

THE HART–SCOTT–RODINO ACT AT FIFTY: ACQUISITION PATTERNS AND INDUSTRY DYNAMICS

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Abstract

The Hart–Scott–Rodino (HSR) Act requires firms to notify the U.S. antitrust agencies of acquisitions that exceed size thresholds. We study the economic consequences of the 2000 HSR Amendments, effective in 2001, which raised the minimum reporting threshold from \$15 to \$50 million, as adjusted, and removed the percentage-of-shares trigger, exempting many smaller transactions from review. Using SDC/Refinitiv transaction data, annual HSR reports, and Census Business Dynamics Statistics, we construct an industry-level measure of exposure to the reform and compare more- and less-exposed industries over the following two decades. We document three stylized facts: the HSR reform is associated with a shift in the composition of recorded acquisitions toward larger, same-industry, and repeated-acquirer deals; these responses differ sharply between goods-producing and service industries; and so do the accompanying changes in industry and labor-market dynamics.

Keywords: Antitrust; HSR; Industry dynamics; Competition

JEL Codes: K21; L40; L10; G34; D22

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1. Introduction

Merger enforcement depends not only on the legal standards used to evaluate transactions, but also on the tools that determine which deals receive scrutiny in the first place. Competition agencies operate under limited budgets and must triage among a large number of transactions using administrable rules based on market concentration, the value of the transaction, merging parties' market shares, or their absolute turnover. These tools economize on scarce enforcement capacity, but they also shape the set of acquisitions that agencies observe before consummation. This paper studies one such tool: the size thresholds that determine mandatory premerger notification in the United States under the Hart-Scott-Rodino Act. We examine whether the 2000 amendment to the Hart-Scott-Rodino Act, which raised the minimum reporting threshold and removed some smaller transactions from mandatory review, was associated with changes in acquisition activity, deal composition, and industry dynamics.

The Hart–Scott–Rodino Antitrust Improvements Act of 1976 (HSR) plays a central role in the institutional design of U.S. merger policy. It requires merging parties that meet certain thresholds for changes of control to notify the federal antitrust agencies, the Department of Justice (DOJ) and the Federal Trade Commission (FTC), before consummation of a transaction. In this sense, for mergers that reached the HSR thresholds, merger control notification became mandatory, in that such mergers had to be submitted to the antitrust agencies for a review of the competitive effects. This transformed merger enforcement from a system that relied heavily on ex post challenges into one that focused largely (but not exclusively) on ex ante review (Nocke and Whinston 2010; Sokol 2024). The logic underlying the HSR is that transaction size could be used as a proxy for market power and thereby could serve as a screen for which mergers should be notified. By concentrating agency resources on larger transactions, the antitrust agencies could focus attention on mergers most likely to alter market structure and do so in such a way that would not be overly burdensome in terms of administrative costs of the review of relatively small acquisitions (Wollmann 2019; Nocke and Whinston 2022; Coate 2005).

The shift between the pre- and post-HSR approach is significant. Before the passage of HSR, the antitrust agencies frequently learned about mergers only after the fact. This created practical difficulties of “unscrambling the eggs” in which merger challenges occurred only after post merger integration (Wollmann 2019). This remedial difficulty created limits to effective merger policy even when the agencies could demonstrate anti-competitive effects of such mergers to the courts. It also meant that certain mergers that

could have been conditionally approved with behavioral or structural remedies could not have been challenged at all. After the implementation of HSR, the premerger notification and waiting-period processes provided the antitrust agencies more time, information, and leverage to better evaluate and remedy potentially anticompetitive mergers prior to their closing or even lead to certain problematic mergers being abandoned entirely.

The HSR premerger notification system, together with successive revisions to the Merger Guidelines (1982, 1984, 1992, 2010, and 2023), contributed to a more transparent and predictable framework for merger enforcement by clarifying enforcement priorities, analytical methods, and evidentiary standards (Baker 2003; Hovenkamp 2024). This both increased deterrence of potentially problematic mergers and provided a more predictable system, with a clearer timeline for when a transaction might close. The combination of notification rules, agency investigations, negotiated settlements, abandoned transactions, and judicial decisions has produced an extensive body of merger cases and policies that influence the behavior of firms contemplating mergers (Clougherty and Seldeslachts 2013; Mayo et al. 2025).

What solved the basic problem of which mergers to notify nevertheless created opportunities for potential arbitrage of smaller acquisitions below the reporting threshold. Based on long agency experience, the thresholds were substantially changed in 2000. The reform increased the minimum reporting threshold from \$15 million to \$50 million and eliminated an alternative reporting trigger based on the percentage of voting securities acquired. The legislation also introduced automatic inflation adjustments that have subsequently raised the reporting threshold substantially. The immediate consequence of the reform was dramatic. The number of reported transactions declined sharply, implying that a substantial set of acquisitions that previously would have entered the HSR process no longer required notification (Wollmann 2019). This also raised competitive concerns. Wollmann (2020) demonstrates how non-reportable mergers increase concentration and reduce healthcare quality. Cunningham et al. (2021) develop evidence consistent with “killer acquisitions,” in which incumbents acquire small innovative targets whose future products may threaten incumbent profits. Many of these transactions fall below the HSR threshold.¹ We examine whether the HSR Antitrust Improvements Act Amendments of 2000, which became effective in 2001 and thereafter referred to as the 2001 HSR reform, was associated not only with changes in the set of notified transactions, but also with longer-run changes in acquisition patterns and industry evolution.

¹At the same time, Mayo and Press (2025) cautions that the data does not indicate that stealth consolidation followed as a result of the 2000 HSR change, and a series of other papers suggest limits to the killer acquisitions thesis in the digital sector (Prado and Bauer 2022; Jin et al. 2023).

We combine transaction-level merger data from SDC Platinum, annual HSR reports, and Business Dynamics Statistics from the U.S. Census Bureau. Our empirical strategy exploits cross-industry variation in exposure to the reform. Specifically, we measure exposure as the pre-reform share of acquisitions that would have been reportable under the old thresholds but exempt under the new regime. We then compare the evolution of more- and less-exposed industries before and after the reform.

We document three stylized facts. First, the reform is associated with changes in the composition of observed acquisitions. If reduced reporting requirements primarily encouraged firms to pursue newly exempt small acquisitions, one might expect more transactions clustered below the new reporting threshold. Instead, compared to less-exposed industries, more-exposed industries exhibit larger observed deal values and a higher share of above-the-threshold deals after the reform. This pattern suggests that an increase in small below-threshold deals is not the only channel through which the reform may have affected economic outcomes. Rather, the results point to broader implications for firms' acquisition strategies.

Second, the acquisition response differs sharply across sectors. Among goods-producing industries, those more exposed to the HSR reform are associated with fewer observed merger deals but larger observed deal values relative to less-exposed industries. We do not find evidence of increased same-industry acquisitions or repeated-acquirer activity in these sectors. Focusing on service industries, by contrast, reveals that, relative to less-exposed ones, industries more exposed to the policy are associated with more observed merger deals, larger observed deal values, a higher share of acquisitions within the same detailed industry, and a greater role for repeated acquirers.

Third, the post-reform industry dynamics also diverge across sectors. In goods-producing industries, greater exposure is associated with contraction: lower entry, higher exit, fewer firms and establishments, and lower job creation. In service industries, greater exposure is associated with expansion along several margins, including higher entry, higher job creation, and more firms, but also a reallocation of activity and employment toward larger firms.

These sectoral differences suggest that the economic consequences of reporting thresholds are unlikely to operate through a single mechanism. In services, acquisitions are more likely to facilitate expansion and create entry-for-buyout incentives. These forces may be weaker in goods-producing industries, suggesting that additional mechanisms beyond antitrust scrutiny, such as asset reallocation and sector-specific economic forces, may also play a role in driving industries dynamics. More broadly, merger-notification

rules may contribute to industry evolution, but their effects depend on the environments in which firms operate. Reporting thresholds may interact with sectoral conditions such as fixed costs, scalability, tradability, local-market structure, and regulation. This matters for policy because the costs and benefits of screening rules may differ across sectors: a threshold that economizes on agency resources in one environment may have different consequences in sectors where acquisitions are central to growth, exit, or consolidation.

Related Literature. Our analysis contributes to three related literatures.

First, we contribute to the institutional analysis of antitrust merger enforcement (Nocke and Whinston 2010, 2013; Hovenkamp 2024). Much of this literature studies how merger doctrine and the Merger Guidelines shape enforcement decisions (Baker 2003; Katz and Shelanski 2007; Hovenkamp 2024), while empirical work typically focuses on agency actions and merger challenges (Seldeslachts et al. 2009; Clougherty and Seldeslachts 2013; Macher and Mayo 2021). We instead focus on an earlier institutional margin: which transactions become visible to the agencies in the first place.

This distinction is central to recent work on the 2001 HSR reform. Wollmann (2019) shows that higher HSR reporting thresholds can facilitate consolidation through repeated small acquisitions that no longer require premerger notification. We study a different but related question: how industries more exposed to the policy changed over the next two decades. We document shifts in acquisition composition and in downstream industry dynamics, with significant heterogeneity across services and goods-producing industries. This suggests that the post-reform response may have been shaped not only by the reporting threshold itself, but also by indirect competitive forces, including entry-for-buyout incentives (Rasmusen 1988), and sector-specific industry conditions outside antitrust enforcement (Mayo and Press 2025).

Second, we contribute to the literature on acquisitions and industry structure. Prior work documents that mergers and acquisitions play an important role in shaping firm growth, industry concentration, and innovation incentives (Berry and Waldfoegel 2001; Bena and Li 2014; Cunningham et al. 2021; De Loecker et al. 2020). Yet relatively little evidence exists on whether changes in reporting requirements affect the prevalence and consequences of acquisition-based firm growth strategies. Our setting provides a unique opportunity to examine whether reduced scrutiny of smaller transactions is associated with changes in firm entry, exit, concentration, employment allocation, and the role of young firms within industries.

Third, we contribute to the literature on U.S. economic dynamism. Researchers have documented long-run declines in startup formation (Decker et al. 2016; Karahan

et al. 2024), labor-market reallocation (Decker et al. 2016; Molloy et al. 2016), the share of high-growth firms (Kim et al. 2024), and other measures of economic dynamism in the United States (Decker et al. 2016; Autor et al. 2020; De Loecker et al. 2020). Competing explanations emphasize technological change, globalization, intangible capital, regulatory burdens, and changes in market structure (Aghion and Howitt 1992; Autor et al. 2020; De Loecker et al. 2020). We examine whether merger-policy institutions may represent an additional mechanism through which industry evolution occurs. If acquisition opportunities influence entrepreneurial incentives, firm survival, or industry concentration, then reporting thresholds may have consequences extending well beyond merger enforcement itself.

The rest of the paper proceeds as follows. Section 2 describes three primary sources of the data. Section 3 outlines our empirical strategy and Section 4 presents our results. A discussion of the potential underlying economic forces driving the observed patterns is offered in Section 5. Section 6 concludes.

2. Data Sources and Sample Construction

We rely on three primary data sources.

First, annual HSR reports to the Congress for fiscal years 1976 to 2024 are available on the website of the US Federal Trade Commission (FTC).² Starting fiscal year 1982, the annual report included a table that lists the count of M&A transactions by 2-digit SIC code of acquiring person (Table X) and 2-digit SIC code of acquired entity (Table XI). In 2001, these two tables included both 2-digit SIC code and 3-digit NAICS code in each row; but only 3-digit NAICS codes were reported in 2002 and after. In theory, the 2001 tables should provide us a crosswalk between SIC and NAICS codes so that we can track the same industry throughout 1982 to 2024. However, this crosswalk is only applicable to industries with M&A deals reported in 2001. Because NAICS codes have been revised in 2002, 2007, 2012, 2017, and 2022, and some revisions created partial overlaps between different versions, it is difficult to avoid erroneous classification when tracking the same industries through annual HSR reports. Due to these data limitations, we use annual HSR reports for aggregate deal counts rather than for across- or within-industry comparisons.

Figure 1 shows how the total count of HSR-reported M&A cases evolved from 1979 to 2024. While there were merger waves over time, a structural break occurred in 2001, when the total number of HSR-reported transactions fell 51.77% from 4,926 in 2000

²Source: <https://www.ftc.gov/policy/reports/annual-competition-reports>.

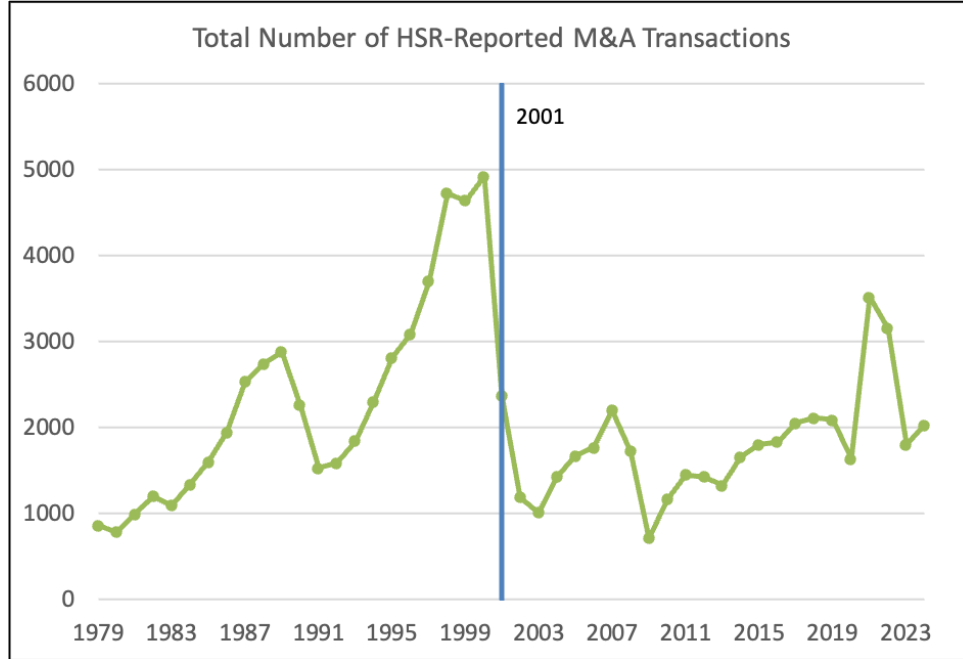


FIGURE 1. Total Number of HSR Reported M&A Transactions (Source: 1979–2024 Annual HSR Reports on www.ftc.gov.)

to 2,376 in 2001, and further to 1,187 in 2002. These substantial drops motivate us to examine the 2001 HSR reform as a major policy shock to US industries.

Our second data source is the SDC Platinum/Refinitiv M&A database (henceforth “SDC”). The database reports transaction-level information on announced mergers, acquisitions, and minority stake purchases. For each transaction, SDC provides information on the target and acquirer, announcement and completion status, transaction value, percentage of shares acquired, industry classifications, nationality of the target and acquirer, and other deal characteristics. SDC is constructed from public and proprietary sources, including company announcements, regulatory filings, news reports, trade publications, and analyst verification, and has been widely used by academic researchers studying M&A activity, including work on the effect of the 2001 HSR reform on merger activity (Wollmann 2019; Mayo and Press 2025).

In our analyses involving SDC data, we restrict attention to 1984–2023. Prior research evaluating SDC against hand-collected M&A data finds that SDC coverage was substantially less complete in the earliest years and improved over time (Barnes et al. 2014). Bena and Li (2014) also begin their sample in 1984 because information on M&A transactions in SDC is less reliable before that year.³

³This restriction is also motivated by the raw patterns in our data: the number of recorded US-

SDC does not capture every M&A transaction. Deals are more likely to be missing when they are small, private, or not publicly disclosed. In addition, transaction value is missing for a substantial share of records, which matters for our analysis because HSR reporting requirements depend in part on deal size. By contrast, missing information on the percentage of shares acquired is more limited. We therefore report deal-value and percent-acquired bins separately and treat missing values as their own categories. We also use SDC deal-status information to focus on completed transactions where appropriate, while recognizing that announcement and completion status are not always perfectly measured in transaction databases.

