When Does Common Ownership Matter?

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Abstract

The impact of common ownership on profitability depends on product similarity. Using mergers of financial institutions as exogenous shocks to common ownership, we find that common ownership raises profit margins only for firms with more similar products, where competition is stronger and prices closer to marginal cost. Firms with well-differentiated offerings—already pricing far above marginal cost—see no effect. Results hold across specifications, alternative profitability measures, and ownership thresholds. We find no consistent differences by industry concentration or entry barriers. This suggests product similarity, rather than other industry characteristics, is the primary channel through which common ownership softens competition.

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1 Introduction

Over the past few decades, the rise of investors holding stakes in multiple firms that purportedly compete with each other has sparked a vigorous debate over the potential anticompetitive effects of such common ownership. Rotemberg (1984) and Azar (2012), among others, show theoretically that common ownership can soften competition by internalizing pricing externalities among firms in the same industry, thereby inducing shared owners to limit aggressive competition to maximize portfolio-level returns. Empirical evidence, however, remains mixed. Early studies find evidence of competitive distortions within individual industries (Azar et al., 2018) and across many industries (He and Huang, 2017), whereas more recent work reports insignificant average effects (Koch et al., 2021) or raises concerns about the methodologies and data underlying earlier findings (Lewellen and Lowry, 2021; Dennis et al., 2022; Gerardi et al., 2024).

An important and empirically unanswered question is the extent to which product market characteristics moderate anticompetitive effects of common ownership. Firms with well-differentiated products can earn near-monopoly profits (Hotelling, 1929; Salop, 1979), whereas firms with similar products compete for market share, which can be detrimental to their profit margins. Consequently, common owners should have stronger incentives to limit competition among firms with similar products. Building on recent research highlighting the role of product substitutability and market structure in shaping common ownership's outcomes (Azar and Vives, 2021, 2022; Antón et al., 2023), the contribution of this paper is to estimate the heterogeneous effect of common ownership. Our central hypothesis is that firms with similar products should exhibit stronger anticompetitive effects of common ownership relative to firms with well-differentiated products.

To estimate the causal effect of common ownership on firm profitability, we follow He and Huang (2017) and Lewellen and Lowry (2021) and use mergers of financial insti-

tutions as a plausibly exogenous source of variation in common ownership. We employ a stacked difference-in-differences regression (Gormley and Matsa, 2011; Cengiz et al., 2019) where the coefficient on the interaction of the post-event dummy and the treatment dummy ($Post \times Treated$) captures the average effect of changes in common ownership on firm profitability. We then test our main hypothesis that the effects of common ownership on profitability are stronger for firms with similar products. We define product similarity, $ATSIM$, as the average of Hoberg and Phillips (2016)'s text-based product market similarity between a firm and its industry peers. The coefficient on the triple interaction ($Post \times Treated \times ATSIM$) captures the effect of common ownership on profitability for firms with more similar products, directly testing Antón et al. (2023)'s assertion that the effect of common ownership depends on the product market interactions (substitutability) between firms.

We begin our empirical analysis by studying the average effects of common ownership on profitability, which we measure in four ways: gross margin, EBITDA-to-sales, net operating profit margin (NOPM), and return on assets (ROA). We document an increase in gross margin, but we do not observe changes in other measures of profitability, consistent with prior studies failing to find a robust relationship between common ownership and firm performance (Lewellen and Lowry, 2021; Koch et al., 2021). Next, we investigate the role of industry structure in shaping the effects of common ownership on profitability by considering variation in industry concentration (HHI) and barriers to entry (CapEx Intensity). We find no evidence that common ownership affects profitability for firms in concentrated industries or industries with high barriers to entry.

Having established a lack of a robust relationship between common ownership and profitability, even when considering several types of heterogeneity, we now turn to our key variable of interest: product similarity. Across a range of specifications and sample constructions, we consistently find that higher common ownership leads to higher gross

margins when firms have more similar products. Following an increase in common ownership, a firm with product similarity one standard deviation above an otherwise comparable company experiences, on average, a 1.2 to 1.5 percentage points higher gross margin. These results hold when using alternative measures of profitability and are robust to the exclusion of the BlackRock–BGI merger or when restricting the analysis to blockholders.

We would like to note that, unlike existing studies that focus on investors holding at least 5% (blockholders), we use a lower 1% threshold. While our main results hold for blockholders, the 1% cutoff helps us separate blockholder effects from broader common ownership effects (Schmalz, 2021). For example, if an acquirer holds 5% in firm i and the target holds 4.5% in an industry peer j, a blockholder-only approach would exclude these firms from the analysis.

Our study contributes to the common ownership literature by showing that the profitability effects of common ownership are heterogeneous and depend on product similarity. Rotemberg (1984), O'Brien and Salop (2000), Azar (2012, 2017, 2020), and Backus, Conlon and Sinkinson (2021) show theoretically that common ownership can contribute to a decline in competition between firms, yet whether this occurs empirically is debated. He and Huang (2017), Azar et al. (2018), Boller and Morton (2020), Azar, Raina and Schmalz (2022), Antón, Ederer, Giné and Schmalz (2023) provide evidence of anticompetitive behavior, while O'Brien and Waehrer (2016), Lewellen and Lowry (2021), Dennis, Gerardi and Schenone (2022), Koch, Panayides and Thomas (2021), Gramlich and Grundl (2024) question the robustness of this conclusion.[1] Our paper shows that common ownership softens competition primarily among firms whose products are ex ante more similar. Moreover, we find that industry concentration and entry barriers do not generate

[1]We direct interested readers to Schmalz (2018, 2021) and Gerardi, Lowry and Schenone (2024) for comprehensive surveys and alternative perspectives of the common ownership literature.

robust correlation between common ownership and profitability. By doing so, it shifts attention from industry structure to firm-level product heterogeneity and helps reconcile conflicting findings in the empirical literature on average effects. Antón et al. (2023) develop a theoretical framework that also reconciles some of the conflicting findings on average effects. However, their focus is on the manager incentives, whereas we show that profitability depends on product similarity, thereby providing an empirical mapping from their theory to observed profit margins across heterogeneous product spaces. They do not measure within-industry product similarity.

Other studies have examined heterogeneity in common ownership within specific industries: Azar et al. (2018) in airlines, Azar et al. (2022) in banking, Aslan (2023) in consumer goods. We explore within-industry heterogeneity across a broader sample that reflects the entire U.S. economy, using an explicit product similarity measure that captures within-industry variation beyond coarser partitions such as SIC or Hoberg and Phillips (2016)'s FIC. Azar and Vives (2021, 2022) distinguish between intra- and inter-industry common ownership, finding that markup effects in the airline industry are largely confined to the former. These findings reinforce our argument that average effects in broad samples can obscure meaningful heterogeneity driven by product-market characteristics. Lu, Shen, Wang and Zhang (2022) document that commonly owned firms reduce advertising expenditure, particularly for firms with products that are more similar ex ante, suggesting lower incentives to differentiate when common ownership is present. Aslan (2023) show that increased common ownership makes rival firms' products more similar over time, creating opportunities for knowledge spillovers. These findings validate that product similarity is critical in determining the effects of common ownership.

Our results underscore how product market characteristics shape the anticompetitive effects of common ownership, suggesting policy should account for product similarity. This is increasingly relevant: in May 2025, the DOJ and FTC jointly filed a statement of

interest in federal antitrust litigation, marking the first time federal authorities formally raised concerns about common ownership's anticompetitive implications.[2] While some studies advocate limiting common ownership within industries to curb anticompetitive effects (Elhauge, 2015; Posner, Scott Morgan and Weyl, 2016), others oppose such restrictions (Ginsburg and Klovers, 2018). We show these effects concentrate in markets with high product similarity, indicating policy should consider both market structure and product differentiation. The heterogeneous effects we document suggest antitrust policy could target common ownership arrangements that reduce competition among close substitutes while preserving diversification benefits in markets with differentiated products.

2 Data, Empirical Design, and Descriptive Statistics

In this section, we describe the data and the empirical research design. Detailed variable definitions are provided in Appendix A.

2.1 Sample Construction and Key Variables

We start with the intersection of Compustat and CRSP firms with share codes 10 and 11 from 1988 to 2019. We exclude financial (SIC code starting with 6) and utility (SIC code starting with 49) industries, as well as industries with one or two firms. We also drop firm-year observations with non-positive total assets, sales below 0.5 million, missing industry classifications, or missing product similarity scores in the Hoberg and Phillips data library.[3]

We use Thomson Reuters' 13F dataset to construct measures of institutional ownership and common ownership. Since Thomson Reuters has multiple manager numbers for the same fund family, we consolidate institutional holdings data following Bodnaruk

[2] https://www.ftc.gov/news-events/news/press-releases/2025/05/ftc-doj-file-statement-interest-energy-collusion-case-against-blackrock-state-street-vanguard

[3] Product similarity dataset is available at https://hobergphillips.tuck.dartmouth.edu/

and Rossi (2016), Lowry, Rossi and Zhu (2019), and Bindal and Rossi (2024). To define common ownership, we use investors that hold at least 1% of a firm's outstanding shares. A firm is considered commonly owned if at least one of its investors also holds at least 1% of the shares in one or more of its three-digit SIC industry peers. We construct three common ownership measures: $WtComOwn$, $Cosine$ and $Lambda$.

