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Bush, Clinton, Bush: Twenty Years of Merger Enforcement at the Federal Trade Commission

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Bush, Clinton, Bush: Twenty Years of Merger Enforcement at the Federal Trade Commission

Malcolm B. Coate[1]

I. INTRODUCTION

In the 1980s, merger enforcement underwent two significant changes. First, the antitrust agencies fully developed the Hart-Scott-Rodino ("HSR") merger review program. Both the Department of Justice ("DOJ") and Federal Trade Commission ("FTC") gained experience in evaluating detailed data before reaching a decision on the likely competitive effect of a proposed transaction. Second, the DOJ issued, and then slightly revised, realistic Merger Guidelines that served as a roadmap for merger analysis.[2] By the late 1980s, the formal structure of merger analysis was basically set. A merger review started with market definition, worked through concentration, entry considerations, and competitive analysis and ended with an evaluation of the efficiencies. Although the 1992 revisions of the Guidelines tweaked the analytical structure, the fundamental priorities of merger enforcement remained largely the same.[3]

This paper presents and analyzes the merger review process between 1989 and 2008 to explore the evolution of the FTC's enforcement regime as the Presidency moved from George Bush (Bush I) to Bill Clinton to George W. Bush (Bush II).[4] Section II illustrates the basic characteristics of merger transactions examined by the FTC. Data is tabulated to generate insights into long term trends in merger enforcement. The next section highlights more detailed information associated with horizontal merger investigations. Data on anticompetitive theories, structural characteristics within unilateral effects and collusion theories, and efficiencies are all evaluated. Section IV presents a new merger enforcement model to test for changes in the

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[2] While the FTC did not officially subscribe to the Merger Guidelines until 1992, the DOJ Guidelines have always played a role in structuring merger analysis at the FTC. (Zuckerman (1988)).

[3] For a discussion of general economic issues related to the Merger Guidelines (1992), *see* Blumenthal (1993), Ordover and Willig (1993), Scheffman (1993), Scheffman, Coate and Silvia (2003), and Coate (2005b).

[4] This paper draws heavily on an earlier working paper detailing enforcement for 1985-2004. (Coate (2005a)). While the basic structure of tables 1, 2, 3, 4, and 6 are similar, the coding of a few observations were updated to reflect the comprehensive data review associated with the Transparency Data Review Project (for an overview, *see* Coate (2008a). Table V was replaced with an alternative analysis contrasting unilateral effect and collusion cases. Material in Section IV was entirely re-worked to incorporate the new significant rivals' variable instead of the theoretical dummy variables, with the results summarized in Table 7. The text was re-written as required to account for the new analyses and the update of the data.

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enforcement regime. Only efficiency analysis shows material change, suggesting FTC merger policy has been basically stable over the last 20 years. Section V concludes with a summary of the results.

II. AN OVERVIEW OF THE INVESTIGATIONS

The HSR program generated thousands of merger filings since its inception in the late 1970's. Under the HSR act, the FTC (or if allocated the matter, the DOJ) is allowed an initial waiting period (usually 30 days) to evaluate the competitive effects of the transaction. If antitrust concerns exist, the Commission issues a second request, which basically delays the consummation of the merger until 30 days after the firms substantially comply with the request for information. Voluntary extensions of the waiting period are not unusual. Staffs of both the Bureau of Competition ("BC") and Bureau of Economics ("BE") generally prepare analyses to aid the Commission's decision making process. At the conclusion of the investigation, the Commission must be prepared to seek a preliminary injunction to block the merger from a federal court or allow the transaction to proceed. Most firms choose to settle when faced with a threat of litigation (Coate & Ulrick (2009)). The FTC also reviews mergers that are not filed under HSR.

Some initial comprehension of the merger review process can be gleaned by looking at the merger data in Table 1. Additional insights can be generated by studying the outcomes of the horizontal merger investigations (Table 2) and then reviewing the industries in which full investigations are undertaken (Table 3). Of course, to understand the data, it is necessary to track the cycles in merger activity; a count of HSR filings represents a useful proxy. This task is made more difficult by the changes in the HSR reporting requirements. The biggest change occurred in 2002, as filings were no longer required for broad classes of transactions unlikely to materially affect competition. Commission staff reworked the filing statistics back to 1998, so it is possible to observe that the growth in filings peaked in 2000 and then collapsed over the 2001-2003 period. HSR filings recovered from 2004-2007, and declined significantly in 2008. A review of the pre-1998 HSR statistics shows that merger activity originally declined after the crest of the 1980s merger wave, and recovered to set new highs in the mid 1990s. These general patterns basically match the patterns in the merger data discussed below.

A. Classification of Merger Investigations

Table 1 starts by listing the biannual number of relevant Commission merger investigations from fiscal years 1989 to 2008. The numbers range from 90 in 1989/90 to 56 two years later and then rise back to virtually 90 for the period 1993-2000. Post 2000, the number of investigations falls to a minimum of 35 in 2003/04 and then recovers to a level of approximately 50 matters every two years. While these changes appear dramatic, they tend to track the changes in the HSR notification activity detailed above.

For this initial review, these investigations are evaluated and separated into a few general categories. Five specific types of cases are discussed, and a sixth category is set up for

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miscellaneous transactions.[5] Each column contains a count for the type of case in the two-year period and identifies (in parentheses) the number of transactions that were either abandoned relatively early in the review process or led to a merger challenge. The difference between the two counts defines the number of transactions that were not interdicted by the Commission.

Column one presents the information on horizontal mergers. These standard merger investigations represent the primary focus of the agency, and generate 82 percent of the transactions affected by antitrust review (85 percent for 1989-1992, 70 percent for 1993-2000, and back to 85 percent for 2001-2008). The analysis generally follows the approach described in the various editions of the Merger Guidelines, with enforcement action taken against any transaction thought likely to substantially lessen competition in a relevant market.