To process the SDC data, we first focus on M&A transactions in which the target is located inside the United States. We then address duplicate records in two steps. First, for records that are identical across all fields except for the SDC Deal Number, the percentage of shares acquired, and deal value, we retain the record with non-missing information on both the percentage of shares acquired and deal value when it is uniquely available, and drop the otherwise duplicate records. Second, we aggregate remaining records that correspond to the same transaction, defined by target name, acquirer name, target and acquirer 6-digit NAICS code, announcement date, and rank date. Within each transaction group, we sum the percentage of shares acquired and deal value when multiple non-zero components are reported.

Table 1 classifies all M&A deals in the SDC database by deal value and percentage of shares acquired (including missing values). Panel A highlights the cells that can trigger HSR reporting before 2001—namely, the percentage of deals with a deal value at or above the minimum threshold of \$15 million *or* a percentage of shares acquired at or above 15%. Panel B repeats the exercise for years on and after 2001, highlighting the percentage of deals with a deal value at or above the updated minimum threshold of \$50 million, regardless of the percentage of shares acquired. We note that this minimum deal-value threshold has been inflation-adjusted annually since 2001, reaching \$133.9 million in 2026 ([Federal Trade Commission 2026](#)). For ease of comparison, Table 1 does not incorporate these yearly post-2001 updates, nor does it include other criteria that could exclude deals from HSR reporting—for example, if the deal exceeds the minimum reporting threshold but does not satisfy the “size of person” test, or if the deal involves a certain amount of foreign assets outside the US—because we lack sufficient information to determine

target transactions increased sharply from the pre-1980 period to the mid-1980s, while the share of recorded deals above large-value thresholds fell mechanically as SDC began to capture more smaller transactions. Including pre-1984 years could therefore conflate changes in SDC data collection with changes in underlying merger activity.

TABLE 1. Summary of All M&A Data from the SDC (1984-2023, US Targets)

Panel A: up to 2000 (highlighted areas <i>may</i> trigger HSR reporting, deal value > \$15 million or shares acquired > 15%)							
% of shares acquired	Transaction value of the M&A deal						Row total
	(0, 15m)	[15m, 50m)	[50m, 200m)	[200m, 1b)	[1b, ∞)	Missing value	
(0, 15%)	9.77%	2.97%	2.05%	1.10%	0.36%	10.46%	26.72%
[15%, 50%)	1.02%	0.45%	0.36%	0.21%	0.05%	0.89%	2.98%
[50%, 100%]	11.61%	6.66%	5.60%	2.97%	0.91%	31.06%	58.82%
Missing	1.89%	0.97%	0.86%	0.50%	0.18%	7.09%	11.48%
Column total	24.30%	11.06%	8.88%	4.78%	1.49%	49.50%	100.00%
Panel B: on and after 2001 (highlighted areas <i>may</i> trigger HSR reporting, deal value > \$50 million regardless of shares acquired)							
% of shares acquired	Transaction value of the M&A deal						Row total
	(0, 15m)	[15m, 50m)	[50m, 200m)	[200m, 1b)	[1b, ∞)	Missing value	
(0, 15%)	7.32%	3.63%	3.28%	2.11%	1.11%	13.23%	30.67%
[15%, 50%)	0.38%	0.19%	0.19%	0.19%	0.08%	0.63%	1.65%
[50%, 100%]	6.64%	4.32%	4.60%	3.34%	1.51%	47.27%	67.67%
Missing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Column total	14.35%	8.13%	8.07%	5.63%	2.70%	61.12%	100.00%

whether any given deal qualifies for an exemption. As a result, the comparison in Table 1 is likely a conservative measure of the extent to which the share of HSR-reportable deals changed before and after 2001.

According to Table 1, if we count the column with missing deal values as HSR-reportable, the percentage of SDC-covered deals that may be HSR-reportable reaches 90.27% before 2001 and 77.52% on and after 2001. If we omit that column, the percentages are 40.73% before 2001 and 16.40% after 2001. In either case, there is a substantial decline in 2001 attributable to the HSR reform. Since HSR-reported deals tend to attract media coverage and are therefore more likely to be captured by SDC, it is plausible that deals with missing deal values tend to be small and below the minimum deal-value threshold for HSR reporting. Accordingly, in the analysis below, we construct the industry-specific exposure index to the 2001 HSR reform using only M&A deals with valid deal values in SDC.

For each industry defined by a 3-digit 2017 NAICS code,⁴ we construct its exposure to the 2001 HSR reform as:

$$Exposure = \frac{N_{15to50}}{N_{15to50} + N_{\geq 50}}$$

⁴We use 3-digit rather than 4-digit NAICS codes because changes in the NAICS classification over time create a number of many-to-many mappings at the 4-digit level. Moreover, the finer 4-digit classification yields fewer deals per industry, increasing noise and reducing comparability across industries and over time.

using SDC-covered deals from 1995 to 2000. For each 3-digit 2017 NAICS code by target firm, the numerator $N_{15\text{to}50}$ refers to deals with a deal value at or above \$15 million but below \$50 million. The denominator adds to these the deals with a deal value at or above \$50 million. By construction, this variable captures the fraction of deals that exceeded the pre-reform HSR minimum deal-value threshold but would not be reportable post-reform. We use 1995–2000 rather than 2000 alone because M&A activity in any given industry-year is susceptible to idiosyncratic shocks; averaging within industry over a broader window attenuates year-to-year noise and yields a measure that better reflects the systematic M&A propensity of an industry.

In principle, we could construct *Exposure* for each of the eighty-six 3-digit NAICS codes, but industries with very few deals are subject to large measurement error. We therefore exclude 3-digit NAICS codes with fewer than 96 M&A deals with a deal value at or above \$15 million during 1995–2000.⁵ The resulting sample comprises 44 industries, which account for 75.9% of total sales and 68.8% of employment according to the 2017 Annual Business Survey from the Census.

Table 2 presents the exposure index for the 44 sampled industries, sorted from highest to lowest. Figure 2 shows that the exposure index is negatively correlated with average firm size within an industry, where firm size is defined as total employment divided by the total number of firms reported by the US Census for that industry in the 1995–2000 Business Dynamics Statistics. Industries with a relatively large average firm size—such as Beverage and Tobacco Product Manufacturing and Utilities—have low exposure to the 2001 HSR reform because deals in these industries readily exceed \$50 million, while industries with a smaller average firm size—such as Construction of Buildings and Funds, Trusts, and Other Financial Vehicles—are more exposed because deal values are more likely to fall in the \$15–\$50 million range.

Although these examples might suggest that manufacturing and other goods producing industries are less exposed to the reform than service industries, Table 2 reveals substantial variation in the exposure index *within* each broad sector. For example, within the manufacturing supersector as defined by the Bureau of Labor Statistics (BLS),⁶ Machinery Manufacturing and Apparel Manufacturing rank among the most exposed industries, while Food Manufacturing and Paper Manufacturing rank among the least exposed. Similarly, Insurance Carriers and Related Activities are far less exposed than Funds, Trusts, and Other Financial Vehicles, even though both belong to the financial activities supersec-

⁵96 is the median of number of M&A deals with a deal value at or above \$15 million during 1995–2000.

⁶Source: <https://www.bls.gov/sae/additional-resources/naics-supersectors-for-ces-program.htm>.

TABLE 2. Exposure Index by 3-Digit NAICS Industry

NAICS	Industry	Goods Producing (0) or Services (1)	Exposure Index
213	Support Activities for Mining	0	0.558
236	Construction of Buildings	0	0.556
561	Administrative and Support Services	1	0.516
621	Ambulatory Health Care Services	1	0.502
423	Merchant Wholesalers, Durable Goods	1	0.500
541	Professional, Scientific, and Technical Services	1	0.497
525	Funds, Trusts, and Other Financial Vehicles	1	0.493
333	Machinery Manufacturing	0	0.484
722	Food Services and Drinking Places	1	0.476
522	Credit Intermediation and Related Activities	1	0.468
332	Fabricated Metal Product Manufacturing	0	0.459
211	Oil and Gas Extraction	0	0.451
315	Apparel Manufacturing	0	0.448
323	Printing and Related Support Activities	0	0.448
518	Data Processing, Hosting, and Related Services	1	0.447
721	Accommodation	1	0.445
334	Computer and Electronic Product Manufacturing	0	0.445
339	Miscellaneous Manufacturing	0	0.441
511	Publishing Industries (except Internet)	1	0.432
531	Real Estate	1	0.423
512	Motion Picture and Sound Recording Industries	1	0.421
335	Electrical Equipment, Appliance, and Component Manufacturing	0	0.415
623	Nursing and Residential Care Facilities	1	0.412
212	Mining (except Oil and Gas)	0	0.411
532	Rental and Leasing Services	1	0.388
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	1	0.385
326	Plastics and Rubber Products Manufacturing	0	0.383
237	Heavy and Civil Engineering Construction	0	0.382
331	Primary Metal Manufacturing	0	0.382
562	Waste Management and Remediation Services	1	0.376
424	Merchant Wholesalers, Nondurable Goods	1	0.366
337	Furniture and Related Product Manufacturing	0	0.365
327	Nonmetallic Mineral Product Manufacturing	0	0.365
622	Hospitals	1	0.358
517	Telecommunications	1	0.347
524	Insurance Carriers and Related Activities	1	0.346
325	Chemical Manufacturing	0	0.326
515	Broadcasting (except Internet)	1	0.318
311	Food Manufacturing	0	0.312
336	Transportation Equipment Manufacturing	0	0.310
322	Paper Manufacturing	0	0.300
445	Food and Beverage Stores	1	0.275
312	Beverage and Tobacco Product Manufacturing	0	0.187
221	Utilities	1	0.176

Notes: Exposure index is defined as the number of M&A deals that have a deal value at or above \$15 million but below \$50 million over the number of deals with deal value at or above \$15 million, based on the 1995-2000 SDC data. An industry is goods producing if its two-digit 2017 NAICS is 21, 23, 31, 32, or 33. Any industry that is not goods producing is classified as services.

tor. This within-supersector variation permits us to control for supersector-specific time trends that may have emerged in the early 2010s independently of the 2001 HSR reform.

Our third data source is the Business Dynamics Statistics (BDS) from the US Census Bureau, an annual dataset that tracks establishment- and firm-level economic data over

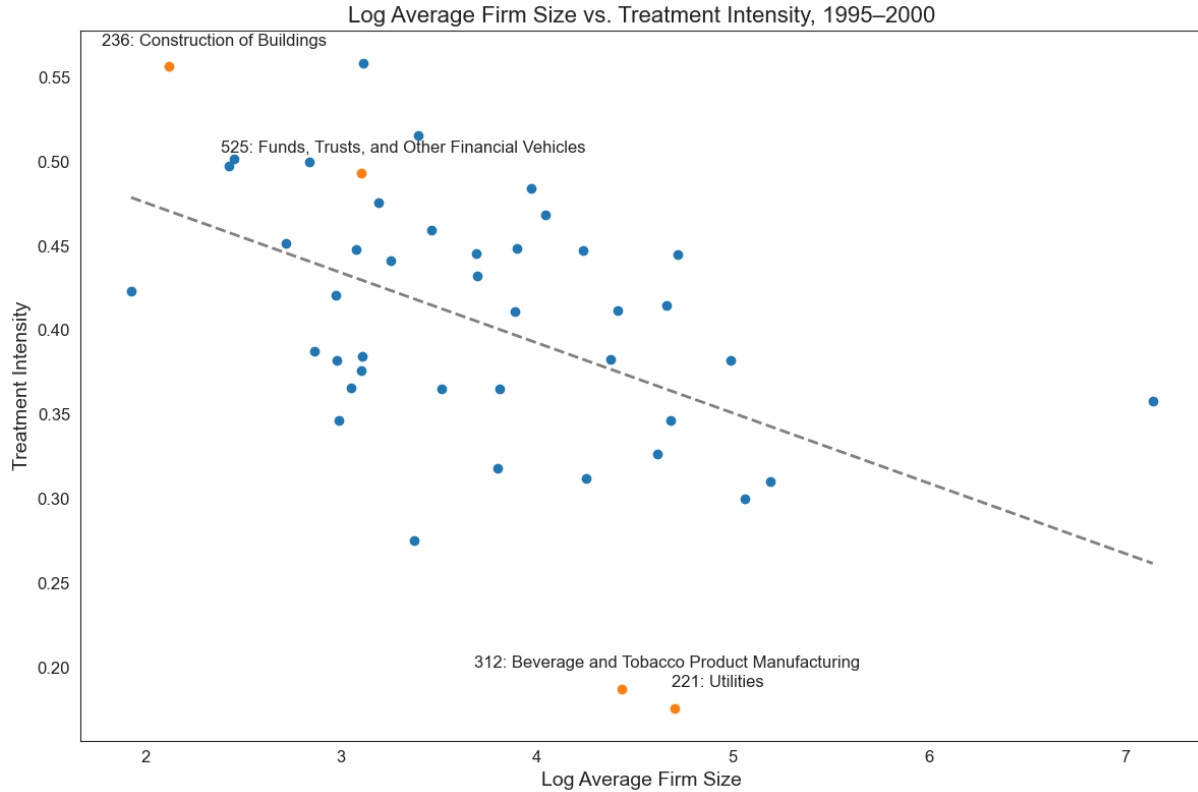


FIGURE 2. Log Average Firm Size vs. Treatment Intensity, 1995–2000

time. For each industry defined by 3-digit NAICS code, it provides comprehensive year-over-year metrics on total counts of firms and establishments, establishment entry and exit rates, total employment, job creation and destruction rates, and the distribution of employment across firm-size classes (defined by employment). One limitation of BDS is that it does not report annual statistics on sales revenue, capital inputs, productivity, or total payroll.

Our analysis sample using BDS data is a balanced panel of 44 industries across 46 years from 1978 to 2023. Our analysis sample using SDC data is a shorter panel of 44 industries from 1984 to 2023.

3. Empirical Framework

Our main econometric specification is difference-in-differences (DID) with continuous treatment defined by the exposure index. As shown in Table 2, the 44 sampled industries face different degrees of exposure to the 2001 HSR reform. If the reform shields a larger fraction of M&A deals from HSR reporting and agency review, potential acquirers may

face lower transaction costs in completing marginal deals. This can lead to changes in both the total number of M&A deals and the composition of those deals. It can also encourage or discourage potential targets to enter, grow within, or exit an industry, depending on how they expect competition and acquisition prospects to evolve. Denoting industry as j , year as t , a post-2001 indicator as $AFT2001$, and the dependent variable as Y , we estimate:

$$(1) \quad Y_{jt} = \alpha_j + \alpha_t + (\alpha_{st}) + \beta \cdot Exposure_j \cdot AFT2001_t + \epsilon_{jt}$$

where α_j represents industry fixed effects that absorb fundamental differences across industries; α_t represents year fixed effects that absorb economy-wide variation such as changes in administration, recessions, and updates to merger guidelines; and supersector-year fixed effects α_{st} , when included, further control for year-by-year variation specific to a supersector (s)—for example, globalization may have disproportionate effects on manufacturing, advances in information technology may primarily affect information industries, and these forces may operate independently of the 2001 HSR reform. To preserve meaningful variation within each supersector, we follow BLS definitions and group our 44 industries into manufacturing (NAICS 31–33), other goods-producing (21, 23), trade, transportation, and utilities (22, 42, 44, 48), information (51), financial activities (52, 53), professional, business, and health services (54, 56, 62), and leisure and hospitality (71, 72).

