

THE EVOLUTION OF MERGER ENFORCEMENT INTENSITY: WHAT DO THE DATA SHOW?

*Jeffrey T. Macher & John W. Mayo**

ABSTRACT

A growing narrative has arisen that antitrust regulators have systematically relaxed enforcement over time. This narrative has led to calls for reinvigorated enforcement and the passage of new tougher antitrust legislation. In this paper, we employ data drawn directly from the antitrust agencies to examine this claim. Data collected from 1979 to 2017 indicate that, contrary to the popular narrative, regulators have become more likely to challenge proposed mergers over time. Controlling for the number of merger proposals submitted to the agencies, the likelihood of a merger challenge has more than doubled over this period. After remaining relatively constant over previous administrations, merger enforcement intensity (MEI) rose in the G.W. Bush and even more so in the Obama administrations. The data also reveal that MEI is positively influenced by the agency budget size. Were historical enforcement tendencies to continue, a ten percent increase in the agencies' budgets would yield an eight percent increase in merger challenges. This finding suggests that, independent of any statutory changes to existing antitrust laws, variation in agency budgets provides a viable pathway to enhanced merger enforcement.

I. INTRODUCTION

A growing narrative in the popular press and among some academics has been that antitrust regulators—influenced by the Chicago School—have systematically relaxed existing antitrust law enforcement.¹ This narrative has led to calls

* McDonough School of Business, Georgetown University, USA. E-mail: mayoj@georgetown.edu. We are grateful to Dale Collins, Brad Jensen, Bob Majure, Nathan Miller, Danny Sokol, Larry White, and Mark Whitener for helpful conversations regarding the development of this paper. Matthew Sachs provided valuable research assistance. Additionally, we appreciate the helpful suggestions of two anonymous referees and an associate editor on an earlier draft. We remain solely responsible for any remaining errors.

¹ See, for example, Jerrold Nadler opening remarks, Subcommittee on Regulatory Reform, Commercial and Antitrust Law hearing on “Oversight of the Antitrust Agencies,” stating that “[o]ver the past several decades, waves of anticompetitive consolidation in industry after industry—which has largely been the result of lax antitrust enforcement—have threatened the economic well-being and financial security of American families.” See also, Joshua D. Wright “Toward a Better Understanding of Concentration: Measuring Merger Policy Effectiveness,” Directorate for Financial and Enterprise Affairs Competition Committee, OECD, June 6, 2018, noting a widespread belief that corporate concentration is increasing both in the United States and abroad and that “[l]ax antitrust policy, and lenient merger enforcement in particular, is understood to be the root cause of these and other problems.”

for reinvigorated enforcement and even the passage of new tougher antitrust legislation. The merits of this narrative and the corollary calls for antitrust reforms depend, in part, on whether the claim that antitrust regulators have become more relaxed in their enforcement efforts over time is correct. In this paper, we employ data from the U.S. antitrust agencies to examine one element of this claim. Specifically, we examine whether the antitrust regulators have become less likely to challenge proposed mergers over time.²

Our data are drawn from annual reports filed by the Federal Trade Commission (FTC) and the Department of Justice (DoJ)—hereafter, the Agencies—over 1979–2017. Our results indicate that, contrary to the popular narrative, the Agencies have become more likely to challenge the proposed mergers over 1979–2017. Controlling for the number of merger proposals submitted under Hart-Scott-Rodino Antitrust Improvement Act of 1976 (HSR), we find that the likelihood of a merger challenge has more than doubled over this period. We also find that merger challenges and MEI are positively influenced by the Agencies’ budget size. Were historical enforcement tendencies to continue, a ten percent increase in the Agencies’ budgets from the FY 2017 levels would yield an eight percent increase in merger challenges. This latter finding— independent of any statutory changes to existing antitrust laws—suggests that variation in Agency budgets provides a viable pathway to enhanced merger enforcement.

The next section provides the background analysis and a literature review. Section III analyzes the data, and Section IV presents the main analysis. Section V offers caveats to the analysis and examines possible explanations for the findings. Section VI provides a conclusion.

II. BACKGROUND AND RELATED LITERATURE

The introduction to a recent *Yale Law Journal* symposium on antitrust policy observes that “[c]oncerns about the potential for under-enforcement are growing.”³ While the volume of these concerns is growing, they are not altogether new.⁴ Indeed, under-enforcement concerns have shadowed the Agencies for many years, and they often arise from casual impressions that antitrust regulators have “gone soft” because a particular merger (or set of mergers) that an observer believes should have been challenged was not. This arm-chair quarterbacking will inevitably continue to exist going forward, with some pundits arguing that regulators have been too easy on mergers and with other pundits arguing the exact opposite.

² For a parallel examination of the evolution of cartel enforcement, see, for example, Vivek Goshel & D. Daniel Sokol, *The Evolution of Cartel Enforcement*, 57 J.L. & Econ. S51 (2014).

³ Jonathan B. Baker, Jonathan Sallet & Fiona Scott Morton, *Unlocking Antitrust Enforcement*, 127 Yale L.J. 1916, 1919 (2018) (footnote omitted).

⁴ See, for example, <https://www.crowell.com/NewsEvents/AlertsNewsletters/all/Senators-Grill-Antitrust-Officials-over-Lax-Merger-Enforcement>.

In contrast to those offering casual opinions, a small literature has sought to provide an empirical and data-driven approach to shedding light on the evolution of merger enforcement efforts over time. Coate (2000) assesses the extent of MEI across three presidential terms: Reagan II, H. W. Bush, and Clinton I,⁵ drawing upon the FTC enforcement activity data around horizontal mergers over the fiscal years 1983–1996. He reports on several indicators of FTC merger investigations and enforcement over time, but proffers “a general measure of total effects of enforcement”—one which sums the number of lawsuits voted by the Commission and the mergers abandoned after the issuance of a second request divided by the total number of merger filings.⁶ Based on this measure, he concludes that “[a]fter an increase from the low levels of the mid-1980s, FTC enforcement, as a share of reportable transactions, has remained relatively constant from the late 1980s through 1996.”⁷

Leary (2002) also seeks to avoid casual narratives regarding the evolution of merger enforcement, stating “[o]ne way to test whether the agencies are really doing what they say they will do is to look at the overall statistical record. In other words, if it is really true that mergers were much more aggressively prosecuted in the 1990s than they were in the 1980s, you would expect to see clear statistical evidence of it. [footnote omitted] What does this evidence show?”⁸ In this spirit, he assembles an array of merger enforcement activity data from the DOJ and FTC over 1981–2000 that includes not only formal challenges but also enforcement indicators, such as consent decrees filed as a consequence of merger restructurings following an agency declaration of an intent to challenge. Leary finds “[t]he history of merger policy in the United States does not reveal steady state or a wildly oscillating universe,”⁹ but rather reflects an essential stability of merger enforcement efforts over time.