The first measure of common ownership, $WtComOwn$, follows Lewellen and Lowry (2021). It is the weighted average of the product of a common owner's stake in the firm and its industry peers summed over all common owners and industry peers, where more weight is given to peer firms with relatively larger market capitalization. Formally,

$$WtComOwn_f = 10{,}000 \times \left(\sum_g w_g \sum_s \beta_{f,s} \beta_{g,s} \right) / \left(\sum_g w_g \right)$$

where $\beta_{f,s}$ is the ownership stake of investor s in firm f and g denotes peer firms in firm f's three-digit SIC industry. w_g is the market capitalization of firm g. The multiplication by $10,000$ allows for easy interpretation of the measure.

Our second measure, $Cosine$, follows Backus, Conlon and Sinkinson (2020) and Backus, Conlon and Sinkinson (2021). It is the weighted average cosine similarity between firm f's and its three-digit SIC peers' ownership vectors, where more weight is given to peer firms with relatively larger market capitalization.

$$\text{Cosine}_f = \left(\sum_g w_g \frac{\beta_f \cdot \beta_g}{\|\beta_f\| \, \|\beta_g\|} \right) / \left(\sum_g w_g \right)$$

Our third measure, $Lambda$, follows Azar (2012), López and Vives (2019), Azar and Vives (2021), Backus et al. (2020), and Backus et al. (2021). Backus et al. (2020) calls this measure $Kappa$ and our calculations mimic theirs. However, earlier studies such as Azar (2012) have labeled this measure as $Lambda$, and we use their terminology. Specifically,

Lambda for firm f is calculated as:

$$Lambda_f = \left(\sum_g w_g \frac{\beta_f \cdot \beta_g}{\|\beta_f\| \, \|\beta_g\|} \sqrt{\frac{\|\beta_g\|^2}{\|\beta_f\|^2}} \right) / \left(\sum_g w_g \right)$$

Lambda is related to *Cosine* by adjusting for the ratio of peer firms' ownership concentration relative to the ownership concentration of the focal firm.

To proxy for product similarity, we follow Hoberg and Phillips (2016) who measure it between firms by comparing their product and business description section, Item 1, of the annual report. For each firm, we define product similarity as the average of this pairwise text-based product market similarity cosine score between a firm and its three-digit SIC industry peers. We label this variable *average total similarity* (*ATSIM*). Ideally, we want to measure similarity at the product level because there can be varying levels of differentiation within a firm across products. However, given existing disclosure requirements, calculating a product-level measure of a firm's differentiation is not feasible. We standardize *ATSIM* in all regression specifications to facilitate interpretation.

Following existing literature, we propose four measures of firm profitability as the dependent variable: Gross Margin, EBITDA-to-sales ratio, net operating profit margin (NOPM), and return on assets (ROA). Gross margin is defined as the difference between sales and the cost of goods sold, scaled by sales. This ratio captures a firm's ability to price its goods above cost and is similar to the price-cost margin measure of Koch et al. (2021). The EBITDA-to-sales ratio is the ratio of earnings before interest, taxes, depreciation, and amortization to sales. NOPM is calculated as net income plus income from extraordinary items and discontinued operations, and taxes paid, divided by sales, following He and Huang (2017). ROA is earnings before interest and taxes scaled by assets at the beginning of the year, as defined in Lewellen and Lowry (2021).

We control for several firm characteristics that may influence profitability. Firm size is defined as the natural logarithm of the market value of equity, but our results are robust to using the natural logarithm of total assets instead. The natural logarithm of the market-to-book ratio proxies for a firm's growth opportunities. We also include cash-to-asset ratio and leverage ratio to capture a firm's financial flexibility and its ability to respond to changes in competition. To account for the potential influence of institutional ownership on profitability, we control for the percentage of shares held by all institutional investors. We control for industry concentration using the Herfindahl-Hirschman Index (HHI), and following Aghion, Bloom, Blundell, Griffith and Howitt (2005), we include the square of HHI to capture potential nonlinear effects. Marketing efforts, which may affect sales, are proxied by the firm's advertising-to-assets ratio. Finally, to control for a firm's investment in innovation and intangible capital (Chan, Lakonishok and Sougiannis, 2001), we include R&D capital; our results are qualitatively similar if we use R&D-to-assets ratio instead. All continuous variables are winsorized at the 1^{st} and 99^{th} percentiles.

2.2 Mergers of Financial Institutions

Institutional investors' portfolio decisions, and thus a firm's level of common ownership, may reflect unobserved firm characteristics that are also correlated with profitability or strategic choices, confounding causal inference. Without addressing this endogeneity, it is difficult to disentangle the effects of common ownership from other firm-specific drivers of performance or behavior.

To address this concern and identify causal effects, we follow He and Huang (2017) and Lewellen and Lowry (2021), who exploit mergers between financial institutions as a quasi-natural experiment that generates plausibly exogenous variation in common ownership. Financial institutions merge for reasons such as cost savings, improved efficiency through the elimination of redundancies (Houston, James and Ryngaert, 2001), increased

market power (Berger, Demsetz and Strahan, 1999), or regulatory pressures (Bindal, Bouwman, Johnson et al., 2020)—not to gain exposure to specific portfolio firms, whose shares can be acquired directly on the open market. As such, these mergers are unlikely to be driven by the characteristics of the underlying portfolio firms. We leverage this exogenous variation in a difference-in-differences framework to examine whether the effects of common ownership vary with the degree of product market similarity among firms.

We identify mergers between two financial institutions that were announced between 1993 and 2013 and were completed within one year of the announcement. We construct a balanced panel from $t-5$ to $t+5$ for a merger that occurs in year t. A balanced panel addresses the concerns about sampling weights in staggered difference-in-difference models raised by Goodman-Bacon (2021). Appendix B contains the list of mergers used in our paper.

For each merger, we identify firms in which either the target or acquirer held at least 1% of shares outstanding in the quarter prior to the merger announcement. A firm i is classified as $treated$ if: (i) the acquirer (target) holds at least 1% of i, and (ii) the target (acquirer) holds at least 1% of another firm in i's industry. In contrast, firm i is classified as a $control$ if it is held ($\geq 1\%$) by one party (acquirer or target), and the other party holds no other firm in i's industry. Treatment and control status are assigned based on holdings in the quarter prior to the merger announcement. Once a firm is treated, it cannot serve as a control in future deals.

2.3 Empirical Design

Traditional two-way fixed effects (TWFE) difference-in-differences (DiD) designs with staggered treatment adoption have come under scrutiny because they can yield biased estimates when treatment effects are heterogeneous across cohorts or over time (Goodman-Bacon, 2021; Sun and Abraham, 2021; Callaway and Sant'Anna, 2021; Borusyak et al., 2024).

We employ a stacked DiD approach (Cengiz et al., 2019; Baker et al., 2022) to mitigate this issue by restructuring the data into a series of "event windows" centered around each cohort's treatment date and estimating DiD with deal × firm and deal × year fixed effects. In each deal, we exclude firms from the control group if they have been treated in a previous deal. This ensures that estimates are based on clean comparisons between treated units and never-treated (or not-yet-treated) units.

We first establish that mergers of financial institutions lead to an increase in common ownership for treated firms relative to control firms by estimating the following equation:

$$\text{CO}_{i,j,t} = \alpha_{i,j} + \eta_{j,t} + \beta_3 \text{Post}_{j,t} \times \text{Treated}_{i,j} + \gamma' \text{X}_{i,t-p} + \epsilon_{i,j,t} \tag{1}$$

where i indexes the firm, j indexes a merger deal, t indexes the year in event-time, and $\text{CO}_{i,j,t}$ is one of our three measures of common ownership. The indicator $Treated$ equals one if the firm is classified as treated and zero otherwise. The indicator $Post$ equals one for the years following the acquisition and zero otherwise. The merger year ($t = 0$) is omitted from the analysis. The vector $\text{X}_{i,t-p}$ includes all control variables discussed in the previous subsection. Following He and Huang (2017), the control variables are lagged at $t = -1$ for the post period and $t = -6$ for the pre-period. Our results are similar if we use time-varying controls for the pre-period. $\alpha_{i,j}$ is deal × firm and $\eta_{j,t}$ is deal × calendar year fixed effects. Standard errors are clustered by deal × firm. The coefficient of interest is β_3, which captures the effect of mergers of financial institutions on the level of common ownership of treated firms relative to control firms.

