lot of exposure in the media puts additional pressure on the Agency to bring the case to resolution quickly. Several factors may contribute to how well any particular acquisition is covered by the media. For instance, a merger that promises huge consumer savings through the realization of some merger-related synergies is likely to be publicized to a great extent. On the other hand, a merger that is likely to lead to consumer harm due to substantial market power achieved by the Firm is likely to generate a public outcry and hence be covered thoroughly as well. Also, mergers in markets for consumer goods typically receive more media exposure.

On the Firm's side of negotiations, the hostage effect is present in a settlement whenever the entire proposed acquisition is held up by the Agency's review of potential anticompetitive problems in one or more of the relevant markets. The larger the uncontested portion of the merger relative to the portion under review, the greater the hostage effect, and hence the greater is the cost to the Firm of prolonged negotiations.

The anticompetitive potential of the merger also influences the cost to the Firm of delaying the settlement. Firm may be more patient in its dealings with the Agency if it is confident that it is going to benefit quite a bit from a great deal of market power obtained through the acquisition. If so, it pays to wait because a smaller divestiture is likely to not diminish Firm's additional market power by very much.

An important aspect of negotiations with the Agency arises out of dynamic considerations of repeated contacts between the Firm and the antitrust authorities. In this model the players are assumed to bargain over the specifics of an individual case, but in reality it is likely that firms who have frequent interactions with the government tend to consider the reputation effect of resisting the authorities. If so, then larger firms, who deal with the govern-

ment often, may not be the toughest hagglers but may be willing to compromise quickly.

On the other hand, it is possible that Firm size is positively related to its ability to bargain and delay accepting an offer. If the reputation effect is not important to the Firm, then one would expect larger firms to act more patiently in dealings with the authorities because of their ability to finance such lengthy negotiations. This war chest effect characteristic of large firms was first investigated by McCall (1984) in his study of the applicability of a rule of reason to predatory pricing.

Finally, a higher anticipated cost of completing any divestiture is likely to increase the degree of patience of the Firm. Theoretically, the more costly it is to comply with a consent decree requiring a divestiture of a given size, the more willing the Firm will be to wait in the hopes of striking a better deal, *ceteris paribus*. It has been suggested by previous research (see, e.g., Coate and Kleit 2001) that retail properties are much more difficult to sell than other assets (plants, manufacturing equipment, etc.) because of the need to ensure that economies of distribution are not lost when outlets are sold to different buyers. If this stipulation is valid, then certain firms, such as owners of grocery chains, will have lower costs of delay than other firms.

To summarize, the vectors of factors determining the cost of delay to each player can be written as follows:

$$\mathbf{V}_A = \{\text{Merger-specific efficiencies, current workload of the agency, political pressure, merger's public exposure, anticompetitive potential of the merger}\},$$

$$\mathbf{V}_F = \{\text{Hostage factor, anticompetitive potential of the merger, reputation effect, anticipated cost of complying with a divestiture order}\}.$$

Note that with the exception of the anticompetitive potential of the merger, the components of vectors \mathbf{V}_A and \mathbf{V}_F appear in one vector or the other but not both. This modeling assumption greatly simplifies the interpretation of estimated coefficients on the variables proxying the impact of each factor on the outcome of negotiations.

V. CONSTRUCTION OF THE DATA

The sample is drawn from the universe of 99 Section 7 cases settled by the Antitrust

Division of the DOJ between 1990 and 2000, as reported in the *Annual Reports to Congress* pursuant to the HSR Act.⁸ After eliminating the cases involving joint ventures and those for which reliable data could not be located, there are 73 usable observations. An observation in this instance is a settlement between the parties on the one hand and the DOJ on the other, which is fewer than the number of transactions reviewed.⁹ For each case, the relevant information was taken from the texts of the Formal Complaint, the Proposed Final Judgment, and the Competitive Impact Statement filed by the staff of the Antitrust Division.¹⁰ Where additional information was required, other sources, such as industry periodicals and company financial statements, were consulted. It is worthwhile to note that all information used is publicly available to any researcher for replication.¹¹

Before discussing the construction of individual variables, it is useful to define the competitive overlap empirically, especially because this concept is quite central to the analysis presented here. Coate (1992, 1995) suggests using sales of the acquired firm in the relevant market as a measure for the size of the overlap. However, occasionally the target's sales are significantly larger than those of the acquiring company in a particular market, so consistently using acquired firm's sales would overstate the overlap for these mergers. Therefore, the overlap is taken to be equal to the sales of the firm with a smaller presence in the relevant market.