Baker and Shapiro (2008) provide a continuity of approach toward the assessment of MEI. In particular, and consistent with Leary (2002), they suggest that “[t]he key statistic is agency enforcement as a fraction of Hart-Scott-Rodino filings.”¹⁰ Moreover, they extend the window of analysis to include the first term of G.W. Bush as well as the first two years of his second term. Based on both the reported data and a complementary survey of the impressions of antitrust practitioners regarding MEI, they conclude

⁵ Malcolm B. Coate, *Merger Enforcement at the Federal Trade Commission*, 45 *Antitrust Bulletin* 323 (2000).

⁶ *Id.* at 329.

⁷ *Id.* at 347.

⁸ Thomas B. Leary, *The Essential Stability of Merger Policy in the United States*, 70 *Antitrust L.J.* 105, 121–122 (2002).

⁹ *Id.* at 107 and 126 stating that “The claim that merger enforcement in the 1990s differed dramatically from enforcement in the 1980s is not supported by statistical evidence.”

¹⁰ Jonathan B. Baker & Carl Shapiro, *Reinvigorating Horizontal Merger Enforcement*, in *HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U. S. ANTITRUST* (Robert Pitofsky ed., Oxford University Press, New York, 2008, at p. 244.) (footnote omitted).

that “the decline in antitrust enforcement is ongoing, especially at the current Department of Justice.”¹¹

Kwoka (2013) provides another assessment of MEI over time. As part of a larger meta-analysis of merger retrospective studies, he identifies 23 mergers over 1976–2006, which were both subject to retrospective study and produced evidence of the associated Agency action.¹² He first categorizes these cases by decade: identifying five from the 1980s, ten from the 1990s, and eight from the 1990s. He then examines the ratios of challenges to each of these respective merger categories, identifies a decreasing decadal rate over time, and thus suggests an apparent drift toward a more permissive merger enforcement posture.¹³ The validity of these results has been the subject of controversy, with alternative statistical tests indicating either a decreasing intensity within the sample or no statistically significant trend over time.¹⁴ Independent of the specifics of this controversy, it is worth observing that the merger pool over which Kwoka observes Agency behavior is exceedingly small, with a sample not exceeding ten in any given decade. This small sample undoubtedly creates challenges in making any inferences regarding trends in MEI over time.

Coate (2018) draws upon FTC data to examine MEI over 1989–2016.¹⁵ Among other data, he examines the annual ratio of FTC merger challenges relative to the number of horizontal merger investigations conducted.¹⁶ From this examination, he indicates that “[a]n obvious increase in challenge rate appears in the data, although substantial variation in the rate remains.”¹⁷ His broader assessment of other dimensions of FTC activity leads him to conclude that “[t]his review of FTC policy highlights broad stability in the merger analysis.”¹⁸

A recent paper by Wollmann (2019) examines the evolution of merger enforcement activities over time that stem from a set of HSR amendments in 2000.¹⁹ Specifically, in December 2000, Congress passed and President Clinton signed into law amendments to the HSR Act.²⁰ Among other changes,

¹¹ *Id.* at 235.

¹² John E. Kwoka, Jr., *Does Merger Control Work? A Retrospective on U.S. Enforcement Actions and Merger Outcomes*, 78 Antitrust L.J. (2013).

¹³ *Id.* at 638.

¹⁴ See Michael Vita and F. David Osinski, *John Kwoka’s Mergers, Merger Control, and Remedies: A Critical Review* 82 Antitrust L.J. Vol. 361 (2018); and John Kwoka, *Mergers, Merger Control, and Remedies: A Response to the Vita-Osinski Critique*, 82 Antitrust L.J. 741 (2019).

¹⁵ Coate, Malcolm B., *The Merger Review Process at the Federal Trade Commission from 1989 to 2016* (February 28, 2018). Available at SSRN: <https://ssrn.com/abstract=2955987> or <http://dx.doi.org/10.2139/ssrn.2955987>.

¹⁶ *Id.* at Table 2 and accompanying text, 8–9.

¹⁷ *Id.* at 8–9.

¹⁸ *Id.* at 28.

¹⁹ Thomas G. Wollmann, *Stealth Consolidation: Evidence from an Amendment to the Hart-Scott Rodino Act*, 1 AM. ECON. REV. INSIGHTS 77 (2019).

²⁰ These changes are embedded in appropriations legislation for the DoJ. For the complete text, see https://kb.osu.edu/bitstream/handle/1811/71043/1/OSLJ_V67N2_0433.pdf.

the amendments raised the size thresholds by which an acquisition triggers an HSR filing requirement with the Agencies.²¹ The consequence of these amendments was that the number of HSR filings made to the Agencies fell sharply in 2001. This change logically had two potential effects: first, by limiting the number of HSR filing to now larger applications, the Agencies' resources were freed to more thoroughly scrutinize those larger merger applications in which anticompetitive issues may be more likely to arise; and second, by removing the filing requirements of a significant number of smaller merger applications, anticompetitive aspects of these now-exempt mergers may be less likely to be detected. It is unclear *a priori* whether and how these two effects collectively have influenced the Agencies' merger enforcement activities.²²

Drawing on Agency data before and after the 2000 HSR amendments, Wollmann (2019) identifies two types of mergers: (1) never-exempt—the set of larger mergers (that is, > \$50MM in total transaction value) that were not exempt pre- or post-HSR amendments and (2) newly exempt—the set of smaller mergers (that is, < \$50MM in total transaction value) that became exempt post-HSR amendments. He then implements difference-in-differences estimation, and finds that in the wake of the HSR amendments, Agency investigations of newly exempt mergers fell significantly.

In sum, the previous empirical and data-driven literature has examined merger enforcement over different timeframes and has alternatively pointed to: a “relatively constant” merger policy²³; “an essential stability” in merger

²¹ While the motivation for this change is not part of the legislation (which is part of an appropriations bill), the most likely explanation behind this change is that it reflects the Act's original design to promote “a careful balancing of the need to detect and prevent illegal mergers and acquisitions prior to consummation without unduly burdening business with unnecessary paperwork or delays.” S. REP. No. 94–803, pt. 1, at 65 (1976). See, also, Marian R. Bruno, “Prepared Remarks before the American Bar Association's ‘Merger and Acquisitions: Getting Your Deal Through the New Antitrust Climate’” June 13, 2002, stating that “[i]n response to complaints that the \$15 million size of transaction threshold was too low, Congress increased the size-of-transaction threshold to \$50 million.” Available at: <https://www.ftc.gov/public-statements/2002/06/hart-scott-rodino-25>. In addition, the legislative history of the original Act indicates that “[i]f these premerger reporting requirements were imposed on every merger, the resulting added reporting burdens might more than offset the decrease in burdensome divestiture trials.” (Report No. 94–1373, House of Representatives, 94th Congress 2d Session, Committee on the Judiciary, July 28, 1976). See also the Senate Report, which observes that in drafting the threshold values, “the Committee sought to include within the ambit of the premerger notification provision primarily those mergers or acquisitions that were most likely to have a substantial effect on competition. That is not to say that smaller mergers may not run afoul of the Clayton Act. To include the bulk of the approximately 3,000 mergers that have occurred annually in the course of the past several years would, however, in the Committee's judgment impose an undue and unnecessary burden on business.” S. Report. No. 94–803, at 65 (1976). For a critique of the 2000 reform measures, see Andrew G. Howell, *Why Premerger Review Needed Reform—And Still Does*, 43 WM. & MARY L. REV. 1703 (2002).