The DID coefficient, β , describes how an industry with $Exposure = 1$ changes in its outcome Y after the 2001 HSR reform, relative to an industry with $Exposure = 0$, after we account for the baseline difference between the two industries and the common macro factors that may affect both industries. However, as shown in Table 2, the exposure index ranges from 0.176 to 0.558 in our sampled industries, with a standard deviation of 0.084. Thus, for two industries that differ by one standard deviation in $Exposure$, the DID impact of the HSR reform on Y should be $0.084 \times \beta$.

Before we conduct any DID analysis, Table 3 summarizes the raw data for three panels of dependent variables Y_{jt} , separately for the periods before and after 2001.

Panel A summarizes merger outcomes constructed from 1984–2023 SDC data, including the number of M&A deals per industry-year and, among these, the percentage with a missing deal value, the percentage at or above the inflation-adjusted minimum deal-value threshold, average and median deal value (conditional on non-missing deal values), the percentage in which the acquirer and target share the same 6-digit NAICS code, and the percentage in which the acquirer has completed at least one deal in the same target industry over the prior five years (referred to as a repeated acquirer). On

TABLE 3. Summary Statistics Per Industry-Year Before and After 2001

Variable	Average Before 2001	Average After 2001
Panel A: Merger Outcomes		
Number of Deals	136.39	233.22
% Deals Missing Value	46.38	61.14
Average Deal Value in Million (USD)	191.06	454.66
Median Deal Value in Million (USD)	46.63	58.27
% Deals Above Adjusted Threshold	32.13	15.26
% Deals with Same 6-Digit NAICS	33.94	31.95
% Deals with Repeated Acquirer (5-Year)	29.33	32.31
Panel B: Business Dynamics		
Number of Firms	57,749	72,524
Number of Establishments	70,405	95,925
Establishments per Firm	1.37	1.57
Establishment Entry Rate	11.83	9.56
Establishment Exit Rate	10.40	9.43
Panel C: Labor-Market Outcomes		
Number of Employment	1,367,926	1,854,282
Job Creation Rate	16.52	13.33
Job Destruction Rate	14.96	13.40
% Employment in Firms 2,500+	12.75	14.07
% Job Creation in Firms 2,500+	11.07	12.36

Notes: Merger outcomes are computed from 1984-2023 SDC data; business dynamics and labor outcomes are computed from 1978-2023 BDS data.

average, the number of M&A deals per industry-year increased substantially from 136 before 2001 to 233 after 2001. At the same time, the percentage of deals above the legally adjusted minimum deal-value threshold declined from 32.13% in 1984–2000 to 15.26% in 2001 and after—partly mechanical, given that the minimum threshold rose from \$15 to \$50 million in 2001 and has been adjusted upward annually since. Conditional on non-missing deal values, average deal size more than doubled from \$191.06 million before 2001 to \$454.66 million after 2001, while median deal size increased more modestly, from \$46.63 million to \$58.27 million. These facts, combined with the substantial rise in the share of deals with missing deal values (from 46.38% before 2001 to 61.14% after 2001), suggest that M&A deals have become less transparent in terms of deal value post-2001, and that those with observable values are larger, likely reflecting the reduced reportabil-

ity enabled by the reform. Interestingly, the percentage of deals in which acquirer and target share the same 6-digit NAICS code declined slightly, from 33.94% before 2001 to 31.95% after 2001. Under the assumption that firms within the same 6-digit NAICS code are more likely to compete directly, this slight decline suggests that the reform did not disproportionately encourage deals between direct competitors relative to deals between firms further apart in NAICS classification. Meanwhile, the percentage of deals involving repeated acquirers increased from 29.33% before 2001 to 32.31% after 2001, suggesting that the reform may have facilitated more serial acquisitions by the same acquirer within the same target industry. Even when an acquirer is classified outside the target industry, serial acquisitions allow it to enter and expand within that industry over time.

Panel B reports baseline statistics on industry dynamics: the number of firms, the number of establishments, establishments per firm, establishment entry rate, and establishment exit rate. Following Census definitions,⁷ the establishment entry rate is 100 times the ratio of establishment openings in industry j in year t to the average establishment count across years t and $t - 1$; the exit rate is defined analogously for closings. On average, the number of firms, the number of establishments, and establishments per firm all increased from the pre-2001 to the post-2001 period, while establishment entry and exit rates both declined.

Panel C focuses on labor-market outcomes. For each industry-year, BDS reports total employment, job creation rate, and job destruction rate. The job creation rate is 100 times the ratio of total employment gains from expanding and opening establishments between the week of March 12 in year $t - 1$ and year t to the average employment count from $t - 1$ to t . The job destruction rate is defined analogously for employment losses from contracting and closing establishments.

BDS also disaggregates total employment and job creation by firm-size class (1–4 employees, 5–9, 10–19, 20–99, 100–499, 500–999, 1,000–2,499, 2,500–4,999, 5,000–9,999, 10,000+). This allows us to compute the share of employment and job creation in large firms, defined here as firms with 2,500 or more employees.⁸ Because BDS does not provide annual data on price, revenue, or sales volume, we use these employment shares to proxy the extent to which economic activity is concentrated in large firms. As shown in Panel C, total employment and the shares of employment and job creation in large firms are all higher on average after 2001. Both job creation and destruction rates among large firms increased post-2001, while the overall rates across all firms declined. Although

⁷Source: <https://www.census.gov/content/dam/Census/programs-surveys/business-dynamics-statistics/codebook-glossary.pdf>.

⁸Results are robust to defining large firms as those with 1,000 or more employees.

smaller and younger firms contribute disproportionately to job creation, job destruction, worker reallocation, and productivity growth, these trends confirm the US economy’s growing reliance on large firms, as documented in the literature (Haltiwanger et al. 2012, 2013).

4. Stylized Facts about the 2001 HSR Reform

In this section, we organize the empirical results around three stylized facts. First, the 2001 HSR reform is associated with changes in the composition of recorded acquisition activity, although the evidence on deal volume is less stable. Second, these acquisition responses differ sharply between goods-producing and service industries. Third, the post-2001 evolution of industry dynamics and labor-market outcomes also differs substantially across these sectors.

We present these facts as related empirical patterns rather than as a single causal chain. The 2001 HSR reform directly changed which transactions were subject to mandatory reporting, and therefore may have affected acquisition strategies, agency visibility, and entrepreneurial incentives. At the same time, industries were exposed to many other forces over this period, including globalization, regulation, zoning and land-use constraints, differences in capital intensity, technological change, and the secular shift of economic activity toward services. Our goal is therefore to document how more- and less-exposed industries evolved after the reform, and then discuss the mechanisms that may account for these patterns.

4.1. Fact 1: The 2001 HSR Reform is associated with a shift in acquisition patterns.

A natural concern with raising merger-reporting thresholds is that firms may respond by structuring acquisitions to avoid premerger notification. Prior work on stealth consolidation shows that transactions exempt from HSR review receive substantially less antitrust scrutiny and that competitor acquisitions increased among newly exempt deals after the 2001 amendment (Wollmann 2019). Related work on killer acquisitions similarly finds that problematic acquisitions in pharmaceuticals are disproportionately located just below antitrust-reporting thresholds (Cunningham et al. 2021). Recent agency attention to serial acquisitions and roll-up strategies reflects the same concern: firms may accumulate market power through a sequence of smaller transactions, many of which individually fall below HSR reporting requirements (Jin et al. 2025).

This logic suggests a simple prediction: if the main effect of the reform were stealth

TABLE 4. TWFE Estimates for Merger Market Outcomes

Panel A: Deal Counts and Values						
	Log Total Deals		Log Average Deal Value		Log Median Deal Value	
	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	Supersector-Year FE	Baseline	Supersector-Year FE	Baseline	Supersector-Year FE
Exposure $\times$ Post-2001	1.035*** (0.285)	0.398 (0.304)	1.781*** (0.415)	2.100*** (0.475)	1.350*** (0.362)	1.338*** (0.414)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,760	1,760	1,759	1,759	1,759	1,759
R-squared	0.775	0.833	0.575	0.638	0.582	0.644

Panel B: Deal Composition						
	Share of Deals Above Adj. Threshold		Share of Deals Within same 6-digit NAICS		Share of Deals with Repeated- Acquirers	
	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	Supersector-Year FE	Baseline	Supersector-Year FE	Baseline	Supersector-Year FE
Exposure $\times$ Post-2001	0.306*** (0.0379)	0.317*** (0.0425)	0.236*** (0.0445)	0.256*** (0.0497)	0.193*** (0.0488)	0.172*** (0.0552)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,760	1,760	1,760	1,760	1,760	1,760
R-squared	0.697	0.752	0.662	0.725	0.579	0.651

Notes: Standard errors are in parentheses. The repeated-acquirer share excludes deals for which acquirer information is missing. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

consolidation, we might expect the response to be concentrated among smaller, newly non-reportable transactions just below the threshold. We find that the pattern is broader. The 2001 HSR reform is associated not only with changes in deal volume, which are sensitive to specification and pre-trends, but also with changes in the composition of recorded acquisitions. Compared to less-exposed industries, more-exposed industries experience relative increases in observed deal values, same-industry deals, and repeated-acquirer activity. Thus, the empirical pattern is not simply one of more small hidden deals. Instead, the reform appears to coincide with a broader shift in acquisition strategies.

Table 4 reports the DID results on merger outcomes using the 1984–2023 SDC panel of 44 industries. Panel A focuses on deal volume and deal values. Panel B focuses on the composition of SDC-recorded transactions.

The evidence on deal volume is mixed. The DID coefficient on the log number of M&A deals is positive in the baseline specification but becomes statistically insignificant once we include supersector-year fixed effects. This instability is important. As shown in Figure A1, high- and low-exposure industries display differential pre-2001 trends in

deal counts, which limits our ability to interpret the deal-count coefficient as a causal effect of the HSR reform. The absence of a robust deal-volume result is also substantively informative: the reduction in reporting obligations did not translate into a clean, across-the-board increase in recorded acquisitions for more-exposed industries than for less-exposed industries.

By contrast, the composition of recorded deals changes more consistently. Conditional on non-missing deal values, average and median deal values increase more in more-exposed industries after 2001. In particular, a one-standard-deviation increase in exposure is associated with a 16–19% increase in the average deal value. This result should be interpreted cautiously because deal values are missing for a substantial share of SDC transactions, and missingness increases after the reform. Nevertheless, among transactions with observed values, more-exposed industries shift toward larger recorded deals.

Panel B shows sharper changes in deal composition. More-exposed industries experience significant increases in the share of deals in which the acquirer and target share the same 6-digit NAICS code and in the share of deals involving repeated acquirers. These outcomes are useful because they capture changes in the type of acquisition activity rather than only the number of deals. They are consistent with the possibility that the 2001 HSR reform changed the environment in which firms pursued horizontal or serial acquisition strategies.

The share of deals above the yearly adjusted HSR-reporting threshold also increases among deals with non-missing values. We do not interpret this as evidence against stealth consolidation. Because deal values are observed only for a selected subset of transactions, and because missing deal values rise after the HSR reform, below-threshold transactions may be disproportionately unobserved. Instead, we treat this result as part of the broader composition fact: among recorded transactions with observed values, acquisition activity in more-exposed industries shifts toward deals that are larger, more likely to involve repeated acquirers, and more likely to occur within narrowly defined industries.

Overall, our results suggest that the 2001 HSR reform did not simply increase the number of small non-reportable deals. Rather, it is associated with a broader reshaping of recorded acquisition activity. This is important because reporting thresholds may affect not only which transactions agencies review, but also the acquisition strategies firms pursue in the shadow of agency review.

Robustness Analyses. The raw trends in Figure A1 reinforce the distinction between deal volume and deal composition. High-exposure industries consistently record more M&A deals than low-exposure industries, and this gap widens even before 2001. This

pattern cautions against a strong interpretation of the deal-count result. By contrast, the pre-2001 trends for deal-composition outcomes are more parallel. High-exposure industries tend to begin with lower shares of above-threshold deals, same-NAICS deals, and repeated-acquirer deals, with these gaps narrowing or reversing after 2001. Event-study plots in Figure A4⁹ similarly suggest that deal counts exhibit differential pre-trends, while the composition outcomes display more stable pre-2001 patterns.

The appendix also reports additional robustness checks. Excluding industries likely affected by the late-1990s dot-com boom and the subsequent 2001 crash leaves the main results largely unchanged (Table A1).¹⁰ Specifications that allow for a separate post-2010 effect, motivated by the 2010 Horizontal Merger Guidelines, show little evidence of additional changes after 2010 for most merger outcomes (Table A2). The one exception—the share of deals above the yearly-adjusted minimum HSR-reporting threshold—shows an additional positive effect, suggesting a potential cumulative effect as more-exposed industries continue to consolidate over time.

4.2. Fact 2: Acquisition responses differ sharply by sector.

The full-sample results mask substantial sectoral heterogeneity. Because our sample comprises only 44 industries, we have limited statistical power to explore heterogeneous effects across industry groups. We examine one key dimension: whether industries fall into the goods-producing or private-sector services category, following Bureau of Labor Statistics definitions. Goods-producing industries include manufacturing (NAICS 31, 32, 33) and other goods-producing sectors (NAICS 21, 23); private-sector service industries include all remaining industries in our sample (NAICS 22, 42, 44, 51, 52, 53, 54, 56, 62, 72).

Table 5 reports the DID results on merger outcomes for goods-producing industries; the corresponding results for private-sector service industries appear in Table 6.

The two industry groups display strikingly different patterns. For goods-producing industries, the DID coefficient on log deal count is negative and significant, and neither the share of deals within the same 6-digit NAICS code nor the share of deals with repeated acquirers is significant. For service industries, the DID coefficient on log deal count is positive and significant,¹¹ and both the share of deals within the same 6-digit

⁹The event study plots take 2001 as the treatment year and classify industries with above- and below-median exposure as the treated and control groups.

¹⁰Following Doms (2004), the four industries that likely encompassed many dot-coms are wholesale electronic markets and agents and brokers; electronic shopping and mail-order services; Internet service providers and web search portals; and data processing, hosting, and related services. These correspond to 517, 425, 518, 519, and 454 under the 2017 3-digit NAICS classification.

¹¹As shown in the event-study plots (Figure A4), log deal count exhibits differential pre-2001 trends

TABLE 5. TWFE Estimates for Merger Market Outcomes: Goods-Producing Industries

Panel A: Deal Counts and Values			
	Log Total Deals (1)	Log Average Deal Value (2)	Log Median Deal Value (3)
Exposure $\times$ Post-2001	-0.781*** (0.269)	2.801*** (0.644)	2.250*** (0.621)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Supersector-Year FE	Yes	Yes	Yes
Observations	840	840	840
R-squared	0.898	0.630	0.593

Panel B: Deal Composition			
	Share of Deals Above Adj. Threshold (1)	Share of Deals Within Same 6-digit NAICS (2)	Share of Deals With Repeated-Acquirers (3)
Exposure $\times$ Post-2001	0.242*** (0.0569)	-0.0256 (0.0596)	0.0671 (0.0675)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Supersector-Year FE	Yes	Yes	Yes
Observations	840	840	840
R-squared	0.701	0.751	0.589

Notes: Standard errors are in parentheses. The repeated-acquirer share excludes deals for which acquirer information is missing. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

NAICS code and the share of deals with repeated acquirers increased for more-exposed industries after 2001.

The one common pattern across the two sectors is deal size. Conditional on non-missing deal values, average deal values rise in both goods-producing and service industries, and the share of deals above the yearly adjusted reporting threshold also increases in both groups. This commonality reinforces the point that the post-reform response is not simply an increase in small, newly non-reportable transactions. At the same time, the broader acquisition response differs sharply across sectors. In goods-producing industries, the evidence points mainly to changes in the size distribution of observed transactions, with little corresponding increase in deal volume, same-industry acquisitions, or repeated-acquirer activity. In service industries, by contrast, the response

between high- and low-exposure industries, driven largely by service industries. The DID coefficient on log deal count may therefore not reflect a causal effect for this group.