The dependent variable, D , equals the fraction of the competitive overlap subject to divestiture. It is calculated as the ratio of sales generated by the assets to be divested to sales from total overlap assets. Note that, by definition, $0 \leq D \leq 1$. In a number of cases, the settlement called for divestiture of assets,

revenues from which exceeded those initially determined to be subject to review (i.e., in overlap). In the context of the present model, such divestitures would imply $D > 1$. However, because this is obviously inconsistent with the bargaining framework employed here—it means that the Agency is able to obtain a portion of the cake larger than the amount bargained over—the dependent variable is set to equal one for these cases. As a result, D is “censored” in the following sense: An observed value of $D = 1$ implies $D^* \geq 1$, where D^* is the “unobserved” true measure of the divestiture's impact, and is interpreted as full structural relief obtained.¹²

The variable *VALUE* is assigned the value of the proposed transaction in millions of dollars. Where a foreign acquirer is involved, and the value of the merger is reported in a different currency, the official exchange rate for the date of the proposed merger is used. Additionally, in one case involving a stock swap, the price of a share on the date of the merger announcement is used to estimate the corresponding asset purchase price. The values are deflated using the gross domestic product (GDP) deflator to 1996.

The total annual revenues of the acquiring firm are recorded in *SALES*, also deflated to 1996. This variable measures the relative size of the acquirers, potentially capturing the reputation effect.

In addition, examination of the DOJ Complaints and Competitive Impact Statements yielded information on the following variables:

CONSUMER = dummy; equals one if the merger involves a consumer product;

USA = dummy; equals one if the acquiring firm is a U.S. entity;

RETAIL = dummy; equals one if the potential divestiture would involve selling retail units (e.g., grocery stores or movie theaters);

HHI = Herfindahl index (after merger, assuming no divestiture) for each relevant market affected by merger;

BARRIER = dummy; equals one if the Complaint or the Competitive Impact Statement contained significant evidence of difficult, unlikely, untimely, or insufficient entry;

8. Note that the reports do not necessarily list only (or all of) the cases initiated under the HSR premerger notification system. Identification of these cases would potentially compromise the confidentiality used to collect the proprietary information from the parties.

9. Several cases dealt with asset swaps or multiple transactions (sometimes involving three or more firms.)

10. The list of cases is available from the author on request.

11. A potential drawback in relying on the public record produced by the DOJ is due to the fact that the documents, such as the Competitive Impact Statement, are produced *after* the settlement is reached. Therefore, the Antitrust Division staff have an incentive to present the factual information in a manner that is convincing that the consent decree resolves all of the competitive issues.

12. The use of quotation marks in this sentence indicates that the resulting econometric model resembles a censored regression model, which would be appropriate if D^* were truly unobservable.

COLLUDE = dummy; equals one if the Complaint or the Competitive Impact Statement alluded to a high probability of coordinated action among firms (collusion).

Although collusion is typically only discussed in those cases where both the likelihood of coordination is high and the corresponding loss in competition would be substantial, barriers to entry are claimed to be present and significant in every case. Intuitively, this is not surprising, because according to the theory of contestable markets, without difficult entry, firms in even highly concentrated markets should behave competitively as the threat of potential entry forces prices down. Nevertheless, only where time-consuming or unlikely entry is supported by concrete evidence, the variable *BARRIER* is assigned a value of one; whenever no support is provided, the barriers are assumed to be insignificant. Out of 73 cases, in 56 instances entry barriers are demonstrated to be substantial.

The documents also provided information on the dates of the merger, the complaint, and the entry of the Final Judgment; total sales of the acquired entity and sales of the acquired entity involved in competitive overlap. The ratio of the acquired firm's sales in overlap to its total sales defines the fraction of the merger subject to antitrust review.¹³

The variable *HOSTAGE* is equal to one minus the portion of the acquisition under review; therefore, it measures the fraction of the deal held up by the investigation. This variable is similar to the measure *SETTLE VALUE* used by Coate et al. (1995) and Coate and Kleit (2001) to investigate the parties' incentives to fight the FTC, fold (abandon the merger), or settle.

The following additional explanatory variables were either constructed from the information above or obtained from other sources:

EFFICNCY = proxy for merger-related efficiencies that would potentially accrue to the acquiring firm; equals *VALUE* times the fraction of the deal under review.

The rationale for using this particular measure is as follows: A large overlap is likely to translate into substantial synergies realized

by the acquirer as some of the acquired assets that duplicate the firm's own operations are shut down, scrapped, or sold off. More precisely, the importance of merger-related efficiencies depends on the size of the overlap relative to other mergers as well as on the absolute size of the transaction; therefore, $VALUE \times (1 - HOSTAGE)$ captures both aspects of this relationship.¹⁴ Note that given the construction of *EFFICNCY*, Agency, assumed to seek to maximize consumer welfare, is penalized for substantial divestitures, which tend to eliminate large portions of overlap. In other words, merger-specific efficiencies directly affect Agency's payoff.

