MERGER SETTLEMENT AND ENFORCEMENT POLICY FOR OPTIMAL DETERRENCE AND MAXIMUM WELFARE

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Merger enforcement today relies on settlements more than litigation to resolve anticompetitive concerns. The impact of settlement policy on welfare and the proper goals of settlement policy are highly controversial. Some argue that gun-shy agencies settle for too little, while others argue that agencies use their power to delay to extract overreaching settlement terms, even when mergers are not welfare reducing. This Article uses decision theory to throw light on this controversy. The goal of this Article is to formulate and analyze agency merger enforcement and settlement commitment policies in the face of imperfect information, litigation costs, and delay risks by the merging parties, agencies, and the courts. The Article explains why limiting the goal of merger enforcement and agency settlement policy simply to avoid welfare harms, but nothing more, is flawed as a matter of both law and policy and would compromise deterrence. The decision-theoretic analysis distinguishes two types of agency commitment policies: a short-run optimal policy that focuses only the specific merger proposal being evaluated and a long-run optimal policy that takes into account effects on future mergers and deterrence goals. The short-run optimal policy may lead to some welfare-reducing settlements by a rationally gun-shy agency; settlement demands for weakly welfare-enhancing merger proposals, what might be called "exacting tribute"; and "anti-deterrence" effects by merging firms proposing some mergers with greater welfare harm in order to increase settlement bargaining leverage. In contrast, a disciplined long-run optimal policy would clear all welfare-enhancing mergers as proposed; forgo negative welfare settlements despite the risk of losing in court, but instead demand settlements on welfare-reducing merger proposals sufficient to lead to strict welfare increases (not just welfare neutrality), relative to no merger; and avoid anti-deterrence by

demanding larger settlements for more harmful mergers. While these latter provisions might be controversial as a political matter, they support deterrence. Demanding only welfare-neutral settlements would lead to under-deterrence. Deterrence also would be improved if last-minute voluntary divestiture agreements were not treated as part of the merger agreement evaluated by the court, contrary to the approach taken in Arch Coal *and other cases.*

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INTRODUCTION

Mergers are the central focus of civil antitrust enforcement by governmental antitrust agencies. Almost all proposed mergers in the United States are cleared as proposed. For example, fewer than 3 percent of the mergers that were reported under the Hart-Scott-Rodino Antitrust Improvements Act (HSR) process in 1999–2011 in the United States received second requests, and about 30 percent of these are cleared as proposed. Most of the rest were settled by consent decree or voluntary restructuring. Some are abandoned by the parties in response to agency settlement demands or threats of litigation. Only a few were litigated in court. As noted in Table 1, fewer than 2 percent of mergers that received second requests reached an adjudicated judgment.

Because of the low percentage of adjudicated cases, merger enforcement has been characterized as a regulatory system, rather than law enforcement.[1] Of course, this is an overstatement. Most law enforcement systems involve plea bargaining with few cases actually going to trial.[2] A high settlement rate is not surprising in light of the cost and uncertainty of litigation. Merger settlements do not simply have the goals of economizing on litigation costs, achieving certainty, and preventing delays. Settlements should also serve two overarching policy goals: (i) preventing specific mergers from lessening competition, while preserving welfare benefits; and (ii) deterring future anticompetitive mergers. Achieving these twin enforcement goals in an efficient way requires careful analysis.

Achieving these goals is complicated by the fact that merger analysis involves inherent uncertainty.[3] Agency competitive-effects analysis typically occurs before the merger is consummated in a fairly short period of time on the basis of limited information. If the agency predicts that the merger likely will reduce welfare, it must defend its prediction to a judge who generally is not an antitrust expert. This means that agency settlement demands and settlement negotiations are tightly connected to litigation; a breakdown in the negotiations is the precursor to trial. Settlement demands also must take into account the potential for errors by the agencies and the courts.

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1. *See, e.g.*, A. Douglas Melamed, *Antitrust: The New Regulation*, 10 ANTITRUST 13, 13 (1995); *see also* Spencer W. Waller, *Prosecution by Regulation: The Changing Nature of Antitrust Enforcement*, 77 OR. L. REV. 1383, 1385–86 (1998); Michael L. Weiner, *Antitrust and the Rise of the Regulatory Consent Decree*, 10 ANTITRUST 4 (1995).

2. *See* George Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 54 (1984).

3. Jonathan B. Baker & Carl Shapiro, *Evaluating Merger Enforcement During the Obama Administration*, 65 STAN. L. REV. ONLINE 28 (2012), http://www.stanford lawreview.org/merger-enforcement-obama-administration; Ken Heyer, *A World of Uncertainty: Economics and the Globalization of Antitrust*, 72 ANTITRUST L.J. 375, 375 (2005); Michael L. Katz & Howard A. Shelanski, *Merger Analysis and the Treatment of Uncertainty: Should We Expect Better?*, 74 ANTITRUST L.J. 537, 538 (2007).

This means that a key merger policy issue is the appropriate settlement demand.[4] The current posture of the agencies has generated great controversy. Some argue that the agencies are overreaching in their settlement demands, while others argue that the agencies are gun-shy and too readily accept welfare-reducing settlements in order to avoid the risk of litigation. For example, Joe Sims and Michael McFalls conclude that the agency settlement regime has led to bureaucratic overreaching that harms consumers and the merging parties.[5] They suggest that the government has the upper hand in settlement negotiations because of its power to delay the resolution of the merger. According to Sims and McFalls, agencies use this delay power to demand excessive divestitures, what might be characterized as "extracting tribute." To prevent this harmful overaggressiveness, Sims and McFalls suggest that the agencies instead should adopt a policy based on what they call the "principle of minimal intrusion," that is, the minimal divestiture necessary to prevent welfare harm, relative to the no-merger outcome.[6] Thomas Barnett, the Department of Justice's Assistant Attorney General during the second George W. Bush Administration, expresses a similar goal.[7]

In contrast, Lawrence Frankel concludes that the design of the enforcement system leads to systematic underenforcement and excessive false negatives.[8] According to Frankel, the agencies have weaker bargaining leverage caused by informational disadvantages, the need to carry the burden of proof in court—where decisions are reviewed by generalist judges—and a fear of losing in court. He notes that the agencies settle for divestitures that leave consumers worse off.[9]

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4. For an overview of settlement policy, see Robert Pitofsky, Chairman, FTC, The Nature and Limits of Restructuring in Merger Review, Remarks at Cutting Edge Antitrust Conference (Feb. 17, 2000), *available at* http://www.ftc.gov/speeches/pitofsky/restruct.htm. For a discussion of achieving effective divestitures, see William J. Baer & Ronald C. Redcay, *Solving Competition Problems in Merger Control: The Requirements for an Effective Divestiture Remedy*, 69 GEO. WASH. L. REV. 915, 915 (2001).

5. Joe Sims & Michael McFalls, *Negotiated Merger Remedies: How Well Do They Solve Competition Problems*, 69 GEO. WASH. L. REV. 932, 938 (2001); *see also* Melamed, *supra* note 1, at 13; Joe Sims & Deborah P. Herman, *The Effect of Twenty Years of Hart-Scott-Rodino on Merger Practice: A Case Study in the Law of Unintended Consequences Applied to Antitrust Legislation*, 65 ANTITRUST L.J. 865, 899 (1997).

6. Sims & McFalls, *supra* note 5, at 933.

7. Thomas O. Barnett, Current Issues in Merger Enforcement: Thoughts on Theory, Litigation Practice, and Retrospectives, Remarks at the Lewis Bernstein Memorial Lecture (June 26, 2008), *available at* http://www.justice.gov/atr/public/speeches/234537.htm ("We don't propose more than is needed—we don't attempt to create bargaining chips. We simply propose the remedy we believe is appropriate.").

8. Lawrence M. Frankel, *The Flawed Institutional Design of U.S. Merger Review*: *Stacking the Deck Against Enforcement*, 2008 UTAH L. REV. 159, 190.

9. On the basis of a number of retrospective studies, Weinberg concludes that there has been underenforcement. Matthew Weinberg, *The Price Effect of Horizontal Mergers*, 4 J. COMP. L. & ECON. 433, 434 (2008). For a similar view, see Heyer, *supra* note 3, at 383.

The goal of this Article is to analyze these issues through a decision-theoretic lens. It focuses on the role of imperfect information and litigation costs in driving optimal enforcement and settlement policy.[10] This Article does not analyze the form or structure of the remedy.[11] Instead, it focuses on the appropriate aggressiveness of agency settlement and enforcement strategy. This Article assumes that the goal of merger policy is to maximize expected welfare.[12]

This analysis involves a number of related questions: Should the agencies ever offer or accept settlements, rather than adopting a "just say no" stance to anticompetitive mergers and litigating them all, while clearing all procompetitive mergers as proposed? Assuming that settlements are made, how strong a settlement should the agencies demand? Should the agencies refuse any settlement that involves a reduction in welfare, relative to the no-merger level, even if they face a risk of losing in court? Should the agencies ever demand settlements that lead to a level of welfare strictly

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10. These issues have been studied by a number of other economists, beginning with Stigler's seminal work on the impact of U.S. enforcement on the number and composition of mergers. *See* George Stigler, *The Economic Effects of the Antitrust Laws*, 9 J.L. & ECON. 225 (1966); *see also* Robin Aaronson, *Do Companies Take Any Notice of Competition policy?*, 2 CONSUMER POL'Y REV. 140 (1992); Jo Seldeslachts et al., *Settle for Now but Block for Tomorrow: The Deterrence Effects of Merger Policy Tools*, 52 J.L. & ECON. 607, 607 (2009).

11. Most recently, there has been consideration of when (if at all) the agencies should use behavioral remedies instead of divestitures or other structural remedies. *See* DOJ & FTC, HORIZONTAL MERGER GUIDELINES (Aug. 19, 2010) [hereinafter HORIZONTAL MERGER GUIDELINES], *available at* http://www.ftc.gov/os/2010/08/100819hmg.pdf. For a recent interesting commentary, see Ken Heyer, *Optimal Remedies for Anticompetitive Mergers*, 26 ANTITRUST 26 (2012).