The next two columns list vertical and potential competition investigations. Although vertical transactions have always been reviewed, these cases were relatively rare until 1993. Between 1993 and 2000, the Commission investigated 25 vertical matters, with almost three-quarters ending in consent agreements or abandonment. For 2001-2004, vertical investigations declined in prominence, and exhibited proportionally fewer transactions blocked by the review process. Investigations increased again for 2005-2008 (the share of vertical investigations remained slightly below the 1993-2000 average).

A typical 1990's vertical case involves contractual issues in a defense-related merger. The settlements negate various vertical arrangements that could offer the acquiring firm a significant market advantage.[6] Other cases raise classic vertical exclusion theories. For example, to resolve a vertical concern in the Time-Warner/Turner merger, the Time Warner cable franchises agreed to carry another news channel, the effect of which was to assist the entry of Fox News into the market.[7] More recent investigations also focus on a wide range of vertical issues. While defense industry enforcement remains in the sample, other cases explore vertical exclusion theories based on market power at one level of competition. These theories can be linked to abuse of patents, regulatory opportunism, or the bundling of a competitive with a non-competitive complementary product.[8] Although the 1984 version of the Merger Guidelines offered some insight into vertical merger analysis, the appropriate standards remain controversial.[9]

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[5] The classification is based on the author's interpretation of the case files. Minor questions could be raised about some of the decisions. For example, overlaps in research and development were generally considered potential competition cases, not horizontal concerns in technology markets. Broad picture generalizations are invariant to the research design.

[6] Many of the remedies involve the establishment of firewalls between the vertically-related subsidiaries of the merging firms. Other consents require divestitures or changes in various teaming agreements designed to ensure competition on future Defense Department bids.

[7] *See*, FTC v. Time Warner 123 FTC 177 (1997).

[8] *See, for example*, Commission orders in Chevron/Unocal (http://www.ftc.gov/os/adjpro/d9305/050610statement9305.pdf), Fresnious (http://www.ftc.gov/opa/2008/09/fresenius.shtm) and Digene (http://www.ftc.gov/opa/2002/06/cytyc_digene.shtm).

[9] Chicago school analysis suggests that vertical mergers rarely raise competitive concerns and therefore enforcement should be limited to special case situations (such as defense industry mergers). (*See*, Bork(1978)). Post-

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Potential competition investigations are also relatively rare until 1993, with a total of just three investigations. For 1993 to 2000, the FTC undertook 20 investigations and almost two-thirds of them were blocked or restructured. Again, for 2001-04, potential competition cases fell, both in absolute numbers and as a percentage of overall investigations. The numbers rebounded for 2005-08, but remained below the rate observed in the late 1990's. Many of these potential competition investigations involve entry into various drug markets and are justified by the institutional rigidities of regulatory agencies such as the Food and Drug Administration ("FDA"). Other matters involve electrical utilities, with the analysis focusing on future competition between the merger partners. Here settlements seem much more difficult, because the assets needed to compete cannot be easily divested without killing the overall transaction. Basic horizontal merger theories can be applied to all the potential competition mergers, because the real concern addresses future horizontal problems. However, abstracting from regulatory structures that enable accurate forecasts of future competition (i.e., the FDA), proving a case would be difficult, because the evidence on future competition is often speculative.

Two other types of cases, joint ventures and monopsony, are also tabulated. Joint venture transactions remained relatively rare throughout the era, while monopsony cases seem to rise and fall randomly over time. These investigations are closely related to horizontal mergers, although they require specific customizations of the Merger Guideline analysis. In a joint venture, one or both of the merging parties retain significant assets in the market affected by the transaction.[10] Thus, the incentives of the two firms to compete are different than those associated with a pure merger. In particular, less competition is likely to be lost through a joint venture, because an independent decision maker is not entirely eliminated.

Monopsony cases differ from the standard horizontal investigation in that the competitive concern involves customers obtaining prices below the competitive level, instead of customers facing prices above the competitive level. Low supplier prices could reduce the production of the affected input and transfer profits from the upstream suppliers to the downstream monopsonist. Again, minor adjustments in the Merger Guideline analysis are required. These investigations are usually limited to gas gathering industries and may end in the divestiture of a segment of a pipeline system.

The final column lists the cases that do not fit into any category. Examples include the purchase of a minority share in a rival, the acquisition of a regulated business, a local merger approved by the State Attorney General, a second request issued on a consummated merger in response to a failure to file under HSR, or an investigation into an acquisition of a bankrupt target. In all of these cases, the special considerations control the analysis and preclude generalization.

Chicago analysis supports a more active policy, as vertical mergers are thought to raise more general issues. (*See*, Ordover, Saloner, and Salop (1990)).

[10] This type of case must be distinguished from what is popularly known as a joint venture in which two firms merge all their assets. These reorganizations are classified as horizontal mergers.

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B. Outcomes of Horizontal Investigations

Table 2 presents a more detailed overview of FTC enforcement activity, although it is limited to horizontal mergers. Four outcomes are possible, because the merger investigation may end with the withdrawal of the transaction, a quick look leading to closing the review, an enforcement action, or a termination of the full investigation after all the information has been reviewed.[11]

The second column lists the number of transactions abandoned after the firm was notified of the FTC's investigation, but before the complaint was ready to be issued. In some cases, the withdrawn deal is restructured early in the investigation to remove the assets linked to the competitive concern, while in many other cases the merger collapses, often—but not always—due to antitrust concerns. Few proposed transactions are abandoned late in the investigation. The data showed abandonments are a way of life in the market for corporate control, although the percentage varies from biannual period to biannual period.