²² We address this issue empirically in Section IV, *infra*.

²³ COATE, *supra* note 5 at 347.

enforcement²⁴; an ongoing “decline in antitrust enforcement”²⁵; a “drift” toward a more permissive enforcement policy²⁶; “a broad stability” in merger analysis²⁷; and a more nuanced assessment that while merger activity and enforcement “track closely with one another,”²⁸ the Agencies’ focus on HSR-exempt mergers has all but evaporated over time. In what follows, we seek to provide continuity with, extensions to, and perspective on these earlier analyses.

III. THE DATA

In the spirit of prior data-driven analyses of merger enforcement efforts, we turn to available data on antitrust challenges to mergers over 1979–2017. The passage of the HSR requires that the DOJ and FTC provide annual HSR-related reports.²⁹ Beginning in 1979, the reports include data not only on the number of HSR filings but also on associated merger enforcement activity.³⁰ Data are provided on the most direct manifestation of merger enforcement activity—viz., formal complaints—as well as more indirect manifestations of merger enforcement. Using each Annual Report over 1979–2017, we develop a merger enforcement measure that includes preliminary injunctions; agencies’ declarations of intentions to challenge mergers; and agencies’ filings of consent decrees that reflect adjustments designed to remove anticompetitive concerns regarding as-proposed mergers.³¹

²⁴ LEARY, *supra* note 8 at 105.

²⁵ BAKER & SHAPIRO, *supra* note 10 at 235.

²⁶ KWOKA, *supra* note 12 at 638.

²⁷ COATE, *supra* note 15 at 28.

²⁸ WOLLMANN, *supra* note 19 at 79.

²⁹ These reports (hereafter, Annual Reports) are available at: <https://www.ftc.gov/policy/reports/policy-reports/annual-competition-reports>

³⁰ The 1977–1978 Annual Reports analyze the developments associated with the implementation of HSR rather than reporting merger enforcement data.

³¹ Our measure is consistent with the Baker and Shapiro (2008) measure, who include “court cases, consent settlements, and transactions abandoned or restructured prior to filing a complaint as a result of an announced challenge.” BAKER & SHAPIRO, *supra*, note 10 at 245. Our measure is also akin to the Leary (2002) MEI measure, although his narrative description indicates that post-second request merger abandonments are included as an indicator of merger challenges. We more conservatively exclude post-second request merger challenge abandonments in our measure for two reasons. First, such abandonments can occur for reasons independent of merger challenges. See, for example, Coate (2018), who indicates that “[n]ot all matters withdrawn from review due to antitrust concerns, as any other impediment to the transaction can force the withdrawal decision. Examples include an inability to obtain other regulatory approvals, losing a bidding war for the target, or failure to obtain financing. Antitrust concerns appear to be the most likely reason for abandonment, although non-antitrust concerns regularly lead to the abandonment of the merger.” COATE, *supra* note 15 at 4. Second, as a practical matter, the Annual Reports do not consistently provide data on the number of mergers abandoned in the wake of second requests by the Agencies.

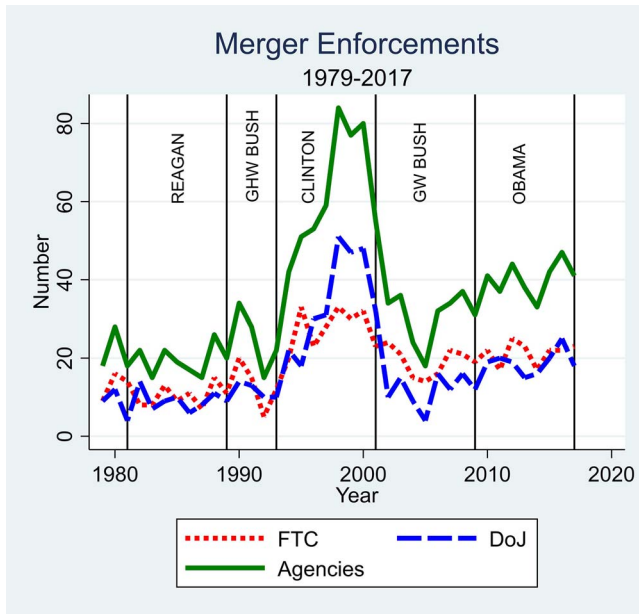


Figure 1. Merger enforcements (1979–2017).

Figure 1 aggregates these data into an annual count of merger enforcements over 1979–2017 and by political administration. Three features are worth highlighting. First, the absolute number of merger enforcements grew sharply in 1994, peaked in 1998, and then fell substantially before stabilizing after 2003. Second, the peak in merger enforcements coincides with the Clinton administration. Third, both DOJ and FTC merger enforcement follow the same pattern over time, with the DOJ effects somewhat larger during the Clinton Administration in comparison with those of the FTC.

To gauge the intensity of merger enforcement, we draw upon merger transactions that are required to be reported by the Agencies under HSR. We focus on the number of “reportable” HSR transactions.³² Figure 2 provides the evolution of these reported merger transactions. Similar to merger enforcements, the most notable feature of HSR reportable mergers is their rapid increase and decline over 1994–2003.

³² We define “reportable” mergers as those for which the agencies are authorized to issue a Second Request. We exclude mergers for which the Agencies are not authorized to request additional information or mergers with separate regulatory agency approval processes [for example, Section 7(a) 6/8 reasons], incomplete filings, unnecessary filings, and so forth. For more details, see the Tenth Annual Report to Congress Pursuant to Section 201 of the Hart-Scott-Rodino Antitrust Improvement Act of 1976, Appendix C, footnote 2.