12. Elsewhere I have concluded that the relevant antitrust standard is true consumer welfare. *See* Steven C. Salop, *Question: What is the Real and Proper Antitrust Welfare Standard? Answer: The* True *Consumer Welfare Standard*, 22 LOY. CONSUMER L. REV. 336, 336 (2010). However, the analysis of settlements in this Article also would apply to other economic welfare standards. The key assumption I am making is that merger settlements will fall in the range where the settlement will increase welfare and decrease profits. For further discussion of the proper welfare measure, see Robert H. Lande, *Chicago's False Foundation: Wealth Transfers (Not Just Efficiency) Should Guide Antitrust*, 58 ANTITRUST L.J. 631 (1989). For a defense of the total welfare standard, see Ken Heyer, *Welfare Standards and Merger Analysis: Why Not the Best?*, 2 COMPETITION POL'Y INT'L 29, 29 (2006). Note also the economics literature that shows that agencies with an overarching goal of maximizing aggregate welfare nonetheless might commit to use a consumer welfare standard in merger enforcement when negotiating with the merging parties. These models also discuss merger policy and deterrence more generally. *See* Mark Armstrong & John Vickers, *A Model of Delegated Project Choice*, 78 ECONOMETRICA 213 (2010); David Besanko & Daniel F. Spulber, *Contested Mergers and Equilibrium Antitrust Policy*, 9 J.L. ECON. ORG. 1, 1 (1993); Joseph Farrell, *Negotiation and Merger Remedies: Some Problems*, *in* MERGER REMEDIES IN AMERICAN AND EUROPEAN UNION COMPETITION POLICY 95 (Howard Shelanski & Francois Leveque eds., 2003); Joseph Farrell & Michael L. Katz, *The Economics of Welfare Standards in Antitrust*, 2 COMPETITION POL'Y INT'L 2 (2006); Sven-Olof Fridolfsson, *A Consumer Surplus Defense in Merger Control*, *in* THE POLITICAL ECONOMY OF ANTITRUST 287 (V. Ghosal & J. Stennek eds., 2007); Damien J. Neven & Lars-Hendrik Röller, *Consumer Surplus vs. Welfare Standard in a Political Economy Model of Merger Control*, 23 INT'L J. INDUS. ORG. 829 (2005).

above the no-merger level? Should the agencies negotiate settlements or just make nonnegotiable, take-it-or-leave-it settlement demands? Should the agencies accept eleventh hour voluntary divestiture offers?

This Article uses decision theory to formulate "optimal" agency settlement policy under two alternative assumptions. It first formulates a "short run" optimal policy that focuses only the specific merger proposal being evaluated and does not take deterrence into account. It then formulates a superior "long run" optimal policy that takes into account effects on future mergers and deterrence goals.[13] It also evaluates the competing claims about agency behavior in the context of the optimal policies.

The analysis reaches a number of conclusions. The optimal short-run and long-run policies are very different. The short-run optimal policy may lead to some welfare-reducing settlements by a rationally gun-shy agency. It also may involve exacting tribute by settlement demands for weak welfare-enhancing merger proposals. It also may cause unintended "anti-deterrence," whereby some merging firms propose mergers with greater potential welfare harm in order to increase their settlement bargaining leverage. In contrast, a disciplined long-run optimal policy would clear all welfare-enhancing mergers as proposed. It also would forgo negative welfare settlements despite the risk of losing in court, but instead demand settlements on welfare-reducing merger proposals sufficient to lead to overall welfare increases (not just welfare neutrality), relative to no merger. While demanding such welfare-enhancing settlements for harmful mergers might be politically controversial, it serves the fundamental deterrence goals of antitrust. Demanding only welfare-neutral settlements would lead to under-deterrence. Anti-deterrence would be avoided by demanding larger settlements for more harmful mergers. Deterrence also would be improved if last-minute voluntary divestiture agreements were not treated as part of the merger agreement evaluated by the court, contrary to the approach taken in *Arch Coal* and other cases.

The remainder of this Article is organized as follows. Part I sets out the basic analytic framework and the formal model used. To fix the ideas, Part II explains that the proper standard for merger enforcement is welfare maximization, subject to the constraints imposed by practicality and deterrence. Part III analyzes the agency's short-run optimal settlement commitment strategy when there are nontrivial litigation costs for the firm and imperfect information provided by the agency, parties, and the court. Part IV analyzes the properties of the optimal long-run deterrence strategy. The conclusion discusses several possible extensions of this analysis. The Appendix contains a technical model of the basic issues and the short run optimal policy.

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13. Long-run optimization also could take into account the impact on legal standards and future judicial decisions.

I. BASIC ANALYTIC FRAMEWORK

This Article uses decision theory to formulate optimal merger enforcement and settlement policy under the HSR process in the United States and the analogous regulatory process in other countries. It analyzes two types of agency settlement and enforcement strategies: (i) a short-run optimal policy, which assumes that the agency evaluates each merger proposal on its own, without regard to any possible impact of its decision on future merger proposals, and (ii) a long-run optimal policy, which assumes that the agency does take into account the impact of its decisions on future merger proposals.   The long-run optimal policy differs substantially from the short-run policy. By including long-run deterrence effects into its analysis, the long-run policy better protects consumer welfare.   It also resolves a number of the commentators' criticisms of current agency policy.

This analysis involves an understanding of the incentives of the agencies and the merging parties to settle cases rather than litigate. The analysis of settlement incentives involves an understanding of the costs and benefits of litigation versus settlement for the agencies and the merging parties. These depend, in turn, on the impact of the transaction on welfare and profitability, as well as on imperfect information and litigation costs. They also depend on expectations of the outcome in court, including the fact that the courts also suffer from imperfect information. Design of optimal long-run enforcement policy also involves an understanding of how the agencies' settlement demands and settlement negotiations affect deterrence, that is, how they affect future merger proposals.   Because settlements are negotiated in the shadow of the law, it also is necessary to link settlement behavior to the legal standards and to the behavior of courts.[14]

A. The Importance of Settlements in Merger Enforcement

It is clear that settlement is a key aspect of the merger review and enforcement process. Settlements permit mergers to proceed expeditiously and achieve cognizable efficiencies, while reducing or eliminating market power concerns.[15]   In fact, most mergers that raise competitive concerns settle, rather than go to court.   Table 1 provides basic merger U.S. enforcement outcomes data for 1999–2011.[16]   Fewer than 2 percent of mergers that received second requests reached an adjudicated judgment.

14*. See* Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950, 950 (1979).

15. *See* Heyer, *supra* note 12.

16. For similar statistics, see Frankel, *supra* note 8, at 162–63 (2008), and the references cited therein*. See also* Jonathan B. Baker & Carl Shapiro, *Reinvigorating Horizontal Merger Enforcement*, *in* HOW THE CHICAGO SCHOOL OVERSHOT THE MARK 235, 244 (Robert Pitofsky ed., 2008); Baker & Shapiro, *supra* note 3, at 28; Jonathan B. Baker & Carl Shapiro, *Reinvigorated Merger Enforcement in the Obama Administration*, ANTITRUST & COMPETITION POL'Y BLOG (June 25, 2012), http://lawprofessors.typepad.com/ antitrustprof_blog/2012/06/reinvigorated-merger-enforcement-in-the-obama-

Of course, these results likely would have been different if the agency settlement policy and behavior were different. Thus, understanding settlement behavior and formulating sensible policy is a key component of merger enforcement policy. This Article is a step in that direction.

Table 1: Outcomes of HSR Filings[17]

Year	Reported	Second Requests	Challenged	Challenges[18]				
				Restructure	Abandoned	Consent Decrees	Adjudicated Cases Won at judgment	Adjudicated Cases Lost at judgment
2011[19]	1,414	58	36	13 total		19	2	2
2010	1,128	46	35	4	7	24	0	0
2009	684	31	29	2	12	15	0	0
2008	1,656	41	35	5	3	26	1	0
2007	2,108	63	32	7	7	16	0	2
2006	1,746	45	30	6	9	15	0	0
2005	1,610	50	17	2	4	11	0	0
2004	1,377	35	24	1	5	15	0	2
2003	968	35	33	3	17	13	0	0
2002	1,142	49	31	5	12	13	0	1
2001[20]	2,237	70	55	20	8	26	1	0
2000	4,749	98	79	16	26	36	1	0
1999	4,340	111	76	16	23	37	0	0
Total	25,159	732	512	94	139	266	5	7
% of total filings	100.0%	2.9%						
% of Second Requests		100.0%	70.0%	12.8%	19.0%	36.3%	0.7%	1.0%

administration.html; Daniel A. Crane, *Has the Obama Justice Department Reinvigorated Antitrust Enforcement?*, 65 STAN. L. REV. ONLINE 13, 16 (July 18, 2012), http://www.stanfordlawreview.org/online/obama-antitrust-enforcement.

17. Table does not include non-HSR challenges.

18. The difference between Restructuring and Consent Decrees is whether the complaint was filed. Restructuring indicates altering the transaction without the government filing a formal complaint, while a consent decree entails settlement occurring after either the commencement of litigation or agency proceedings.

19. For 2011, the FTC stated that its seventeen challenges have resulted in nine consent decrees, three judicial proceedings (FTC v. Phoebe Putney Health Sys., Inc., 133 S. Ct. 1003 (2013) (pending following reversal and remand); FTC v. Promedica Health System, Inc., No. 3:11 CV 47, 2011 WL 1219281 (N.D. Ohio Mar. 29, 2011) (win); FTC v. Lab. Corp. of Am., No. 11-55293 (9th Cir. Mar. 14, 2011) (loss)), and five abandon/restructures. The five abandon/restructure cases are nonpublic and cannot be categorized any further. The Commission's counterpart, the DOJ, entered into eleven consent decrees, one merger was abandoned (United States v. AT&T, No. 11-01560 (D.D.C. filed Aug. 31, 2011)), one merger was blocked at trial (United States. v. H&R Block, Inc., No. 11-00948 (D.D.C. Oct. 31, 2011)), and seven other transactions were restructured. For purposes of calculating the percentages, all five FTC cases were allocated to the abandoned column based on the FTC's statistical average from the 1999–2010 period of having an abandon-to-restructure ratio of eighty-three to five.

20. In February 2001, the HSR reporting rules changed, resulting in a substantial reduction in the number of mergers that required HSR filings. Pub. L. No. 106-553, § 630, 114 Stat. 2762 (2000).

B. Imperfect Information, Litigation Costs, and Delay

Merger review takes place in an environment of inherent uncertainty and litigation costs.   Settlements are struck through negotiation, in which bargaining leverage is important. The key to understanding the bargaining leverage of the two sides involves several factors: the impact of the merger on welfare and profitability, the relative litigation and delay costs of the two sides, their information and risk aversion, their reputational costs and benefits of litigation, and the behavior of the courts.[21]

The impact of the consummation of the transaction on welfare and profitability clearly is a paramount factor. The agencies are tasked with protecting competition and maximizing welfare. The merging firms are concerned with maximizing shareholder value. Another key factor is relative litigation costs. For the merging firms, delay costs and uncertainty are likely more significant than out-of-pocket litigation costs, except perhaps for small transactions.[22] Delays raise costs for several reasons.[23] First, litigation delays the consummation of the transaction and achievement of the increased value. Second, delays lead to uncertainty that obviously makes it risky for the merging firms to move forward with their business plans and strategies during the interim until the matter is resolved. This may not be primarily an issue of risk aversion but rather a matter of not wanting to waste investments. In addition, delays can lead to the loss of key managers of the acquired firm, who do not know if they will be retained after the merger.