Next, we estimate the average effects of common ownership on firm profitability by using Equation (1) but with a different dependent variable. Specifically, we estimate:

$$y_{i,j,t} = \alpha_{i,j} + \eta_{j,t} + \beta_3 \text{Post}_{j,t} \times \text{Treated}_{i,j} + \gamma' \text{X}_{i,t-p} + \epsilon_{i,j,t} \tag{2}$$

where $y_{i,j,t}$ measures firm profitability for firm i, deal j, at time t. We measure $y_{i,j,t}$ as gross margin, EBITDA-to-sales ratio, net operating profit margin (NOPM), and return on assets (ROA).

To estimate the heterogeneous effects (HE) of industry partitions and firm product similarity on profitability, we estimate a triple difference-in-differences specification interacting the relevant industry characteristic or firm similarity with $Post \times Treated$. For firm i and merger event j over event-time t, we estimate:

$$\begin{aligned} y_{i,j,t} = {} & \alpha_{i,j} + \eta_{j,t} + \beta_3 \text{HE}_{i,t-p} + \beta_4 \text{Post}_{j,t} \times \text{Treated}_{i,j} + \beta_5 \text{Post}_{j,t} \times \text{HE}_{i,t-p} \\ & + \beta_6 \text{Treated}_{i,j} \times \text{HE}_{i,t-p} + \beta_7 \text{Post}_{j,t} \times \text{Treated}_{i,j} \times \text{HE}_{i,t-p} + \gamma' \text{x}_{i,t-p} + \epsilon_{i,j,t} \end{aligned} \tag{3}$$

where $HE \in \{HHI,\ CapEx\ Intensity,\ ATSIM\}$, β_7 is the coefficient of interest. The independent variables, fixed effects, and other details are identical to those used in estimating Equation (2).

2.4 Summary Statistics

Table 1 reports the summary statistics for the subsample of the firms that were classified as either treated or control in the quasi-natural experiment. Panel A reports the descriptive statistics for the four measures of profitability. The average (median) $GrossMargin$ is 38.1% (36.5%), $EBITDA - to - sales$ is 11% (12.8%), $NOPM$ is 1.8% (6.3%), and ROA is 9.5% (9.9%).

[Table 1 about here]

Panel B reports summary statistics for a firm's similarity scores and common ownership measures. $ATSIM$ is always between 0 and 1. Using three-digit SIC codes to measure a firm's similarity to its peers, the average $ATSIM$ value is 0.031. The average $WtComOwn$ is 44.4, $Cosine$ is 0.29 and $Lambda$ is 0.29. All three measures are calculated at the firm-quarter level and then averaged over the fiscal year to obtain a firm-year measure.

Backus et al. (2021) and Amel-Zadeh et al. (2022) use $Cosine$ and $Lambda$ (labeled $Kappa$ in these papers) to document trends in common ownership. While our construction is similar, differences in data sources lead to slightly different summary statistics. First, while the other two papers use 13-F filings from SEC Edgar and only consolidate BlackRock holdings reported under different CIKs, we consolidate all institutional holdings as in Bodnaruk and Rossi (2016), Lowry et al. (2019), and Bindal and Rossi (2024). Second, Backus et al. (2021) study only S&P 500 firms, whereas our sample covers a broader set of firms. Finally, Amel-Zadeh et al. (2022) construct a more comprehensive dataset using Form 4, 13-D and 13-G filings. The authors of both papers generously shared their data with us. The correlation between our Lambda and Backus et al. (2021) is 0.84. The correlation between our Lambda and Amel-Zadeh et al. (2022) is 0.45, which is lower but expected, as Amel-Zadeh et al. (2022) incorporate information on insider/concentrated owners ("mavericks"), whereas neither we nor Backus et al. (2021) do. The correlation between Backus et al. (2021) and Amel-Zadeh et al. (2022) is 0.52.

Panel C reports the descriptive statistics for firm characteristics. The average (median) firm size is \$2.91 (\$0.56) billion. The relatively smaller firm size compared to publicly listed US firms is understandable given our sample selection criteria. In order to be in the sample, investors need to hold at least 1% in the firms, which eliminates extremely large firms. We note that some existing studies on common ownership focus only on investors that hold

at least 5% (i.e., blockholders), which would further reduce both the sample size and the average size of the remaining firms.

Panel C also shows that the average firm has a market to book ratio of 1.76. The mean cash-to-assets ratio is 17.6% and leverage ratio is 19.8%. In our sample firm, 56.1% of shares are held by institutional investors. The average industry concentration (Herfindahl-Hirschman Index) is 1920, which according to the FTC's definition, is highly concentrated.[4] The mean advertising to assets ratio is 1.3% and the R&D capital is 0.228.

Panel D reports the correlations between firm-level product similarity (ATSIM) and industry characteristics (HHI and CapEx Intensity). The correlation between ATSIM and HHI is 9%, between ATSIM and firm-level CapEx Intensity is 6%, and between ATSIM and industry-level CapEx Intensity is -4%. As can be seen, our key variable, ATSIM, exhibits low correlation with industry characteristics.

3 Main Results

To establish a causal relationship between a firm's profitability and its common ownership, we follow the methodology of He and Huang (2017) and Lewellen and Lowry (2021) and use mergers of financial institutions as a quasi-natural experiment to exogenously vary common ownership of portfolio firms. In the following subsections, first we validate that mergers between financial institutions result in an increase in common ownership of treated firms relative to control firms. Having established that these events indeed affect common ownership, we employ them in a difference-in-differences analysis to study their impact on profitability.

[4] https://www.justice.gov/atr/herfindahl-hirschman-index

3.1 Do mergers of financial institutions increase common ownership?

We estimate Equation (1) to verify that mergers of financial institutions increase common ownership for firms held by merging institutions in our sample. We report the results in Table 2. We find that in the five years following a merger, treated firms experience a statistically and economically significant increase in common ownership relative to the control firms. For instance, treated firms experience an increase in *Cosine* of 0.023 in the post period, which is about 8% of its average (0.023/0.293).

[Table 2 about here]

3.2 Revisiting Common Ownership and Firm Profitability

Existing evidence relating common ownership to firm profitability is mixed, with some studies, such as He and Huang (2017), positively linking common ownership to profitability, whereas more recent research concludes that these results are not robust (Lewellen and Lowry, 2021; Koch et al., 2021). We revisit this analysis in our sample to confirm that, indeed, a clear pattern does not emerge on average when considering several measures of profitability. To do so, we estimate Equation (2). Our coefficient of interest, β_3, captures the effect of common ownership on firm profitability.

For each dependent variable, we estimate Equation (2) without and with firm-level controls. The results are presented in Table 3. While an increase in common ownership increases gross margin, the result is not robust as there is no correlation between other measures of profitability. Our evidence is thus largely consistent with existing studies, which fail to identify a clear pattern when considering average results without accounting for variation in industry characteristics and the product space in which firms operate.

[Table 3 about here]

Next, we explore whether industry competitiveness matters by studying whether the effects of common ownership are stronger for certain industries. We examine two dimensions capturing industry competitiveness: concentration and barriers to entry. We follow existing studies, such as Antón et al. (2023), which have found heterogeneous effects of common ownership based on industry concentration, where common ownership is more likely to facilitate reduced competition. We also explore barriers to entry. In a perfectly competitive world, if marginal profits were high, new firms would enter. However, high barriers to entry discourage entry. In contrast, low investment intensity makes it easier for firms to enter, increasing competitive pressure. If common ownership weakens competition, its negative impact is likely to be greatest in these low-intensity industries, where competitive threats are more pronounced.

We estimate Equation (3) to test the effects of these two industry partitions. The setup is identical to Equation (2), with one key difference: we interact $Post$ and $Treated$ with an *Industry Cut Dummy*. For the first set of results, the *Industry Cut Dummy* equals one if a firm belongs to an industry with an HHI of at least 1800, which the Federal Trade Commission (FTC) classifies as highly concentrated. For the second set of results, *Industry Cut Dummy* equals one if a firm belongs to an industry with high capital intensity, defined as those where the average ratio of capital expenditures to gross PP&E is above the median across all industries in a given year. Higher values of this ratio indicate more capital-intensive operations that cannot be easily initiated or unwound. Results are similar if we instead use gross PP&E scaled by total assets, which captures the proportion of tangible fixed assets required to operate in a given industry. Because common ownership may itself influence industry structure (Gutiérrez and Philippon, 2018), we define all industry cuts using information from the pre-event period ($t = -1$).

[Table 4 about here]

As can be seen from Table 4, there is no robust relationship between common ownership and profitability based on the two industry partitions that we consider. Using a triple interaction specification, we confirm the findings of Koch et al. (2021), which were based on double interactions and a subsample analysis of concentrated industries.

3.3 The Role of Product Similarity

Competition is shaped by product similarity: firms with similar offerings face lower pricing power than those with differentiated products. We hypothesize that common ownership reduces incentives to compete, particularly among firms with similar products. This is because firms with differentiated products already enjoy near-monopoly pricing, limiting the potential for further price increases. Therefore, we expect the impact of common ownership to be concentrated among firms with similar products.