The third column shows the number of cases that closed after an initial "quick look" investigation revealed the transaction was not likely to have a significant anticompetitive effect. On occasion, the investigation is closed within a couple of weeks of the inception of the investigation, while in other cases, months pass before the Agency closes the investigation. The quick look numbers fluctuate over time. Possibly fewer cases are closed on "quick looks" when the number of HSR filings are either unusually high (staff is too busy to investigate marginal cases) or unusually low (no bureaucratic pressure exists to resolve the unpromising investigations).

The fourth column tabulates the number of horizontal mergers that were challenged at the FTC. This series shows a general increase over the 1990's to a peak in 1999-2000. Data for 2001-04 exhibits a noticeable decline in enforcement, linked to the decline in the number of investigations, while the review finds enforcement actions recovers for 2005-08 (again linked to an increase in the number of filings).

The final column identifies the number of investigations closed after a full review of the record. Of particular interest is the percentage of the fully reviewed matters that end as enforcement actions. Early in the sample, the number of enforcement actions approximates the number of closed investigations (and thus the enforcement share was close to 50 percent), while in most of the other periods, the number of enforcement actions is noticeably higher than the

[11] The table is based on the author's analysis of the relevant cases. A few allocation issues need to be addressed. First, a case was considered a "quick look" if it was resolved without the need to conduct a full investigation. Second, a case was considered a complaint if the FTC voted to sue or settle on a substantive issue linked to the merger (one matter was presumed resolved after a voluntary divestiture agreement). Investigations that ended in a settlement involving the elimination of an ancillary restraint were considered closed cases, because the essence of the horizontal overlap was allowed. Information on case outcomes are linked to fiscal year in which the investigation started, not the fiscal year of the final outcome. Thus, these statistics differ from the FTC Mission Accomplishment tabulations.

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number of closed investigations (and therefore, the percentage was well over 50 percent). To be specific, the FTC has moved against 52.5 percent of the transactions subject to full review in FY 1989-92. This compares to a significantly higher 68.5 percent of the deals for the 1993-2000 period and 70.4 percent of the deals for 2001-2008. If enforcement standards did not change, this result suggests an improvement in case selection.

C. Merger Investigations by Industry Type

Table 3 presents various classifications for the set of horizontal mergers that underwent full investigations (tabulated in the final two columns of Table 2). The results are summarized separately for challenged and closed cases, with classifications for the consumer-producer good status, the manufactured good-service type, and, when possible, specific industry. In general, the data show a trend from producer to consumer goods, then back to producer goods and finally back to consumer goods at the end of the sample period. Manufacturing investigations exceed service industry cases, although the extent of the domination declines over the sample, demonstrating the rise of service-related markets in the economy.

The lower portion of the table highlights the statistics for 9 specific industries with the most representation in the overall sample. In general, the categories are self-explanatory as long as a general interpretation is made of the title (i.e., "automotive industries" address the entire chain of industries supplying the auto industry). Only "Aerospace and Department of Defense" ("DoD") needs any real explanation as this segment includes all industries involved in markets that use DoD procurement methods for purchasing, whether the market involves an Aerospace linked business, defense procurement, or another government procurement system comparable to the DoD model.

The health-related and retail sectors are heavily represented in the data. Hospitals (and various types of clinics) were involved in a total of 37 investigations, while drugs and medical equipment accounted for 41 cases. Various types of retailing were involved in 42 matters and the branded consumer goods added another 41. Of the pure producer goods, chemicals, broadly defined, made up a total of 39 cases. Oil and energy related matters defined another 24 cases, while DoD-type cases contributed a total of 11. Overall, the nine sectors accounted for 75 percent of the cases, with the percentage of cases covered in the table increasing from 61 percent for 1989-1992 to 76 percent for 1993-2000 and 80 percent for 2001-2008.

The table highlights the growth of mergers in health care, retail, and branded products industries. Hospital enforcement peak in the mid-1990s, although these investigations have recently re-appeared, while drug and device investigations stay at a high level. Retail transactions also peak in the 1990's and drop in more recent years, while branded consumer products remain a focus of a number of investigations throughout the sample. DoD-type matters become rare after 2000, probably because the bulk of the industry reorganization was complete. And, of course, a decline would be noticed in the miscellaneous classification omitted from the table.

Looking at the ratio of complaints to the total number of investigations by industry, it appears that mergers in drug and device industries are relatively more likely to end in

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enforcement action than the representative case, probably due to the high concentration and the temporal barriers into the representative health care supply businesses (primarily FDA regulation and technology). A comparable claim can be made for chemical mergers. Usually, few firms produce a product, and entry requires substantial time to engineer the chemical and build the plant. Likewise, retail investigations are concentrated in the enforcement column, again probably due to a claim of high concentration in local markets and alleged barriers to entry. Taken together, these three industries show a higher enforcement probability than the rest of the sample (t-statistic is 6.4).[12]

Hospital-related investigations seem as likely to end in enforcement as closing. While these markets are generally characterized by few competitors and barriers to entry, enforcement actions are often limited to the most concentrated markets. DoD-type and computer-related cases are more likely to close than lead to enforcement, although the small sample size limits the relevance of the result. The DoD-type matters usually involve the government as a power buyer, and thus only the most extreme transactions are likely to be challenged. Computer markets are generally considered to be robustly competitive and, on occasion, entry is manageable.