Finally, and perhaps most important, delays increase the likelihood that the merger will fail to be consummated at all, even aside from the legal risks. It is commonly said that "time is the enemy of the deal" and the situation is no different for merger transactions. During the period of delay, market conditions and strategies may change, so that the merger may no longer be in the interest of one of the parties or might create the potential for opportunism. Because delays put the entire value of the transaction at risk, they provide strong incentives to settle quickly.

If the merging firms' litigation and delay costs are large, the agency would gain a significant bargaining advantage. It could anticipate that its settlement demand is more likely to be accepted by the merging firms to

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21. For a dealmaker's view of negotiation dynamics, see JAMES C. FREUND, SMART NEGOTIATING: HOW TO MAKE GOOD DEALS IN THE REAL WORLD (1993); *see also* ROGER FISHER & WILLIAM URY, GETTING TO YES: NEGOTIATING AGREEMENT WITHOUT GIVING IN 99 (1981). The economic analysis of bargaining is based on the Nash bargaining solution and Nash sequential bargaining equilibrium. *See* John Nash, *The Bargaining Problem*, 18 ECONOMETRICA 155 (1950); *see also* Ken Binmore et al., *The Nash Bargaining Solution in Economic Modeling*, 17 RAND J. ECON. 176 (1986).

22. For large matters, out-of-pocket costs probably will be small relative to the incremental value of the merger. That incremental value is equal to the net present value of future profits less the cost of the acquisition.

23. The magnitude of these delay costs is more likely to be a proportion of the incremental value of the merger, rather than being a fixed cost that does not vary with the size of the transaction.

avoid further delays.[24] This anticipation might lead the agency to demand a more intrusive settlement.

The agencies also may have litigation costs. First, the agencies have limited budgets, which could create opportunity costs. However, it is not clear how significant these opportunity costs are. Budgets are sufficient for litigation on the current scale and likely would be increased if litigation intensity increased over time. The agencies also may have negative opportunity costs in that litigation experience provides valuable staff training and beneficial credentials. However, the agencies likely do face significant capacity constraints during limited periods of merger booms or when an administration wants to quickly ramp up litigation intensity.[25]

The agencies are also sensitive to their win-loss records in court. The agencies appear concerned that critics will interpret losses in court as agency overreaching, bad judgment, or incompetence. The agencies also may want to avoid losses to maintain staff morale. There also could be possible adverse deterrence effects from losses in court. A loss in court could change the law and thereby alter the agency's future litigation prospects. All of these factors create "opportunity costs" for the agencies that could make them "gun shy" about bringing cases instead of reaching a settlement, even if the settlement leads to a welfare reduction.[26] As discussed below, these concerns arguably are overstated, if not entirely unfounded.[27]

C. The Determinants of Settlement Behavior

Imperfect information is central to this analysis. We assume that all three participants (the agency, the firms, and the court) face imperfect information about welfare. We assume that the agency can accurately estimate the *expected* welfare impact, in the sense of having unbiased estimates. However, those estimates involve some unavoidable uncertainty regarding the ultimate actual welfare impact. For example, even if the

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24. Sims & McFalls, *supra* note 5, at 938 (focusing on the agency's ability to inflict delay costs on the firm as the primary reason for the agency's bargaining leverage).

25. For example, as noted in Table 1, comparing the merger wave of 2000 to the more modest merger activity in 2011, the second request rate was about 2 percent in 2000 versus 4 percent in 2011. There also were more transactions adjudicated in 2011.

26. For example, the DOJ's loss in the Oracle merger litigation has been said to have led to its scaling back its enforcement of unilateral effects. *See* Baker & Shapiro, *supra* note 3, at 32–33; James A. Keyte, United States v. H&R Block: *The DOJ Invokes* Brown Shoe *To Shed the Oracle Albatross*, 26 ANTITRUST 32, 32 (2012) ("[T]he desire for a litigated win in the shadow of *Oracle* had become palpable in the hallways of the Antitrust Division."); Scott A. Sher & Andrea Agathoklis Murino, *Unilateral Effects in Technology Markets:* Oracle, H&R Block, *and What It All Means*, 26 ANTITRUST 46, 46 (2012) ("[T]he DOJ's recent victory in *H&R Block* has reinvigorated a mode of unilateral effects analysis that had been seriously undermined when the DOJ lost the *Oracle* case." (citations omitted)).

27. *See infra* Part IV.B.

estimate of expected welfare impact is positive, it is possible that the merger actually could cause welfare to fall, or vice versa.[28]

In the United States, the enforcement agencies do not have carte blanche to order divestitures or other changes to the structure of the merger. Instead, settlements are negotiated in the shadow of the legal standards for liability under section 7 of the Clayton Act.[29] A court will reject a proposed merger if and only if it concludes that the expectation is that the merger will be welfare reducing, relative to the no-merger alternative.[30]

We assume that the court has no information that the agency lacks.[31] For simplicity, we also assume that the parties and the agency agree about the welfare impact of the settlement.[32] We assume that the court is generally less informed and less expert than the agency. We thus will assume for simplicity that the court has made an erroneous finding (false acquittal), if and when it rules against an agency that challenges a merger that the agency believes will reduce welfare.[33] While this assumption clearly is not always true, and is also not essential for the conclusions drawn, it serves as a useful abstraction to simplify the analysis. However, we will assume that the court's decisions are not *perverse*. That is, we assume that the court is less likely to falsely convict if the welfare benefits are larger, and the court is less likely to falsely acquit if the welfare harms are larger.

In order to estimate the likelihood that its settlement demand will be accepted by the merging firms, the agency must estimate the firms' incremental profitability of the merger and their litigation and delay costs, including delay risks. The firms would have the incentive to accept a settlement demand that would lead to profits that exceed their expected profits from litigating. If the agency had perfect information about

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28. For example, the agency may expect that the merger either will reduce welfare by 100 or raise it by 40, each with probability of 50 percent, in which case the expected welfare impact is a welfare reduction of 30 (i.e., 50% x (-100) + 50% x (+40) = -30).

29. 15 U.S.C. § 18 (2006).

30. This raises the issue of whether a court should evaluate the merger relative to an attainable maximum welfare standard rather than a no-merger alternative, as discussed in more detail below in Part II.B.

31. In the real world, additional information sometimes is developed in preparation for trial that would change the estimate of the expected welfare. This possibility is ignored in the analysis here, but could be added.

32. In the real world, the merging firms likely face imperfect information about the agency's estimate of the incremental welfare impact of the merger as proposed, as well as the agency's estimate of the welfare impact of various alternative structures that might be offered as settlements. This imperfect information might involve the agency's analysis of the cognizability of the claimed efficiencies, as well as market power factors. The firms also might have imperfect information about the agency's opportunity costs.

33. *See, e.g.*, Frankel, *supra* note 8, at 174; Sims & Herman, *supra* note 5, at 898 ("[T]here is no doubt that those at the agencies are more skilled at understanding and applying complicated economic concepts than the average federal judge or clerk."). For an opposing view, see Joshua D. Wright & Angela M. Diveley, *Do Expert Agencies Outperform Generalist Judges? Some Preliminary Evidence from the Federal Trade Commission*, 1 J. ANTITRUST ENFORCEMENT 1 (2012). However, this Article uses the decision to appeal as the measure of the likelihood of error. This test assumes that appeals courts are a more reliable arbiter of the correct outcome.

profitability, it could tailor a maximal settlement demand that the merging firms surely would accept. In this way, the agency could also avoid transactions being abandoned as a result of overreaching settlement demands, as well as avoid unnecessary litigation. However, we assume that the agency generally has imperfect information about the firms' profitability, including their perceived cost and risk of delay.

For much of our analysis, we assume that the agency makes a nonnegotiable, "take it or leave it" *(*TIOLI) settlement demand, backed up by a commitment to litigate if its demand is rejected by the firms.[34] We assume that these demands are made after the agency has reached its conclusion about the welfare impact of the merger, based on its own completed investigation, analysis by the parties, and discussions between the agency and the parties.

Bargaining theory often assumes that negotiators are not able to make credible TIOLI offers. However, in the case of merger enforcement, the agency has inherent bargaining advantages that make reputation formation and commitments more possible. Enforcement decisions are made repeatedly by the agencies with respect to numerous mergers and those decisions are accompanied by explanations.[35] The agencies also can reinforce their reputational effects and make their threats more credible through guidelines, press releases, and speeches.

This assumption that the agency makes nonnegotiable settlement demands clearly does not describe current agency behavior. The normal procedure is for the agency and merging parties to negotiate over the details of a possible settlement, not simply to make threats. Negotiations are used to exchange relevant information about the potential agreement, explore common ground, and learn the consequences of failure to reach agreement.[36] These informational benefits may mitigate or even trump the bargaining power benefits to the agency of committing to making only a single nonnegotiable offer. However, the assumption that the agency makes nonnegotiable settlement demands is a useful starting point for our normative analysis of optimal enforcement policy.

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34. Of course, firms have potential bargaining counterstrategies to mitigate or even reverse the agency's inherent bargaining leverage. One strategy is a last-minute divestiture proposal, as discussed in Part IV.E. Firms also can signal a greater (and more credible) willingness to litigate in various ways—such as by agreeing to a duty to litigate or a large reverse breakup fee in the acquisition agreement—by preparing their trial strategy and exhibits in advance or by retaining a law firm with a reputation and taste for litigating. For an interesting database on reverse termination fees, see Dale Collins, *Antitrust Reverse Termination Fees*, ANTITRUST UNPACKED (July 15, 2011), http://www.antitrustunpacked .com/siteFiles/BlogPosts/005_reverse_breakup_fees1.pdf.

35. A few merging parties are repeat players and they have a similar ability to establish reputations.

36*. See, e.g.*, FISHER & URY, *supra* note 21, at 67, 80; FREUND, *supra* note 21, at 37.

II. THE WELFARE-MAXIMIZATION STANDARD AND OPTIMAL DETERRENCE

To explicate these concepts, we initially assume that there are no information imperfections or litigation costs. We assume instead that the agency and the merging parties both know (and agree on) the welfare impact and profitability of the merger and possible settlements. We also assume that the court never errs. Within this simple structure, we analyze the agency's settlement commitment strategy and the impact of the strategy on the behavior of merging firms. This simple scenario also can be used to explain the benefits of a settlement standard geared toward maximum welfare, not welfare neutrality.

The overarching goal of the antitrust laws is to maximize welfare. We consider how this goal should play out for an agency choosing its settlement policy for potentially anticompetitive mergers. We assume that the agency makes a nonnegotiable settlement demand. If the firms reject the settlement demand, the matter goes to litigation, and the court decides whether or not to block the merger based on the incremental welfare impact of the merger as proposed. Because the court also has perfect information, it enjoins the merger if and only if the merger reduces welfare. That is, the court uses a legal standard of welfare neutrality.