WORK = measure of the workload at the DOJ at the time of each case; equals the total number of transactions reported to the Anti-trust Division in the month when complaint is filed;

CONGRESS = share of Democrats in the House of Representatives;

SENATE = share of Democrats in the Senate;

POLITICS = (unweighted) average of *CONGRESS* and *SENATE*.

The preceding three variables proxy the extent of political pressure on the antitrust authorities stemming from the partisan differences in the approach to antimerger policy.

WSJ = number of articles published in *The Wall Street Journal* dealing with the merger;

COURT% = the estimated probability that the merger will be enjoined, if litigated.

The probability of government's victory in court is simulated using the estimates from the econometric model described and estimated in Coate (1995) and used in Coate and Kleit (2001).¹⁵

$STRUCTURE = BARRIER \times HHI / 10,000.$

14. Other proxies for merger-specific efficiencies found in the literature include the number of pages in the FTC Bureau of Economics memoranda devoted to the explanation of proposed cost savings (Coate et al. 1995) and the number of FTC docket entries per case (Rogowsky 1986). Both measures are somewhat less direct and require access to the agency's restricted internal documents. Furthermore, the former measure may to some extent reflect the degree of disagreement between the parties about the scope of potential synergies rather than the substance of the savings themselves.

15. Details of this simulation are available from the author on request.

13. In several cases the information on target's sales in a particular geographic market was unavailable. Then the fraction under review is approximated by the ratio of the number of target's facilities (plants) in affected markets to the total number of its facilities.

This is an additional measure of the likely anticompetitive effect of the merger.¹⁶

TIME = number of months since the first case in the sample.

Given that the sample cases span a period of about 11 years, this variable is included to account for any time-dependent changes in the design of divestiture remedies.

Descriptive statistics of the variables are shown in Table 2.

VI. ECONOMETRIC MODEL

Because the dependent variable *D* is censored at both tails, zero and one, use of ordinary least squares (OLS) would lead to inconsistent estimates. In other words, I seek to explain the variation in the unobserved dependent variable *D** by using its censored counterpart *D*. The relationship between *D** and *D* can be summarized as follows:

$$(1) \quad D = \begin{cases} 0 & \text{if } D^* \leq 0 \\ D^* & \text{if } D^* \in (0, 1) \\ 1 & \text{if } D^* \geq 1 \end{cases}$$

The frequency of each instance of *D* is shown in Table 3. The relevant regression equations are estimated using the tobit model. The expected effects of explanatory variables on the relative size of divestiture can be derived from the discussion of the factors likely to affect the players' costs of delay.

For example, a consumer welfare-enhancing merger (i.e., one with a relatively high realization of *EFFICNCY*) puts pressure on the Agency to minimize the delay and resolve the case quickly; therefore, its coefficient is expected to be negative. The coefficient signs on the political variables (*CONGRESS*, *SENATE*, and *POLITICS*) are undetermined a priori. Similarly, the effect of acquiring firm's relative size, measured here by *SALES*, is ambiguous based on the theoretical arguments. Additionally, *USA* is included to investigate whether foreign acquirers systematically

achieve different outcomes from their domestic counterparts due to difference in their bargaining costs; a priori, no expectations are formed for this coefficient. The expected signs of the coefficients on all variables are summarized in Table 4. Note that both linear and squared forms of *COURT%* are used in an attempt to capture the (possibly) nonlinear effect of the anticompetitive potential on the scope of the divestiture.

VII. RESULTS

Several underlying models can be posited and estimated depending on what one considers to be the major driving force behind the bargaining process. Results of estimation are presented in Table 5. Model 1, for example, is a "Chicago-plus-efficiencies" model similar to a model suggested and estimated in Coate (2000).¹⁷ According to the Chicago school of thought, conduct and performance of the industry are directly determined by its structure—that is, market concentration, ease of entry and collusive behavior. Therefore, a merger presenting a great deal of competitive concern is deemed undesirable and must be remedied adequately. The scope of the divestiture is assumed to be determined primarily by the anticompetitive potential of the merger, but merger-specific efficiencies are included to offset the harmful effect on competition.¹⁸ Formally, the degree of patience of the Agency is affected most of all by how competitively harmful a particular merger is likely to be. The model performs poorly as only the constant coefficient is statistically significant.

Next, I estimate a model in which political forces play a central role in determining the outcome of negotiations. One might think of this model (Model 2) as arising out of the public choice theories of antitrust, according to which the Agency tends to maximize its bureaucratic output, while being influenced from the outside by political pressures. Although this model appears to perform slightly better than Model 1,

16. Where the case involved more than one (geographic and/or product) market, the maximum value of *HHI* was used for these computations. An unweighted average as well as a weighted average of the various markets' Herfindahls were also attempted, with the weights equal to the shares of each particular market in the total overlap (measured by combined acquirer and target sales.) Neither of the averages proved to result in significant *COURT%* or *STRUCTURE* variables.