III. A LOOK INSIDE HORIZONTAL INVESTIGATIONS

The Merger Guidelines define an economic basis for horizontal merger policy. Various theories (e.g., monopoly, collusion, and general unilateral effects) are advanced as supporting enforcement actions, but the choice of the relevant theory depends on the facts in the case. Within the collusion and unilateral theories, market structure affects the likelihood of enforcement action, as do the relevant efficiencies. Information on these factors may shed some light on developments in enforcement policies at the FTC. Table 4 summarizes information on the types of theories used to underpin the 224 enforcement actions in the sample. As each overlap is reviewed, it is possible to see the full scope of the relevant theories used in the merger analysis. Table 5 introduces the structural information available for the generic unilateral and collusion theories. Table 6 adds insights for efficiencies, tracing the affirmative findings by both BC and BE over the twenty year period. While these issues are generally explored in more detail elsewhere, the tabulations are able to shed light on facts associated with mergers challenged by the FTC between 1989 and 2008.

A. Theories of Competitive Concern

Table 4 presents data on the types of anticompetitive theories implicitly used to support complaint recommendations. Each investigation is classified according to the most substantive anticompetitive concern mentioned for any of the horizontal competitive overlaps under review.[13] The numbers in parentheses count the number of cases with secondary markets

[12] The test compares the 101 enforcements in 122 investigations for the three industries, with 123 enforcements in the 216 investigations.

[13] To identify the most serious concern, the analysis reviews the structural statistics and focuses on the most substantial concern in a significant overlap. In a few matters, less substantial, but more material markets are identified as relevant for the review (i.e., a merger to monopoly in a relatively small market might be passed over for

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raising additional theoretical concerns. Since some investigations involve a large number of competitive overlaps, multiple economic theories could be cited for a particular case.[14]

In Table 4, the monopoly theory addresses the situation in which the merger: (1) combines the only two significant rivals in the market; and (2) fringe share does not exceed ten percent.[15] Thus, the merged firm becomes a virtual monopolist. Technically, this firm is almost certainly able to take the output of its fringe rivals as given and set the monopoly price using a residual demand curve. The tabulation shows monopolies were alleged in 39 percent of the cases for 1989-1992, compared to 33 percent for 1993-2000 and 41 percent for 2001-2008. These differences are not statistically significant and disappear entirely if the 9 monopoly matters identified as secondary markets for 1993-2000 were used in the analysis.

The next column presents the data for the slightly weaker dominant firm (strong unilateral effects) theory. Here the merger eliminates the only significant competitor to the leading firm in the market, but fringe competitors, taken together, hold more than a 10 percent share. Post-merger, the leading firm holds a dominant position, but the larger fringe creates more opportunities for long run competition. The 1992 revision of the Guidelines highlighted the need to study repositioning in a dominant firm unilateral effects analysis (although the issue was almost certainly covered earlier in the entry analysis).[16] Dominant firm-based unilateral issues are most prominently featured in the Clinton era (1993-2000) with 19 percent of the investigations using the analysis as the primary theory and another 11 percent using dominant firm as a secondary theory. Comparable numbers for the Bush II era are 17 percent as a primary theory and 6 percent as a secondary theory.

Duopoly situations are covered in the third column. A duopoly concern exists when a merger leaves only two significant competitors in the market (possibly with a collection of fringe players). As only two post-merger rivals exist, the merger may generate a regime shift from a reasonably competitive oligopoly to a less-than-competitive market. The specific concern turns on the facts in the market. Unilateral issues would be raised when the products of the two merging parties represent the two best alternatives for a broad class of customers, while collusion issues would be relevant when the merged firm has the ability to coordinate with its remaining rival. Duopoly cases are the primary concern in 10 percent of investigations prior to 1993. After 1993, duopoly represents the primary concern in roughly 28 percent of the cases and

a duopoly merger in a large market).

[14] A quick review of the markets defined in enforcement actions did not detect evidence that the BC market definition process changed systematically over the 20 year period. Problematic market definition appeared, on occasion, over the entire sample, suggesting no inter-temporal enforcement bias. For a more detailed market analysis on a subsample of the twenty-year period, *see* Coate and Fischer (2008).

[15] Significant competitors are firms whose independence could significantly affect the ability of the merged firm to achieve an anticompetitive outcome. If the two merging firms are not considered to be significant competitors (for a hypothetical merger) the transaction would not be coded as horizontal.

[16] The Guidelines do not highlight the dominant firm model, but the FTC/DOJ Commentary on the Horizontal Merger Guidelines (2006) does recognize the dominant firm variant of the unilateral effects analysis. For a basic discussion of unilateral effects, *see* Blumenthal(1993), Ordover and Willig(1993), and Coate (2008c).

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a secondary concern in another 23 percent of the matters. Comparable numbers are observed for the Bush II administration.

The fourth column lists the number of cases utilizing a standard collusion story. Here various economic models generate the result that a loss of an independent rival will push the overall market towards a noncompetitive outcome. Increases in concentration interact with other structural conditions to justify the competitive concern; a concern that can be enhanced by evidence of a current lack of competition.[17] Although collusion was the antitrust theory of choice in the mid- 1980s, its popularity had begun to decline by 1989. For 1989-1992, collusion concerns were the primary concern in 32 percent of the investigations. This ratio fell to 13 percent in the later periods. However, collusion remains a concern in at least one market for roughly 30 percent of the post-1992 merger investigations.

The final model advances a weak version of the unilateral effects model.[18] Under this structure, the merger combines two relatively close rivals to create a new firm that is likely to impose a significant price increase on consumers without any cooperation from the remaining rivals. Unlike the strong version or even the duopoly version of the unilateral effects model, the merged firm does not dominate the market or face only a single significant competitor. Instead, the merged firm exploits its position in a localized niche to raise price.