TABLE 6. TWFE Estimates for Merger Market Outcomes: Private-Sector Service Industries

Panel A: Deal Counts and Values			
	Log Total Deals (1)	Log Average Deal Value (2)	Log Median Deal Value (3)
Exposure $\times$ Post-2001	1.669*** (0.555)	1.344* (0.700)	0.353 (0.537)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Supersector-Year FE	Yes	Yes	Yes
Observations	920	919	919
R-squared	0.793	0.648	0.699

Panel B: Deal Composition			
	Share of Deals Above Adj. Threshold (1)	Share of Deals Within Same 6-digit NAICS (2)	Share of Deals With Repeated-Acquirers (3)
Exposure $\times$ Post-2001	0.397*** (0.0633)	0.560*** (0.0792)	0.286*** (0.0882)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Supersector-Year FE	Yes	Yes	Yes
Observations	920	920	920
R-squared	0.785	0.695	0.643

Notes: Standard errors are in parentheses. The repeated-acquirer share excludes deals for which acquirer information is missing. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

extends to deal volume, within-industry acquisitions, and repeated-acquirer activity.

These differences illustrate how the same reduction in reporting obligations need not generate a uniform acquisition response, highlighting the interaction between the implications of the HSR reform and the economic environment in which acquisition activity takes place.

In goods-producing industries, the evidence points mainly to changes in the size distribution of observed transactions, with no corresponding increase in deal volume, same-industry acquisitions, or repeated-acquirer activity. One interpretation is that, in sectors characterized by tangible assets, physical capacity, and greater exposure to trade and regulatory constraints, acquisitions may operate more through the reallocation of existing assets and productive capacity than through a broad expansion in acquisition activity (Maksimovic and Phillips 2001). In such settings, changes in acquisition opportunities may affect which firms remain active, expand, or exit the industry.

Service industries provide a different environment. Many service sectors are local or multi-market, rely more heavily on organizational and intangible assets, and have become increasingly scalable through fixed-cost technologies that allow firms to operate in many local markets at lower marginal cost (Hsieh and Rossi-Hansberg 2023). In these sectors, a reduction in reporting obligations may be more likely to coincide with acquisition-led expansion through repeated or same-industry transactions, especially when acquisitions allow firms to add locations, capabilities, routines, or complementary services (Karim and Mitchell 2000).

Thus, the sectoral split suggests that reporting thresholds interact with pre-existing sectoral features, including features that are not directly related to antitrust enforcement (Mayo et al. 2025). The documented heterogeneity points to the importance of studying how regulatory changes interact with sectoral environments, since the same policy change may have different implications for competition, efficiency, and firm dynamics across industries.

4.3. Fact 3: The 2001 HSR reform is associated with a shift in industry dynamics, but these also differ sharply by sector.

Merger-notification rules may have implications beyond the transactions directly reviewed by antitrust agencies. By changing the expected ease of acquisition, the 2001 HSR reform may affect entrants' expected exit options, incumbent and large-firm growth strategies, and the allocation of economic activity across firms. Thus, we next examine the extent to which the reform had broader implications for industry dynamics, distinguishing outcomes related to changes in industry structure—establishment entry and exit, firm and establishment counts—from those related to labor market dynamics—employment, job creation and destruction, and their allocation to large firms.

A priori, the direction of these downstream changes is ambiguous. Easier acquisition may increase the value of entry by making a sale to an incumbent or large entrant a more attractive exit path. It may also weaken independent entry and survival if small firms expect to face greater acquisition pressure, or if larger firms can expand more easily by acquiring smaller rivals. Moreover, these outcomes are likely to reflect many forces beyond merger policy. Goods-producing and service industries followed different trajectories over this period, shaped by trade exposure, technological change, environmental regulation, land-use constraints, capital intensity, and the broader shift of economic activity toward services (Greenstone 2002; Autor et al. 2013; Hsieh and Moretti 2019; Hsieh and Rossi-Hansberg 2023). Supersector-year fixed effects absorb common

TABLE 7. TWFE Estimates for Business Dynamics Outcomes across Industries

	Establishment Entry Rate	Establishment Exit Rate	Log Firms	Log Establishments
	(1)	(2)	(3)	(4)
Panel A: Goods-Producing Industries				
Exposure $\times$ Post-2001	-13.74*** (1.452)	3.647*** (1.236)	-1.673*** (0.175)	-1.656*** (0.165)
Observations	966	966	966	966
R-squared	0.833	0.854	0.963	0.961
Panel B: Private-Sector Service Industries				
Exposure $\times$ Post-2001	4.835 (3.207)	5.600** (2.303)	0.802*** (0.186)	-0.124 (0.169)
Observations	1,058	1,058	1,058	1,058
R-squared	0.625	0.688	0.988	0.989
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

shocks at the sector-year level, but they cannot fully separate the HSR amendment from all contemporaneous industry-specific changes.

We therefore focus on whether the sectoral divide we observed in acquisition patterns is mirrored in our broader measures of industry dynamics and interpret the results cautiously.¹² While they are related to the acquisition patterns documented above, they should not be read as causal evidence that acquisition behavior directly explains entry, exit, or employment.

Industry structure. Table 7 reports the DID results for establishment entry, establishment exit, the log number of firms, and the log number of establishments. Each specification includes industry fixed effects, year fixed effects, and supersector-year fixed effects.

The headline result is that more-exposed goods-producing and service industries evolve in sharply different ways after 2001. In goods-producing industries, more-exposed industries experience a broad decline in dynamism. Establishment entry falls, establishment exit rises, and both the number of firms and the number of establishments

¹²Full sample analyses are reported in the appendix. Tables 6 and 6 present the DID results pooling all 44 industries. One can find corresponding raw data plots in Figures A2 and A3, event study plots in Figures A5 and A6, robustness checks excluding dot-com industries in Tables A5 and A6, and robustness checks exploring post-2010 effects in Tables A7 and A8.

TABLE 8. TWFE Estimates for Labor Market Outcomes across Sectors

	Log Employment	Job Creation Rate	Job Destruction Rate	Employment Share in Large Firms	Job Creation Share in Large Firms
	(1)	(2)	(3)	(4)	(5)
Panel A: Goods-Producing Industries					
Exposure $\times$ Post-2001	-1.305*** (0.222)	-13.99*** (2.128)	-1.763 (2.508)	-0.0881*** (0.0219)	0.0239 (0.0304)
Observations	966	966	966	966	966
R-squared	0.905	0.844	0.799	0.820	0.642
Panel B: Private-Sector Service Industries					
Exposure $\times$ Post-2001	1.019*** (0.168)	1.248 (4.215)	1.518 (3.951)	0.144*** (0.0355)	0.119*** (0.0378)
Observations	1,058	1,058	1,058	1,058	1,058
R-squared	0.988	0.674	0.623	0.795	0.786
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Super Sector-Year FE	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

decline. This pattern points to contraction along several margins: fewer new establishments, greater exit, and fewer active firms and establishments.

The service-sector results are different. In more-exposed service industries, the number of firms increases and establishment exit also rises. The establishment entry coefficient is positive but statistically insignificant, while the number of establishments is essentially unchanged. Thus, the service-sector pattern is not one of broad contraction. It is closer to a pattern of firm-level expansion and reallocation: more firms are active, exit increases, but the number of establishments does not rise proportionally.

Labor-market outcomes. Table 8 reports the corresponding results for employment, job creation, job destruction, and the allocation of employment and job creation to large firms.

The labor-market results reinforce the sectoral split. In goods-producing industries, greater exposure is associated with lower employment, lower job creation, and a lower share of employment in large firms. The coefficients on job destruction and the share of job creation in large firms are not statistically significant. These labor-market estimates are consistent with the business-dynamics results: more-exposed goods-producing industries become smaller and less dynamic along several margins.

In service industries, the pattern points in the opposite direction. Greater exposure is associated with higher employment, a higher share of employment in large firms,

and a higher share of job creation accounted for by large firms. The job creation and job destruction rates themselves are not statistically significant. Thus, more-exposed service industries appear to experience expansion together with a growing role for large firms in employment and job creation.

Overall, the downstream associations between the HSR amendment and industry dynamics are highly heterogeneous across sectors. These patterns should not be read as evidence against the role of antitrust enforcement institutions in shaping aggregate patterns of business dynamism. To the contrary, they suggest that merger-notification rules may matter not only for the transactions directly reviewed by the agencies, but also for entry, exit, firm growth, and the allocation of activity across firms. At the same time, the sectoral heterogeneity cautions against a simple interpretation in which the downstream effects operate mechanically through increases in observed M&A activity.

This point is clearest in goods-producing industries. These are the sectors where we find the strongest negative associations with dynamism—lower establishment entry, higher exit, fewer firms and establishments, lower employment, and lower job creation—yet these are also the sectors where we do not observe an increase in recorded deal volume, same-industry acquisitions, or repeated-acquirer activity for more-exposed industries. By contrast, in service industries, the increase in firms, employment, and large-firm activity is more closely aligned with the acquisition patterns documented above, including increases in same-industry and repeated-acquirer transactions. This contrast highlights how merger-reporting rules may interact with sectoral environments in different ways: in some industries, changes in reporting obligations may operate through observed acquisition activity, while in others they may work through expectations, selection, unobserved transaction margins, asset reallocation, or broader sectoral forces.

5. Discussion and Potential Mechanisms

The 2001 HSR reform changed the set of transactions subject to mandatory premerger notification, and therefore plausibly affected the acquisition environment faced by firms. At the same time, the observed changes in acquisition patterns, entry, exit, employment, and large-firm activity need not all operate through the same channel. The results instead suggest that reporting thresholds may interact with sectoral environments in ways that generate heterogeneous effects on industry organization. We organize the discussion around four mechanisms.

Stealth consolidation and cumulative consolidation. The most direct implication of raising the HSR reporting threshold is that more transactions can close without mandatory pre-merger notification. Prior work emphasizes that this can create scope for stealth consolidation, potentially leading to increased concentration and consumer harm (Wollmann 2019, 2020). This mechanism is closely related to antitrust concerns over cumulative acquisitions, roll-up strategies, and the possibility that transaction size may be an imperfect proxy for competitive significance (Asil et al. 2024; Jin et al. 2025). Even if each acquisition appears modest in isolation, a sequence of acquisitions can reduce the number of independent competitors, increase the share of activity controlled by large firms, or eliminate fringe rivals before they become significant constraints.

Our evidence suggests that this channel is relevant, especially in services where same-industry and repeated-acquirer deals rise. Moreover, the increase in the number of deals with missing transaction price is potentially consistent with this channel. However, our results also indicate that the post-reform response is broader and more heterogeneous than a simple increase in small below-threshold transactions. In particular, the goods-producing results show negative changes in industry dynamics without an increase in recorded deal volume or serial and horizontal acquisition shares, suggesting that other mechanisms or sectoral forces are also important. Consistent with this, Mayo and Press (2025) argues that post-reform acquisition responses may also reflect business-cycle and other non-antitrust forces in addition to strategic avoidance of review.

Reduced scrutiny, horizontal acquisitions, and potential competition. A second channel is reduced scrutiny of transactions that, if reported, might have attracted agency attention. HSR notification does more than impose a filing cost: it gives the agencies information before closing, creates a waiting period, and gives enforcers time to investigate and negotiate remedies before assets are integrated. When transactions fall outside mandatory notification, agencies may still challenge them ex post, but the practical difficulty of detecting and unwinding completed transactions can reduce expected enforcement risk (Nocke and Whinston 2010; Wollmann 2019).

This channel connects directly to standard theories of horizontal merger harm. If same-NAICS transactions are more likely to involve actual or potential competitors, then an increase in same-industry acquisitions may raise concerns about unilateral effects, coordinated effects, or the elimination of potential competition (Farrell and Shapiro 1990; Baker 2003; Cunningham et al. 2021; Hovenkamp 2024). Because subsequent horizontal acquisitions become easier to complete once the acquirer enters via an initial deal, this

may also facilitate serial acquisitions by the same acquirer within a target industry, thus exacerbating the risk of competitive harm.

Our results in service-sector industries are consistent with this channel. More-exposed service industries experience increases in deal volume, same-industry acquisitions, and repeated-acquirer activity. They also experience higher employment and a larger role for large firms in employment and job creation. One interpretation is that lower reporting obligations facilitated acquisition-led expansion in sectors where firms can scale by acquiring customers, locations, routines, data, or complementary capabilities. This need not imply harm in every case. Acquisition-led expansion may generate efficiencies, improve management, or reallocate assets to more productive owners. But it may also increase the control of large firms over local or specialized markets and weaken independent competitive pressure.

Entry for buyout versus entry deterrence. A third set of mechanisms operates through entry incentives. A more permissive regime for smaller acquisitions can increase the expected value of entry if entrepreneurs view acquisition as a likely and valuable exit path. In this case, lower reporting obligations may encourage “entry for buyout,” especially in sectors where acquisition is a common path to scale, liquidity, or commercialization (Rasmusen 1988; Phillips and Zhdanov 2013). This mechanism can generate more firm formation and more exits at the same time: firms enter because sales are more attractive, and some later disappear as independent entities through acquisition.

The same change can also discourage independent entry and growth. If incumbents or large entrants can more easily acquire promising rivals before they mature, prospective entrants may anticipate lower survival probabilities, weaker bargaining positions, or greater difficulty scaling independently. Kamepalli et al. (2022) formalizes this logic as a “kill zone” effect in the context of markets with strong network effects characteristic of digital platforms. More generally, even outside such markets, easier acquisition may shift the competitive environment by reducing the pool of potential acquirers or by strengthening the acquirer’s position in the market and increasing the overall competitive pressure (Jin et al. 2024).

In services, the post-reform increases in the number of firms, exit, repeated-acquirer activity, large-firm employment shares, and M&A activity are consistent with the entry-for-buyout logic: entry and firm formation may rise, but successful activity may increasingly flow toward larger firms. The goods-producing industries exhibit lower establishment entry, higher exit, fewer firms and establishments, lower employment, and lower

job creation. At the same time, we do not observe an increase in recorded deal volume, same-industry acquisitions, or repeated-acquirer activity. This pattern suggests that the entry-for-buyout channel may have been weaker in goods-producing industries. In sectors where entry requires larger fixed investments, tangible assets, and physical capacity, a reduction in reporting obligations may do less to raise the expected payoff from entry through future acquisition.

Asset reallocation and non-antitrust sectoral forces. A final channel operates independently of strategic responses to reduced scrutiny. Even absent any change in firms' incentives to avoid review, easier acquisition can reallocate assets and productive capacity toward firms better positioned to use them, with effects that depend on sector characteristics rather than antitrust enforcement per se. Differences in tangible-asset intensity, tradability, capital requirements, and the scalability of intangible assets imply that the same reduction in reporting obligations may manifest as consolidation and exit in some sectors and as acquisition-led expansion in others. This channel is consistent with our finding that the strongest downstream changes in goods-producing industries arise without a corresponding rise in recorded deal volume, and it cautions against attributing all post-amendment dynamics to merger policy alone (Mayo and Press 2025).

6. Conclusion

This paper studies the economic consequences of one of the most important changes in the history of the Hart–Scott–Rodino (HSR) merger-notification regime: the 2000 amendments, which became effective in 2001. By substantially increasing the reporting threshold and eliminating the percentage-of-shares trigger, the reform exempted many transactions from mandatory premerger notification. We exploit cross-industry variation in exposure to the reform to examine how industries differentially affected by the change evolved over the subsequent two decades.