17. In that study, the likelihood of an FTC challenge is investigated given the characteristics of a proposed acquisition. Although an entirely different issue is being addressed here, one would expect that the probability of a challenge and extent of structural relief obtained in any case are affected by similar factors.

18. Alternatively, one may think of Model 1 as simply reflecting the agencies applying the DOJ-FTC Horizontal Merger Guidelines. I am thankful to an anonymous referee for pointing out this interpretation.

TABLE 2
Descriptive Statistics

Variable	Mean	SD	Min.	Max.
<i>D</i>	0.6251	0.3661	0	1
<i>VALUE</i> ^a	6.2786	2.3359	2.0148	10.9651
<i>EFFICNCY</i> ^{a,b}	4.5868	1.9285	0	9.9075
<i>CONSUMER</i>	0.3425	0.4778	0	1
<i>WORK</i> ^c	3.229	1.0545	0.97	4.94
<i>CONGRESS</i>	0.5056	0.0532	0.4690	0.6138
<i>SENATE</i>	0.4869	0.0464	0.45	0.57
<i>POLITICS</i>	0.4962	0.0473	0.4618	0.5869
<i>WSJ</i>	5.9863	9.2429	0	47
<i>HOSTAGE</i>	0.6658	0.3142	0	1
<i>SALES</i> ^a	7.3833	2.074	2.7661	11.4076
<i>USA</i>	0.8904	0.3145	0	1
<i>RETAIL</i>	0.0959	0.2965	0	1
<i>COURT</i> %	0.782	0.354	0.00002	1
<i>STRUCTURE</i>	0.4194	0.3056	0	1
<i>TIME</i>	94.8342	38.3986	0	143.4

Note: $N = 73$. ^aNatural logs of actual values.

^bBy construction, $EFFICNCY = \ln(VALUE \times [1 - HOSTAGE])$ resulted in several negative values, which were replaced by zeros.

^c*WORK* is reported as hundreds of transactions per month.

all of the explanatory power rests with *WSJ*. The results suggest that although a high-profile case's degree of public exposure in the media affects the outcome of the settlements, outside influences, such as Congress's supervision of the antitrust agencies, are not important. Note that the coefficient on *WSJ* is of the wrong sign—it is expected to be negative, a priori—but interpretation of individual coefficients is hardly appropriate in this context, as the modeling assumptions clearly do not stand up to empirical testing.

Model 3 posits a particular relationship between the Firm and the Agency, in which the Firm-specific and merger-specific characteristics are central to the bargaining process, whereas Agency's approach is the same to all cases. This assumption may be plausible if in

a typical case, Agency allows Firm to make whatever concessions the latter deems worthwhile to get the approval for its acquisition. In such a case, the Firm-side factors are important, and the variation in Agency's characteristics across different mergers matters relatively little. The results indicate that the portion of the deal not subject to antitrust review but held up by the investigation (measured by *HOSTAGE*) explains all of the variation in the dependent variable. In other words, the only factor affecting Firm's cost of delay substantially arises from the inability to consummate the entire merger. Note the (statistical) insignificance of *COURT*% and *COURT*%², pointing to the fact that firms proposing mergers motivated by the pursuit of greater market power are just as patient in their dealings with the government as are firms pursuing other objectives through acquisition.¹⁹

TABLE 3

Frequency of the Observed Dependent Variable

Value	Frequency	Percent
$D = 0$	7	9.6
$0 < D < 1$	37	50.7
$D = 1$	29	39.7
Total	73	100.0

19. There is some anecdotal support for this type of model. The rules of premerger notification grant a good deal of strategic power to the Firm, who can essentially choose when to "start the clock" on the review process. The antitrust agencies have no control over when the filing is submitted to them but are limited to a 30-day waiting period in which to make a decision whether to pursue a challenge. In other words, the Agency's approach is likely to be the same to the review of most proposed mergers, at least initially.

TABLE 4
Variables' Expected Signs

Variable	Expected Sign
<i>EFFICNCY</i>	–
<i>CONSUMER</i>	–
<i>WORK</i>	–
<i>CONGRESS</i>	?
<i>SENATE</i>	?
<i>POLITICS</i>	?
<i>WSJ</i>	–
<i>HOSTAGE</i>	+
<i>SALES</i>	?
<i>USA</i>	?
<i>RETAIL</i>	–
<i>COURT%</i>	+
<i>COURT%</i> ²	–
<i>STRUCTURE</i>	+
<i>TIME</i>	?