For example, if the merged firms sell closely competitive products and the remaining rivals cannot reposition themselves, unilateral analysis often predicts higher prices in a segment of the market. In theory, the unilateral effects analysis needs not be linked to market share, although a merger between two firms with small shares may not raise any real concerns—either because: (1) a number of other firms could potentially offer closely competing products; or (2) the magnitude of the prospective welfare loss could be inconsequential. Although the motivation for this theory stems from 1992 Guidelines, investigations using this theory appeared early in the Bush I administration and continued at a comparable rate into the later administrations. Overall, this style of enforcement remains rare.

B. Analysis of Investigations Where Competition Remains

A quick review of Table 4 highlights the key distinction between the unilateral mergers to dominant firm (monopoly) status in columns one and two and the rest of the sample (in columns three, four and five). The analysis in Table 4 focuses on the matters in which the merger did not eliminate the only significant rival to the acquiring firm and expands the review to consider closed investigations. Linking back to Table 3, the study starts with the 338 matters

[17] FTC analysis raises collusion concerns when the merger review identifies less-than-competitive performance in a structurally concentrated market, as well as situations in which the merger is likely to cause some type of regime shift. See Coate (2008b).

[18] The collusion theory and the weak unilateral effects theory should not generally be used in the same markets, because the models require different assumptions. A collusion theory requires market conditions that facilitate coordination and implies a price increase would fail if rejected by rivals. A unilateral theory requires market conditions that tend to identify demand structures for niches in the marketplace, reducing the need for coordination.

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identified in Table 3 and eliminates the 122 two-to-one mergers to focus on 216 transactions.[19] Of these mergers, 75 followed a unilateral analysis (44 challenged and 31 closed), while the remaining 141 were evaluated with a collusion analysis (60 challenged and 81 closed).

Table 5 splits the data by theory of concern and the count of the number of significant pre-merger rivals and then summarizes both the Herfindahl statistic (calculated by the Bureau of Competition) and entry barrier findings (calculated here by the Bureau of Economics) along with the average enforcement outcome. The enforcement rate falls from levels around 80 percent for three-to-two mergers to just over 50 percent for four-to-three mergers and down to about 25 percent for five-to-four mergers and to basically 10 percent for transactions with more than five pre-merger rivals.

The structural statistics show high BC Herfindahls for the three-to-two mergers and lower HHI levels when more than three significant rivals exist. For unilateral effects markets with more than three rivals, the relatively constant values of the mean Herfindahl and the average of the entry index highlight the significance of the relationship between the count of rivals and the outcome of the investigation. For collusion cases, the HHI is highly correlated with the rival count, and thus both variables are linked to the enforcement outcome. BE entry evidence also suggests that the lack of clear barriers may play a role in the closing of investigations in four-to-three mergers. As barrier findings do not continue to become less likely as the number of pre-merger rivals increases to five and beyond, barrier information appears to play less of a role in these markets. Overall, selected structural variables appear to affect enforcement decisions for both the unilateral and collusion cases.

C. Efficiencies in Merger Analysis

Merger investigations also gather information on efficiencies. In general, efficiencies are thought to reduce the likelihood of a merger challenge,[20] although it is unclear how they are balanced with anticompetitive concerns. Efficiency analysis is undertaken by both the Bureau of Competition and the Bureau of Economics. Presentations from the merging parties are evaluated (along with other evidence) to determine if the transaction under review generates any merger specific efficiencies. The core analysis proceeds in two stages. First, the efficiencies are studied to determine if they are both valid (not caused by the competitive effect of concern) and specific to the merger under review. Efficiencies that are tied to the anticompetitive effect of concern or those that can be accomplished without the merger are rejected as not relevant. Second, the efficiency claims are verified by the staff. In general, clear marginal cost savings are considered cognizable, while certain fixed cost economies are held to a higher standard. Efficiencies are considered present if they pass both tests. In coding the files, the tone of the

[19] Of the 122 two-to-one transactions eliminated from the review, 120 resulted in enforcement and two were closed.

[20] For the classic presentation of the efficiency analysis, *see* Williamson (1967).

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discussion determines the outcome; if the staff simply repeats the claims without any discussion of the merger specificity and verification issues, no claim is considered to be made.[21]

Table 6 compares the biannual percentage of matters with efficiency findings for both complaints and closed cases, first for the BC analyses and second for the BE evaluations. The BC data highlights an interesting analytical evolution. Efficiencies start to be taken seriously by BC in 1995-96, with the bulk of the early attention in closed investigations. By 1999, the likelihood of a BC efficiency finding in an enforcement action matched that in a closed case. This trend dissolves in 2003, with BC becoming much more likely to find efficiencies in closed investigations than enforcement actions.

The BE data shows little systematic change. Efficiencies are found in both enforcement actions and closed investigations, with efficiencies more likely to be found in the closed matters. Possibly, the last four years have seen a decline in efficiency findings, although the small samples of closed cases limits the strength of the conclusion. Not surprisingly, BE is more likely to find efficiencies than BC. The ratio of BE findings to BC findings fell from 7.5 to 1 in 1989-1994, to 1.4 to 1 in 1995-2000 and then moved to 1.6 to 1 for 2001-08. While BC still remains less likely to find efficiencies than BE, the difference is not as large in 2008 as it was in 1989.

IV. INSTITUTIONAL EFFECTS ON MERGER ENFORCEMENT

Merger enforcement may also be affected by institutional considerations such as politics or regulatory structures. A number of papers have tried to link political considerations with merger policy, expecting populism associated with high profile deals or Democratic control of the enforcement agency to increase the probability of a merger challenge. While the evidence suggests that political considerations mattered in the mid-to-late 1980s, the relationship basically disappeared in the 1990's.[22] In effect, antitrust policy lost its political orientation, when "Dow-Jones Democrats" rose to power and effectively matched the enforcement equilibrium that had evolved in the Bush I administration.[23] Populism was forced to a fringe position, generally exerting a small positive effect on the probability of enforcement for very large transactions.