A. The Agency's Welfare-Maximizing Optimal Settlement Demand

Suppose that there is perfect information and zero litigation costs for all sides. In this scenario, the agency's optimal strategy is simple. If the merger as proposed is welfare enhancing, the agency will clear the merger as proposed. If the matter were litigated in court, the judge would correctly find that the merger is welfare enhancing and would reject the agency's complaint with certainty. Firms know this fact, so any settlement demand would be rejected by the firms, which lack litigation and delay costs.

In contrast, if the merger were welfare reducing, the agency would have complete control. The court would enjoin the merger with certainty if the matter were litigated. In this situation, the merging firms would accept any settlement demand for which its incremental profits would remain positive. Thus, the agency would have the ability and incentive to make the settlement demand that maximizes welfare, subject only to the constraint that the firms would rather accept the settlement than abandon the transaction.

B. The Proper Welfare Benchmark for Merger Enforcement

This ability and incentive of agencies to demand the welfare-maximizing divestiture raises the policy issue of whether maximum welfare *should* be the agency's goal in settlements. The liability standard is that a merger is illegal where "the effect of such acquisition may be substantially to lessen competition."[37] It might be argued that this implies that the agency should

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37. 15 U.S.C. § 18 (2006).

limit settlement demands solely to prevent the mergers from reducing welfare and should not demand settlements that lead to strictly positive incremental welfare impacts, let alone welfare maximization.[38]

This argument for welfare neutrality misses the mark for several reasons. First, the section 7 legal standard applies to judicial decision making, not to settlements. Settlements are *voluntary agreements* that are made to avoid litigation and are not subject to the same standard as for liability.[39] In fact, as discussed below, when there is imperfect information and agency litigation costs, the agency often will find it optimal to accept some settlements that lead to welfare reductions to compensate for litigation risks.[40]

Second, even as a legal matter, the relevant standard is not welfare neutrality of the overall merger as proposed. The issue is more complicated. The proper standard is welfare maximization*, subject to constraints of practicality and deterrence*. Firms would not be incentivized to opt for the most efficient and procompetitive merger proposals if the competitive-effects analysis were judged solely on the overall impact of the merger proposal as a whole. Their incentives predictably would lead to lower welfare and might be called "anti-deterrence."[41] Thus, agencies and courts should analyze whether multiple aspects of the merger are inextricably linked and reasonably necessary to achieve the welfare goals of the transaction. If they are not inextricably linked, they should be evaluated separately. This procedure is consistent with a standard of welfare maximization, not welfare neutrality.

This policy analysis can be illustrated by the example of a firm that carries out a series of acquisitions over time. For example, suppose that one supermarket chain in Los Angeles first proposes to acquire one of the two Los Angeles supermarket chains owned by a significant competitor. Suppose that this acquisition of the one chain would be considered clearly procompetitive and welfare enhancing and would be cleared by the agency. Suppose, however, that the buyer subsequently proposes to acquire the seller's second chain three months later. Suppose that the agency concludes that this second merger clearly would be anticompetitive and welfare reducing. Thus, the agency would challenge this second merger. These results are not controversial.

As a benchmark for comparison, consider the following alternative timing. Suppose instead that the buyer had proposed to acquire both chains simultaneously. Assume further that the agency concludes after its analysis

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38. *See* Sims & McFalls, *supra* note 5, at 938.

39. For example, see Joseph G. Krauss et al., *The Tunney Act: A House Still Standing*, ANTITRUST SOURCE (June 2007), http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Jun07_Krauss6_20f.authcheckdam.pdf. For a critical view, see John J. Flynn & Darren Bush, *The Misuse and Abuse of the Tunney Act: The Adverse Consequences of the "Microsoft Fallacies*, 34 LOY. CONSUMER L. REV. 749 (2003).

40. *See supra* Part II.

41. Anti-deterrence is discussed in more detail in Part III.

that both acquisitions considered jointly (on an all-or-nothing basis) would raise welfare but that the welfare enhancement actually comes solely from the acquisition of the first chain. That is, the acquisition of the second chain reduces welfare (as in the first example) by less than the acquisition of the first chain raises welfare. If the two acquisitions were inextricably linked in some way, it would make sense to analyze the acquisitions as a single unit. But, in the hypothetical example, suppose that the agency concludes that the welfare benefits from the first acquisition are not inextricably linked to the second acquisition. That is, suppose that the agency further concludes that, if the two acquisitions had been attempted sequentially, the second acquisition would have been challenged as anticompetitive, just as in the previous scenario.

In this hypothetical, the agency should not permit the acquisition of the second chain.[42] The merger-specific efficiencies are not inextricably linked to the acquisition of the second chain. This merger (absent the divestiture) could also be considered a violation of section 7. The acquisition of the smaller chain has the effect of substantially lessening competition.[43]

These examples show that if competitive effects are evaluated solely on the overall impact, it could incentivize merging firms to broaden their procompetitive merger proposals to include anticompetitive elements. This might involve expanding the set of assets acquired. It also might involve including (or even adding) anticompetitive provisions. This is a harmful incentive that predictably would lead to lower welfare. Thus, if merger law is concerned at all with deterrence, it must condemn this conduct. This implies that the legal standard is welfare maximization, not simply welfare neutrality of the overall merger proposal. Only if the multiple elements of the merger are inextricably linked, as explained in the Merger Guidelines, should they be evaluated as unitary.[44]

This focus on welfare maximization does have two important limits. This analysis does not give the agencies carte blanche to engage in subtle restructuring of procompetitive mergers in order to gain small increases in welfare. First, a small welfare enhancing divestiture may not be practical. A small divestiture might not raise welfare while a large divestiture may lead to litigation in a world with imperfect information. Second, as discussed below, a policy of exacting tribute from mergers that are welfare enhancing as proposed actually may reduce deterrence by lessening the incentives of merging firms to forgo welfare-reducing proposals in favor of welfare-enhancing ones. Thus, it would not be long-run optimal.[45]

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42. Or, if the seller insisted on selling both chains, the agency should require the divestiture of the second chain.

43. This analysis easily can be placed into the context of section 1. The acquisition of the second chain's assets (and the resulting incremental reduction in welfare) is not reasonably necessary for the success of the merger as a whole.

44. HORIZONTAL MERGER GUIDELINES, *supra* note 11, at 30.

45. *See supra* Part IV.B.

C. Merger Selection, Restructuring, and Deterrence Effects

The analysis of the short-run optimal policy assumes that the agency and the merging firms take the structure of the proposed merger as fixed. The merging firms respond to the agency's settlement demand by settling, litigating, or abandoning the transaction. However, in the real world, the firms might voluntarily restructure the merger even before proposing it to the agency. Restructuring can benefit the firms by altering the agency's demand.

Such restructuring incentives are straightforward to analyze when there is perfect information and de minimis litigation and delay costs, and when the agency demands the welfare-maximizing settlement for all welfare-reducing mergers while clearing as proposed welfare-neutral and welfare-enhancing mergers. Suppose that an acquiring firm is contemplating a welfare-reducing merger proposal. Anticipating the agency's settlement demand, it would be in the interest of the firm voluntarily to restructure the merger proposal to the welfare-neutral level. Although this structure would reduce its profits relative to the original merger as proposed, it likely would lead to higher profits than if the agency forced the firms to make the welfare-maximizing divestiture. The same result could occur if the acquiring firm has a choice to select one of several potential merger partners.

Although the agency in this example is following a short-run policy without regard to deterrence, its policy nonetheless has a deterrent effect.[46] Deterrence is an important goal of merger enforcement. Agency settlement policy must treat deterrence as a central goal.

III. IMPERFECT INFORMATION, LITIGATION COSTS, AND THE AGENCY'S SHORT-RUN OPTIMAL SETTLEMENT COMMITMENT STRATEGY

Agency settlement behavior depends on whether the agency focuses solely on the merger under consideration or whether it takes deterrence effects into account. This part analyzes the optimal policy when deterrence is not the focus. The analysis of this short-run optimal policy is complex when the parties have imperfect information and significant litigation costs. The predicted results resemble the outcomes discussed—and criticized—by commentators.

A. Basic Analytics

The analysis can be explained most simply by distinguishing among mergers that have different welfare impacts as proposed. Much of the analysis in this section is based on the technical model contained in the Appendix.

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46. On closer analysis, however, the voluntary restructuring ironically is harmful to welfare. As a result of this voluntary restructuring, the agency then loses the opportunity to force the firm to settle for the welfare-maximizing structure.

1. Welfare-Reducing Mergers

Consider a merger that is expected to be welfare reducing as proposed. The agency would choose the settlement demand that optimally balances the risks and rewards of being more or less aggressive. On the one hand, the reward for being more aggressive is that welfare will be higher, if the settlement demand is accepted. On the other hand, the risk is that the merging firms are less likely to accept a tougher demand. And, if the firms reject the demand, the agency may lose in court, in which case consumers will suffer the welfare reduction from the merger as proposed.

For this reason, it may be optimal for the agency to propose a settlement that nonetheless would lead to welfare harm, even if the agency litigation costs are zero. The explanation for this striking result is the agency's fear of the court reaching a false-acquittal result and permitting the merger as proposed. In deciding whether to accommodate a welfare-reducing settlement, the agency would recognize that a false acquittal would lead to even greater welfare harm than would an accommodative settlement.

This analysis also shows how a greater potential for judicial errors affects settlements. The larger the probability of a false acquittal, the more likely the agency would have the incentive to weaken its settlement demand. Indeed, even if the likelihood of a false negative falls far short of 50 percent, the agency might still be so fearful that the firms would reject the settlement and the agency would lose in court that it will accept a significantly welfare-reducing settlement.[47]

In fact, a merger with larger welfare harm as proposed sometimes can lead the agency to demand an even weaker welfare-reducing settlement. This can occur if the likelihood of a false acquittal for the more harmful merger proposal nonetheless remains significant. In particular, when the *expected harm* from a merger as proposed is higher (that is, when the decrease in the likelihood that the firms would win in court is more than offset by a larger potential welfare harm from the more problematic merger), then the agency has more to lose from going to court. This is a very significant result because it suggests that firms may do better by proposing more problematic mergers, what might be called "anti-deterrence."