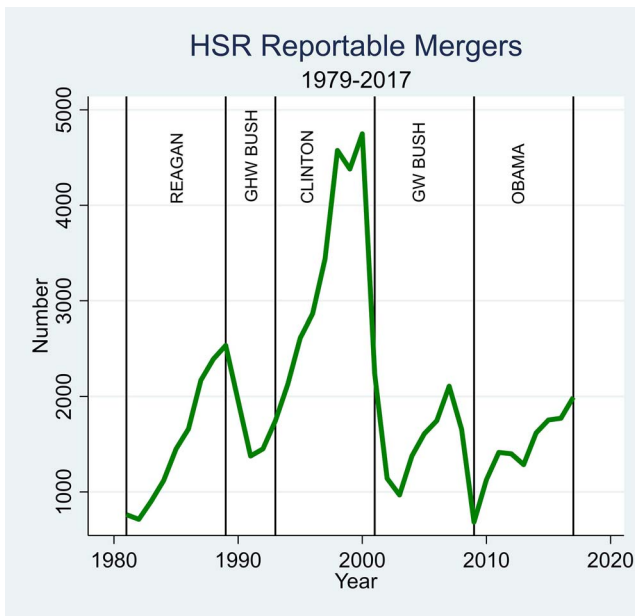


Figure 2. HSR reportable mergers (1979–2017).

To gauge the Agencies' MEI we create a ratio of annual merger enforcements to annual HSR reportable mergers.³³ Figure 3 indicates that Agencies have challenged between 1.0 and 4.5 percent of HSR-eligible mergers over 1981–2017.^{34,35} The notable spikes in MEI appear mainly due to economic

³³ While the total number of HSR transactions is reported for 1979 and 1980, the number of reportable transactions is not available for these years. Our MEI measure thus necessarily begins in 1981. Both as a robustness check and to include the 1979 and 1980 data, the analysis in Section IV is replicated using total HSR transactions as the denominator in our MEI measure. The results are substantively unchanged to this alternative measure.

³⁴ As noted in Section II, the use of this ratio as a gauge of merger enforcement activity began with COATE *supra*, note 5, and is the basis for the analysis presented in LEARY *supra* note 8, BAKER & SHAPIRO, *supra* note 10, and Coate *supra* note 15. Our measure continues the tradition of including enforcement actions undertaken by the Agencies that are both reported under HSR and not reported under HSR in the numerator, with only transactions that are reported under HSR in the denominator. An ideal calibration of the numerator to the base of HSR reported transactions would require backing the Agencies' challenges to non-HSR-reported mergers out of the numerator. Unfortunately, the Annual Competition reports do not indicate whether a given challenge is to an HSR-reported transaction or to a non-HSR reported transaction. Consequently, we retain the unadjusted measure.

³⁵ Our MEI measure reflects the combined activities across both Agencies. We aggregate DoJ and FTC activities for two reasons. First, while some “inside baseball” curiosity will exist about agency-specific MEIs, our view is that inter-agency variations are most likely the result of varying case mixes rather than systematic enforcement propensity differences. Second, our combined MEI measure is most directly responsive to the debate which motivates our paper; namely, whether MEI (in total) has increased or decreased over time.

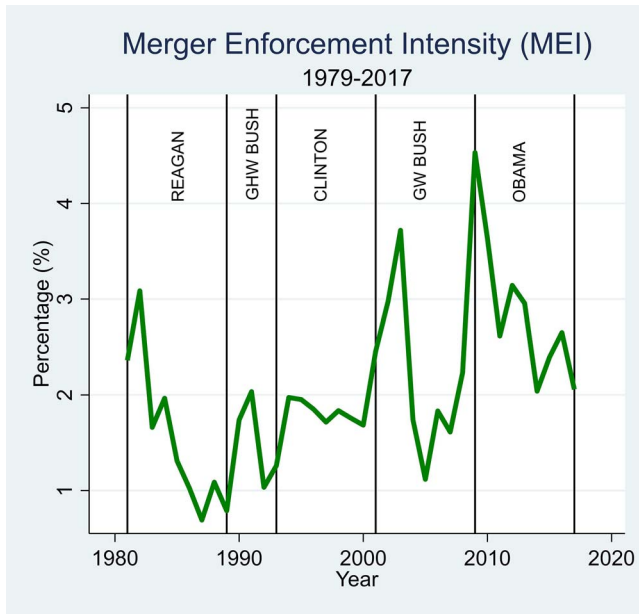


Figure 3. MEI (1979–2017).

recessions, which subsequently reduced the number of mergers (HSR-eligible or otherwise). In 1982, a severe global economic recession and stagflation in much of the developed world was due to the 1973 oil crisis and 1979 energy crisis. A shallow recession emerged in 2003 from the collapse of the dot-com bubble, falling investments, and 09/11. In 2009, the subprime mortgage crisis led to a global financial crisis. In each instance, the number of HSR-eligible mergers was substantially lower than in the year prior or year after.

IV. ANALYSIS

A. Preliminaries

Our MEI measure is best thought of in probabilistic terms. In particular, there are n_t HSR filings over t time periods with challenges occurring in a subset (m_t) of these. The aggregated empirical probability of a challenge is therefore:

$$p_t = \frac{m_t}{n_t}, \quad (1)$$

which we can write as a linear probability function:

$$p_t^* = \beta x_t + \mu_t, \quad (2)$$

where p_t^* is the predicted value of p_t from equation (2); x_t is a set of explanatory variables; β is a vector of estimated parameters; and $\mu_t = p_t^* - p_t$ is a random error term. The estimation of equation (2) is straightforward, but requires adjustment to account for nonconstant variance in the μ_t error term that would eliminate the minimum variance properties of ordinary least squares (OLS) regression and invalidate statistical tests on the realized parameter values. The variance of p_t^* is given by $\text{Var}(p_t^*) = p_t(1 - p_t)/n_t$ and can be estimated by $p_t^*(1 - p_t^*)/n_t$. We accordingly employ weighted least square (WLS) regression using the weights, $\omega_t = [n_t/p_t^*(1 - p_t^*)]^{1/2}$. This weighting correction results in unbiased estimates with standard errors capable of providing reliable tests.³⁶ Our estimations also employ robust standard errors.

B. MEI over Time

Table 1 examines Agencies' MEI (MEI_t) and challenges over time. The year (YEAR) serves as the independent variable of interest. Column (1) examines MEI_t using the number of reportable mergers (ELIGIBLE MEI) available over 1981–2017; column (2) examines MEI_t using the total HSR filings (ALL MEI) available over 1979–2017. The results indicate that, independent of the specific measurement approach, YEAR is positive and statistically significant ($p < .01$). Contrary to the current narrative, MEI has increased over time.

We next examine the annual number of merger challenges (CHALLENGES) as the dependent variable. The year again serves as the main independent variable, but we also control for the number of eligible [column (3)] or total [column (4)] HSR filings. The results again indicate that YEAR is a positive and statistically significant ($p < .01$) determinant of merger enforcement. Controlling for the level of merger filings, the estimations indicate that the number of merger challenges increases by nearly 0.6 per year.