We document three stylized facts. First, the 2001 HSR reform is associated with a shift in acquisition patterns. While we find little robust evidence of an increase in overall deal volume, more-exposed industries experienced changes in the composition of acquisitions, including increases in same-industry transactions and repeated-acquirer activity. Second, these acquisition responses differ sharply across sectors. The strongest evidence of increased same-industry and repeated-acquirer activity appears in private-sector service industries, whereas goods-producing industries exhibit more limited changes in

observed acquisition activity. Third, the reform is associated with substantial changes in industry dynamics and labor-market outcomes, but these effects are also highly heterogeneous across sectors. More-exposed goods-producing industries experienced lower entry, higher exit, fewer firms and establishments, lower employment, and lower job creation. In contrast, more-exposed service industries experienced more firms, higher employment, and a greater role for large firms.

These findings contribute to the literature on merger policy by shifting attention from merger-enforcement outcomes to the institutional rules that determine which transactions enter the enforcement process in the first place. They also contribute to the literature on acquisitions and industry dynamics by showing that reporting thresholds can influence not only acquisition patterns but also broader measures of business dynamism.

The policy implications are twofold. First, merger-notification thresholds are not merely administrative tools for allocating enforcement resources. By shaping which transactions receive scrutiny, they may influence acquisition strategies, entry incentives, firm growth, and the allocation of economic activity across firms. Second, the effects of reporting thresholds appear to depend on the sectoral environment. A uniform change in reporting obligations need not generate uniform consequences across industries.

At the same time, the welfare implications of these patterns are necessarily ambiguous. Lower reporting requirements may facilitate cumulative consolidation or acquisitions of actual and potential competitors, but acquisitions can also reallocate assets, capabilities, and productive capacity to firms better positioned to use them. Our results suggest that both the benefits and costs of merger-policy institutions may depend on industry characteristics. Understanding the conditions under which reporting thresholds promote efficient reallocation versus anticompetitive consolidation remains an important direction for future research.

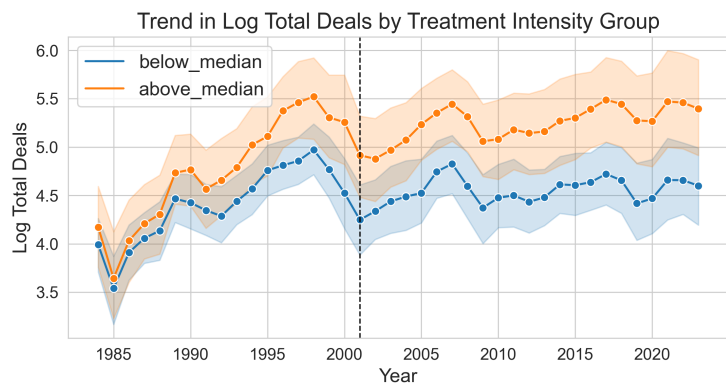
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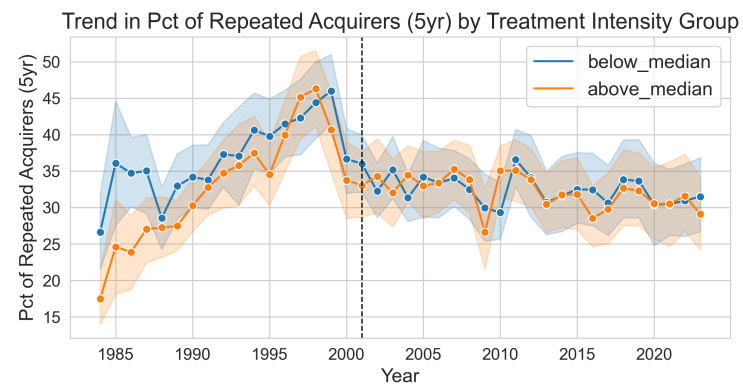
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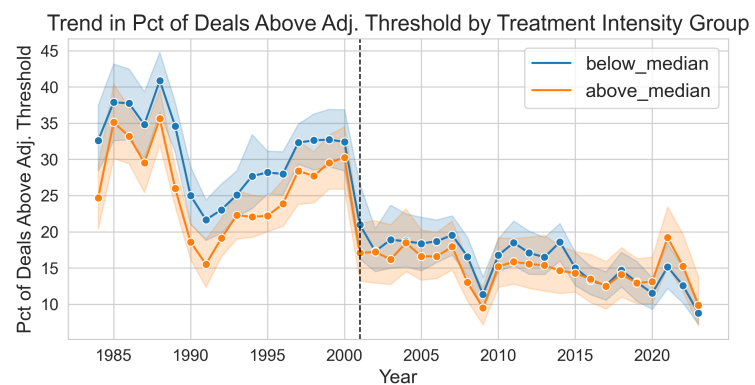
ONLINE APPENDICES



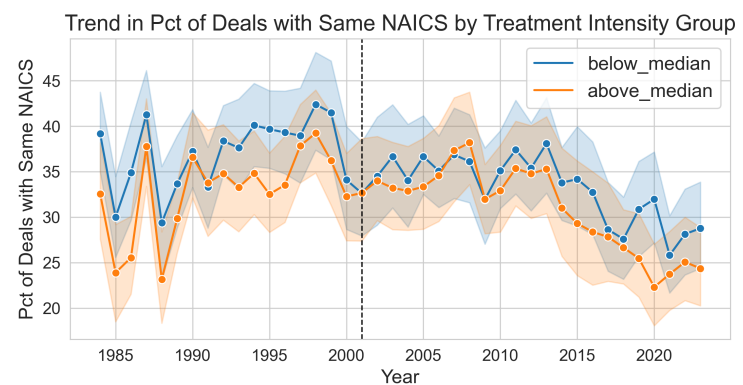
A. Log Deals



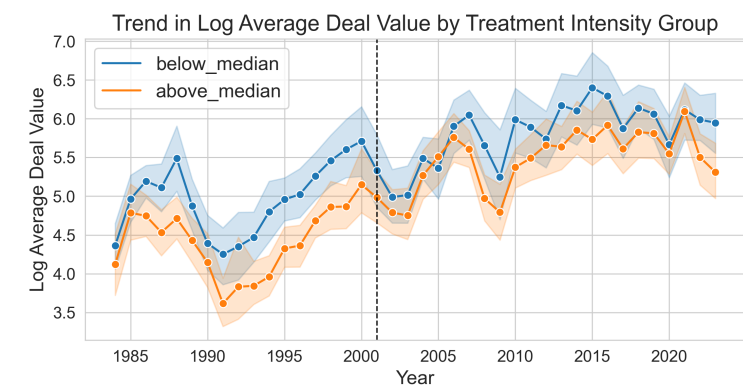
B. % Deals with Repeated Acquirers



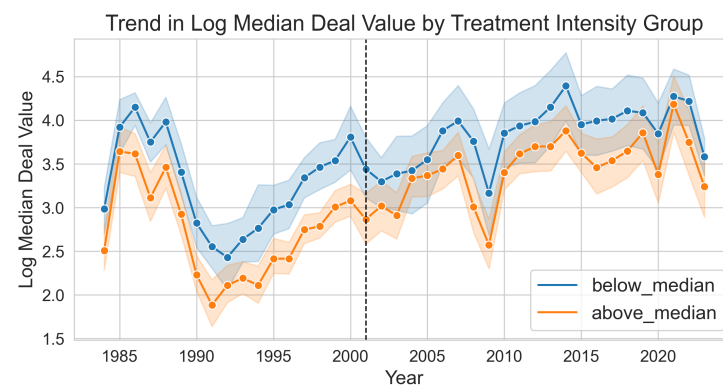
C. % Deals above Adjusted Threshold



D. % Deals with Identical 6-digit NAICS

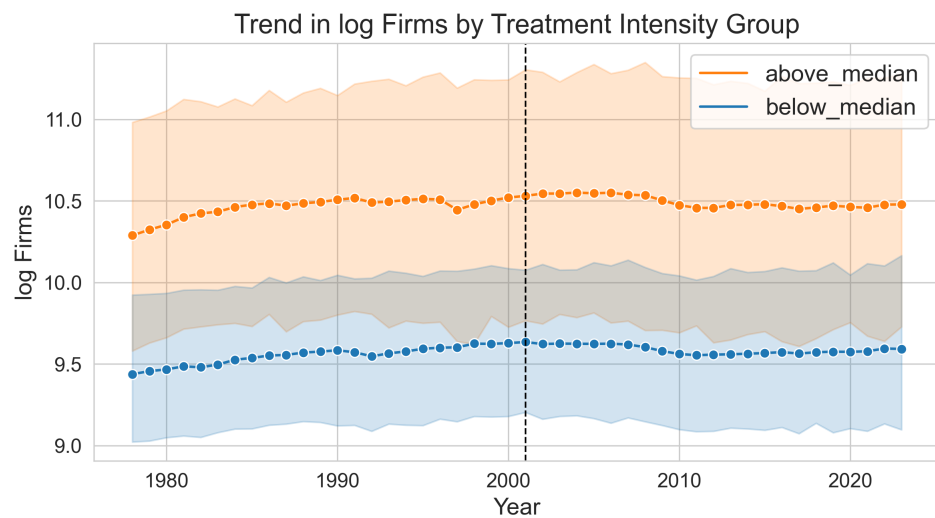


E. Log Average Deal Value

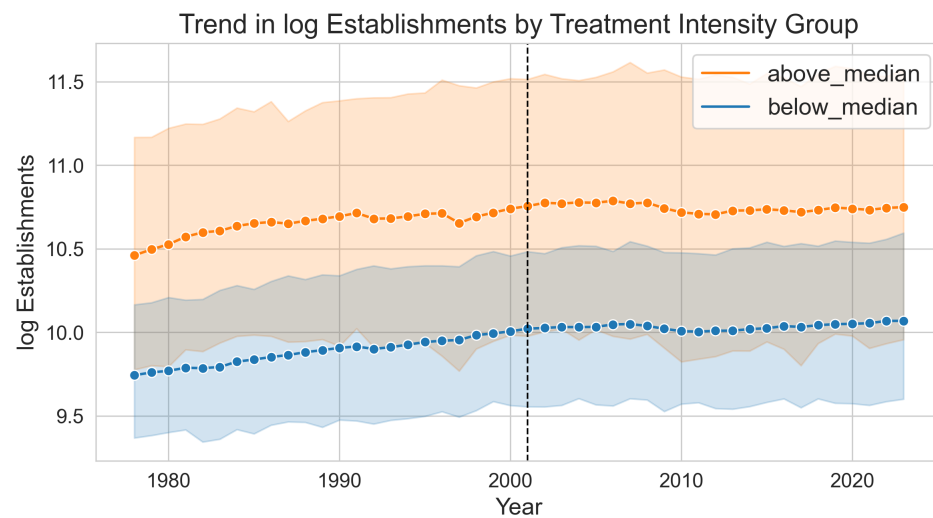


F. Log Median Deal Value

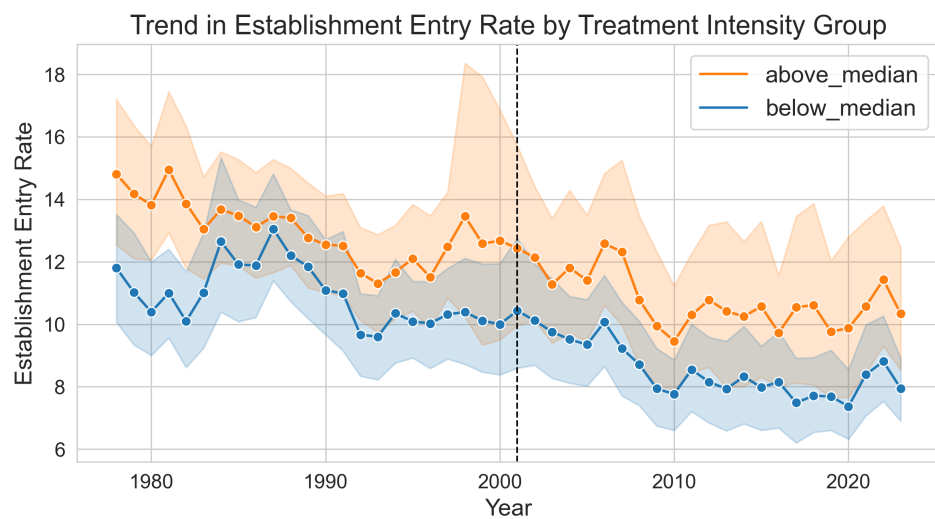
FIGURE A1. Trends in Merger Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform



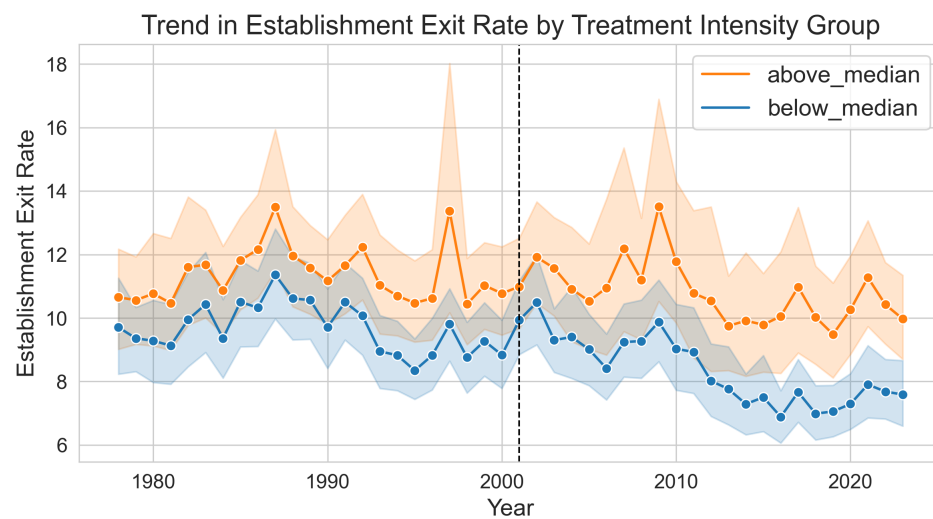
A. Log Firms



B. Log Establishments

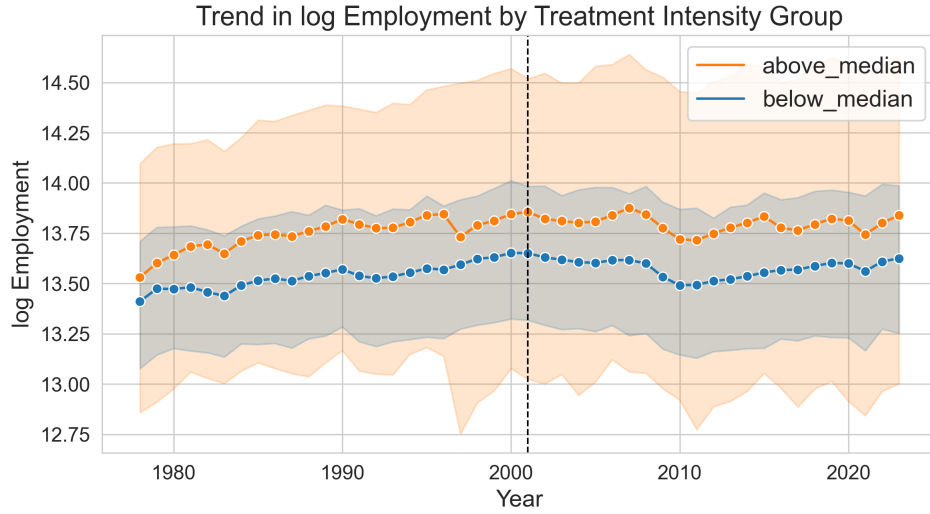


C. Establishment Entry Rate

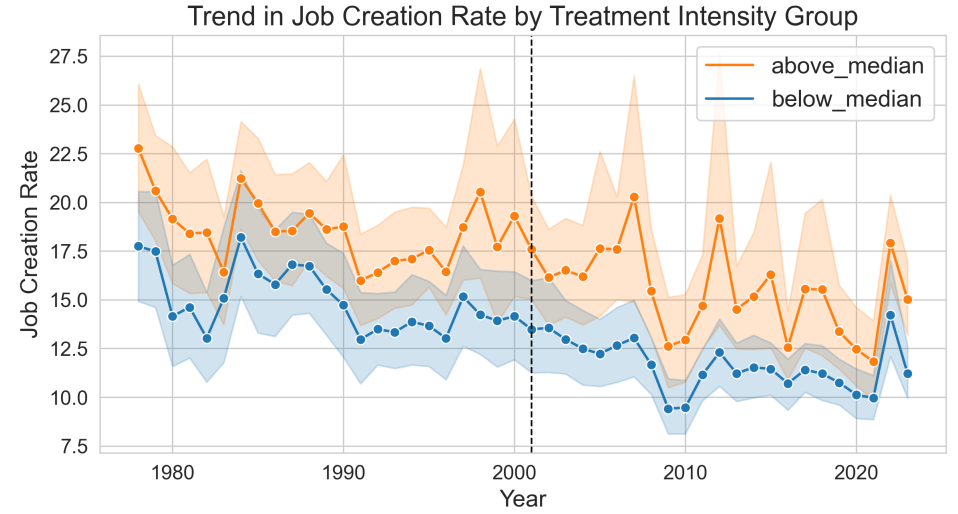


D. Establishment Exit Rate

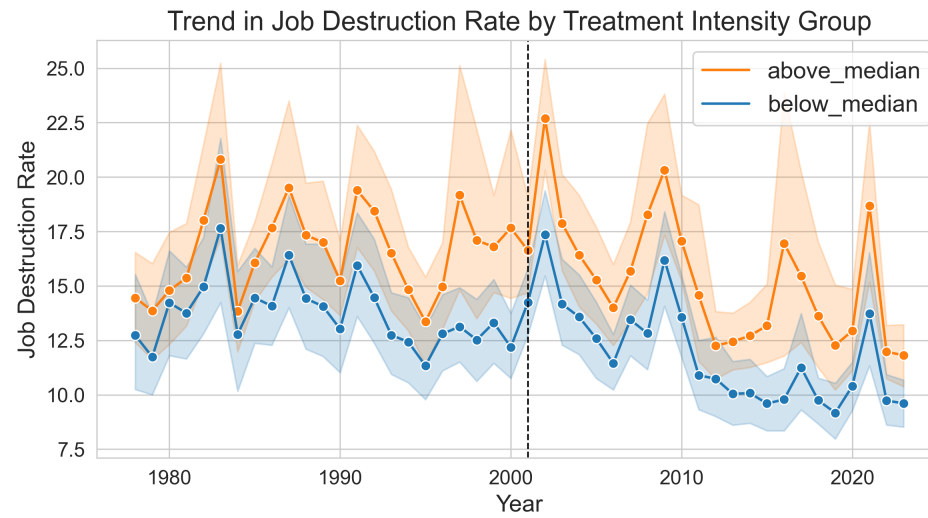
FIGURE A2. Trends in Firm and Establishment Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform



A. Log Employment

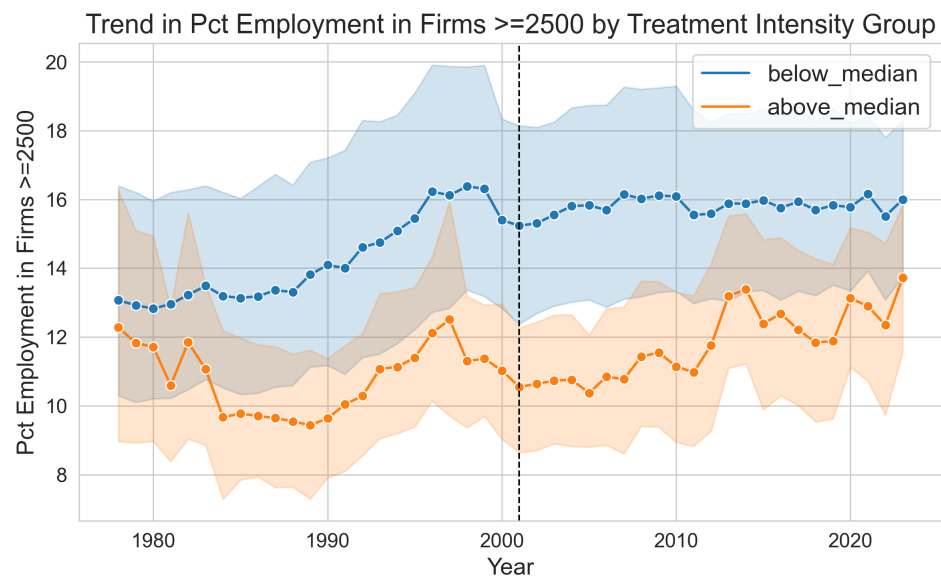


B. Job Creation Rate

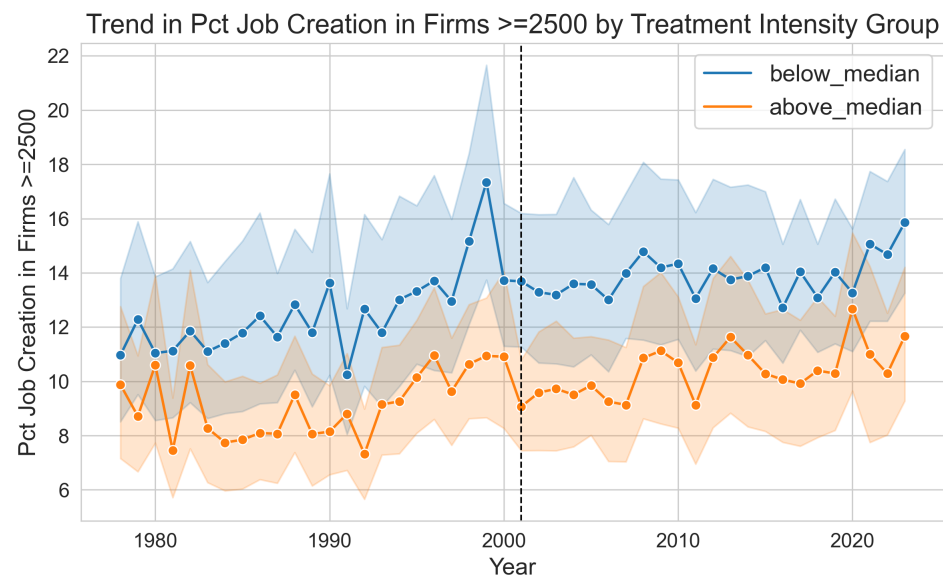


C. Job Destruction Rate

FIGURE A3. Trends in Labor Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform



D. % Employment in Firms 2500+



E. % Job Creation in Firms 2500+

FIGURE A3. Trends in Labor Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform, continued

TABLE A1. TWFE Estimates for Merger Market Outcomes: Excluding Dot-Com Industries

Panel A: Deal Counts and Values			
	Log Total Deals	Log Average Deal Value	Log Median Deal Value
	(1)	(2)	(3)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	0.124 (0.301)	2.126*** (0.481)	1.392*** (0.424)
Industry FE	Yes	Yes	Yes
Year FE Yes	Yes	Yes	
Sector-Year FE Yes	Yes	Yes	
Observations	1,680	1,679	1,679
R-squared	0.842	0.637	0.643

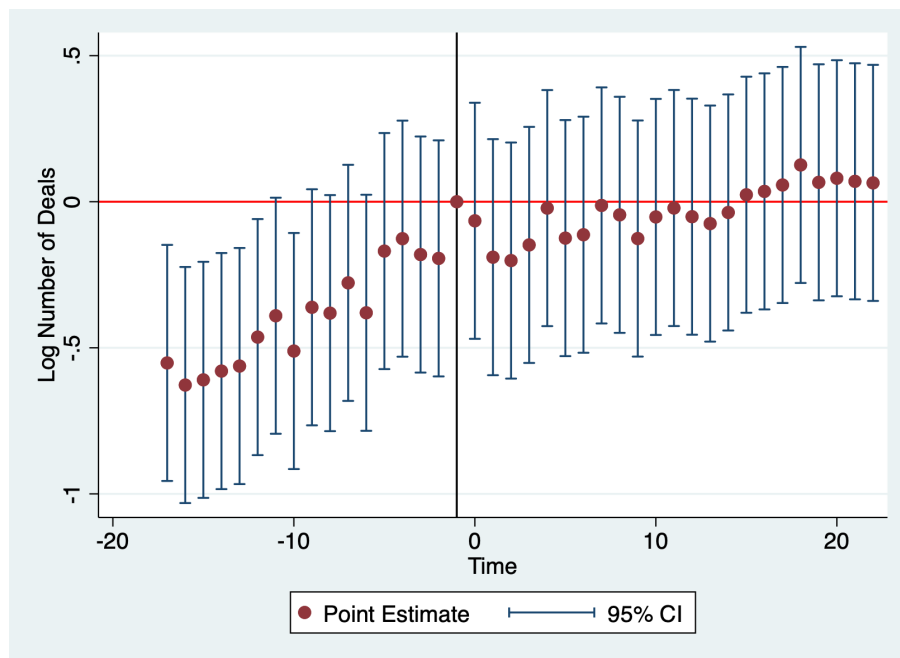
Panel B: Deal Composition			
	Deals above Adj. Threshold Ratio	Deals Identical NAICS Ratio	Repeated-Acquirer Ratio
	(1)	(2)	(3)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	0.314*** (0.0431)	0.237*** (0.0502)	0.149*** (0.0561)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes
Observations	1,680	1,680	1,680
R-squared	0.754	0.732	0.655

Notes: Standard errors are in parentheses. The repeated-acquirer share excludes deals for which acquirer information is missing. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

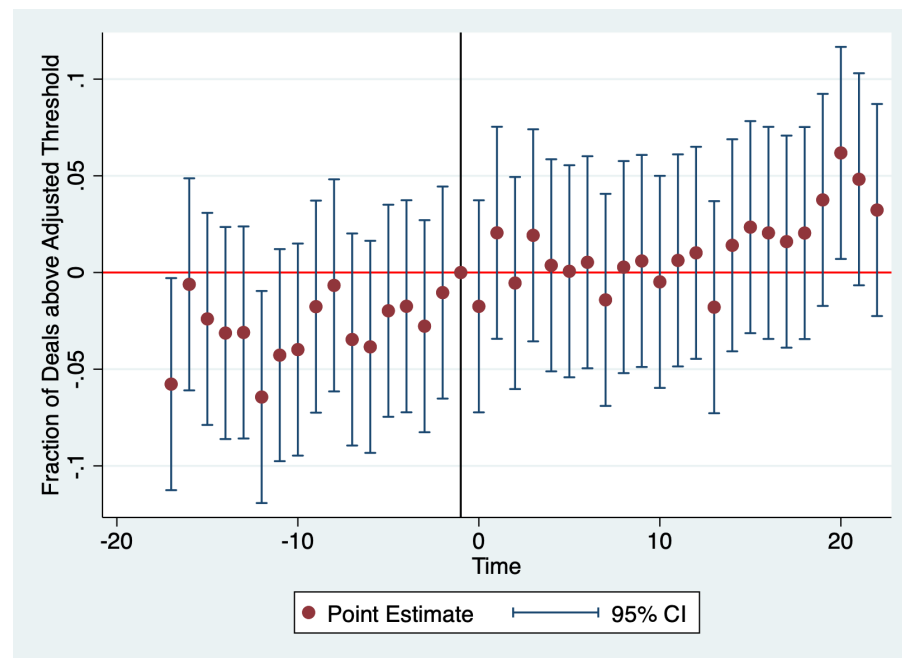
TABLE A2. TWFE Estimates for Merger Market Outcomes: Post-2001 and Post-2010 Effects

Panel A: Deal Counts and Values			
	Log Total Deals	Log Average Deal Value	Log Median Deal Value
	(1)	(2)	(3)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	0.301 (0.392)	1.826*** (0.612)	0.828 (0.533)
Exposure $\times$ Post-2010	0.161 (0.406)	0.451 (0.634)	0.838 (0.552)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes
Observations	1,760	1,759	1,759
R-squared	0.833	0.639	0.645
Panel B: Deal Composition			
	Deals above Adj. Threshold Ratio	Deals Identical NAICS Ratio	Repeated-Acquirer Ratio
	(1)	(2)	(3)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	0.216*** (0.0546)	0.253*** (0.0641)	0.214*** (0.0711)
Exposure $\times$ Post-2010	0.165*** (0.0566)	0.00571 (0.0664)	-0.0688 (0.0737)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes
Observations	1,760	1,760	1,760
R-squared	0.754	0.725	0.651

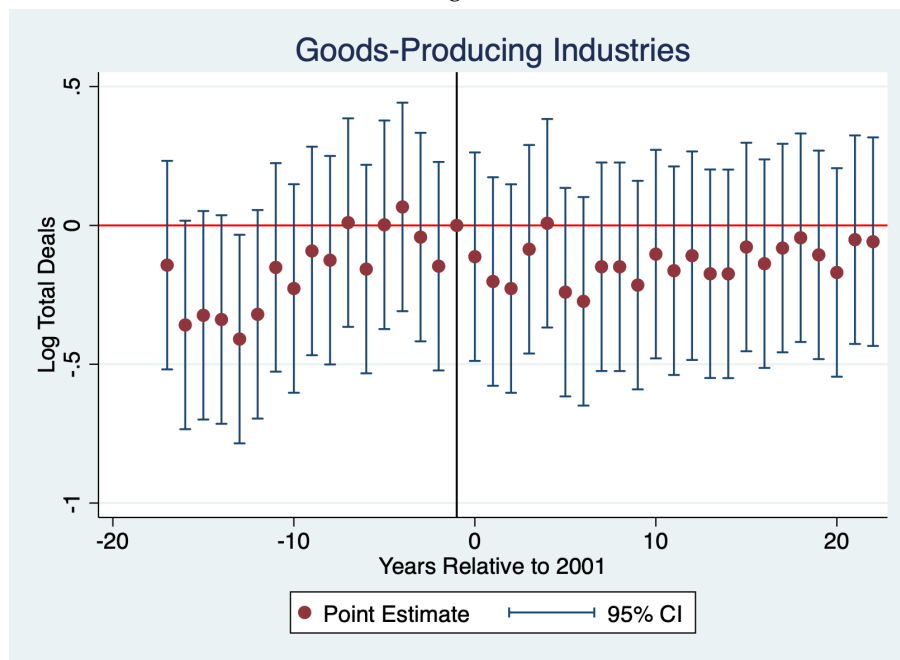
Notes: Standard errors are in parentheses. The repeated-acquirer share excludes deals for which acquirer information is missing. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.