Model 4 is a “consumer welfare” model. It is estimated here to investigate whether the goal of protecting or maximizing consumer welfare (as opposed to, for example, total welfare) forces the Agency to be more patient in remedying the mergers, which are likely to bring the most consumer harm if not fixed. None of the included variables' coefficients are significant, so this modeling scenario does not appear plausible.

The relatively poor performance of the four restricted models discussed so far suggests that a combination of factors is at play. Therefore, a full or “econometric” model is estimated (Model 5), allowing for various Agency- and Firm-side characteristics to contribute to explaining the underlying process.

The last column of Table 5 presents the estimates from this model; the marginal effects of explanatory variables are also given for each model.²⁰ Nine out of 13 coefficients are statistically significant at conventional levels.²¹ The variable of interest, *HOSTAGE*, is significant

20. Whenever a variable's coefficient is not significantly different from zero, the marginal effect is omitted. Several diagnostic tests were performed to assess the robustness of the estimated results, including moment-based tests for the presence of multiplicative heteroskedasticity and for the validity of the normality assumption on the error term. Details are available on request from the author.

21. Coate (2000) attempts several models in his study of FTC decisions and also concludes that such econometric models are best in terms of their explanatory power.

and positive, as predicted by theory. Note that the coefficient falls in magnitude when additional regressors are included, as is evident from a comparison of results from Model 5 with those from Model 3. The *EFFICNCY* measure is also highly significant,²² as is *WSJ*, although *WSJ* still has the wrong sign. It may be that a great deal of media exposure increases the pressure on the agency to get it right, thus making it more patient. If this is a correct conjecture, then *WSJ* will have a positive effect on the outcome.

The coefficient on *CONGRESS* is significant and negative, suggesting that a larger share of Democrats is associated with less successful antimerger policy. The somewhat puzzling result is the unexpected sign on the *WORK* proxy: It is positive, although just barely statistically significant. It is possible that the effect of high workload at the DOJ is misspecified in this model. For example, if during merger waves, the government is forced to challenge a smaller proportion of mergers, it may be limited to bringing only the strongest cases, which are easier to resolve with a strong settlement. Also, focusing on only settled cases may inadvertently introduce a degree of selection bias into the analysis: It is possible that relief obtained in *all* merger cases (including those litigated) suffers considerably, but settled cases fare better on average. On the other hand, given the overwhelming prevalence of settlements among all Section 7 cases, this scenario is not likely.²³

The insignificance of the coefficients on *SALES* and on the dummy variables *CONSUMER*, *USA*, and *RETAIL* suggests that bigger firms, domestic producers, makers of consumer products, and retail chains do not

22. A referee suggested that merger-specific efficiencies are rarely given much weight by the agencies: The parties are seldom successful at using the “efficiency defense” in court, which renders efficiency claims rather weak bargaining chips in settlement negotiations. However, in the present article *EFFICNCY* is a proxy for the true extent of merger-related efficiencies—not for what the parties might claim as potential savings—which the agency *should* take rather seriously.

23. Yet another possibility is that a high realization of *WORK* allows the Antitrust Division staff to delay the settlement process while communicating to the parties that it is backed up. In other words, the DOJ can use its heavy workload as a bargaining chip. I am grateful to Donald Basch for suggesting this possible interpretation. A potential future extension of this research may consider the effect of the number of reported transactions per member of staff at the DOJ as a more precise measure of workload.

TABLE 5
Estimation Results Dependent Variable: *D*

Variable	Model 1	Marginal Effect	Model 2	Marginal Effect	Model 3	Marginal Effect	Model 4	Marginal Effect	Model 5	Marginal Effect
Constant	0.7487** (2.203)	0.3944	1.4804 (0.947)		-0.05593 (0.152)		0.4131 (1.091)		3.184** (2.164)	1.8288
<i>EFFICNCY</i>	-0.0047 (0.104)						-0.0223 (0.484)		-0.1527*** (3.392)	-0.0877
<i>CONGRESS</i>			-2.2029 (0.874)						-4.2927* (1.903)	-2.4657
<i>CONSUMER</i>			-0.1015 (0.606)				0.173 (0.951)		-0.025 (-0.169)	
<i>WORK</i>			0.198 (1.566)				0.1607 (1.218)		0.1808* (1.657)	0.1039
<i>WSJ</i>			0.075*** (3.248)	0.0398					0.0903*** (3.334)	0.0519
<i>HOSTAGE</i>					0.903*** (3.542)	0.5231			0.4193* (1.951)	0.2408
<i>USA</i>									-0.1712 (0.86)	
<i>SALES</i>			-0.0112 (0.256)		0.0589 (1.521)				0.0241 (0.651)	
<i>RETAIL</i>					0.1043 (0.376)		0.287 (0.919)		-0.07267 (0.274)	
<i>COURT%</i>	-1.6433 (1.393)				-1.7206 (1.607)		-1.6859 (1.425)		-2.6025** (2.498)	-1.4948
<i>COURT%</i> ²	1.4269 (1.313)				1.5598 (1.598)		1.6262 (1.495)		2.5081*** (2.698)	1.4406
<i>TIME</i>	0.0029 (1.338)		-0.0048 (1.201)		-0.0003 (0.152)		-0.0003 (0.07)		-0.0068** (1.969)	-0.0039
<i>Log likelihood</i>	-67.3333		-55.5138		-58.641		-65.6461		-42.8758	