To test whether the effects of common ownership vary by a firm's product market similarity, we re-estimate Equation 3 by replacing the Industry Cut with ATSIM, which is our variable of interest, capturing the average similarity score between a firm and its three-digit SIC peers. Unlike the Industry Cut dummy, ATSIM varies by firm.

[Table 5 about here]

Table 5 shows that the effect of common ownership on profitability varies by a firm's product similarity (ATSIM), which we have standardized to allow for easy interpretation. The coefficient on $Post \times Treated \times ATSIM$ is positive and statistically significant in every model, indicating that the effects of common ownership on profitability are stronger when a firm has similar products. Following an increase in common ownership, a firm with product similarity one standard deviation above an otherwise similar company will experience, on average, a 1.2 to 2.1 percentage point higher profitability relative to a control firm. For comparison, the sample mean for profitability varies between 1.8% and 38.1%, depending on the variable definition. Industry is defined using either the firm's

three-digit SIC code. Our results are robust to using the FIC400 code, as reported in Table IA.3.

The smaller and less significant double interaction terms in Table 5 are broadly consistent with those reported in Table 3, where we find little evidence of average effects of common ownership on profitability when product similarity is not accounted for. This pattern suggests that the double interactions alone were masking important heterogeneity in treatment effects. Specifically, the inclusion of the triple interaction term with ATSIM reveals that the effect of common ownership is not uniform across firms but instead depends critically on product market positioning. Firms with more similar products appear to internalize competitive pressure more acutely in the presence of common ownership, leading to measurable increases in profitability. In contrast, firms with more differentiated products—whose pricing is already less constrained by direct competitors—show limited responsiveness to changes in ownership structure. Accounting for this heterogeneity may help reconcile mixed findings in the broader literature, which often estimates average effects without considering underlying variation in firms' strategic substitutability.

In addition to standard DiD regressions, we create event study graphs mimicking our main specification. In particular, we interact the treatment dummy and the interaction with product similarity with a set of time dummies going from 5 years before to 5 years after the event, and plot the coefficients over time. We report the coefficients of $time \times Treated \times ATSIM$ in Table 6 and also plot them in Figure 1. The coefficients in the pre-event period are close to zero and statistically insignificant, consistent with the conditional parallel trends assumption. In the post-period, profitability is positively related to common ownership, albeit the coefficients are not always statistically significant. This is not surprising because the impact of common ownership on profitability may not manifest itself immediately. Additionally, estimating separate coefficients for each post-treatment period reduces statistical power, which may contribute to larger standard errors.

3.4 Robustness Tests

We take additional steps to ensure the robustness of our identification strategy. Specifically, we examine two potential channels that could confound the relationship between common ownership and firm outcomes. First, we assess whether common ownership affects a firm's product similarity, which could independently influence profit margins. Second, we test whether common ownership is associated with changes in industry structure, such as consolidation, that might account for our results. To address these possibilities, we estimate Equation (1) using either ATSIM or the natural log of the number of firms in an industry as the dependent variable. The results, presented in Table IA.1, show no statistically significant relationship between common ownership and either product similarity or industry size. These findings reinforce our interpretation that the observed effects are not driven by changes in market structure or product positioning, but rather by shifts in firm incentives associated with common ownership.

Lewellen and Lowry (2021) conclude that while mergers of financial institutions increase common ownership, results on positive effects of common ownership on profitability are driven primarily by the Blackrock-BGI merger. Therefore, we redo our main analysis from Table 5 by excluding the merger between Blackrock and BGI. The results in Table IA.2 confirm our conclusion that the effect of common ownership on profitability is conditional on product similarity.

While, to allow for comparison with the existing studies, we use three-digit SIC codes as our industry definition, we use Hoberg and Phillips (2016)'s fixed industry classification (FIC) as an alternative. Specifically, we use FIC400, as its granularity is comparable to that of three-digit SIC codes. The results are consistent and are presented in Table IA.3.

Some existing studies define common ownership using blockholders (institutions that hold 5% or more in a given firm). Therefore, we replicate our main analysis from

Table 5 by defining treated and control firms using only blockholders and find that the triple interaction coefficients remain strongly statistically and economically significant. We report the results in Table IA.4.

Finally, we also test the robustness of our results by using the natural logarithm of total assets as a control variable for firm size instead of the natural logarithm of market value of equity. The results in Table IA.5 are consistent. In unreported results, we also use R&D-to-assets ratio instead of R&D-to-capital and find consistent results.

4 Conclusion

The academic and regulatory debate on the effects of common ownership on firms' profitability and, indirectly, consumer surplus must recognize that not all firms operate in the same product space. Greater product differentiation allows firms to price further above marginal cost, boosting profit margins. Firms with well-differentiated products—already enjoying quasi-monopoly pricing—have limited scope to increase margins following common ownership. In contrast, firms with similar products, whose prices are closer to marginal cost, have greater potential to do so.

This paper examines how product market characteristics affect the relationship between common ownership and firm profitability. While prior literature has focused largely on average effects, we show that such an approach can mask meaningful heterogeneity. Using mergers of financial institutions as plausibly exogenous shocks to common ownership, we document that common ownership increases gross margins for firms producing more similar products, but not for those with well-differentiated offerings. These results are robust across specifications, alternative profitability measures, and ownership thresholds.

By contrast, we find no consistent evidence that industry concentration or barriers to entry shape the effects of common ownership, nor do we find robust average effects

across the full sample. This suggests that product similarity, rather than other sources of heterogeneity, is the more likely channel through which common ownership may soften competition.

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Appendices

A Variable Definitions

We define all dependent and independent variables used in the paper here. Compustat variable names are capitalized. All continuous variables are winsorized at the 1st and 99th percentiles.

Dependent Variables	
Gross Margin	Gross margin is the difference between sales (SALE) and cost of goods sold (COGS) scaled by sales.
EBITDA-to-sales	Ratio of earnings before interest, taxes, depreciation, and amortization (EBITDA) to sales (SALE).
NOPM	Net income (NI), plus extraordinary items and discontinued operations (XIDO), plus tax (TXPD), divided by sales (SALE).
ROA	Earnings before interest and taxes (EBIT) divided by beginning-of-year assets (AT).
Key Independent Variables	
Treated	Using holdings from the quarter prior to the merger announcement, firm i is classified as treated if one of the merging institutions holds at least 1% in it and the other holds at least 1% in another firm within the same industry. Firms held by both institutions in the quarter prior to the merger announcement are excluded from the analysis. The variable Treated equals 1 for treated firms and 0 otherwise. Once a firm is treated, it cannot serve as a control in future events.
ATSIM	For a firm i, the pairwise similarity score with firm j is given by cosine(v_i, v_j), where v_i (v_j) is the vector of i's (j's) product description reported in its annual report (Hoberg and Phillips, 2016). This score is then averaged over all peers j in firm i's industry to obtain an annual, firm-level measure.
Measures of Common Ownership	
WtComOwn	The product of the percentages of shares of firm i and firm j held by institutional investor s, summed over all institutional investors (Lewellen and Lowry, 2021). This pairwise measure is then aggregated across all peers, weighted by the market capitalization of the peer, to create a firm-level measure.
Cosine	The cosine similarity between the vector of ownership percentages for institutions holding either i or j (Backus et al., 2020). This pairwise measure is then aggregated across all peers, weighted by the market capitalization of the peer, to create a firm-level measure.
Lambda	Following Backus, Conlon and Sinkinson (2020), we measure common ownership between firms i and j by computing the cosine similarity and multiplying it by the square root of the ratio between j's investor HHI and i's investor HHI. A firm's investor HHI is defined as the sum of squared ownership percentages of its institutional investors.