We develop predictions of MEI and challenges over time using the Table 1 estimates and marginal effects: MEI more than doubles from 1.33 to 2.77 percent over the sample period, while the predicted challenges increase from 24.1 to 46.9, holding enforceable merger filings at its mean.

We examine two tests of robustness to these main results. First, previous research efforts that interpret MEI as a measure of enforcement intensity have provoked the observation that the measure fails to make adjustments for the evolving mix of mergers that are presented to the Agencies over time. That

³⁶ See G.S. MADDALA LIMITED-DEPENDENT AND QUALITATIVE VARIABLES IN ECONOMETRICS, Cambridge University Press, Cambridge, UK, 28–29 (1983).

Table 1. Baseline MEI and challenges regressions

DEP VAR	(1) ELIGIBLE MEI	(2) ALL MEI	(3) CHALLENGES	(4) CHALLENGES
YEAR	0.037*** (0.012)	0.035*** (0.012)	0.600*** (0.131)	0.601*** (0.130)
ELIG HSR			0.014*** (0.001)	
ALL HSR				0.013*** (0.002)
Constant	-71.877*** (24.615)	-68.912*** (23.127)	-1,190.615*** (262.382)	-1,190.293*** (259.359)
Predicted effect	2.073*** (0.125)	1.972*** (0.121)	36.297*** (1.480)	35.615*** (1.544)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. R-squared	0.222	0.228	0.760	0.718

Note: (1) * $p < .10$; ** $p < .05$; *** $p < .01$ CHALLENGES correspond to m_t in equation (1), which includes preliminary injunctions; agencies' declarations of intentions to challenge mergers; and agencies' filings of consent decrees that reflect adjustments designed to remove anticompetitive concerns regarding as-proposed mergers. Standard errors are reported in parentheses.

is, if the types of mergers change systematically over time, then the possibility arises that the changes in the observed MEI is the result of changes in the merger mix rather than the changes in merger enforcement. To address this argument, we consider the Agencies' enforcement directed to a single, and most problematic, merger type: horizontal mergers. To do so, we gather data on the number of "intra-industry" mergers over 2002–2017,³⁷ which include the set of all horizontal mergers reported to the Agencies in a given year.³⁸ We also identify the number of challenges to horizontal mergers by the Agencies over time.³⁹ The ratio of Agency enforcement actions taken against horizontal mergers (HORIZ CHALLENGES) to the total number of horizontal mergers reported (HORIZ HSR) serves as our measure of horizontal MEI (HORIZ MEI)—that is, the rate that Agencies challenge the most potentially problematic mergers over time.

³⁷ These data are found in Table XI of the Annual Reports. Agency data on intra-industry mergers before 2002 are inconsistent and incomplete.

³⁸ Our reliance on the count of "intra-industry" mergers as a measure of horizontal mergers sets aside a more precise accounting of horizontal mergers, which would require identifying whether each merger involves firms that compete in the same relevant geographic and product market. Nonetheless, relying on the Agencies' three-digit NAICS definition, "intra-industry" mergers capture all such horizontal mergers.

³⁹ To do so, we exclude all enforcement actions taken against vertical mergers. Enforcement actions directed to vertical mergers are identified in Steven C. Salop and Daniel P. Culley, "Vertical Merger Enforcement Actions: 1994–April 2020," Appendix to "Revising the Vertical Merger Guidelines: Policy Issues and an Interim Guide for Practitioners." 4 J. ANTITRUST ENFORC. 1 (2016).

Table 2. Robustness MEI and challenges regressions

DEP VAR	(1) HORIZ MEI	(2) HORIZ CHALLENGES	(3) LEARY MEI	(4) LEARY CHALLENGES
YEAR	0.352*** (0.101)	0.948** (0.333)	0.030** (0.012)	0.459*** (0.140)
ELIG HSR		-0.003 (0.004)		0.014*** (0.001)
ALL HSR			-57.361** (24.642)	-906.838*** (280.220)
Constant	-701.298*** (203.674)	-1867.017*** (667.169)	2.245*** (0.133)	38.514*** (1.608)
Estimation	WLS	OLS	WLS	OLS
Observations	16	16	37	37
Adj. R-squared	0.291	0.418	0.141	0.720

Note: (1) * $p < .10$; ** $p < .05$; *** $I < .01$. Standard errors are reported in parentheses.

The first two columns of Table 2 present the horizontal merger results: column (1) examines HORIZ MEI using the number of eligible horizontal mergers; column (2) examines the HORIZ CHALLENGES. The results indicate that, independent of the specific measurement approach, YEAR is positive and statistically significant ($p < 0.05$). Controlling for merger mix, the results again indicate that MEI has increased over time.

Second, we turn to Leary (2002), who examines the evolution of MEI but uses more limited data and slightly different measures than we employ. We make use of the longer data window available (that is, 1981–2017 versus 1981–2000), but employ his specific challenges data which differs at points from ours.⁴⁰

The last two columns of Table 2 present the Leary results: column (3) examines the Leary MEI measure; column (4) examines the Leary merger challenges measure. The results are encouragingly consistent with our baseline results: MEI and merger challenges increase over time.

Baker and Shapiro (2008) similarly rely upon the Leary enforcement data, but attempt to account for the HSR filing threshold increase implemented in 2001. A notable consequence of the increased threshold is that the number of reported HSR filings fell. Using the historical relationships between all

⁴⁰ Leary (2002) indicates that data are drawn from FTC Mission Accomplishments and count as challenges the sum of authorized preliminary injunctions, administrative complaints, Part II consents accepted, and transactions withdrawn after issuance of a second request, while his DOJ challenge data are drawn from the HSR Annual Reports and include the sum of merger actions filed in the district court and transactions abandoned or restructured before filing a complaint as a result of an announced challenge. See his Table 1, Note 2. Our data are for both the DOJ and FTC, are drawn from the HSR Annual Reports, and do not include post-second-request merger abandonments as a challenge. Our measure of merger challenges differs from Leary in a number of years.