Notes: $N = 73$. Absolute value t -statistics in parentheses. *Significant at the 0.1 level; **significant at the 0.05 level; ***significant at the 0.01 level.

on average receive any special treatment. Finally, the anticompetitive potential measure, *COURT%* and its squared form, *COURT%*², are both significant and have opposite signs.

The effects on the unobserved dependent variable of a one-standard-deviation change in each x can be computed using the information from the descriptive statistics.²⁴ Table 6

24. The need for the marginal effects arises from the difficulty in interpreting the raw tobit coefficients. Because of the censoring in the dependent variable, the obtained β 's do not have valid intuitive meaning. The corresponding marginal effects are computed as partial derivatives of the expected value (conditional mean) of the observed dependent variable with respect to the independent variables and equal the estimated coefficients scaled by the probability of nonlimit observations in the sample. That is, $\partial E[D|x_i]/\partial x = \beta \times \text{Prob}[0 < D < 1]$. The derivatives are evaluated at the means of the explanatory variables. Because the marginal effects are essentially the tobit coefficients scaled down by a probability, they are smaller in magnitude than the raw coefficients.

summarizes these results. The conditional mean of D , as reported by Limdep, is 0.3645 and is computed as

$$E[D|x_i] = 0 \cdot \text{Prob}[D = 0] + 1 \cdot \text{Prob}[D = 1] \\ + E[D|0 < D < 1] \cdot \text{Prob}[0 < D < 1].$$

Therefore, for example, an increase in the workload of the DOJ of about 105 transactions per month (corresponding to a one- σ_x increase) from the mean of 323 reported mergers is associated with an increase in the size of divestiture of 0.1096 (from 0.3645 to 0.4741). Similarly, an increase in the percentage of the deal held hostage to the review from 66% to 98%, increases the fraction of overlap subject to divestiture by roughly 0.076, from 0.3645 to 0.4402.

Somewhat less straightforward is the interpretation of the effect of a change in

TABLE 6
Marginal Impacts (MI) on D^* of Significant Variables

Variable	Mean	SD (σ_x)	MI on D^* of σ_x
<i>EFFICNCY</i>	4.5868	1.9285	-0.16913
<i>WORK</i>	3.229	1.0545	0.109563
<i>CONGRESS</i>	0.5056	0.0532	-0.13118
<i>WSJ</i>	5.9863	9.2429	0.479707
<i>HOSTAGE</i>	0.6658	0.3142	0.075659
<i>COURT%</i>	0.782	0.354	-0.52916
<i>COURT%</i> ²	0.7351	0.3793 ^a	0.54642 ^a
<i>TIME</i>	94.8342	38.3986	-0.14975

^aThe standard deviation and marginal impact for *COURT%*² are computed and reported for consistency purposes only. The change in *COURT%*² induced by a one-standard-deviation change in *COURT%* is, of course, the more relevant measure.

COURT% because the variable enters the index function both linearly and quadratically, and the coefficients have opposite signs. A decrease in the probability of a governmental victory in court from 0.782 to 0.428 (a one-sigma drop) has an overall effect of reducing the divested fraction of overlap by 0.0879. Thus, on average, a merger with about a 35% lower probability of being enjoined is subject to only a 9% smaller divestiture.²⁵

In summary, *EFFICNCY*²⁶, *WORK*, *CONGRESS*, and *WSJ* have quantitatively meaningful effects on the size of the resulting divestiture, although a one- σ_x change in *WSJ* required for the computation (about 9.2 articles) is rather large relative to the mean of less than 6. The effects of *HOSTAGE* and the probability of a court blocking the merger, on the other hand, are not substantial.

25. Details of this computation are available from the author on request.

26. A one-standard-deviation rise in *EFFICNCY* corresponds to an increase in merger-specific efficiencies from roughly \$98.2 million to \$675.4 million. However, given the construction of this measure, these results should be interpreted with caution.