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Control Variables	
ln(Assets)	Natural logarithm of a firm's total assets (AT).
ln(MVE)	Natural logarithm of a firm's market value of equity (CSHO * PRCC_F).
ln(Mkt/Book)	Natural logarithm of a firm's market value of equity (CSHO * PRCC_F) plus book value of debt (DLTT + DLC), divided by its book value of assets (AT).
Cash/Assets	A firm's cash and cash equivalents (CHE) divided by its total assets (AT).
Leverage	A firm's book value of debt (DLTT + DLC) divided by its total assets (AT).
Inst. Ownership	The percentage of a firm's shares held by all institutional investors in each quarter, averaged over the firm's fiscal year.
HHI	Herfindahl-Hirschman Index (HHI) is the sum of the squares of the market shares of all firms in an industry. A firm's market share is defined as its sales (SALE) divided by total industry (3-digit SIC) sales.
Ad/Assets	A firm's advertising expenses (XAD) divided by its total assets (AT). Missing XAD values are replaced with zero.
R&D Capital	Following Chan, Lakonishok and Sougiannis (2001), R&D capital is defined as the ratio of a firm's remaining productive R&D to the sum of the book value of current R&D and book equity, where the denominator is given by XRD + CEQ + SEQ + TXDB + ITCB – PSTKRV. If PSTKRV is missing, we replace it with PSTKL (if available) or PSTK. A firm's remaining productive R&D is calculated as the sum of R&D expenditures (XRD) over the last five years, assuming a capital amortization rate of 20%. Our results remain unchanged if we instead use R&D (XRD) to assets (AT) ratio.
Industry Heterogeneity Dummies	
High HHI	Indicator variable equal to 1 if a firm belongs to an industry with HHI $\geq$ 1800, the FTC's threshold for highly concentrated industries.
High CapEx Intensity	Indicator equal to 1 if a firm belongs to an industry with CapEx intensity greater than or equal to the median industry CapEx intensity. Industry CapEx intensity is calculated as the average CapEx intensity of all firms in the industry, where a firm's CapEx intensity is defined as the ratio of capital expenditures (Capx) to beginning-of-year gross property, plant, and equipment (PPEGT). Our results remain unchanged if we instead define the indicator using the ratio of gross PP&E (PPEGT) to beginning-of-year total assets (AT).

B List of Mergers

Below is the list of mergers used in the quasi-natural experiment described in Section 2.2.

Announcement Date	Effective Date	Acquirer Name	Target Name
Sep 20 1993	May 31 1994	Marshall & Ilsley Corp	Valley Trust Co/Wisc
Oct 18 1993	Jul 1 1994	First Union Corp,Charlotte,NC	Lieber & Co
Mar 6 1994	Jun 30 1994	First Union Corp,Charlotte,NC	Evergreen Asset Management Crp
Nov 28 1994	Apr 12 1995	KeyCorp,Cleveland,Ohio	Spears,Benzak,Salomon & Farrel
Feb 21 1995	Nov 30 1995	Fleet Financial Group Inc,MA	Shawmut National Corp
Jun 16 1995	Jun 16 1995	TCW Group Inc	Continental Asset Mgmt
Jun 19 1995	Jan 2 1996	First Union Corp,Charlotte,NC	First Fidelity Bancorp,NJ
Jun 23 1995	Sep 29 1995	New England Investment Cos LP	Harris Associates LP
Jun 28 1995	Jan 3 1996	Morgan Stanley Asset Mgmt	Miller Anderson & Sherrerd
Aug 7 1995	Feb 16 1996	First Bank System Inc.	FirsTier Financial Inc.
Aug 28 1995	Mar 31 1996	Chemical Banking Corp,New York	Chase Manhattan Corp
Oct 18 1995	Apr 1 1996	Wells Fargo Capital C	First Interstate Bancorp,CA
Jul 10 1996	Oct 31 1996	LGT Asset Mgmt Inc.	Chancellor Capital Mgmt
Aug 30 1996	Jan 6 1997	NationsBank Corp,Charlotte,NC	Boatmen's Bancshares,St Louis
Sep 6 1996	Dec 12 1996	First Union Corp,Charlotte,NC	Keystone Investments Inc
Jan 20 1997	May 20 1997	Mellon Bank Corp,Pittsburgh,PA	Ganz Capital Management Inc
Mar 20 1997	Aug 1 1997	First Bank System Inc.	U S Bancorp
Jun 9 1997	Oct 1 1997	BankAmerica Corp	Robertson Stephens & Co
Nov 5 1997	Dec 1 1997	PIMCO Advisors LP	Oppenheimer Capital LP
Dec 11 1997	Apr 1 1998	Mellon Bank Corp,Pittsburgh,PA	Founders Asset Management Inc
Apr 6 1998	Oct 8 1998	Travelers Group Inc	Citicorp
Apr 13 1998	Sep 30 1998	NationsBank Corp,Charlotte,NC	BankAmerica Corp
Jun 8 1998	Nov 2 1998	Norwest Corp,Minneapolis,MN	Wells Fargo & Co
Jul 20 1998	Dec 31 1998	SunTrust Banks Inc,Atlanta,GA	Crestar Finl Corp,Richmond,VA
Feb 15 1999	Jul 6 1999	Credit Suisse Asset Management	Warburg Pincus Asset Mgmt
Mar 14 1999	Oct 1 1999	Fleet Financial Group Inc,MA	BankBoston Corp,Boston,MA
Apr 30 1999	Sep 20 1999	Firstar Corp,Milwaukee,WI	Mercantile Bancorp,St Louis,MO
Jun 20 2000	Oct 2 2000	Alliance Capital Mgmt Hldg LP	Sanford C Bernstein & Co Inc
Sep 13 2000	Dec 31 2000	Chase Manhattan Corp	JP Morgan Chase & Co
Oct 18 2000	Feb 14 2001	Allianz AG	Nicholas-Applegate Capt Mgmt
Oct 25 2000	Apr 10 2001	Franklin Templeton Investments	Fiduciary Trust Co Intl
Aug 26 2003	Aug 26 2003	Wells Fargo & Co.	Benson Associates, LLC
Oct 27 2003	Apr 1 2004	Bank of America Corp	FleetBoston Financial Corp,MA
Jan 14 2004	Jul 1 2004	JPMorgan Chase & Co	Bank One Corp,Chicago,IL
May 26 2004	Jan 3 2005	Wells Fargo & Co.	Strong Financial Corp.
May 19 2005	Aug 4 2005	Transamerica Investment Mgmt	Westcap Investors LLC
Oct 31 2006	Dec 4 2006	Morgan Stanley	FrontPoint Partners LLC
Dec 3 2006	Jul 2 2007	Bank of NY Trust Co	Mellon Bank
Apr 23 2008	Sep 30 2008	Lehman Brothers Holdings Inc	David J Greene & Co LLC
Jul 7 2008	Nov 7 2008	RiverSource Investments LLC	J&W Seligman & Co
Sep 14 2008	Jan 1 2009	Bank of America Corp	Merrill Lynch & Co Inc
Sep 16 2008	Sep 22 2008	Barclays PLC	Lehman-Invest Bkg Bus
Oct 3 2008	Dec 31 2008	Wells Fargo & Co	Wachovia Corp,Charlotte,NC
Sep 16 2009	Dec 1 2009	Blackrock Inc	Barclays Global Fund Advisors
Apr 6 2010	Apr 6 2010	Goldman Sachs Group Inc	Level Global Investors LP
Apr 1 2013	Apr 1 2013	Allianz Global Investors US	RCM Capital Management LLC

Table 1. Summary Statistics: This table presents the descriptive statistics for the sample used in this paper. Panel A summarizes the dependent variables, Panel B summarizes firm-level product similarity measures and common ownership metrics, and Panel C summarizes the control variables included in the analysis. Panel D shows correlations between a firm's ATSIM and industry concentration, as measured by HHI, as well as industry capital requirements, as measured by CapEx intensity. Variable definitions are in Appendix A.

Panel A: Summary Statistics for Profitability Measures

	N	Mean	StDev	P10	P25	P50	P75	P90
Gross Margin	38,790	0.381	0.268	0.143	0.236	0.365	0.543	0.711
EBITDA-to-sales	38,790	0.110	0.283	0.013	0.067	0.128	0.209	0.306
NOPM	38,790	0.018	0.324	-0.108	0.012	0.063	0.126	0.212
ROA	38,790	0.095	0.134	-0.035	0.042	0.099	0.161	0.239

Panel B: Summary Statistics for Product Similarity and Common Ownership Measures

	N	Mean	StDev	P10	P25	P50	P75	P90
ATSIM	38,790	0.031	0.033	0.002	0.007	0.019	0.044	0.081
WtComOwn	38,790	44.408	36.393	5.480	14.204	35.721	66.478	96.857
Cosine	38,790	0.293	0.162	0.084	0.164	0.285	0.410	0.512
Lambda	38,790	0.293	0.213	0.073	0.145	0.250	0.386	0.557

Panel C: Descriptive Statistics for Control Variables and Other Firm Characteristics

	N	Mean	StDev	P10	P25	P50	P75	P90
Assets ($ billion)	38,790	2.914	7.135	0.052	0.163	0.563	1.987	7.051
ln(Assets)	38,790	6.362	1.847	3.953	5.093	6.334	7.594	8.861
MVE ($ billion)	38,790	3.914	10.527	0.051	0.163	0.623	2.251	8.142
ln(MVE)	38,790	6.452	1.975	3.926	5.091	6.435	7.719	9.005
ln(Mkt/Book)	38,790	0.339	0.637	-0.400	-0.121	0.249	0.727	1.226
Mkt/Book	38,790	1.763	1.438	0.671	0.886	1.283	2.069	3.407
Cash/Assets	38,790	0.176	0.194	0.010	0.027	0.097	0.264	0.478
Leverage	38,790	0.198	0.175	0.000	0.029	0.177	0.313	0.437
Inst. Ownership	38,790	0.561	0.258	0.176	0.368	0.593	0.763	0.882
HHI	38,790	0.192	0.143	0.071	0.092	0.139	0.253	0.374
Ad/Assets	38,790	0.013	0.030	0.000	0.000	0.000	0.010	0.040
R&D Capital	38,790	0.228	0.422	0.000	0.000	0.063	0.306	0.572