Criticism associated with the potential politicalization of merger policy rose late in the Bush II administration, although the bulk of the concerns were directed at the Department of

[21] An efficiency defense is tabulated if at least one claim appears accepted. Obviously, a tighter standard could be applied, with staff required to make clear findings of acceptance or rejection. Such a structure would not reach a conclusion on a number of efficiency claims. *See*, Coate and Heimert (2009).

[22] *See*, Coate, Higgins and McChesney (1990), Coate and McChesney (1992), and Coate (1995) for evidence suggesting political control matters and Coate (2002) for evidence suggesting the net political effect of politics on enforcement disappeared in the Clinton administration.

[23] In light of the rise of the 401-k and other defined contribution pension plans, the core of the Democratic party was forced to reposition their policies to focus on the Dow Jones index to remain politically viable, as the stock market determined both job prospects for the young workers and retirement income for the older workers. The Republican party recently failed to protect investors and lost power. While the loosening of the regulations on the mortgage market drove the housing boom and pumped up the stock market for 2004, the Dow crashed and burned in 2008, taking the Republican candidate with it.

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Justice.[24] While recent studies have shown politics had no effect on FTC merger enforcement, the question could be revisited now that the Bush II Presidency has ended.[25] Once the data is assembled, it is also relatively easy to test to see if the institutional change associated with the 1992 revisions of the Merger Guidelines affected enforcement. Failure to show the revisions of the Merger Guidelines affected policy suggests that these documents simply described existing enforcement regimes.

To identify the effect of the institutional variables, it is necessary to start with a set of structural variables to control for the quality of the case. Coate and Ulrick (2006) use four market related variables (the HHI, the Change in the HHI, the Interaction of the HHI with its change, and the (pre-merger) number of Significant Rivals) to explain FTC merger enforcement for 1996-2003, a period that sits towards the middle of this 1989-2008 data set. All variables are measured in log form (the Interaction variable is the product of the logged values of the HHI and its Change) and are derived from the Bureau of Competition studies. Two additional explanatory variables (Barriers to Entry and Efficiencies) available in the data set reflect findings made by both Commission's Bureau of Competition and Economics. These indexes range from 0 (when no evidence on barriers or efficiencies exists) to 2 (when both Bureaus make findings of barriers or efficiencies).[26] The model imposes a logarithmic transformation to enhance the non-linear effect.[27] One would strongly expect the HHI, its change, and the entry index to be positively related to enforcement, while the Interaction term, rivals, and efficiencies would take on negative signs. Table 6 suggests that the efficiency index should be limited to the period after the 1995 arrival of Chairman Pitofsky.[28]

Populism is proxied by the valuation of the proposed merger, with larger deals expected to be more likely to be challenged. The variable starts with the nominal value of the acquisition (in millions of dollars) and adjusts the values for inflation using the year 2000 as a base. Then the log of the inflation-adjusted value is computed to reduce the impact of the few very large transactions. Not surprisingly, the inflation-adjusted value has a skewed distribution, with a mean of $3.603 billion, but a median of $414 million. Twenty-five and seventy-five percentile cutoffs are $101.7 million and $2.120 billion, respectively.

Political considerations can be measured by variables associated with control of Congress, the Presidency, and the Chairmanship of the FTC. The uniqueness of the average Republican control of both Congress and the Presidency suggests that the indicator for

[24] *See*, Baker and Shapiro (2008).

[25] *See* Coate and Ulrick (2006) at Table 3, along with Coate (2008b) at Table 5 (suggesting, if anything, the Bush II administration was more aggressive for collusion cases) and Coate (2008c) (an unreported regression that found no effect.)

[26] BE is assumed to accept the BC finding when they formally "concur" in the BC staff analysis.

[27] A "1" is added to the sum of the affirmative findings by the staff and then the data is logged to generate values of 0 (no findings), .6931 (one finding), or 1.0986 (two findings).

[28] Table 4 of Coate (1995) detected an efficiency defense after 1987, as did Table 2 of Coate (2002); both of these studies use a sample using all fully reviewed mergers after 1982. With a sample limited to single market overlaps after 1992, no efficiency effect was found (Coate (2005b)). Thus, it is interesting to revisit the issue. A new efficiency variable models the strength of the evidence, counting both BC and BE findings.

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Republican control of the government would be a reasonable proxy for the political effect, although robustness analysis is undertaken to ensure that the variable is representative. Traditional public choice theories imply a negative effect for Republican control, but recent developments suggest that no significant effect will be found.

Table 7 presents the parameter estimates of the model for the full 338 observation sample, along with two subsamples (one with 271 observations and the other with 201 observations).[29] The results are relatively similar, with structure and barriers driving the enforcement decision as expected, along with a slightly higher chance of enforcement for the larger transactions and a lower probability for enforcement when efficiencies are identified. Simulations suggest that three-to-two mergers (with mixed evidence on entry, but no efficiencies) are challenged with a probability of 85 percent, regardless of the statistical model used in the analysis. Four-to-three mergers are challenged with a probability that ranges from 57 to 59 percent, while five to four mergers are challenged with a probability that ranges between 21 to 24 percent. Matters for which BC and BE agree that entry barriers exist are noticeably more likely to be challenged.