There are limits to this effect. One might expect that the likelihood of a false acquittal would become very low for egregiously anticompetitive mergers, leading to a lower expected welfare harm. But, while this might be true in the extreme, the agency cannot simply *assume* that the probability of a false negative approaches zero, even for substantially anticompetitive transactions. The defense could win on a procedural technicality; the

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47. The agency also would be more willing to be satisfied with a negative welfare settlement when a welfare-neutral settlement demand would lead to a substantial reduction in the likelihood that the firms would accept the settlement. In that situation, it might make sense for the agency to settle for a smaller welfare reduction, rather than take on the litigation risk of a false-acquittal outcome.

agency's lawyers may be outgunned in court by a well-financed and skillful adversary; the agency's key witness might blow up on the stand; or, perhaps an inexperienced, careless, or ideologically blinded district court judge will totally miss out on the merits.[48]

In contrast, there are two situations where an agency focused only on the short-run clearly would find it optimal to insist on a welfare-enhancing settlement. One situation is a case in which both the agency and the firms perceive that the agency's chances of winning in court are very high. In that situation, the firms would likely be willing to agree to a welfare-enhancing settlement and the agency would have the incentive to take the (small) risk that the firms would choose to litigate. The other situation involves an agency expectation that the risk-reward ratio is low, that is, where the agency perceives that a more aggressive settlement demand would not significantly reduce the firms' willingness to settle. In that case, the more aggressive settlement demand would have only a very small downside risk. As a result, it would make sense for the agency to push the envelope.

2. Welfare-Neutral and Welfare-Enhancing Mergers

Consider next a welfare-neutral merger proposal. Putting aside agency litigation costs, it always would be short-run optimal for the agency to demand a welfare-improving settlement rather than clear the merger as proposed. The firms would almost surely accept a modest settlement. But, even if there is some chance that a more aggressive demand would lead to litigation and potential loss in court, the agency would lose nothing.

Consider next a merger that is expected to be welfare enhancing as proposed. The agency nonetheless may demand a settlement that would increase welfare, rather than permit the merger as proposed. The merger as proposed does not maximize welfare, so there is room for a welfare improvement by a more aggressive stance.[49] As long as the firms have some fear of losing in court or some litigation or delay costs, they would have the incentive to make some concessions. This situation illustrates a bargaining advantage that the agency has in settlement negotiations.

The agency's short-run optimal settlement demand would be simple if it knew the firms' profit function and litigation and delay costs. The agency could demand the maximum settlement offer that the firm would accept. However, with imperfect information, demanding a more aggressive

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48. For example, in *FTC v. Whole Foods Market Inc.*, the judge apparently overlooked statements by the CEO that one effect of the merger would be to eliminate the possibility of future price wars. *See* FTC v. Whole Foods Mkt., Inc., 502 F. Supp. 2d 1 (D.D.C. 2007), *rev'd*, 548 F.3d 1028, 1041 (D.C. Cir. 2008). In *Lundbeck*, the judge made an inexplicable market definition error. *See* FTC v. Lundbeck, Inc., 2010-2 Trade Cas. (CCH) ¶ 77,160 (D. Minn. 2010), *aff'd*, 650 F.3d 1236 (8th Cir. 2011).

49. This assumes, of course, that the efficiencies would not be lost. Where the efficiencies are inextricably linked to the divested assets, consumer welfare benefits could be lost.

settlement is a risky and somewhat ironic agency strategy. On the one hand, if the firms accept the settlement, welfare will improve. On the other hand, if the firms reject the settlement and the agency wins in court (as a result of a false acquittal), welfare will be lower than if the merger were cleared as proposed. Thus, if the merging firms reject the settlement demand, the agency actually may have the short-run incentive to abandon the litigation.[50]

For this reason, when the agency decides to demand a settlement for a welfare-enhancing merger as proposed, it must do so judiciously. First, the agency should only take this aggressive approach when the merger as proposed is not substantially better than welfare neutral. In that situation, the agency has less to lose if the firms reject the settlement and the agency wins in court. Second, the agency should reserve such an aggressive strategy for situations where the firms' litigation and delay costs appear high. In that way, the probability is lower that the settlement will be rejected. Third, the agency should not be greedy. It should not demand such a large divestiture that it becomes unlikely that the firms will accept the settlement.

There are several economic reasons why such an aggressive policy might not be short-run optimal for the agency, even if the agency ignores deterrence effects. First, the agency may be less intent on extracting small settlements because such settlements may not actually increase welfare. For example, a divestiture that does not include an entire business may be too small to create a viable business entity.[51] Second, the agencies conceivably may feel that extracting such tribute is irresponsible behavior that involves the abuse of governmental power. Or, perhaps staff morale would be reduced by litigating such cases. Third, the agencies may fear that the firms will litigate out of anger, despite the cost of doing so.[52] Finally, and perhaps most importantly, extracting tribute is not long-run optimal. It can be an impediment to effective deterrence, as discussed below in Part IV.

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50. One possible option would be for the agency to assign its less talented litigators to the case as a way to reduce its likelihood of winning in court. Of course, given the importance of the agency maintaining its commitments in order to incentivize future firms to accept such settlements, abandoning the suit or throwing the game would not be a wise move in the long term.

51. *See* FTC, BUREAU OF COMPETITION, A STUDY OF THE COMMISSION'S DIVESTITURE PROCESS 4 (1999), *available at* http://www.ftc.gov/os/1999/08/divestiture.pdf.

52. Although this is an explanation grounded in practical reality and behavioral economics, rather than purely rational decision making, it is common for bargaining to go awry when one side appears unreasonable. FREUND, *supra* note 21, at 80. This is a common result in the Ultimatum Game. *See* Ernst Fehr & Simon Gächter, *Cooperation and Punishment in Public Goods Experiments*, 90 AM. ECON. REV. 980, 984–93 (2000); Richard H. Thaler, *Anomalies: The Ultimatum Game*, 2 J. ECON. PERSPECTIVES 195, 196–203 (1988).

B. The Role of Judicial Error

A higher likelihood of judicial errors will impact the agency's optimal settlement demand. If the likelihood of false acquittals is higher, the agency must be more accommodating in its settlement demands in welfare-reducing mergers. This is an unsurprising result. Perhaps more surprisingly, if the likelihood of false convictions is higher, the agency also should be less aggressive in its settlement demands in welfare-enhancing mergers. This is an implication of the result that welfare is higher when the agency loses a welfare-enhancing litigated case than when it wins.

C. Deterrence Impacts

As discussed earlier in the case of perfect information, there are deterrence effects even if the agency does not design its policies with deterrence in mind. The deterrence effects can involve the selection of a merger partner or the proposed structure of the merger. These results also occur when there is imperfect information and litigation costs. These deterrence effects can be counterintuitive.

1. Beneficial Deterrence

Consider a welfare-reducing merger proposal. It might be in the acquiring firm's interest to choose a less problematic merger partner or restructure the terms of the merger in a more accommodative way before being confronted by the agency.[53] Even if the agency does not demand a strict welfare-enhancing proposal, a somewhat less harmful structure could increase the likelihood of a false acquittal. This higher probability of a false acquittal would increase the incentives of the firm to reject an aggressive settlement demand and raise agency concerns about losing in court. Both effects would serve to deter the agency from making a more aggressive settlement demand. As a result, the firms may end up with higher profits. This deterrence is beneficial in the sense that the proposed structure is less welfare reducing.[54]

2. Anti-deterrence

With imperfect information and litigation costs, the result could reduce deterrence or create "anti-deterrence." That is, the firms may find it more profitable to propose a more problematic merger or structure their merger in

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53. Restructuring might be done as part of a prepackaged voluntary divestiture or through other agreements made at the time of the initial HSR filing. Or, it might be formulated during the investigation process. As long as a court will evaluate the impact of a restructured transaction, not the original structure, this type of restructuring would place the firms in a better position to resist aggressive settlement demands by the agency.

54. Of course, the existence of deterrence effects does not mean that there is optimal deterrence. Optimal deterrence would require additional information about the distribution of potential mergers. Analyzing this issue is beyond the scope of this Article. The required data also would be difficult to collect.

a more welfare-reducing way in an attempt to frighten the agency into accepting a weaker settlement.

Normally, a larger welfare-reducing merger proposal would decrease the likelihood of a false acquittal and would thereby embolden the agency to demand an even stronger settlement. But, where there is a significant likelihood of a false acquittal that is not highly affected by the merger structure, the opposite result can occur. The fear of a larger welfare reduction, in the event that the settlement is rejected and the court falsely acquits, will serve to "up the ante" for the agency and may lead it to propose a weaker settlement. As a result, the profits of the merging firms may rise.[55]

Merging firms would never say publicly that they are taking a more aggressive approach to create an *in terrorem* effect on the agencies. But this type of conduct sometimes appears to occur. More importantly, this result suggests the importance of the agency designing a long-run optimal merger settlement policy that takes deterrence effects into account.

IV. LONG-RUN OPTIMAL POLICIES FOR EFFECTIVE DETERRENCE

Deterrence of anticompetitive conduct is an important goal of antitrust law and merger enforcement. Courts and commentators often phrase this issue in terms of minimizing the frequency and cost of "false positives" and "false negatives." These terms are sometimes treated as if they solely involve erroneous convictions and acquittals made by courts, given the legal standard. But, the terms also implicate deterrence in the setting of legal standards.[56] Instead, a better interpretation of the term "false positives" would include "over-deterrence."

The previous analysis of the short-run optimal policy assumed that the agency determined its settlement demand for each merger on its own, without reference to the impact of its decisions on future mergers. Those decisions nonetheless would have beneficial or adverse deterrence effects. A long-term optimal strategy would attempt to deter anticompetitive mergers while encouraging procompetitive ones, as well as interdicting

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55. For example, suppose that the court may erroneously define the market so broadly that the combined market share of the merging firms will be in the safe harbor with or without a divestiture. The Merger Guidelines contain a provision that if the HHI is sufficiently low, the merger normally will be cleared without further analysis, a provision that is commonly referred to as a "safe harbor." *See, e.g.*, Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 701, 721 n.76 (2010).

56*. See, e.g.*, Monsanto Co. v. Spray-Rite Serv. Corp., 465 U.S. 752, 763 (1984) ("[D]eter or penalize perfectly legitimate conduct."); *see also* Monsanto Elec. Indus. Co. v Zenith Radio Corp., 475 U.S. 574, 594 (1986) ("[C]hill the very conduct the antitrust laws are designed to protect."). Indeed, if the sole goal in setting a legal standard were to minimize errors, *without any regard to deterrence effects*, one optimal standard would be per se illegality backed up by huge sanctions. With that standard, no one would ever violate the law, so there would be no trials and, therefore, no erroneous convictions or acquittals.

anticompetitive merger proposals and permitting procompetitive ones to proceed.

Formulating a settlement policy to achieve optimal deterrence is not a trivial undertaking when the parties have imperfect information and litigation costs.[57] However, further analysis can describe some of the key principles of such a policy. The analysis also suggests several useful rules of thumb.

A. Tailoring Settlement Demands To Increase Deterrence

Deterrence functions by impacting the incentives of the merging firms. The general way to achieve deterrence is to formulate a policy that leads firms to have higher expected returns from welfare-enhancing merger proposals than for welfare-reducing proposals. The agencies have two basic policy instruments: issuing complaints and demanding settlements.[58] Issuing complaints is a costly approach, and it is imperfect in light of the judicial false-acquittal problem.