Panel D: Correlation Between ATSIM, HHI, and CapEx Intensity

	ATSIM	HHI	CapEx Intensity	Ind. CapEx Intensity
ATSIM	1.000			
HHI	0.087	1.000		
CapEx Intensity	0.059	-0.123	1.000	
Ind. CapEx Intensity	-0.037	-0.293	0.328	1.000

Table 2. Do the mergers of financial institutions increase common ownership? This table presents the effect of financial institution mergers on the level of common ownership by estimating Equation (1). Firm-level control variables are defined in Appendix A. The list of mergers is provided in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	WtComOwn		Cosine		Lambda	
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated	2.935***	2.144**	0.026***	0.023***	0.012*	0.012*
	(0.002)	(0.022)	(0.000)	(0.000)	(0.085)	(0.082)
ln(MVE)		-0.024		0.015***		0.019***
		(0.968)		(0.000)		(0.000)
ln(Mkt/Book)		0.886		0.001		0.004
		(0.286)		(0.834)		(0.452)
Cash/Assets		-0.020		0.003		0.001
		(0.994)		(0.784)		(0.953)
Leverage		0.343		0.009		-0.001
		(0.889)		(0.429)		(0.939)
Inst. Ownership		39.285***		0.080***		-0.110***
		(0.000)		(0.000)		(0.000)
HHI		30.682***		0.283***		0.218***
		(0.002)		(0.000)		(0.002)
HHI x HHI		-54.878***		-0.392***		-0.307***
		(0.000)		(0.000)		(0.002)
Ad/Assets		-11.152		-0.028		0.010
		(0.509)		(0.755)		(0.947)
R&D Capital		-0.409		-0.006		-0.007
		(0.718)		(0.188)		(0.358)
N	38,790	38,790	38,790	38,790	38,790	38,790
Adjusted R^2	0.691	0.704	0.631	0.641	0.491	0.495
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 3. Common Ownership and Firm Profitability: This table reports estimates of the effect of merger-induced increases in common ownership on firm profitability using Equation (2). The coefficients are obtained from a stacked difference-in-differences design spanning event years t=-5 to t=+5 (excluding t=0). Treated and control firms are defined in Section 2.2. Firm-level control variables are defined in Appendix A. The list of mergers is provided in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	Gross Margin		EBITDA-to-sales		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated	0.017***	0.013**	0.015**	0.010	0.009	0.010	-0.005	0.001
	(0.001)	(0.014)	(0.037)	(0.122)	(0.244)	(0.168)	(0.192)	(0.863)
ln(MVE)		0.012***		0.003		-0.019***		-0.027***
		(0.004)		(0.498)		(0.003)		(0.000)
ln(Mkt/Book)		0.031***		0.052***		0.083***		0.079***
		(0.000)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.024		-0.135***		-0.141***		-0.066***
		(0.438)		(0.000)		(0.001)		(0.000)
Leverage		0.070***		0.081***		-0.004		0.000
		(0.004)		(0.004)		(0.893)		(0.994)
Inst. Ownership		0.041**		0.042**		0.021		0.009
		(0.021)		(0.030)		(0.406)		(0.372)
HHI		-0.033		0.017		-0.008		0.028
		(0.481)		(0.761)		(0.896)		(0.463)
HHI x HHI		0.004		-0.066		-0.040		-0.019
		(0.942)		(0.321)		(0.593)		(0.688)
Ad/Assets		0.275***		0.026		-0.012		0.070
		(0.007)		(0.867)		(0.947)		(0.511)
R&D Capital		0.012		-0.002		0.014		-0.019***
		(0.390)		(0.910)		(0.458)		(0.006)
N	38,790	38,790	38,790	38,790	38,790	38,790	38,790	38,790
Adjusted R^2	0.762	0.766	0.683	0.689	0.570	0.575	0.565	0.587
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4. Common Ownership, Industry Cuts, and Firm Profitability: This table reports difference-in-differences estimates from Equation 3, testing whether the impact of increased common ownership on firm profitability varies with industry competitiveness. The main variable of interest is the triple interaction $Post \times Treated \times IndustryCut$, where $Post$ equals one in the post-merger period, $Treated$ identifies firms affected by financial institution mergers, and $IndustryCut \in \{HHI, \text{CapEx Intensity}\}$. Firm-level control variables are defined in Appendix A. The list of mergers is provided in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