27. There were eight consent decrees during the 2001 fiscal year. However, the Thomson-Harcourt merger involving Thomson's acquisition from Reed Elsevier of Harcourt textbook publishing assets, was excluded due to lack of reliable data. The case alleged potential competitive problems in markets for 38 college course textbooks as well as the market for computer-based testing services. Given the data requirements for computations of the overlap and divestiture measures, the potential for imprecise results is obvious in this case. The full list of cases used in this out-of-sample prediction test is available from the author on request.

VIII. OUT-OF-SAMPLE PREDICTION

Information on seven additional cases, all settled by the Antitrust Division in 2001, was gathered.²⁷ Below, one case is discussed in detail to give readers an idea of what a typical observation looks like. The results of prediction of all seven out-of-sample cases are presented in Table 7. As is evident from the reported results, five of the seven cases are predicted reasonably well by the model. The two remaining mergers yielding rather inaccurate predictions are analyzed below.

The Premdor/Int'l Paper/Masonite case dealt with the merger of a Canadian maker of interior molded doors—Premdor—and a maker of molded doorskins (an input into the production of molded doors)—Masonite. Masonite was the only firm in the molded doorskin business that was not vertically integrated into the manufacture of molded doors; Premdor, on the other hand, was one of Masonite's key competitors as well as a substantial customer.²⁸ Approximately 23% of Premdor's total sales in 2000 were revenues from sales of interior molded doors, and Premdor also held a 48.5% interest in a Chilean producer of molded doorskins, Fibramold. Masonite's total sales in 2000 were \$465 million, with about half of this amount accounted for by revenues from molded doorskins.

The proposed merger between Premdor and Masonite, valued at \$527 million, was announced on 30 September, 2000.²⁹ The relevant antitrust markets were determined as follows: For interior molded doorskins, the United States was deemed the appropriate geographic market, whereas for molded doors the geographic market was argued to be comprised of small regional areas, each with a radius of about 300 miles and centered at the point of manufacture.

The vertical integration of the firms-parties to the merger presented additional complicating aspects. The upstream and downstream product markets are closely connected because the interior molded doorskins are a key input in the production of interior molded doors and account for about 70% of

28. This case is an example of an occasional horizontal merger challenged by the government on largely non-horizontal grounds in addition to the usual loss-of-competition concerns.

29. See Katz (2002) for a more detailed discussion of this case.

TABLE 7
Out-of-Sample Prediction

Case	Divestiture (<i>D</i>)	
	Predicted	Observed
3D Systems/DTM	0.24329	0
AB Volvo/Renault/Mack Trucks	0.66193	1
Georgia-Pacific/Fort James	0.75177	1
Premdor/Int'l Paper/Masonite	0.51941	0.5
News Corp/Fox/Chris-Chraft	0.42851	1
Signature Flight Support/Ranger	0.90289	1
WorldCom/Intermedia	0.28107	0.93118

the production cost. The proposed merger would enhance substantially Premdor's otherwise small presence in the molded doorskins market and not (directly) affect the structure of the molded doors market. However, elimination of an independent producer of molded doorskins (Masonite) may lead to increased incentives for Premdor to foreclose other non-vertically integrated firms from the molded doorskins market; it would also make coordinated action with the only other significant competitor (a firm, not party to the merger) easier and more likely. In other words, the downstream molded doors market, though not affected directly, contributed several significant elements to the analysis of the potential anticompetitive problems, such as likely coordinated action.

Given the resulting HHI measure for the upstream and downstream markets of 4,200 and 3,600, respectively,³⁰ evidence of past collusive attempts in the industry, and significant sunk costs required to initiate entry, the estimated probability of the court enjoining the merger is 0.99973.

The settlement negotiation resulted in a consent decree requiring the divestiture of one of the two production facilities, owned by Masonite. No information was available on the production distribution across the two plants, located in Laurel, MS, and Towanda, PA, so they were assumed to have equal capacity and consequently $D = 0.5$. The model predicted a divestiture of about 0.52, which is very close to the observed outcome of one-half.

30. Again, the downstream market (interior molded doors) was not affected structurally, so pre- and post-merger HHIs are the same.

The predicted outcomes discussed here should be interpreted with caution. Given the approximations needed to construct some of the relevant measures, the results should not be expected to be precise. Also, the validity of using estimates from a prior period to predict later out-of-sample observations will be compromised if the approach to the settlement process is markedly different in 2001 from to that of the previous years.³¹

If one considers predictions of less than 0.5 reasonably good approximations of observed outcomes in the interval $[0, 0.5]$, and predictions of 0.5 or greater reasonable estimates of outcomes in $[0.5, 1]$, then only two cases are poorly predicted. Furthermore, if one breaks the $[0, 1]$ interval into quartiles and requires a "good" prediction to be in the same quartile as the actual observed outcome, then three cases are incorrectly predicted.