The agencies can use settlement demands to improve deterrence.[59] This would involve demanding aggressive settlements for welfare-reducing merger proposals while clearing welfare-enhancing mergers. This policy would increase the benefits at the margin to the firms making more procompetitive merger proposals. Thus, the firms' incentives to propose or restructure welfare-reducing mergers would be increased.

This result follows from the basic economics of optimal deterrence. Suppose that the incidence of false convictions and false acquittals means that the likelihood of being convicted and penalized does not increase very much when an individual actually violates the legal standard, compared to

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57. Building a formal optimal control model to derive the optimal long-run settlement policy for a distribution of merger proposals and firm restructuring decisions in response to the policy is beyond the scope of this Article. Instead, this Article will discuss several rules of thumb for approaching optimality. There is economic literature involving formal models of merger enforcement policy for optimal deterrence. For example, the recent article by Nocke and Whinston concludes that for all but the smallest acquirer, the agency only should approve mergers that increase welfare surplus by an amount that exceeds a strictly positive minimal acceptable level. *See* Volker Nocke & Michael. D. Whinston, *Merger Policy with Merger Choice*, (Northwestern Univ., Searle Ctr. Legal & Regulatory Studies, Working Paper, 2010), *available at* http://www.law.northwestern.edu/searlecenter/papers/Nocke Whinston_MergerChoic.pdf. In contrast, their earlier article concludes that dynamic optimality is achieved if the agency follows a simple myopic merger policy of approving all mergers that increase consumer welfare. *See* Volker Nocke & Michael. D. Whinston, *Dynamic Merger Review* (Nat'l Bureau of Econ. Research, Working Paper No. 14526, 2008), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1312621. These models do not include either settlements or litigation risk.

58. The agency could achieve more deterrence if it had the ability to directly levy high fees on welfare-reducing mergers. However, the only way it can "tax" is to issue complaints or demand settlements.

59. For the purposes of this Article, I assume that the optimal strategy is to make nonnegotiable settlement demands. There are certain benefits to adopting a negotiation strategy instead, as noted elsewhere. Subsequent work can examine this assumption in more detail.

when the individual actually satisfies the standard. In this scenario, the incentives to satisfy the standard are reduced, relative to the case in which there are no errors.[60] The analysis is somewhat more complicated when the individual can control behavior at the margin with (marginally) more or less "aggressive" behavior (i.e., choosing whether or not to step closer to or just over the line separating legal from illegal behavior). If the choice of behavior at the margin does not have much effect on the probability and likelihood of being detected and convicted or on the resulting expected sanction, there is less incentive to stay within the legal line, which would lead to under-deterrence.[61]

The likelihood of false acquittals in this analysis complicates the optimal policy because it weakens the relationship between the behavior and the likelihood of being penalized. However, this weakening effect can be mitigated by increasing penalties. For example, this is one role of treble damages in antitrust.[62]

This deterrence analysis can also be applied to settlements. While the exact shape of the optimal settlement and enforcement policy is impossible to describe algebraically, and would depend on the underlying distribution of merger proposals and effects, this analysis suggests three simple rules of thumb to improve deterrence. By following these three rules, the agencies would give merging firms an increased incentive to propose welfare-enhancing mergers and restructure welfare-reducing mergers voluntarily.

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60. *See* Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1484 (1999). For a simple technical example, see Henrik Lando, *Does Wrongful Conviction Lower Deterrence?*, 35 J. LEGAL STUD. 327, 329–30 (2006). Lando's example assumes that the probability of a false acquittal is Pa, the probability of a false conviction is Pc and the sanction is a fine of F. In that case, the expected sanction when the individual violates the rule is $(1-Pa)F$, while the expected sanction when the individual satisfies the rule is PcF. The incentive to satisfy the rule depends on the difference in expected sanctions $(1-Pa-Pc)F$. This expression shows that false convictions as well as false acquittals reduce the incentives to comply with the rule. The intuition of this reasoning can be illustrated with an extreme example. Suppose that the police stop and ticket for speeding *randomly*, rather than according to the driver's speed. In this scenario, there is no incentive to slow down because $Pa=Pc=1/2$. A driver might as well exceed the speed limit and reach the destination more quickly. Lando also discusses the certain limitations to this under-deterrence result. *See generally* Warren F. Schwartz, *Legal Error*, *in* ENCYCLOPEDIA OF LAW AND ECONOMICS 1029–1040 (Boudewijn Bouchaert & Gerrit De Geest eds., 2000).

61. *See generally* John E. Calfee & Richard Craswell, *Some Effects of Uncertainty on Compliance with Legal Standards*, 70 VA. L. REV. 965 (1984). In contrast, even if the likelihood of detection and conviction (and so the expected sanction) is low, a *large increase* in the likelihood of detection and conviction for marginally more aggressive behavior around the legal line will tend to lead to substantial deterrence, perhaps even over-deterrence.

62. Treble damages are often justified on the grounds that the illegal conduct (e.g., covert price fixing conspiracies) is often undetected. However, the same analysis would apply to any reason why illegal behavior would not be penalized, including erroneous acquittals. In fact, this analysis implies the ironic result that punitive damages make more sense for the "difficult" cases, where errors are more likely, in contrast to "egregious" cases that are easy to detect and lead to certain conviction. A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869, 891 (1998); Steven C. Salop & Lawrence White, *Economic Analysis of Private Antitrust Litigation*, 74 GEO. L.J. 1001, 1031 (1986).

Anti-deterrence effects also would be greatly reduced. The three rules of thumb can be summarized as follows:

One, the agencies should commit to clear all mergers that are welfare enhancing as proposed, even if it would be possible to extract a beneficial settlement.

Two, the agencies should commit never to accept welfare-reducing settlements, even if there is risk of a false acquittal.

Three, the agencies should commit to always demand settlements for welfare-reducing merger proposals that lead to significant welfare increases, not simply welfare neutrality.

These rules of thumb follow directly from the basic deterrence analysis. By forgoing tribute settlements for welfare-enhancing proposals, while demanding strong settlements (i.e., settlements that go beyond the welfare-neutral outcome) for welfare-reducing proposals, the policy increases the disincentive for the firms to make merger-reducing proposals. This additional wedge is needed because of the adverse effects on deterrence of false acquittals by the courts. This policy notably rejects the view that the agency should only attempt to achieve welfare neutrality. While this policy might be controversial as a political matter, it does serve the fundamental deterrence goals of antitrust.[63] Demanding only welfare-neutral settlements would lead to under-deterrence. At the same time, the agency should not demand "tribute" settlements for mergers that are welfare enhancing as proposed, even if the merging firms would accept such settlements because of litigation costs and delay risks.[64]

Determining the exact magnitude of the required welfare increase for settlements of welfare-reducing merger proposals requires further analysis, though it is clear that welfare neutrality is too accommodative a standard. It is also clear that more harmful merger proposals demand more beneficial settlements. This standard is necessary to maintain the incentives of potential merging firms to select less harmful merger proposals or voluntarily restructure their proposals in beneficial ways. However, without knowing more about the distribution of mergers and their effects on welfare, profits, and other relevant factors, it is difficult to draw more specific conclusions.

B. *Maintaining Discipline*

Following these rules of thumb for optimal deterrence strategy requires *discipline*, that is, a commitment not to deviate from these settlement policies. Discipline is needed because deviation from the long-run optimal decision and reversion to the short-run optimal settlement demand would be in the agency's short-run interest. For example, after a merger is proposed, if the agency myopically ignores the inevitable effects on deterrence, the

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63. An understanding of the deterrence benefits also might make the policy less politically controversial.

64. Subject to the caveats discussed in Part II.B and below.

agency might have the incentive to settle for a weaker, welfare reducing settlement for a harmful merger that involves a significant risk of a false acquittal. It also might have the incentive to use its bargaining power to extract a small divestiture for a welfare-enhancing merger.

This guidance can be stated as a rule of thumb. The optimal deterrence strategy does not permit the agency to be "gun shy" about going to court. This is the case even if the short-run welfare effects from settling would seem favorable, once a litigation discount is subtracted to account for the litigation risks. On the other side, the agency also must resist the opportunistic incentive to collect settlement "scalps" for welfare-enhancing mergers, even if the parties are willing to cave.

There are several impediments to maintaining such a disciplined policy. With respect to welfare-reducing mergers, agencies do not like to lose in court, as discussed already. However, there are good reasons why agencies should be less defensive about losses in court and should not be "gun shy" about bringing cases instead of agreeing to welfare-reducing settlements. First, any claim that losses in court imply agency overreaching or bad judgment certainly should be discounted. It is well established in the law and economics literature on equilibrium case selection bias that the win-loss record mainly reflects differences in the litigants' costs and benefits of going to trial. [65] In the simplest situation where the stakes are symmetric, only the hardest cases reach adjudication, and the equilibrium win-loss rate is 50/50.[66] Deviations from 50/50 reflect asymmetries in the stakes or unanticipated changes in one side's (here, more likely the agency's) litigation strategy.

Agencies also might fear that losses in court would adversely affect merger law.[67] Merger cases are very fact based, which generally should lead to narrow (if any) legal precedents.[68] But, more generally, if losses in court are harmful, wins are beneficial, and it is not clear why losses would have larger long-term effects than wins.[69] Moreover, these effects may be exacerbated today precisely because so few cases are litigated. If the agencies were to bring more cases, each decision would carry less weight

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65. *See* Priest & Klein, *supra* note 2, at 5.

66*. Id.* at 17–20; Salop & White, *supra* note 62, at 1063.

67. At the same time, it is the function of courts to affect the law. Settlements deal the courts out of the process. *See* Pitofsky, *supra* note 4.

68. The possible exception is the attempt by either side to substitute presumptions for facts. Reliance on presumptions can be a signal of a weak factual case. But arguing for presumptions also can be an explicit agency strategy to create stronger law for greater future deterrence.

69*. Whole Foods* provides an interesting example of the way in which judicial opinions can be two-edged swords. The district court inexplicably ignored the CEO's statements about the merger eliminating the fear of price wars. *See* FTC v. Whole Foods Mkt., Inc., 502 F. Supp. 2d 1 (D.D.C. 2007). But, the D.C. Circuit panel then held that the FTC has a reduced burden of proof for obtaining a preliminary injunction. *See* FTC v. Whole Foods Mkt., Inc., 548 F.3d 1028, 1041 (D.C. Cir. 2008).

and the random effects of different courts—especially outlier courts—might tend to wash out.

The overreaching claim also relies on the false assumption that the factual conclusions of the court are generally superior to the conclusions of the agency in deciding to bring the case. This assumption seems unlikely to be true.[70] A typical judge in the District Court for the District of Columbia might hear one merger case every five years, and few obtained antitrust experience in the private bar. In contrast, agency staffs are comprised of lawyers and economists trained in competition analysis. They develop extensive experience by working full-time on proposed mergers. They work in teams and argue among themselves, which also should serve to reduce the error rate.