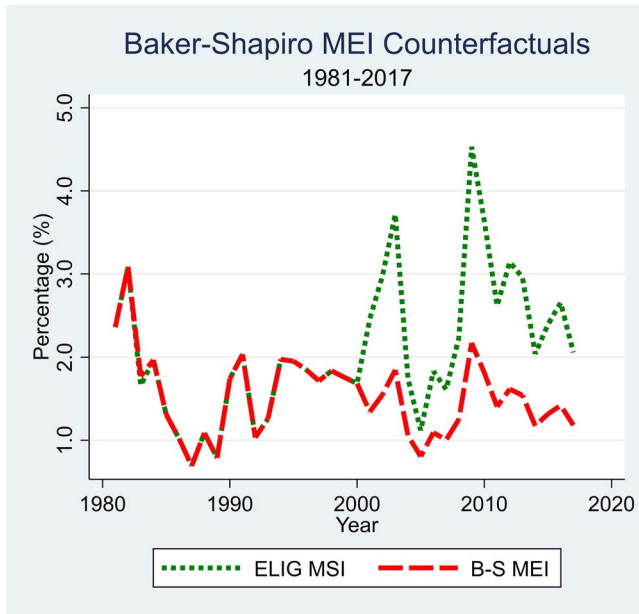


Figure 4. MEI counterfactuals (1981–2017).

mergers, reported HSR mergers, and challenges per reported merger, Baker and Shapiro (2008) project MEI levels under the counterfactual that Congress did not alter the HSR threshold.⁴¹ Figure 4 displays both the actual MEI and the Baker–Shapiro MEI counterfactual, which show the 2000 HSR adjustments triggered an increase in MEI relative to the counterfactual of no HSR adjustments. Indeed, the Baker–Shapiro adjustment projects that MEI would have remained flat or even declined had the threshold adjustments not occurred.

Finally, Wollmann (2019) shows that in the wake of the 2000 HSR Amendments, the level of Agency investigations into smaller (that is, newly exempt) mergers fell precipitously.⁴² Some of these investigations would have led to actual challenges but are no longer visible because they were not reported to the Agencies under HSR. Using Baker and Shapiro’s counterfactual analysis of historical ratios of challenges per newly exempt mergers, however, it is possible to project the level of challenges that did not happen as a consequence of the

⁴¹ For a complete description of their methodology, see Baker and Shapiro (2008), *supra* note 10 at 274, footnotes 81 and 82.

⁴² See also the working paper by Thomas G. Wollmann, “How to Get Away with Merger: Stealth Consolidation and Its Real Effects on US Healthcare,” NBER Working paper 27274, (May 2020). It indicates that merger challenges in the dialysis have been substantially reduced for mergers that are not reported under HSR.

reduction in HSR filings with the Agencies.⁴³ At the same time that investigations into newly exempt mergers were falling, the intensity of challenges to larger (that is, never-exempt) mergers was increasing. To calculate these increases, we compare the number of challenges predicted by the increasing MEI (applied to the ongoing filings of the larger, never-exempt mergers) with a benchmark of the number of challenges that would have occurred had the MEI remained at its 1990–2000 average value.

Figure 5 shows the net effect to merger challenges, taking into consideration both the decrease associated with the newly exempt mergers as a consequence of the HSR Amendments and the increase associated with increasing MEI over time. While the number of merger challenges fell in the aftermath of the 2000 HSR amendments, the increased propensity of the Agencies to challenge the never-exempt mergers largely eliminated the challenges reduction by 2009; since 2013, the net effect has been an increase in the number of merger challenges filed.⁴⁴

C. MEI over Political Administrations

While the majority of economists and lawyers who investigate mergers are career employees, the fact that the heads of the FTC and the DOJ's Antitrust Division are political appointees has long fostered a curiosity about whether differing political administrations produce substantively different merger enforcement intensities.⁴⁵ In this vein, several research efforts have examined data on the merger enforcement across political administrations with varying results.⁴⁶ For example, Coate (2000) analyzes FTC merger enforcement data

⁴³ Baker and Shapiro (2008) show that the 2000 HSR amendments reduced HSR filings by 60 percent relative to the no HSR amendments' condition. The actual number of HSR filings reported following 2000 can then be inflated by 2.5 to produce a value of mergers that would have been reported but for the 2000 HSR amendments. The difference between this number and the number of HSR transactions reported represents the number of newly exempt mergers that were not filed with the Agencies as a consequence of the 2000 HSR amendments. BAKER AND SHAPIRO, *supra*, note 10, footnote 81, p. 274. They also show that for newly exempt mergers (that is, those valued at <\$50MM), the historical rate of second requests was 0.98 percent, and 61.6 percent of second requests over 1990–2000 resulted in enforcement challenges. Using these data, we can therefore calculate the number of newly exempted mergers over time as well as the number of challenges associated with the reduced number of HSR filings.

⁴⁴ Our calculation admittedly may mask several important considerations in the overall evolution of MEI. For instance, the calculation assumes that challenges for smaller (newly exempt) mergers are equivalent to challenges for larger (never-exempt) mergers. It is reasonable to consider, however, that challenges to larger mergers may entail more effort by the Agencies and therefore reflect larger "enforcement costs" per challenge than similar challenges to smaller mergers.

⁴⁵ For an early examination of the role of political pressure on FTC enforcement activity, see Malcolm B. Coate, R.S. Higgins, Richard S. & Fred S. McChesney, *Bureaucracy and Politics in FTC Merger Challenges*, 33 J. L. & ECON. 463 (1990).

⁴⁶ See COATE *supra* note 5, COATE (2018) *supra* note 14, LEARY *supra* note 8, and Baker and Shapiro *supra* note 10.

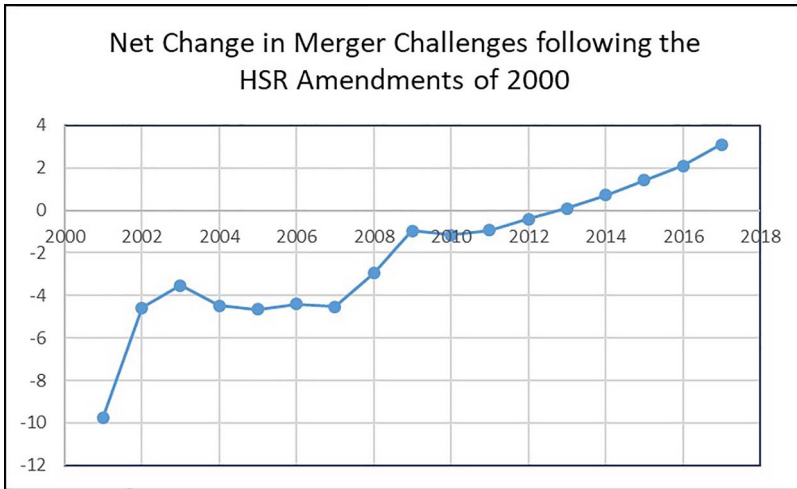


Figure 5. Merger challenges net change from HSR amendments (2001–2017).

across three presidential administrations: Reagan, Bush, and Clinton. The data suggest little indication of political influence on MEI.⁴⁷ Leary (2002) similarly concludes that there was mostly stability in MEI across political administrations. Baker and Shapiro (2008) extend the data employed in Coate (2000) to examine MEI in the first six years of the G.W. Bush administration; they observe that that “merger enforcement became much more lenient during the current administration,”⁴⁸ and suggest that “prospective merger enforcement has fallen into decline.”⁴⁹ Coate (2016) analyzes FTC data on MEI over 1989–2014 and finds that “[s]tatistical analysis of the merger review process detects no evidence of political partisanship”⁵⁰ and “[t]his review of FTC policy highlights a broad stability in the merger enforcement process.”⁵¹

Our data permit us to both replicate and extend these analyses, with the exception of Coate (2000, 2016) who employs in-house FTC data. Our key measure of MEI remains the ratio of all challenges to the set of reportable mergers under HSR. A set of administration dummy variables serve as the main variables of interest. Following Leary (2002, p. 122) and Baker and Shapiro (2008), we anticipate an expected time lag in a new administration putting its political leadership team into place in the Agencies and similarly

⁴⁷ See COATE *supra* note 5 at 347, who states “FTC enforcement, as a share of reportable transactions, has remained relatively constant from the late 1980s through 1996.”