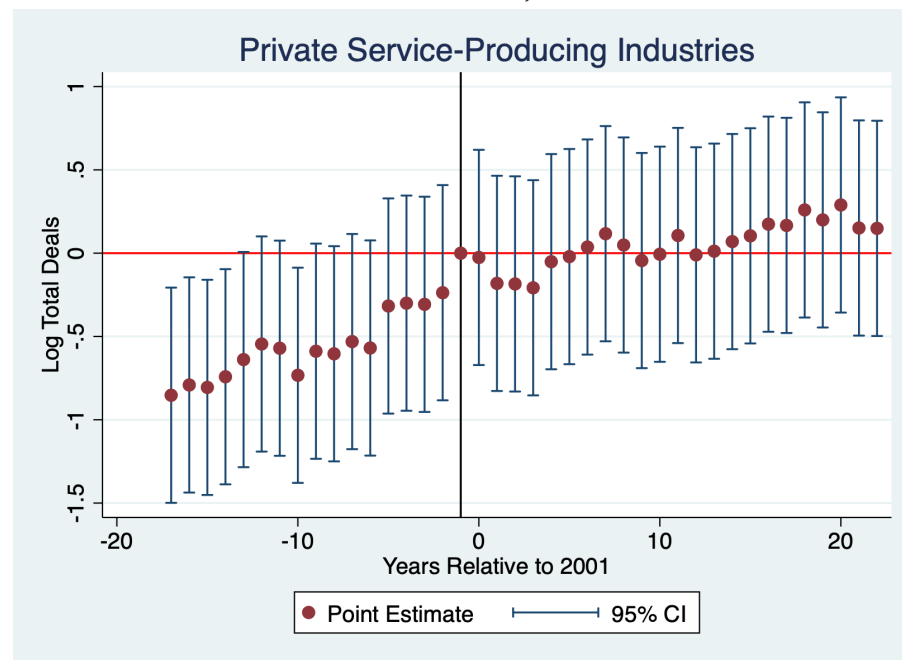
A. Log Deals



B. Share of Deals Above Adjusted Threshold

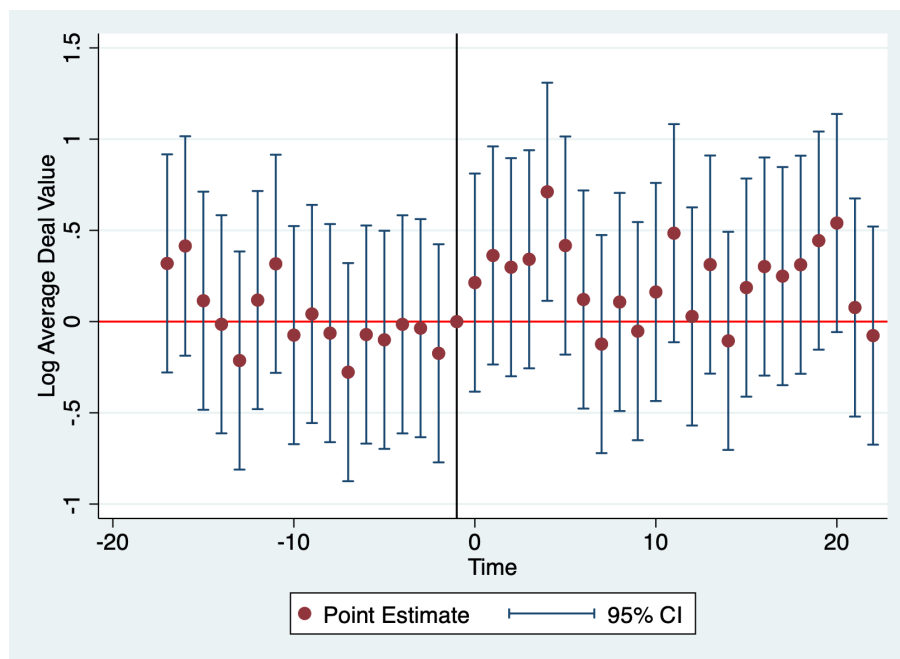


C. Log Deals (Goods Producing)

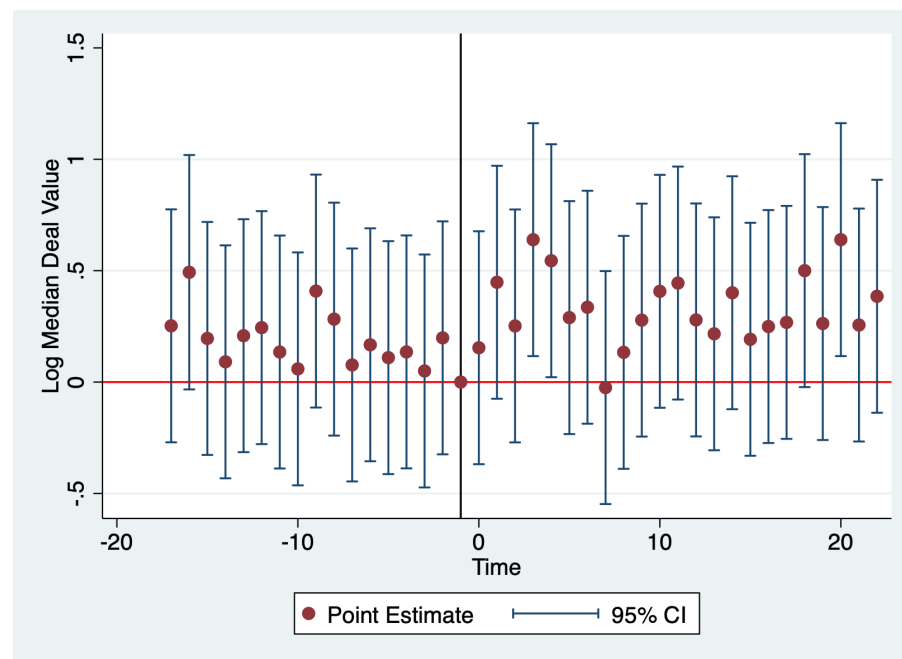


D. Log Deals (Private Services)

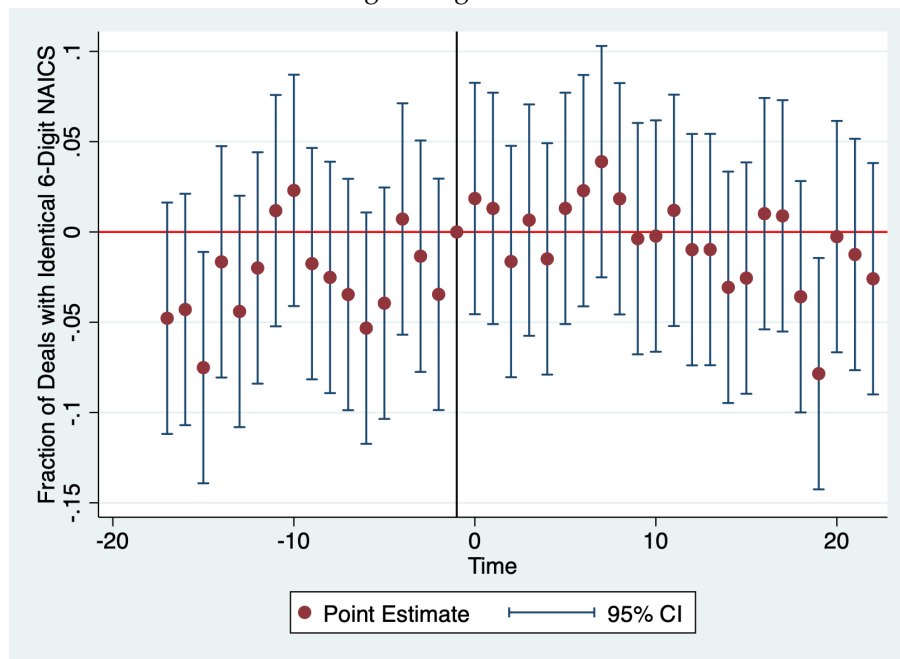
FIGURE A4. Event Study Merger Outcomes by Above- and Below-Median Treatment Exposure to the 2001 HSR Reform



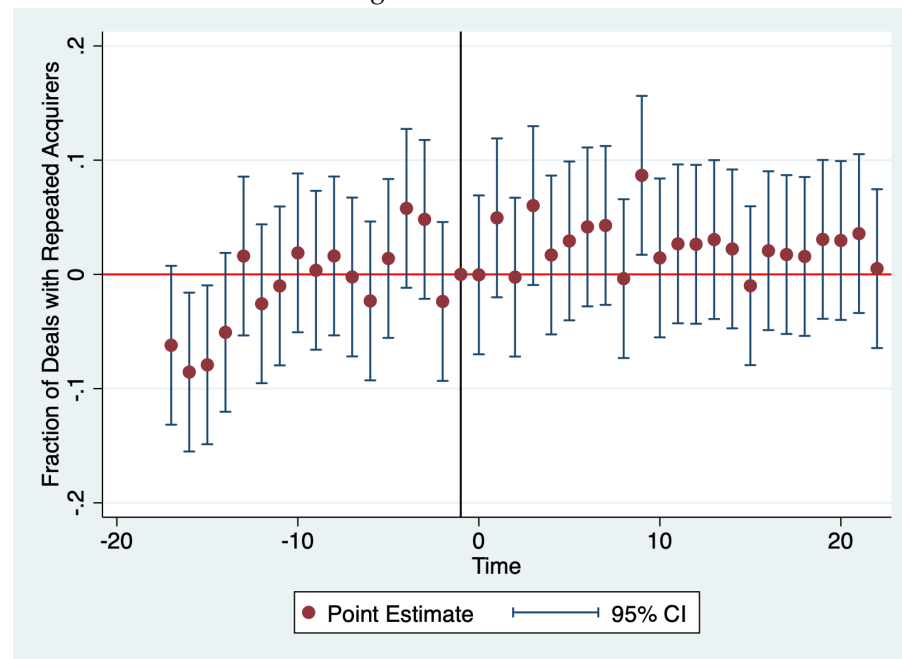
E. Log Average Deal Value



F. Log Median Deal Value

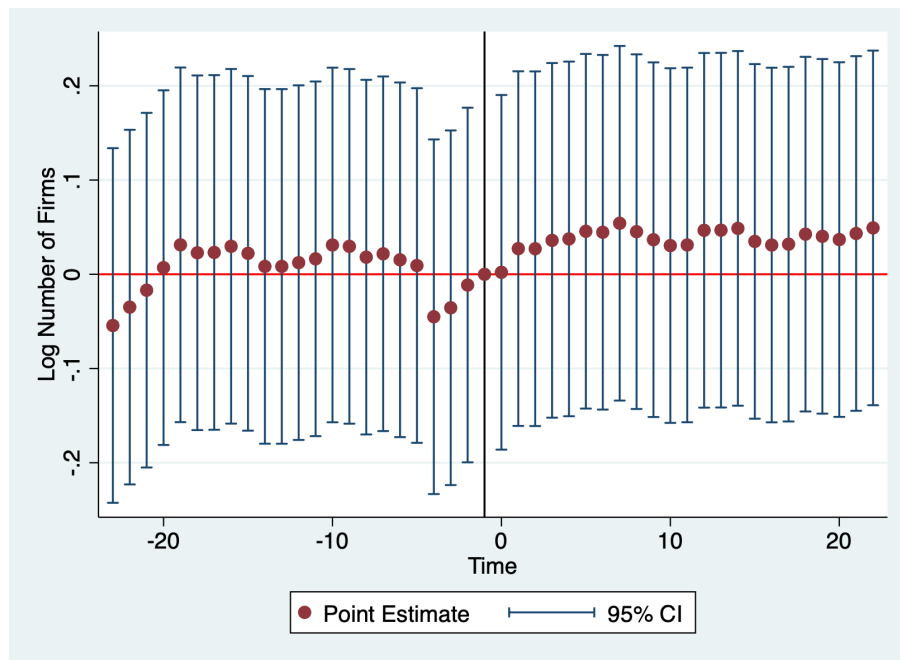


G. Share of Deals Within Same 6-digit NAICS Code

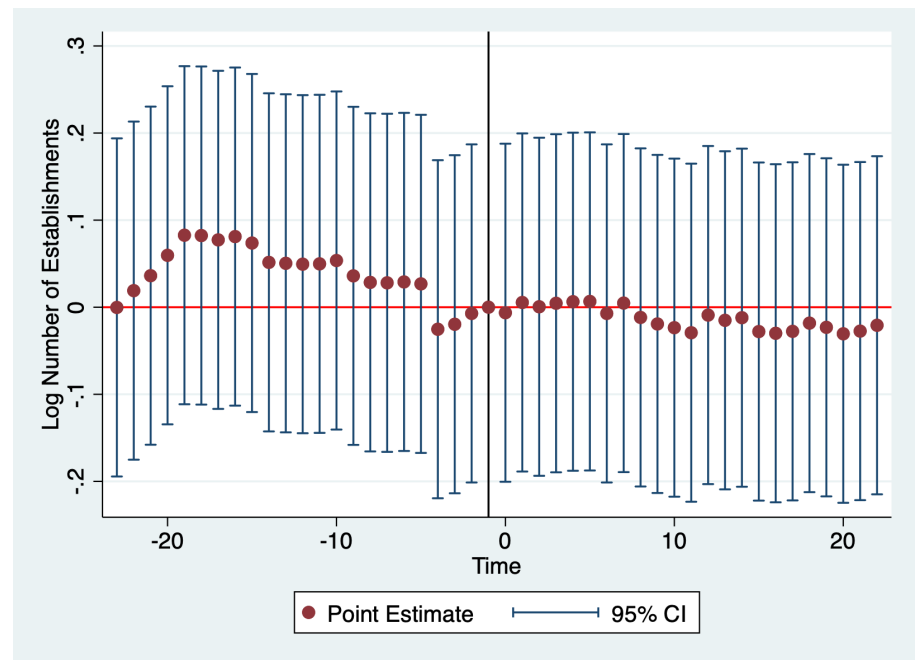


H. Share of Deals with Repeated Acquirers

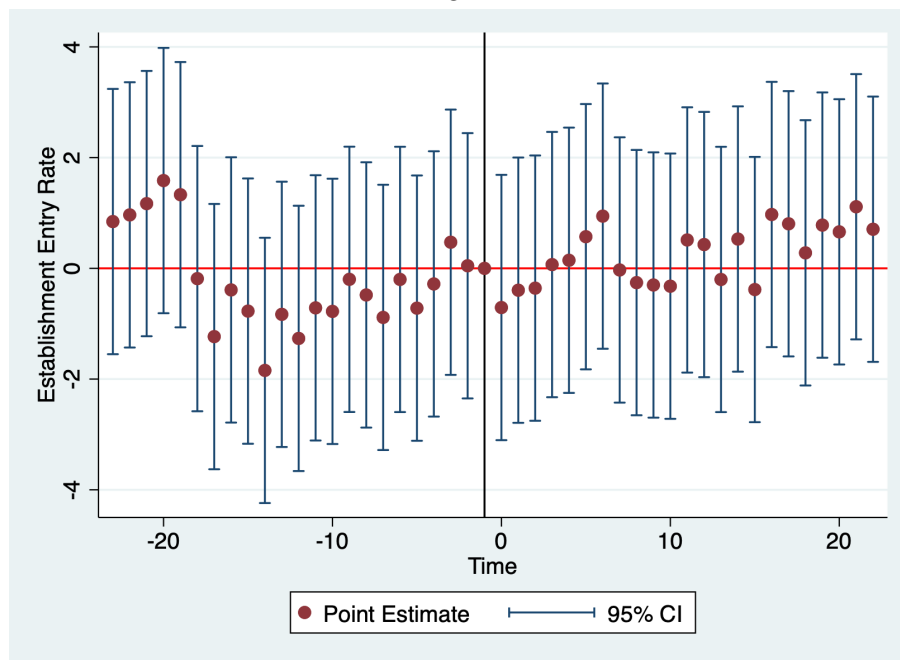
FIGURE A4. Event Study Merger Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform (continued)