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	HHI				CapEx Intensity			
	Gross Margin	EBITDA-to-sales	NOPM	ROA	Gross Margin	EBITDA-to-sales	NOPM	ROA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x Ind. Cut	-0.009	-0.011	-0.011	0.003	0.014*	0.007	0.002	0.001
	(0.272)	(0.306)	(0.389)	(0.651)	(0.066)	(0.504)	(0.856)	(0.909)
Post x Treated	0.009	0.012	0.010	-0.003	-0.001	0.005	0.007	0.002
	(0.241)	(0.226)	(0.375)	(0.554)	(0.855)	(0.512)	(0.472)	(0.668)
Ind. Cut	-0.033*	-0.023	0.002	-0.011	0.030**	0.005	-0.011	-0.007
	(0.061)	(0.432)	(0.954)	(0.465)	(0.024)	(0.744)	(0.529)	(0.600)
Post x Ind. Cut	-0.015**	-0.003	-0.006	-0.007	0.007	-0.001	0.005	-0.007
	(0.019)	(0.731)	(0.559)	(0.168)	(0.217)	(0.901)	(0.611)	(0.167)
Treated x Ind. Cut	0.021	0.022	0.009	0.021	-0.013	0.033	0.031	0.005
	(0.285)	(0.468)	(0.794)	(0.211)	(0.504)	(0.188)	(0.277)	(0.756)
ln(MVE)	0.011**	0.003	-0.019***	-0.027***	0.010**	0.003	-0.019***	-0.026***
	(0.010)	(0.609)	(0.003)	(0.000)	(0.015)	(0.563)	(0.004)	(0.000)
ln(Mkt/Book)	0.032***	0.053***	0.084***	0.080***	0.032***	0.052***	0.084***	0.079***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash/Assets	-0.023	-0.134***	-0.141***	-0.066***	-0.023	-0.134***	-0.142***	-0.066***
	(0.464)	(0.000)	(0.001)	(0.000)	(0.450)	(0.000)	(0.001)	(0.000)
Leverage	0.068***	0.080***	-0.007	-0.000	0.070***	0.081***	-0.005	0.000
	(0.005)	(0.005)	(0.839)	(0.989)	(0.004)	(0.004)	(0.872)	(0.978)
Inst. Ownership	0.042**	0.042**	0.020	0.009	0.040**	0.042**	0.020	0.010
	(0.019)	(0.030)	(0.427)	(0.363)	(0.023)	(0.029)	(0.426)	(0.341)
HHI	0.030	0.049	0.019	0.039	-0.001	0.033	0.006	0.017
	(0.530)	(0.391)	(0.764)	(0.313)	(0.988)	(0.555)	(0.922)	(0.652)
HHI x HHI	-0.053	-0.095	-0.067	-0.029	-0.027	-0.081	-0.055	-0.008
	(0.372)	(0.163)	(0.376)	(0.546)	(0.651)	(0.232)	(0.466)	(0.863)
Ad/Assets	0.279***	0.031	-0.008	0.069	0.268***	0.023	-0.011	0.072
	(0.006)	(0.841)	(0.963)	(0.514)	(0.008)	(0.882)	(0.948)	(0.499)
R&D Capital	0.011	-0.002	0.014	-0.019***	0.010	-0.002	0.014	-0.019***
	(0.425)	(0.882)	(0.449)	(0.005)	(0.449)	(0.894)	(0.458)	(0.007)
N	38,757	38,757	38,757	38,757	38,757	38,757	38,757	38,757
Adjusted R^2	0.766	0.689	0.575	0.587	0.766	0.689	0.575	0.587
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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Table 5. Common Ownership, Product Similarity, and Firm Profitability: This table reports difference-in-differences estimates from Equation 3, testing whether the impact of increased common ownership on firm profitability varies with product market similarity ($ATSIM$). The main variable of interest is the triple interaction $Post \times Treated \times ATSIM$, where $Post$ equals one in the post-merger period, $Treated$ identifies firms affected by financial institution mergers, and $ATSIM$ measures a firm's product similarity to its industry peers. Firm-level control variables are defined in Appendix A. The list of mergers is provided in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	Gross Margin		EBITDA-to-sales		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x ATSIM	0.015**	0.012*	0.019**	0.015*	0.022**	0.021**	0.012***	0.012***
	(0.037)	(0.072)	(0.021)	(0.062)	(0.016)	(0.017)	(0.001)	(0.000)
Post x Treated	0.019***	0.015***	0.017**	0.013*	0.011	0.013	-0.004	0.003
	(0.001)	(0.006)	(0.032)	(0.070)	(0.223)	(0.128)	(0.382)	(0.426)
ATSIM	0.009**	0.009**	0.007	0.007*	0.004	0.005	0.003	0.003
	(0.025)	(0.020)	(0.124)	(0.096)	(0.426)	(0.353)	(0.284)	(0.279)
Post x ATSIM	0.002	0.003	-0.000	0.001	-0.004	-0.003	-0.001	0.001
	(0.327)	(0.248)	(0.969)	(0.620)	(0.287)	(0.459)	(0.662)	(0.729)
Treated x ATSIM	0.004	-0.000	-0.005	-0.008	-0.010	-0.011	-0.009	-0.009
	(0.719)	(0.977)	(0.711)	(0.541)	(0.502)	(0.459)	(0.154)	(0.152)
ln(MVE)		0.010**		0.002		-0.020***		-0.028***
		(0.015)		(0.731)		(0.001)		(0.000)
ln(Mkt/Book)		0.032***		0.054***		0.085***		0.080***
		(0.000)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.021		-0.131***		-0.137***		-0.063***
		(0.477)		(0.000)		(0.001)		(0.000)
Leverage		0.066***		0.079***		-0.007		-0.001
		(0.006)		(0.005)		(0.828)		(0.915)
Inst. Ownership		0.038**		0.041**		0.020		0.009
		(0.030)		(0.036)		(0.421)		(0.401)
HHI		-0.021		0.022		-0.011		0.028
		(0.649)		(0.687)		(0.866)		(0.460)
HHI x HHI		-0.016		-0.078		-0.040		-0.022
		(0.778)		(0.241)		(0.591)		(0.644)
Ad/Assets		0.252**		0.005		-0.033		0.054
		(0.012)		(0.976)		(0.852)		(0.615)
R&D Capital		0.009		-0.004		0.012		-0.020***
		(0.499)		(0.800)		(0.518)		(0.003)
N	38,790	38,790	38,790	38,790	38,790	38,790	38,790	38,790
Adjusted R^2	0.763	0.767	0.684	0.690	0.570	0.576	0.566	0.588
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6. Dynamic Effects of Common Ownership and Product Similarity on Firm Profitability: This table reports event-study estimates from a difference-in-differences specification that interacts the treatment indicator and product similarity ($ATSIM$) with event-time dummies spanning the five years before and after the merger. The coefficients on $ATSIM$ interacted with event-time indicators capture dynamic treatment effects before and after financial institution mergers. The omitted category is the year immediately preceding the merger announcement. Variable definitions are in Appendix A, and the list of mergers is in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	Gross Margin	EBITDA-to-sales	NOPM	ROA
	(1)	(2)	(3)	(4)
t=-5 x Treated x ATSIM	-0.000	-0.001	0.006	-0.003
	(0.958)	(0.888)	(0.605)	(0.461)
t=-4 x Treated x ATSIM	0.001	0.005	0.011	0.001
	(0.897)	(0.600)	(0.300)	(0.792)
t=-3 x Treated x ATSIM	-0.007	0.000	0.002	-0.001
	(0.359)	(0.969)	(0.841)	(0.783)
t=-2 x Treated x ATSIM	-0.002	0.000	0.001	-0.003
	(0.808)	(0.977)	(0.894)	(0.261)
t=+1 x Treated x ATSIM	0.005	0.006	0.013	0.012***
	(0.514)	(0.519)	(0.259)	(0.001)
t=+2 x Treated x ATSIM	0.014*	0.013	0.028**	0.010**
	(0.067)	(0.181)	(0.017)	(0.012)
t=+3 x Treated x ATSIM	0.009	0.010	0.021*	0.007*
	(0.273)	(0.314)	(0.066)	(0.095)
t=+4 x Treated x ATSIM	0.008	0.015	0.020	0.011**
	(0.398)	(0.188)	(0.114)	(0.016)
t=+5 x Treated x ATSIM	0.017*	0.032***	0.043***	0.015***
	(0.076)	(0.003)	(0.001)	(0.001)
N	38,790	38,790	38,790	38,790
Adjusted R^2	0.767	0.690	0.576	0.588
Deal x Firm FE	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes

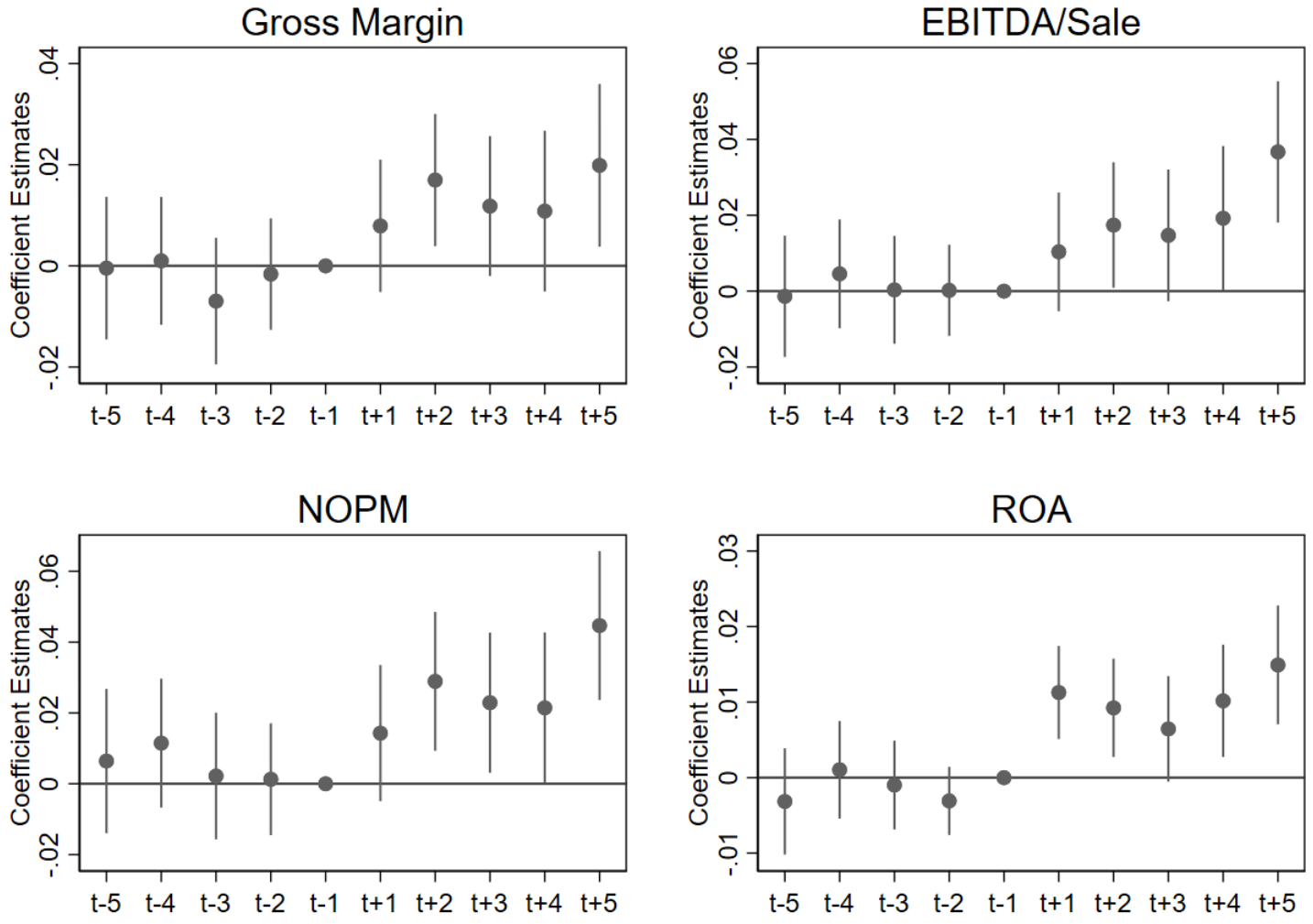


Figure 1. Dynamic Effects of Common Ownership and Product Similarity on Firm Profitability: This figure plots the estimated coefficients from the event study difference-in-differences specification in Table 6, along with their 90% confidence intervals.