⁴⁸ BAKER & SHAPIRO, *supra* note 10 at 247.

⁴⁹ *Id.* at 266.

⁵⁰ Coate, Malcolm B., “Merger Policy at the Federal Trade Commission: What, If Anything, Has Changed?” (March 31, 2016), p. 37. Available at SSRN: <https://ssrn.com/abstract=2757301> or <http://dx.doi.org/10.2139/ssrn.2757301>.

⁵¹ *Id.* at 36.

Table 3. Robustness MEI and challenge regressions (by administration)

DEP VAR	(1) ELIG MEI	(2) ALL MEI	(3) CHALLENGES	(4) CHALLENGES
BUSH GHW	-0.036 (0.342)	-0.101 (0.306)	4.504 (4.033)	3.751 (3.905)
CLINTON	0.351 (0.283)	0.322 (0.261)	27.829*** (4.923)	29.223*** (5.269)
BUSH GW	0.918* (0.496)	0.907* (0.466)	12.346*** (3.553)	12.154*** (3.490)
OBAMA	1.134*** (0.332)	1.143*** (0.311)	20.850*** (2.712)	20.897*** (2.693)
ELIG HSR			0.008*** (0.002)	
ALL HSR				0.007*** (0.002)
Constant	1.553*** (0.269)	1.468*** (0.248)	6.610* (3.738)	8.313* (4.187)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. R-squared	0.403	0.425	0.876	0.858

Note: (1) * $p < .10$; ** $p < .05$; *** $p < .01$; (2) Reagan serves as the baseline (omitted administration). Standard errors are reported in parentheses

introduce a one-year lag across administrations but still allow for the entire time in office for each administration.⁵²

Table 3 presents these MEI and merger challenge results. While some variation across administrations exists, the most striking result is the clear and marked increases in both MEI and the challenges in later administrations relative to the base (omitted) Reagan administration. And this trend dominates any differences in MEI and the challenges that are associated with the political party of the administration in power. The estimates are generally consistent with earlier studies [Coate (2000, 2016) and Leary (2002)] which do not identify the changes in political administrations as an important driver of variations MEI. The estimates also indicate that the lull in merger enforcement activity during the first two years of G.W. Bush's second term identified by Baker and Shapiro (2008) did not turn into a longer-term downturn in MEI.

⁵² LEARY *supra* note 8 and BAKER & SHAPIRO *supra* note 10 break out enforcement intensity into each four-year presidential term. To the extent that we seek to identify the role of political administrations on merger enforcement, we believe that any such influence is best assessed over the respective administration's full term in office. Variations in the observed MEI across the same president's two terms are not plausibly driven by differences in political influence.

V. CAVEATS AND CAUSALITY

We examine two additional considerations. First, while our analysis provides a data-driven alternative to casual impressions and anecdotal inferences regarding merger enforcement over time, it comes with certain caveats and qualifications.⁵³ For instance, the portfolio of observed mergers may, in part, be determined endogenously by merger policy. For instance, the evolution of the Merger Guidelines over 1968–2010 may have increased the number of proposed mergers—as firms are better able to understand problematic mergers—or reduced the number of proposed mergers—as Agencies better enunciate theories and tools by which to challenge mergers. It is also possible that harsher merger enforcement regimes may lead to fewer proposed mergers, while more lenient policies may lead to more proposed mergers. While such possibilities cannot be eliminated, a Granger causality test of whether current MEI causes subsequent movements in reported HSR-reported mergers is not supported.⁵⁴ It is thus not clear whether any policy variations fundamentally alter—and in which direction—our conclusions.

Additionally, our measure is not a comprehensive accounting of merger enforcement. A number of activities are omitted, including merger enforcement advocacy undertaken by the Agencies before other regulatory bodies, such as the Surface Transportation Board (STB) or the Federal Communications Commission (FCC). The Agencies' merger enforcement activities related to bank mergers are similarly omitted. Furthermore, some firms have historically chosen to halt the proposed mergers in response to Second Requests.⁵⁵ Similarly, some potential mergers may have never occurred as a consequence of an anticipated challenge from antitrust enforcers. It is simply not possible, however, to observe these nonmergers.

We also note that while the window of data we examine is as comprehensive as possible, our analysis and conclusions run the risk of not being fully responsive to those whose reference point for a narrative that “regulators have gone soft” is before 1979.⁵⁶ Systematic data from the pre-HSR period that would allow the comparison of this earlier period to more recent enforcement efforts are not available. There are, however, a number of historical examinations of

⁵³ Our analysis of these caveats and qualifications builds upon those first identified by BAKER & SHAPIRO *supra* note 10.

⁵⁴ Our test follows C.W.J Granger, *Investigating Causal Relations by Econometric Models and Cross-Spectral Methods*, 37 *Econometrica* 424–438 (1969) using a three-period lag. An *F*-test of the significance of the lagged values of MEI indicates that we cannot reject the hypothesis of no causation of merger enforcement on the HSR reported level of merger activity.

⁵⁵ See, for example, Annual Report 1980, footnote 17.

⁵⁶ See, for example, https://www.ftc.gov/system/files/documents/public_statements/1409925/opening_remarks_of_joe_simons_hearings1georgetown_sept2018_0.pdf. FTC Chairman Joe Simmons notes some recent literature concludes that there has been “a change to a less enforcement-oriented antitrust policy beginning in the 1980s.”

mergers and merger enforcement that provide a flavor of these efforts in this earlier era.⁵⁷

Additionally, note that the 1979–1985 data reported by the Agencies were for calendar years, while fiscal year reporting began in 1986.⁵⁸ It does not appear possible to fully reconcile these two conventions, and we simply accept these data as reported.⁵⁹ Finally, there is necessarily some intertemporal slippage between the time when mergers are reported under HSR and the time that policy challenges are raised by the Agencies. This certainly results in some mergers reported in one year and challenges recorded in the following year.