Some might even argue that *as a doctrinal matter*, courts reach the *true* conclusion of whether the merger is anticompetitive as a matter of definition. However, this argument is fundamentally flawed. It is a tenet of the economic analysis of law that courts face inherently imperfect information.[71] As emphasized in Supreme Court opinions, generalist courts generate false acquittals (i.e., false negatives) and false convictions (i.e., false positives).[72] One cannot build a logical jurisprudence on the concern with false positives/false negatives while simultaneously believing that factual disagreements between the agency and the court involve the court necessarily being right and the agency necessarily being wrong.

Discipline also entails the agency forgoing use of its bargaining power to extract tribute settlements for welfare-enhancing mergers. Those settlements can be attractive to the agency. If well designed, such settlements can raise welfare. As discussed above, they also serve the goal of deterrence when they target situations where the merging parties propose an overly broad acquisition that is not inextricably linked to the overall welfare benefits of the merger, or where the parties append anticompetitive provisions.[73]

Unfortunately, such settlements are potentially subject to overuse or even abuse. They may interfere with deterrence by reducing at the margin the incentives to propose welfare-enhancing mergers. Therefore, it is important that such settlements be reined in. One way to achieve this goal is by limiting such settlements solely to situations where the merging parties propose an overly broad acquisition (with elements clearly not inextricably linked to increasing welfare) or append anticompetitive provisions to an otherwise beneficial merger.

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70. As noted earlier, I assume that the agencies generally are more skilled than the courts.

71. *See* Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. LEGAL STUD. 257, 278 (1974); *see also* C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41, 43 (1999).

72. *See, e.g.*, Verizon Commc'ns Inc. v. Law Offices of Curtis v. Trinko, LLP, 540 U.S. 398, 414 (2004).

73. *See supra* Part I.B.

The latter condition ("append anticompetitive provisions") represents both a bright line and involves an indefensible addition to the merger agreement. Thus, it is easy to justify and enforce, without a significant potential for reducing deterrence. In contrast, the former condition ("overly broad acquisition") is not as bright a line and so it could be subject to misuse. Thus, its usage must be carefully monitored. This also demonstrates the benefits of the "just say no" bright-line rule as a policy to maintain effective discipline.

C. Maintaining Discipline with the "Just Say No" Enforcement Policy

Discipline can also be maintained by making clear commitments to these principles and rules of thumb. Commitments might be made in pronouncements like the Merger Guidelines. However, these do not achieve airtight commitments because the Merger Guidelines do not represent unbreakable vows. It also can be difficult for outsiders to detect deviations from the Guidelines because the analysis is so fact based. In the end, the agencies must rely on the establishment of a reputation.

One path to an effective reputation is to adopt a simple and straightforward policy. Simplicity aids transparency, which speeds the establishment of the agency reputation. It also deters backsliding because deviation from a simple policy can be easily and rapidly detected.[74] Thus, even if a more complex policy might have certain advantages, sacrificing those advantages for simplicity can be a useful trade off.

This approach can be applied to merger enforcement policy. In the analysis of short-run incentives, we noted that it was not optimal for the agency to commit to a no-settlement policy. In contrast, once deterrence concerns and the benefits of transparency are taken into account, there can be benefits from a no-settlement commitment. The policy would function as follows. On the one hand, if the merger is welfare enhancing or welfare neutral, the agency would clear the merger as proposed. On the other hand, if the merger is welfare reducing, the agency would "just say no" and file a complaint. It would not negotiate or demand a fix. Applying the analogy of just "calling balls and strikes," a baseball umpire never negotiates.

Commitment to a "just say no" policy would achieve the greatest deterrence. It also would address and reduce the concerns of Frankel,[75] Sims and McFalls,[76] and Melamed.[77] The policy would prevent the agency from exacting tribute settlements on welfare-enhancing proposed mergers, as desired by Sims and McFalls.[78] The "just say no" feature of the policy

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74. One of the benefits of the classic tit-for-tat strategy in a repeated prisoner's dilemma game is its transparency. *See* ROBERT AXELROD, THE EVOLUTION OF COOPERATION 51–54 (1984).

75. *See* Frankel, *supra* note 8.

76. *See* Sims & McFalls, *supra* note 5.

77. *See* Melamed, *supra* note 1.

78. *See* Sims & McFalls, s*upra* note 5.

would eliminate the current regulatory approach, as desired by Melamed.[79] If the agency were forced to "put up or shut up," agency overreaching would be deterred, and merging firms also would have to "put up or shut up." This would give the firms the incentive to restructure transactions unilaterally, as desired by Frankel.[80]

This more aggressive approach might lead to more cases being litigated in the short run while the expectations of the merging parties are adjusting.[81] Litigation costs would increase, but with large offsetting benefits. An increase in litigation would also reduce the seeming importance of each individual litigated case. As noted already, in today's environment, in which merger litigation is a rare event, the outcome of each case is overinterpreted as a major signal of enforcement policy and legal doctrine. If more cases were litigated, an outlier court would have less effect. With more cases, the law of large numbers would begin to come into play and establish real trends, if any. It is also possible that as courts gain more experience, they might be more inclined to decide each case on the basis of its particular facts, rather than simply creating legal presumptions. Or, there might be dueling presumptions by different courts that would lead to the law advancing.

D. Providing a Role for Balance

This is not to say that there are no benefits to settlements, even occasional settlements that lead to welfare-reducing outcomes. The concern is whether agency discipline can be maintained without a just-say-no policy commitment. The overarching concern is that the focus on settlements can swallow up the enforcement process in highly counterproductive ways. A focus on settlement implicitly or explicitly encourages agency staff to focus on the remedy and potential risks in court, rather than on the competitive impact of the merger. One might frame the point as follows: the first question that the staff should ask is whether the merger as proposed is welfare reducing, not what divestitures might improve the outcome. The just-say-no policy is a way to change the focus.

Settlements nonetheless can retain a residual policy role even if "just say no" becomes the norm. Settlements—even welfare-reducing settlements—

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79. *See* Melamed, *supra* note 1.
80. *See* Frankel, *supra* note 8.
81. Moving to the "just say no" policy could raise a practical concern that the agency may not have sufficient capacity to litigate substantially more merger cases. In my view, this concern is likely a red herring for several reasons. First, any such capacity limitations would be transitory. If the agency decided to litigate more cases, it could recruit and train additional litigators. Well-qualified attorneys would flock to the agency for the opportunity to litigate merger cases. Second, in the longer run, litigation frequency would reequilibrate at a lower level. Once the agency reputation is established, merging firms would propose fewer anticompetitive mergers and would restructure others in advance in order to avoid litigation. To make a simple analogy, a policy of refusing to negotiate with terrorists who take hostages deters hostage taking.

can be used to establish an agency foothold in an area.[82]   One recent example (albeit in a litigated case) is the FTC's order in the already-consummated Evanston Northwestern/ENH merger.[83]   This case might be viewed as a classic pyrrhic victory.[84]   The order did not entail a divestiture but rather consisted of a likely ineffective order mandating that two divisions of a single firm begin to compete.   However, the policy benefit of the case was to show how such a merger could raise prices, an important finding in light of the string of previous agency losses in hospital merger cases.   At the same time, a settlement like this is easy to distinguish from backsliding to a short-run strategy.

E. Encouraging Self-Identification, Disclosure, and Voluntary Remediation

Deterrence also could be increased by an "advance self-fix" policy to encourage self-identification and early disclosure of competitive problems and voluntary divestiture proposals by the merging parties. Notwithstanding the general bargaining advantages gained by making nonnegotiable settlement demands, there can be benefits from ceding the role to the merging firms in this particular limited way.

Current practice requires the agency to identify the competitive problems rather than encouraging voluntary disclosure by the parties.   The merging parties can simply wait and see if the agency detects the problem.   If and when a problem is detected, the parties then can propose a divestiture and make a binding agreement with the divestiture buyer.   This process reduces deterrence.   In addition, under cases like *Arch Coal*, the parties can use a voluntary divestiture agreement as the competitive benchmark in the event that the agency rejects the divestiture and litigates the case in court.[85]   This voluntary divestiture might be made even after the complaint has been filed. This procedural stance essentially eliminates the ability of the agency to make nonnegotiable settlement demands, which in turn reduces the bargaining power of the agency.   Thus, this procedure also reduces deterrence.

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82. *See* Pitofsky, *supra* note 4.

83. *In re Evanston Nw. Healthcare Corp.*, No. 9315, 2007 WL 4358355 (F.T.C. Nov. 9, 2007).

84. *See generally* Kenneth G. Elzinga, *The Antimerger Law: Pyrrhic Victories?*, 12 J.L. & ECON. 43 (1969).

85. In *Arch Coal*, the court concluded that Arch's sale of one mine (Buckskin) to a divestiture buyer (Kiewit) "would be considered as part of the challenged transactions" along with Arch's acquisition in evaluating "the probable effect of those transactions on competition." FTC v. Arch Coal, Inc., 329 F. Supp. 2d 109, 114–15 n.2 (D.D.C. 2004). Other courts have also treated the remedy as part of the transaction to be evaluated, although there is still an open issue about which side has the burden of proof on remedy. Other recent cases that raised this issue include *United States v. Dairy Farmers of America*, 426 F.3d 850 (6th Cir. 2005), and *FTC v. CCC Holdings*, 605 F. Supp. 2d 26 (D.D.C. 2009); *see also* Darren S. Tucker, *The Elephant in the Room: Litigating the Fix After* Arch Coal *and* Dairy Farmers, ANTITRUST SOURCE (Jan. 2006), http://www.americanbar.org/content/dam/aba/ publishing/antitrust_source/Jan06_FullSource1_27.authcheckdam.pdf.

An alternative approach would entitle the merging firms to have the voluntary divestiture treated as part of the merger transaction for the purpose of competitive-effects analysis, but only if the divestiture agreement is made well before the complaint is issued. The required timing could be either as part of the initial HSR filing, during Phase 1 of the HSR process, or before second request compliance is certified. This timing shift would incentivize the merging parties to identify, disclose, and cure the competitive problem in advance. It thus would increase deterrence. One might refer to this as a credible "advance self-fix" policy, in contrast to the current misnamed "fix-it-first" policy.[86] This advance self-fix policy requires adjustment of the current *Arch Coal* approach of allowing *after-the-fact* voluntary divestiture agreements to be made part of the transaction for purposes of evaluating competitive effects.

CONCLUSION

This Article has analyzed agency merger settlement demands under two alternative policy assumptions: a short-run optimal policy that focuses only on the merger under investigation without regard to future deterrence versus a superior long-run optimal policy that takes deterrence benefits into account. The criticisms of agency decisions suggest a current agency approach something along the lines of the short-run policy. The principles and rules of thumb for long-run deterrence developed here would involve a notable shift in policy.