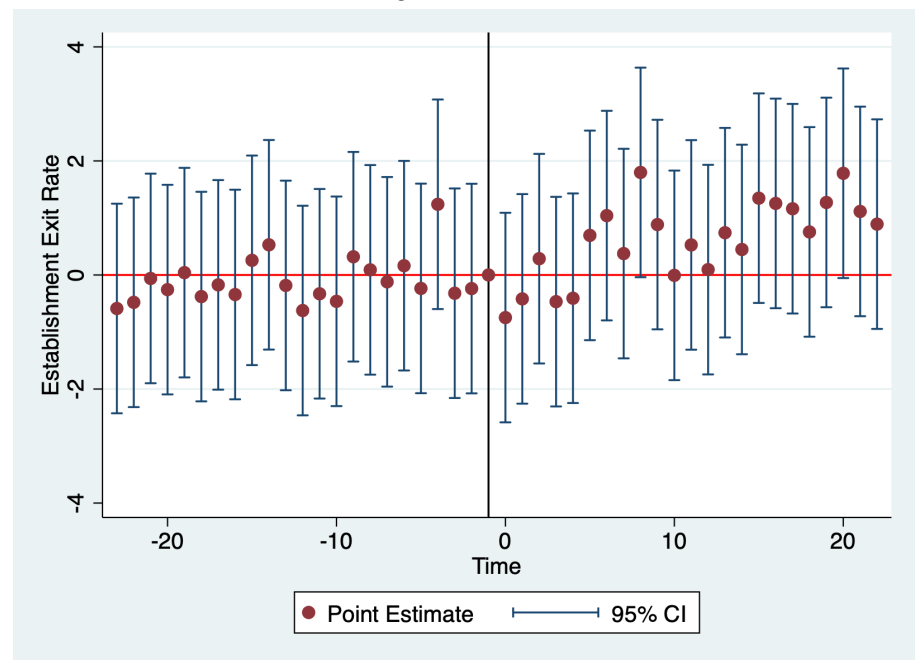
A. Log Firms



B. Log Establishments

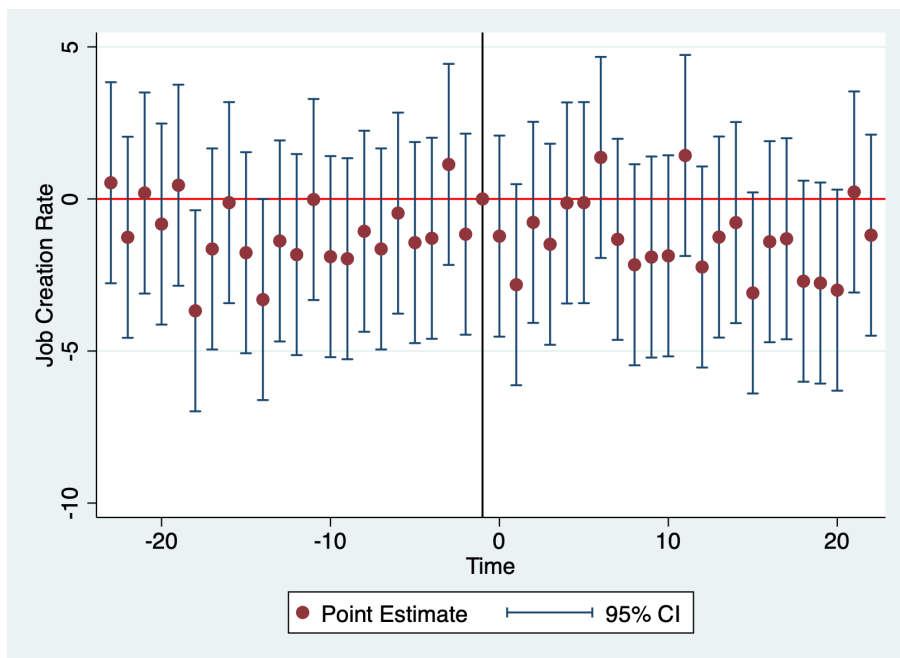


C. Establishment Entry Rate

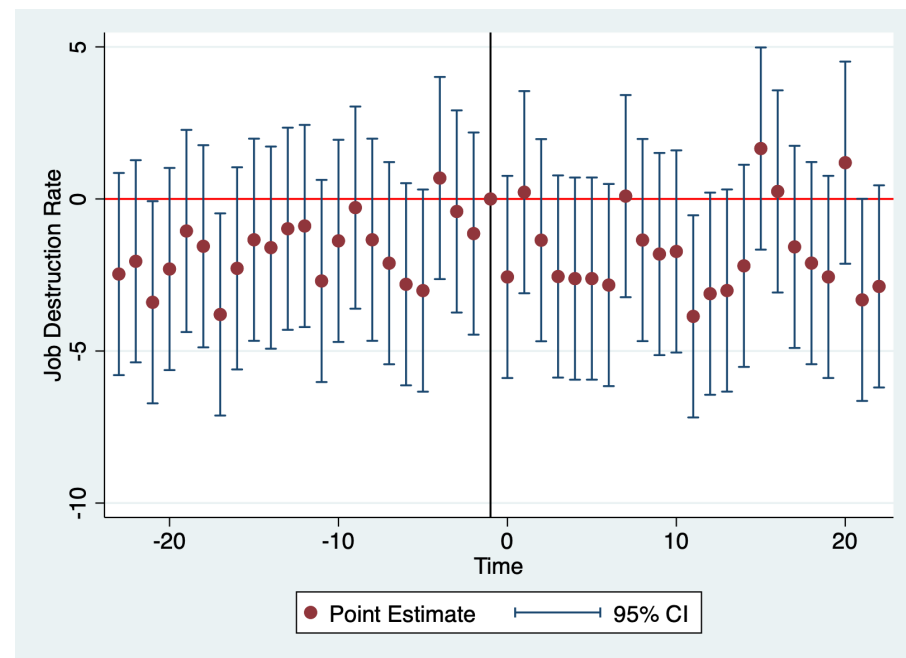


D. Establishment Exit Rate

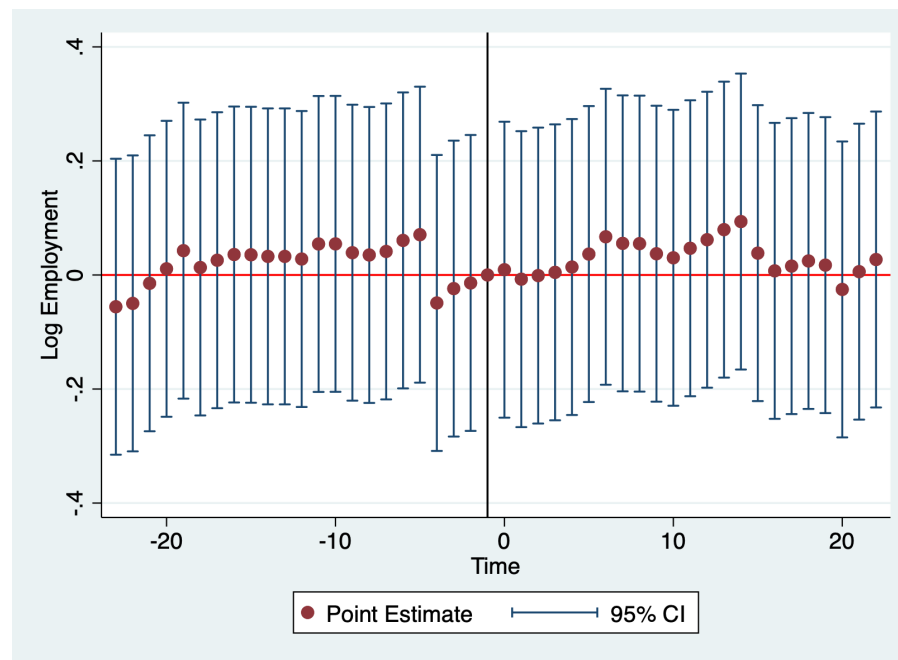
FIGURE A5. Event Study Firm and Establishment Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform



A. Job Creation Rate

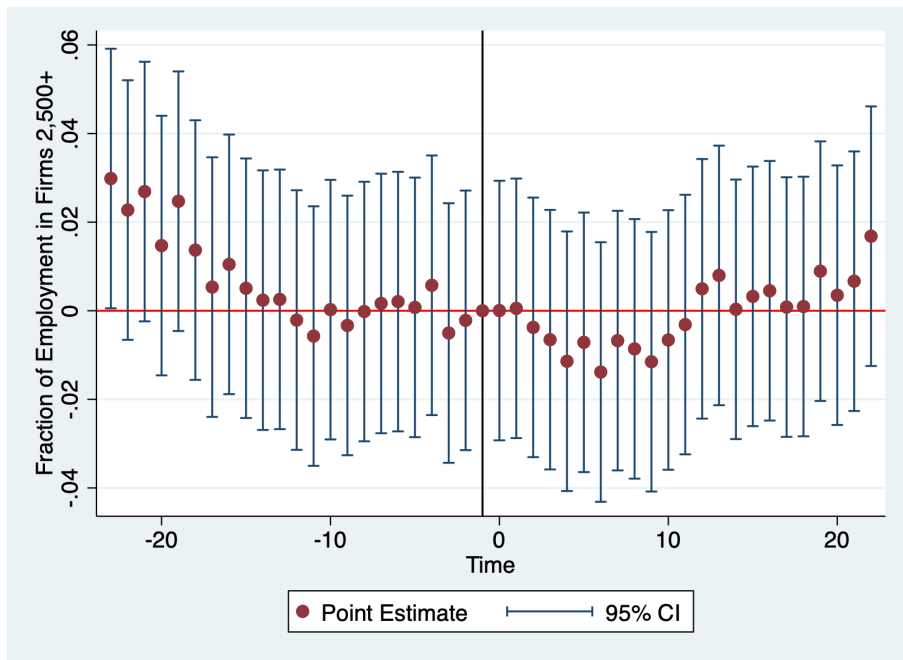


B. Job Destruction Rate

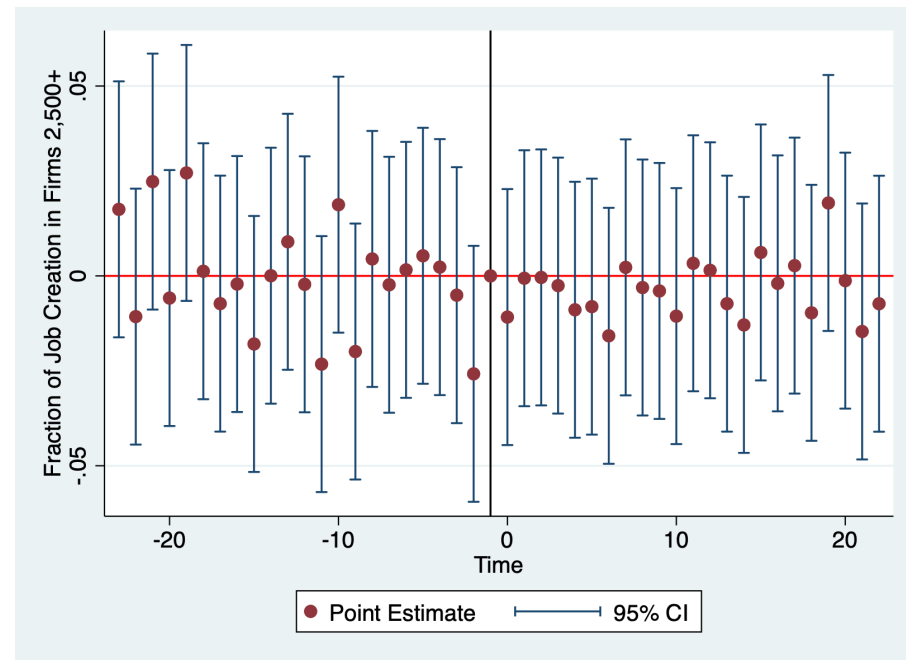


C. Log Employment

FIGURE A6. Event Study Labor Market Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform



D. Share of Employment in Firms 2500+



E. Share of Job Creation in Firms 2500+

FIGURE A6. Event Study Labor Market Outcomes by Above- and Below-Median Exposure to the 2001 HSR Reform (continued)

TABLE A3. TWFE Estimates for Business Dynamics Outcomes (Full Sample)

	Etab. Entry Rate		Etab. Exit Rate		Log Firms		Log Establishments	
	(1) Baseline	(2) Super Sector-Year FE	(3) Baseline	(4) Super Sector-Year FE	(5) Baseline	(6) Super Sector-Year FE	(7) Baseline	(8) Super Sector-Year FE
Exposure $\times$ Post-2001	-6.097*** (1.529)	-4.796*** (1.737)	0.418 (1.181)	4.587*** (1.284)	0.0420 (0.120)	-0.482*** (0.131)	-0.162 (0.124)	-0.918*** (0.120)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE								
Sector-Year FE								
Observations	2,024	2,024	2,024	2,024	2,024	2,024	2,024	2,024
R-squared	0.670	0.722	0.691	0.762	0.979	0.984	0.977	0.986

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A4. TWFE Estimates for Labor Market Outcomes (Full Sample)

	Log Employment		Job Creation Rate		Job Destruction Rate		Frct Employment in Big Firms		Frct Job Creation in Big Firms	
	(1) Baseline	(2) Super Sector-Year FE	(3) Baseline	(4) Super Sector-Year FE	(5) Baseline	(6) Super Sector-Year FE	(7) Baseline	(8) Super Sector-Year FE	(9) Baseline	(10) Super Sector-Year FE
Exposure $\times$ Post-2001	0.916*** (0.164)	-0.186 (0.143)	-10.82*** (2.111)	-6.655*** (2.323)	-6.676*** (2.135)	-0.184 (2.308)	0.104*** (0.0186)	0.0237 (0.0208)	0.118*** (0.0215)	0.0696*** (0.0241)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE										
Sector-Year FE										
Observations	2,024	2,024	2,024	2,024	2,024	2,024	2,024	2,024	2,024	2,024
R-squared	0.945	0.972	0.702	0.765	0.621	0.711	0.757	0.804	0.686	0.741

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A5. TWFE Estimates for Business Dynamics Outcomes: Excluding Dot-Com Industries

	Estab. Entry Rate	Estab. Exit Rate	Log Firms	Log Establishments
	(1)	(2)	(3)	(4)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	-4.639*** (1.684)	5.233*** (1.213)	-0.506*** (0.129)	-0.928*** (0.119)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes
Observations	1,932	1,932	1,932	1,932
R-squared	0.735	0.786	0.985	0.987

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A6. TWFE Estimates for Labor Market Outcomes: Excluding Dot-Com Industries

	Log Employment	Job Creation Rate	Job Destruction Rate	Frct Employment in Big Firms	Frct Job Creation in Big Firms
	(1)	(2)	(3)	(4)	(5)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	-0.318** (0.146)	-7.456*** (2.310)	-0.563 (2.291)	0.0256 (0.0213)	0.0765*** (0.0243)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1,932	1,932	1,932	1,932	1,932
R-squared	0.973	0.775	0.722	0.802	0.750

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A7. TWFE Estimates for Business Dynamics Outcomes: Post-2001 and Post-2010 Effects

	Estab. Entry Rate	Estab. Exit Rate	Log Firms	Log Establishments
	(1)	(2)	(3)	(4)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	-4.872** (2.317)	2.715 (1.711)	0.0117 (0.173)	-0.363** (0.158)
Exposure $\times$ Post-2010	0.125 (2.518)	3.077* (1.859)	-0.810*** (0.189)	-0.913*** (0.172)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes
Observations	2,024	2,024	2,024	2,024
R-squared	0.722	0.763	0.984	0.986

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A8. TWFE Estimates for Labor Market Outcomes: Post-2001 and Post-2010 Effects

	Log Employment	Job Creation Rate	Job Destruction Rate	Frct Employment in Big Firms	Frct Job Creation in Big Firms
	(1)	(2)	(3)	(4)	(5)
	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE	Super Sector-Year FE
Exposure $\times$ Post-2001	0.131 (0.191)	-5.087 (3.097)	1.318 (3.078)	-0.0349 (0.0276)	0.0283 (0.0321)
Exposure $\times$ Post-2010	-0.521** (0.208)	-2.577 (3.366)	-2.468 (3.345)	0.0963*** (0.0300)	0.0680* (0.0349)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Sector-Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,024	2,024	2,024	2,024	2,024
R-squared	0.972	0.765	0.711	0.805	0.742

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$