Second, our analysis to this point indicates that the propensity of Agencies to challenge filed mergers has increased over time. While this finding is in itself informative to the current debate regarding the evolving intensity of merger enforcement, it provokes consideration of a more basic question: *why* has the enforcement policy evolved as it has? Although a complete exploration of this question lies beyond our scope, we nonetheless offer some limited insights. Table 1 indicates that the number of merger challenges is positively related to the level of merger activity as captured by HSR filings. Especially in light of the mercurial levels of mergers occurring over time (see Figure 2), the wherewithal to challenge mergers may be constrained by the Agency budget levels. We examine this possibility directly.

Figure 6 provides the combined FTC and DoJ inflation-adjusted (to 2017) budgets. There is a marked increase in the aggregate budget level since 1990. Accordingly, Table 4 replicates the Table 1 estimations, but substitutes YEARS with an annual AGENCY BUDGET measure. Columns (1) and (2), respectively, indicate AGENCY BUDGET is a positive and statistically significant determinant of MEI when using either eligible mergers or all HSR-reported mergers. Columns (3) and (4), respectively, indicate the inflation-adjusted measure of AGENCY BUDGET has a positive and statistically significant effect on merger challenges, controlling for either eligible mergers or total mergers. These results thus indicate that the observed increases in MEI over time have been driven, at least in part, by Agency budgets. For instance, the estimations indicate that a ten percent increase from 2017 Agencies' funding levels (that is, from \$478MM to \$526MM) would yield an increase in the eligible MEI from 2.8 to 2.9 percent and would generate roughly an eight percent increase in the number of merger challenges (from 45.7 to 49.2).

Aside from budget-driven changes in MEI, the data indicate a second potentially important explanation for the observed increases in MEI over

⁵⁷ Several detailed narrative accounts of early enforcement efforts provide insights into merger enforcement activities before the passage of HSR and the subsequent publication of annual reports. See, for instance, William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSPECTIVES 43 (2000).

⁵⁸ Annual Report 1985, p. 7.

⁵⁹ We do note, however, that the general conclusions reported in Section IV *infra* are invariant to omitting the early, calendar year data—only using the fiscal years data beginning in 1986.

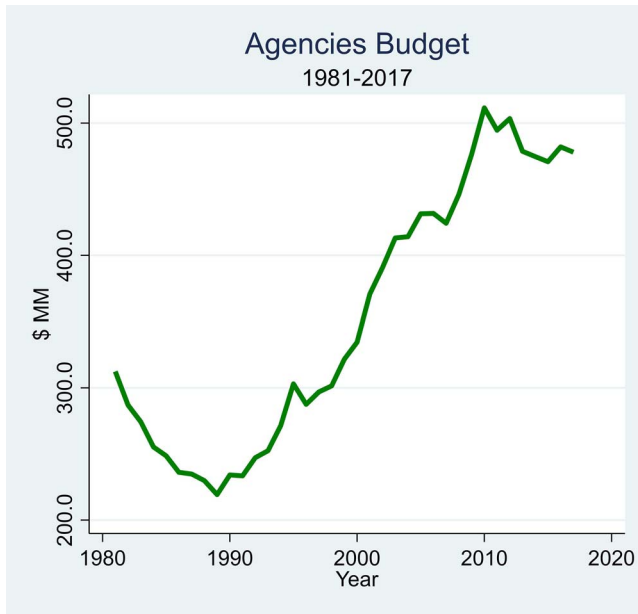


Figure 6. Competition agencies’ real budgets, 1981–2017.

Note: (1) Inflation Index, FY 2017 = 100; (2) since FY 1990, total Agency appropriations include both direct appropriations and anticipated HSR filing fee revenues, with adjustments to the former to achieve a total level of annual permitted expenditures that reflect budget priorities. The total level of effective appropriations is determined as a matter of policy; HRS filing fees simply reduce the level of direct appropriations allocated to the agencies. Anticipated HSR filing fees do not directly affect the total budget figures for the Agencies reported here.

Table 4. Robustness MEI and challenge regressions (Agency budgets)

DEP VAR	(1) ELIG MEI	(2) ALL MEI	(3) CHALLENGES	(4) CHALLENGES
AGENCY BUDGET ELIG HSR	0.006*** (0.001)	0.006*** (0.001)	0.075*** (0.014) 0.016*** (0.001)	0.088*** (0.014)
TOT HSR				0.015*** (0.001)
Constant	0.065 (0.362)	-0.303 (0.323)	-20.900*** (5.901)	-26.325*** (6.084)
Estimation	WLS	WLS	OLS	OLS
Observations	37	39	37	39
Adj. R-squared	0.428	0.507	0.795	0.780

Note: (1) * $p < .10$; ** $p < .05$; *** $p < .01$. Standard errors are in parentheses.

time. As seen in [Figure 5](#), the amendments to the HSR Act in 2000 ushered in substantial differences in the pattern of enforcement. In particular, in

the wake of the HSR amendments, the Agencies have shifted their focus to larger mergers that continue to be reported under HSR, while focusing less on smaller mergers that are no longer reported under HSR.⁶⁰ With limited financial and investigative resources, this shift to focus on large mergers has likely contributed to the increase in measured merger challenges as larger mergers are more likely, *ceteris paribus*, to provoke anticompetitive concerns than smaller mergers.

VI. CONCLUSIONS

Our analysis of the data on merger enforcement over 1979–2017 provides some high-level insights into the current narrative that antitrust regulators have “gone soft.” In short, the data do not provide support to this argument. Indeed, the data indicate that the Agencies have become *more* likely to challenge mergers filed over time. While this increase may be due to numerous factors, we identify two likely drivers. First, we find that MEI is directly related to the antitrust Agencies’ annual budgets. The data indicate that a ten percent increase in current Agency budgets increases both MEI and, for a given number of HSR-filed mergers, merger challenges. Second, Congress modified the HSR filing thresholds in 2000, with the result that the Agencies have focused more of their efforts on larger mergers. These larger mergers are, on average, more likely to be problematic and, as a consequence, increase the propensity to challenge the set of HSR-filed mergers in any given year.

We conclude with a cautionary note regarding the normative policy interpretation of our analysis. Specifically, and as a factual matter, we show that contrary to the current narrative suggesting antitrust regulators have become increasingly lax in their merger enforcement efforts, MEI has increased over time. Taken on its face, this finding suggests that antitrust policy reform advocates should not seek to advance such efforts on the prevailing narrative. But this finding does not rule out other possible reasons that may justify antitrust reform efforts. In this specific context, policy reform advocates have a burden for providing a clear rationale—rooted in facts and data and not based on speculation—regarding why proposed reforms are merited.

⁶⁰ See WOLLMANN, *supra* note 19.