This Article also suggests further analysis. Much of the analysis in this Article has assumed that the agencies can and do make nonnegotiable settlement demands, backed by a commitment to litigate if the demands are not accepted by the merging firms. This is not the typical agency bargaining dynamic today. While certain agency bargaining advantages flow from such a committed strategy, we have also noted certain shortcomings of this strategy. Negotiations can reveal important information that can lead to higher welfare.[87] It is possible that these informational benefits may mitigate or trump the benefits to the agency committing to a single nonnegotiable offer. Therefore, further analysis of alternative negotiation strategies would be a useful extension.

This Article also suggests that deterrence may be compromised by permitting the merging parties to make last-minute divestiture agreements

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86. This advance self-fix proposal is thus very different from the agency "fix it first" policy in that fix-it-first remedies can be proposed at the end of the HSR process but before a complaint is filed. U.S. DEPT. OF JUSTICE, ANTITRUST DIVISION POLICY GUIDE TO MERGER REMEDIES 22 (2011), *available at* http://www.justice.gov/atr/public/guidelines/272350.pdf.

87. This Article implicitly assumes that the agency does not make its settlement demand until all the relevant information has been revealed. However, to the extent that both sides became more (rather than less) open during settlement negotiations, such openness could lead to benefits from a negotiation strategy rather than a commitment strategy. Discovery during the pretrial phase of litigation could also disclose additional information that might lead to productive settlement discussions. These issues are worthy of additional study.

that are treated by the court as part of the merger agreement for the purpose of evaluating competitive effects. At the same time, consistent with the suggested approach in this Article, it has become more common for merger agreements to commit the acquiring firm to certain potential divestitures. It would be useful to evaluate these merger agreements in more detail and analyze the effects of such agreements in settlement negotiations and their impact on deterrence.

Finally, the analysis of the long-run optimal policy has focused on several policy rules of thumb, rather than examining alternative policies in the context of a formal economic model. While it is unlikely that a single model would capture all the complexity involved in merger-settlement policy, developing formal models no doubt would push our understanding forward. Therefore, additional formal modeling efforts also would be useful.

APPENDIX: FORMAL MODEL OF SHORT-RUN
OPTIMAL SETTLEMENT DEMANDS

To better expose the logic of the analysis, it is useful to formulate a technical model of agency behavior. Embedding the analysis in a technical model also permits the derivation of certain key properties of the short-run optimal settlement strategy.

A merger can be characterized as having a set of structural and market characteristics that determine the expected impact of the merger on the net present value (NPV) of economic welfare (whether consumer welfare or aggregate welfare) and profits of the merging parties. One key characteristic is the set of assets comprising the transaction. Other characteristics include all the usual market structure factors commonly investigated in merger analysis—market shares and concentration; ease of entry; diversion ratios; margins; GUPPIs; elasticity of demand; expansion and repositioning; buyer power, synergies, factors that facilitate or complicate coordination, etc.[88]

A merger proposal can be characterized by its set of structural and behavioral characteristics. For simplicity, we assume that there is a single scalar characteristic y, and the specific merger is characterized by $y=\hat{y}$ and NPVs of incremental expected welfare and profits, denoted by $W(y)$ and $\Pi(y)$, respectively. We assume that all three participants (the agency, the firms, and the court) face imperfect information about welfare and that the agency has unbiased estimates of expected welfare. Incremental welfare and profits can be affected by a settlement (e.g., a divestiture or other changes that leads to a new structure $S < \hat{y}$). We focus on divestitures and other remedies that raise welfare but reduce profits.

The left panel, Figure 1A, illustrates a merger as proposed with structure $\hat{y}$ and negative expected incremental welfare $W(\hat{y})$. The right panel, Figure 1B, shows the incremental profits $\Pi(\hat{y})$. Figure 1 illustrates the relationship between incremental welfare and profits for various alternative settlement structures. If the agency demands a settlement S such that $\Pi(S)<0$, then the firm would abandon the transaction rather than accept the settlement. If the proposed merger is abandoned or enjoined, which we formalize as $y=0$, then the incremental welfare and profit would equal zero.

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88. Certain merger characteristics affect welfare and profits in the same direction. For example, synergies increase both the incremental profitability and welfare. However, other factors affect welfare and profits in opposite directions. For example, high barriers to entry would likely lead to higher profits and lower welfare, other variables held constant. Some factors might move welfare and profits in the same direction in one region but in opposite directions in other regions.

Figure 1
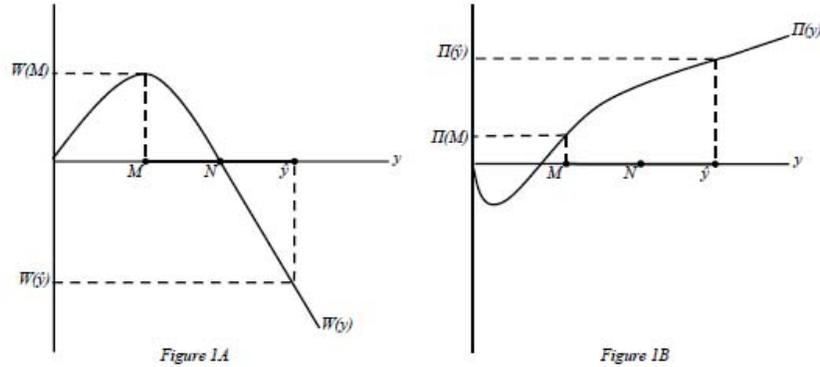
Figure 1A

Figure 1B

We focus on settlements between *M* and *ŷ* that achieve higher welfare, *W(S)>W(ŷ)*, but lower profits, *Π(S)<Π(ŷ)*. As illustrated in Figure 1A, there is a settlement structure that leads to welfare neutrality, which we denote as *S=N*. There is another settlement, *S=M*, that maximizes welfare.[89]

We assume that a court will reject a proposed merger if and only if it concludes that the expectation is that the merger will be welfare reducing, relative to the no-merger alternative. We assume that the court is less informed and less expert than the agency, so there is some probability that it will reach an erroneous outcome. We denote with *p(y)* the probability that the court permits a merger with structure *y*. We assume that the court is less likely to falsely acquit if the welfare harms are larger, that is, *p'(y)<0*. For simplicity, we assume that the agency and the merging parties agree about the probability of the outcome in court.

In order to estimate the likelihood that its settlement demand would be accepted by the merging firms, the agency forms expectations about the firms' incremental profitability of the merger and their litigation and delay costs, including delay risks. This might be formalized as follows: the firms would accept a settlement demand *S* that would lead to profits *Π(S)* that exceed the firm's expected profits from litigating, or

$$(1) \quad \Pi(S) > (1 - \gamma)[p(\hat{y})\Pi(\hat{y}) - C_F]$$

where C_F is the merging firms' out-of-pocket litigation cost, γ is the probability that the delay will cause the transaction to be terminated by the parties, and *p(ŷ)* is the probability that the firm wins in court. Equation (1)

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    89. If the settlement involves a divestiture that moves the structure of the merger below *M*, both incremental welfare and incremental profits fall, so such settlements would never be proposed.

assumes for simplicity that the litigation costs are only borne if the deal is not terminated, though it is likely that in reality there would be some litigation costs before the deal is terminated.

If the agency had perfect information about equation (1), it could tailor the maximum settlement demand that the merging firms would accept.[90] However, we assume that the agency generally has imperfect information about the firms' profitability.[91] For purposes of the economic model, we assume that the agency forms an estimate $a(S)$ that the firm will accept a settlement demand S. We assume that a weaker settlement offer is more likely to be accepted by the parties (i.e., *a'(S)>0)*.

We assume that the agency makes a nonnegotiable, "take it or leave it" settlement demand, backed up by a commitment to litigate if its demand is rejected by the firms. The settlement demand S can range at one end from de minimis demand ($S\sim\hat{y}$) that barely (if at all) affects the welfare impact, up to a large change ($S=M$) that would lead to welfare being maximized. An agency's absolute decision to litigate is equivalent to making a settlement demand so large that the merging firms would surely choose to reject.

The agency chooses the settlement demand S^* to maximize expected welfare EW, that is,

$$(2) \quad \underset{S}{Max\ EW} = a(S)W(S) + (1 - a(S))(1 - \gamma)[p(\hat{y})W(\hat{y}) - C]$$

where $W(S)$ is the agency's estimate of the expected welfare outcome if the settlement is accepted, $W(\hat{y})$ is the agency's estimate of expected welfare if the settlement is rejected and the agency loses in court, $a(S)$ is the agency's estimate of the likelihood that the settlement is rejected by the merging parties, $p(\hat{y})$ is the probability that the agency loses in court, γ is the probability that the deal is terminated voluntarily as the result of the agency complaint, and C is the agency's opportunity cost of litigation.[92]

This model assumes that the agency commits to litigating if its settlement demand is rejected. The agency does not bluff. While equation (2) describes the short-run optimal policy that takes the structure of the merger

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90. This Article does not focus on the use of settlement demands to reveal asymmetric information. Instead, it simply focuses on the parties that have differential beliefs as a result of limited information on both sides. It also does not analyze the structure of the imperfect information, at least initially. Instead, it makes assumptions about the impact of the imperfect information on the parties' subjective probabilities of the court's decision on liability and the likelihood that the other party will accept a settlement offer rather than litigate.

91. Perhaps the most significant missing information is the delay risk factor γ, the probability that the litigation delay will cause the deal to crater.

92. For simplicity, this Article assumes that the agency anticipates a zero probability that the merger proposal will be abandoned rather than litigated, a condition that is satisfied if $\Pi(M) > 0.$

as given and ignores deterrence effects, the agency's policies will have effects on the structure of future proposed mergers.

With imperfect information and positive litigation costs, the agency's short-run optimal settlement demand balances the benefits and costs of making a marginally tougher settlement demand. The first-order condition can be stated formally as follows:

$$W(S^*) - (1 - \gamma)[p(\hat{y})W(\hat{y}) - C] = -aW'(S^*)/a'$$ (3)

Intuitively, the agency has the incentive to choose the settlement demand that equates the marginal benefit to the marginal cost. This tradeoff can be stated in the form of a marginal risk-reward ratio. The term on the right-hand side reflects the marginal risk-reward tradeoff. The reward is the marginal increase in expected welfare, $-aW'(S)$. The risk is the marginal reduction in the likelihood that the settlement will be accepted, $a'(S)$. The larger the ratio of marginal reward to marginal risk, the more the agency's incentive will be to demand a more aggressive settlement commitment.

Equation (3) also explains why the agency may take a less aggressive position toward more anticompetitive mergers, that is, those with more negative $W(\hat{y})$. While the likelihood of a false acquittal, $p(\hat{y})$, will be lower for such mergers, the *expected* welfare harm, $p(\hat{y})W(\hat{y})<0$, may become more negative. In this situation, the agency would have more to fear from an aggressive settlement demand. As a result, the agency would have the incentive to be more accommodating by demanding a weaker settlement, S^*.