Efficiency findings significantly affect the enforcement decision in all three models, although the impact of the effect is larger in the 271 and full 338 observation samples.[30] Findings of clear efficiencies by both BC and BE outweigh most of the increase in enforcement probability associated with the move from a representative structure of five pre-merger rivals to one with four pre-merger rivals (with one barrier finding). Instead of moving the enforcement probability from 21 to 24 percent to 57 to 59 percent, strong efficiency findings would leave the enforcement probability at 28 to 30 percent (for two of the three models). For structurally less-competitive markets (three-to-two or two-to-one transactions), the effect of efficiencies on the enforcement decision is noticeably lower.

Table 7 also reports that Republican control of the government does not significantly affect merger enforcement. This result is quite robust as a total of twelve political models were considered (but not reported to save space) and no significant results are identified. The populism index proved significant in all three specifications, with large transactions subject to slightly tighter merger enforcement. Simulations for the three models identified the importance of the value variable. Assuming one barrier finding, but not efficiencies or politics, and setting the structural variables to their means (for the full 338 observation data set), suggest that the movement from the 50th to 75th percentile on distribution of the value variable increases the enforcement probability from 72-75 percent to 83-85 percent, while movement from the 50th percentile to the 25th percentile reduces the chance of enforcement from the 72-75 percent to 62-

[29] The full sample (338 observations) uses all available mergers, the next sample (271 observations) uses data from mergers with 1-3 competitive concerns and the third sample (201 observations) limits the study to mergers with a single competitive concern.

[30] An unreported regression included an efficiencies variable defined over the entire sample. This variable proved insignificant in the 271 and 201 observation sample. For the full 338 observation sample, it was possible to split the efficiency effect into two variables and reject the hypothesis that the 1989-mid 1995 index was statistically significant. Inability to code the significant rivals variable for mergers decided prior to 1989 (due to difficulties in recovering 20 + year old files), limits further testing.

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66 percent, depending on which model is used. Overall, these results show a limited effect for populism.

A final analysis tested for any change in the structural coefficients related to the publication of the April 1992 Merger Guidelines. The structural parameters are stable over this change as none of the shift factors showed a significant effect. Moreover, a joint test that all the new coefficients are statistically indistinguishable from zero cannot be rejected. As a bottom line, policy appears remarkably stable over the twenty year interval 1989-2008, with only the strengthening of the efficiency defense in the mid-1990s.

V. CONCLUSION

This review of FTC merger enforcement highlights a number of interesting developments. Changes have occurred in the types of cases investigated, the outcomes of the investigations, and the industries studied. For horizontal mergers, considerations discussed in the Guidelines appear to affect the enforcement decisions over the entire time period, although some changes are observed at the margin. An econometric study of the enforcement data identifies the key variables that drive enforcement (and suggests a change in efficiency policy over the 20 year sample).

The overall analysis of the Commission actions highlights a diversification of initiatives starting around 1993 with vertical and potential competition issues generating more activity. The study of horizontal merger enforcement also reveals some interesting results. In recent years, relatively fewer matters are closed at the end of a full investigation, a result that is compatible with the improvement in the case selection process. The type of merger reviewed by the FTC also changes, with retail and hospital cases increasing dramatically in the mid 1990's and then falling in number in the 21st century. Finally, enforcement actions are relatively more likely in the drug, chemical, and retail industries, but less likely in computer-related markets.

An analysis of the anticompetitive theories used in the various enforcement decisions suggests a shift to stronger monopoly/dominant firm/duopoly theories after 1992. On the other hand, the evidence shows that collusion and weak unilateral matters are still represented in the sample, but the collusion enforcement actions are often secondary challenges for multi-market merger complaints. Abstracting from the monopoly and dominant firm mergers, the data suggests that collusion theories outnumbered unilateral concerns about two-to-one, although the unilateral matters exhibited less-competitive market structures and thus are more likely to generate an enforcement action. Finally, after FY 1994, BC staff appeared more willing to support efficiency claims.

The econometric model serves to wrap up the analysis. Little evidence can be found to suggest that the enforcement regime changed in response to either political control or the specific wording of the Merger Guidelines. Only the introduction of an efficiency effect in the Pitofsky administration appears novel. Finally, the results of the modeling were generally invariant to the data sample used, suggesting reliable results can be generated by focusing on subsamples of the FTC data.

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Table 1 - Classification of FTC Merger Investigations

(biannual, 1989-2008)

Year	Horizontal Transaction	Vertical Transaction	Potential Competition	Joint Venture	Monopsony Issues	Other Type Of Case	Total Cases
1989-90	75(39)	3(1)	2(2)	0	5(2)	5(3)	90(47)
1991-92	49(25)	2(1)	1	1	0	3(1)	56(27)
1993-94	70(40)	7(4)	3(1)	0	3(1)	3(2)	86(48)
1995-96	71(40)	7(7)	6(5)	0	3(2)	7(2)	94(56)
1997-98	72(47)	6(3)	3(2)	0	4(2)	5(2)	90(56)
1999-00	67(54)	5(5)	8(5)	3(1)	2(2)	2(1)	87(68)
2001-02	46(32)	2(1)	1	0	0	5(1)	54(34)
2003-04	31(16)	2(1)	1(1)	0	1(1)	0	35(19)
2005-06	42(25)	8(4)	1(1)	0	0	2(2)	53(32)
2007-08	46(32)	1(1)	3(1)	0	0	1	51(34)

Source: a review of FTC merger investigations by fiscal years. Multiple filings on a specific matter are excluded from the tabulation, when relevant. The number of matters resolved via enforcement (or abandonment prior to the challenge decision) is given in parentheses.