The case involving a merger of Worldcom with Intermedia Communications was settled by a consent decree requiring a nearly complete divestiture of all assets acquired by Worldcom as part of the merger. The overlap subject to review by the DOJ constituted the entire merger, thus resulting in no significant hostage effect. Therefore, according to the model developed here, the acquiring firm should possess substantial bargaining power because most of the deal is being challenged. The model predicts a relatively small divestiture of about 28% of the overlap, but the DOJ achieved a nearly 93% divestiture.

The problem may lie in the regulatory framework under which the merger was proposed. Both Worldcom and Intermedia are providers of various telecommunications services, including Internet backbone connectivity. In order to take control of Intermedia's Internet Backbone Provider operations, Worldcom filed an application for the transfer

31. Although there is no specific reason to suspect that this is the case, two aspects are worthy of note. First, the methods of merger review and analysis are constantly evolving; therefore, if this evolution process is not smooth but rather is characterized by bursts of innovation, predicting future cases can lead to poor results. Second, in 2001, the DOJ and the FTC raised the threshold requirements for reporting a merger under the HSR, which immediately resulted in fewer transactions filed and fewer low-profile mergers reviewed. "Low-profile" here refers to size-of-transaction and size-of-person tests, which are reflected in the value of the deal and sales of the firms involved. Any such merger may still be well covered in the media and be of considerable interest to various groups.

of various licenses issued by the Federal Communications Commission to Intermedia. Unless and until the commission granted the transfer, the merger could not be consummated, which essentially amounts to review of the merger by a regulatory agency in addition to the challenge by the DOJ on antitrust grounds. This additional source of delay is not accounted for by the model.

The other settlement that appeared problematic for the model is in the case of a merger of two operators of television stations. News Corporation proposed to acquire 10 stations owned by Chris-Craft, including KTVX-TV, a Salt Lake City ABC affiliate. News had its own station, KSTU-TV in the same market, which it operated through its subsidiary, Fox. The hostage effect associated with the delay due to antitrust review was a substantial 0.9 because only 1 of the 10 stations was located in the overlap. One would expect the acquiring firm to be facing significant costs from delaying the consummation of the merger and thus be willing to settle quickly. In other words, a relatively high predicted value of D is expected. However, the model yields a prediction of less than 0.43.

On closer examination, the structural characteristics of the relevant market barely warrant issuing a challenge. Although the premerger HHI of about 2,000 and change of 785 points associated with the merger are both above the DOJ Guidelines' thresholds, this case can be argued to carry only a marginal potential for competitive harm.³² The combined firm would hold a 40% market share, which even in the presence of entry barriers—argued to be substantial in this case—seems less than threatening. Two additional TV stations would continue to compete with the combined firm for the spot advertising revenue. The estimated probability of defeat in court is about 0.63 (the sample mean is 0.78.) Therefore, it is not surprising that the model produces a relatively modest prediction for a case that is unlikely to raise significant competitive concerns.

The mixed results of these out-of-sample prediction exercises suggest that the estimated model should only be used as a rough benchmark in attempting to forecast what a divestiture ought to look like in any particular

settlement. Given that an individual case may differ substantially from the mean Section 7 challenge, those differences should be considered as well.

IX. CONCLUDING REMARKS

In this article, I addressed the obvious void in the empirical literature of the economics of merger policy. Although many aspects of the policy continue to be the subject of research, structural remedies are often ignored. This article demonstrates that application of econometric techniques can help isolate the effects of various exogenous influences on the underlying process. I hope that this study is a first (albeit small) step in the right direction.

I find that in nearly 60% of cases, the obtained structural remedy does not completely remove all of the competitive overlap. Some of this observed deficiency can be attributed to the presence of substantial merger-specific synergies, which tend to be reduced by a significant divestiture. However, other factors prove to be important as well. For example, the bargaining power of the merging firms is greater when a relatively large portion of the acquisition is subject to antitrust review—parties are more patient during settlement negotiations and are able to obtain a better outcome (i.e., a smaller divestiture.) On the other hand, the antitrust agencies appear to be subject to external influences—such as the government's approach to merger policy and the extent of publicity that a given case receives—as well as internal factors, such as the agency's workload. The anticompetitive potential of a merger, often considered to be the main focus of antitrust review, has a relatively small though positive effect on the scope of the structural remedy.

A variety of extensions to the presented framework are possible. I limit myself to one suggestion here: application of the predictive ability of this divestiture model to nonsettled cases. What *would* a settlement look like *if* the parties reached an agreement instead of insisting on litigation? Potentially, such study could reveal whether, on balance, the merging firms would have been better off agreeing to the predicted divestiture rather than incurring significant litigation costs and facing the possibility of defeat in court.

32. The average postmerger HHI for the sample cases is 4,569.

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