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Table 2 - Outcomes of FTC Horizontal Merger Investigations

(biannual, 1989-2008)

Fiscal Year	Mergers Studied	Abandon Deal	Quick Look	Enforcement Action	Closed Case
1989-90	75	20	18	19	18
1991-92	49	13	14	12	10
1993-94	70	14	7	26	23
1995-96	71	12	14	28	17
1997-98	72	16	16	31	9
1999-00	67	15	5	39	8
2001-02	46	13	8	19	6
2003-04	31	5	4	11	11
2005-06	42	7	10	18	7
2007-08	46	11	9	21	5

Source: A review of FTC horizontal merger investigations by fiscal years. This table is an updated version of Table 1 in Coate (2000).

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Table 3 - Overview of FTC Horizontal Merger Investigations(limited to enforcement action and closed cases for 1989-2008)

	Enforcement					Closed Cases				
	89-92	**93-96**	**97-00**	**01-04**	**05-08**	**89-92**	**93-96**	**97-00**	**01-04**	**05-08**
Consumer Goods	*9*	*34*	*29*	*7*	*21*	*8*	*20*	*7*	*8*	*8*
Producer Goods	22	20	41	23	18	20	20	10	9	4
Manufactured	24	26	40	23	26	21	24	12	8	3
Services	7	28	30	7	13	7	16	5	9	9
Selected Industries										
Automotive	2	1	1	1	0	0	0	1	0	0
Branded Consumer	2	5	8	4	4	3	4	3	6	2
Computer	0	1	1	0	2	1	0	1	2	3
Chemicals	6	3	13	4	5	3	1	2	2	0
Aerospace & DoD	3	0	1	0	1	2	3	1	0	0
Hospitals	1	12	3	0	3	3	9	2	0	4
Drugs & Devices	2	7	8	6	12	2	2	1	1	0
Oil & Energy	0	2	6	6	2	1	3	2	2	0
Retail	4	13	12	2	4	1	4	2	0	0

Source: A review of FTC horizontal merger investigations by fiscal years. This table is an expanded version of Table 2 in Coate (2000).

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Table 4 - Anticompetitive Theories in FTC Horizontal Merger Enforcements

(biannual, 1989-2008)

Fiscal Year	Monopoly	Strong Unilateral	Duopoly	Collusion	Weak Unilateral	Cases
1989-90	7	3(1)	1(1)	6(1)	2(1)	19
1991-92	5	0	2(1)	4(2)	1	12
1993-94	6	4(3)	8(4)	4(5)	4(1)	26
1995-96	11(1)	5(4)	7(6)	4(5)	1(2)	28
1997-98	14(2)	7(2)	5(7)	5(5)	0(1)	31
1999-00	10(6)	8(5)	15(11)	4(11)	2(2)	39
2001-02	5	2(1)	8(2)	4(2)	0(1)	19
2003-04	4(1)	4	1(3)	1(1)	1	11
2005-06	11	2	3(7)	2(5)	0(4)	18
2007-08	8	4(3)	5(5)	2(3)	2(1)	21

Source: A review of FTC horizontal merger challenges by fiscal years. The numbers in parentheses count matters in which the relevant theory did not appear to be the primary concern of the merger enforcement action.

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Table 5 - Structural Statistics for Non-Dominant Firm Unilateral and Collusion Cases (enforcement action and closed cases, 1989-2008)

Unilateral Theories	Cases	BC – HHI	BE – Barriers (%)	Enforce (%)
3 rivals	40	5153	77.5	77.5
4 rivals	16	3700	43.8	56.3
5 rivals	9	3529	66.7	33.3
5+ rivals	10	3629	60.0	10.0
Collusion Theories	**Cases**	**BC – HHI**	**BE – Barriers (%)**	**Enforce (%)**
3 rivals	28	4824	82.1	85.7
4 rivals	42	3458	52.4	54.8
5 rivals	29	2746	55.2	27.6
5+ rivals	42	1992	45.2	11.9

Source: Review of FTC horizontal merger investigations.

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Table 6 – Percentage of Efficiency Claims made by BC/BE in Merger Cases (biannual, 1989-2008)

	BC Percentage Efficiency (complaint)	BC Percentage Efficiency (close)	BE Percentage Efficiency (complaint)	BE Percentage Efficiency (close)
1989-90	11	11	37	61
1991-92	0	0	42	70
1993-94	4	13	65	52
1995-96	25	59	54	71
1997-98	19	44	35	78
1999-00	33	38	28	38
2001-02	26	33	42	100
2003-04	18	55	36	73
2005-06	0	57	6	71
2007-08	14	60	38	20

Source: A review of FTC horizontal merger investigations by fiscal years.

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Table 7 – Econometric Analysis of Merger Enforcement (1989-2008)
(by the number of markets reviewed in investigation)

	Any Number of Markets	Three or Fewer Markets	Single Market
HHI	5.557*** (2.76)	7.445*** (3.17)	8.070*** (3.08)
Change in HHI	6.204*** (2.63)	8.025*** (2.97)	8.820*** (2.95)
Interaction	-.7199** (-2.55)	-.9586*** (-2.94)	-1.062*** (-2.94)
Rivals	-1.839*** (-3.94)	-1.920*** (-3.87)	-2.076*** (-3.37)
Barriers	2.176*** (5.80)	2.304*** (5.63)	1.783*** (3.90)
Efficiencies	-.6944*** (-2.72)	-.6583** (-2.40)	-.5030* (-1.69)
Value of Transaction	.1808*** (2.62)	.2207*** (2.60)	.2036** (2.19)
Republican Control	.03579 (0.12)	.0798 (0.24)	-.0622 (-0.16)
Constant	-47.39*** (-2.84)	-62.14*** (-3.22)	-66.20*** (-3.07)
Pseudo R-squared	.6163	.5941	.5401
Log-Likelihood	-82.91	-73.80	-62.32
Sample Size	338	271	201

t-statistics in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

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