Internet Appendix

Table IA.1. Effect of Common Ownership on Product Similarity and Industry Size: This table reports regression results from estimating Equation 1, where the dependent variable is either product similarity (ATSIM) or the natural logarithm of the number of firms in the industry. Variable definitions are in Appendix A, and the list of mergers is in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	Similarity		lnNumFirms	
	(1)	(2)	(3)	(4)
Post x Treated	-0.001*	-0.000	0.047***	0.015
	(0.099)	(0.470)	(0.001)	(0.314)
ATSIM		0.016***		-0.015
		(0.000)		(0.221)
ln(MVE)		0.000		0.038***
		(0.697)		(0.000)
ln(Mkt/Book)		0.000		0.025*
		(0.637)		(0.057)
Cash/Assets		0.000		0.068
		(0.913)		(0.136)
Leverage		0.000		0.072*
		(0.983)		(0.092)
Inst. Ownership		-0.001		-0.022
		(0.523)		(0.485)
HHI		0.002		-1.749***
		(0.730)		(0.000)
HHI x HHI		-0.009		1.250***
		(0.254)		(0.000)
Ad/Assets		0.012		-0.543*
		(0.104)		(0.070)
R&D Capital		0.000		0.118***
		(0.717)		(0.000)
N	37,778	37,778	38,790	38,790
Adjusted R^2	0.875	0.901	0.963	0.965
Deal x Firm FE	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes

Table IA.2. Excluding Blackrock-BGI Merger: This table replicates the main difference-in-differences estimates from Equation 3, but excludes the BlackRock-BGI merger. Otherwise, this table is identical to Table 5.

	Gross Margin		EBITDA-to-sales		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x ATSIM	0.016**	0.013*	0.017**	0.013	0.021**	0.019**	0.011***	0.011***
	(0.035)	(0.064)	(0.042)	(0.108)	(0.023)	(0.029)	(0.002)	(0.001)
Post x Treated	0.022***	0.018***	0.018**	0.015**	0.014	0.017**	-0.003	0.004
	(0.000)	(0.001)	(0.016)	(0.032)	(0.103)	(0.040)	(0.522)	(0.258)
ATSIM	0.007	0.007*	0.003	0.003	0.000	0.001	0.003	0.002
	(0.107)	(0.082)	(0.444)	(0.394)	(0.982)	(0.904)	(0.402)	(0.432)
Post x ATSIM	0.002	0.003	0.001	0.003	-0.002	-0.001	-0.000	0.002
	(0.351)	(0.285)	(0.762)	(0.383)	(0.530)	(0.855)	(0.982)	(0.257)
Treated x ATSIM	0.007	0.002	0.003	-0.000	-0.004	-0.005	-0.008	-0.008
	(0.558)	(0.882)	(0.820)	(0.991)	(0.781)	(0.735)	(0.192)	(0.202)
ln(MVE)		0.012***		0.003		-0.019***		-0.028***
		(0.004)		(0.543)		(0.003)		(0.000)
ln(Mkt/Book)		0.031***		0.053***		0.084***		0.080***
		(0.000)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.025		-0.131***		-0.135***		-0.064***
		(0.426)		(0.000)		(0.001)		(0.000)
Leverage		0.063**		0.064**		-0.025		-0.005
		(0.010)		(0.025)		(0.436)		(0.685)
Inst. Ownership		0.034*		0.034*		0.017		0.006
		(0.064)		(0.094)		(0.516)		(0.581)
HHI		-0.009		0.046		0.022		0.036
		(0.846)		(0.402)		(0.726)		(0.338)
HHI x HHI		-0.038		-0.108		-0.083		-0.041
		(0.515)		(0.104)		(0.265)		(0.382)
Ad/Assets		0.234**		-0.048		-0.088		0.018
		(0.023)		(0.750)		(0.610)		(0.863)
R&D Capital		0.012		0.000		0.017		-0.020***
		(0.391)		(0.980)		(0.378)		(0.006)
N	36,920	36,920	36,920	36,920	36,920	36,920	36,920	36,920
Adjusted R^2	0.765	0.770	0.694	0.700	0.575	0.580	0.563	0.586
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.3. Using FIC400 instead of three-digit SIC to define industry: This table presents difference-in-differences estimates analogous to those in the main analysis (Equation 3), testing whether the effect of increased common ownership on firm profitability varies with product market similarity ($ATSIM$). The key variable remains the triple interaction $Post \times Treated \times ATSIM$, where $Post$ indicates the post-merger period, $Treated$ identifies firms affected by financial institution mergers, and $ATSIM$ measures firm-level product similarity using the FIC400 industry classification rather than the three-digit SIC code. Even-numbered specifications include firm-level controls (defined in Appendix A). The list of mergers is provided in Appendix B. Standard errors are clustered at the $deal \times firm$ level, with p-values in parentheses.

	Gross Margin		EBITDA-to-sales		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x ATSIM	0.021***	0.019***	0.019**	0.017**	0.017*	0.017*	0.010**	0.011***
	(0.002)	(0.003)	(0.019)	(0.026)	(0.065)	(0.060)	(0.013)	(0.004)
Post x Treated	0.015***	0.012**	0.014**	0.010	0.009	0.007	0.002	0.003
	(0.008)	(0.029)	(0.048)	(0.146)	(0.252)	(0.351)	(0.570)	(0.368)
ATSIM	-0.001	-0.002	-0.005	-0.006	-0.002	-0.003	0.003	0.002
	(0.811)	(0.461)	(0.210)	(0.135)	(0.659)	(0.551)	(0.353)	(0.540)
Post x ATSIM	0.004	0.003	0.003	0.002	-0.002	0.001	-0.006*	-0.002
	(0.183)	(0.327)	(0.519)	(0.587)	(0.777)	(0.825)	(0.083)	(0.590)
Treated x ATSIM	-0.012*	-0.011*	-0.008	-0.007	-0.010	-0.010	-0.009**	-0.009**
	(0.071)	(0.069)	(0.326)	(0.377)	(0.260)	(0.257)	(0.040)	(0.031)
ln(MVE)		0.007*		0.001		-0.019***		-0.027***
		(0.080)		(0.807)		(0.005)		(0.000)
ln(Mkt/Book)		0.028***		0.047***		0.077***		0.074***
		(0.000)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.007		-0.120***		-0.109***		-0.057***
		(0.814)		(0.000)		(0.006)		(0.000)
Leverage		0.063***		0.077***		-0.008		-0.002
		(0.004)		(0.003)		(0.792)		(0.863)
Inst. Ownership		0.043**		0.041**		0.027		0.004
		(0.011)		(0.030)		(0.280)		(0.714)
HHI		-0.049		0.002		0.099		-0.021
		(0.324)		(0.977)		(0.174)		(0.436)
HHI x HHI		0.064		-0.013		-0.105		0.030
		(0.279)		(0.875)		(0.272)		(0.372)
Ad/Assets		0.262***		0.072		0.098		0.049
		(0.002)		(0.554)		(0.479)		(0.577)
R&D Capital		0.001		-0.015		0.008		-0.028***
		(0.967)		(0.398)		(0.724)		(0.001)
N	40,530	40,530	40,530	40,530	40,530	40,530	40,530	40,530
Adjusted R^2	0.757	0.760	0.683	0.687	0.566	0.570	0.568	0.586
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.4. Using Blockholders Only: This table replicates the main difference-in-differences analysis (Equation 3) but defines treated and control firms using blockholders only. This table is otherwise identical to Table 5.

	Gross Margin		EBITDA/Sale		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x ATSIM	0.077***	0.070***	0.072***	0.065***	0.069***	0.061***	0.037***	0.031***
	(0.002)	(0.003)	(0.000)	(0.000)	(0.001)	(0.003)	(0.000)	(0.000)
Post x Treated	0.051***	0.049***	0.052***	0.055***	0.054***	0.061***	0.023***	0.031***
	(0.004)	(0.004)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
ATSIM	0.010*	0.008	0.013*	0.011	0.007	0.005	0.007	0.007
	(0.088)	(0.177)	(0.082)	(0.111)	(0.434)	(0.537)	(0.258)	(0.205)
Post x ATSIM	-0.006	-0.005	-0.009**	-0.007*	-0.011**	-0.008*	-0.011***	-0.008***
	(0.110)	(0.197)	(0.024)	(0.084)	(0.010)	(0.068)	(0.002)	(0.009)
Treated x ATSIM	0.012	0.013	-0.018	-0.013	-0.004	0.008	-0.030*	-0.020
	(0.822)	(0.806)	(0.787)	(0.840)	(0.955)	(0.902)	(0.083)	(0.139)
ln(MVE)		0.005		-0.015*		-0.044***		-0.034***
		(0.511)		(0.050)		(0.000)		(0.000)
ln(Mkt/Book)		0.031**		0.072***		0.109***		0.097***
		(0.045)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.105**		-0.115***		-0.137***		-0.084***
		(0.040)		(0.005)		(0.002)		(0.001)
Leverage		0.001		0.012		-0.093*		-0.040**
		(0.977)		(0.799)		(0.084)		(0.032)
Inst. Ownership		0.025		0.019		0.039		0.002
		(0.482)		(0.449)		(0.288)		(0.915)
HHI		-0.162*		-0.219**		-0.334***		-0.126*
		(0.073)		(0.030)		(0.002)		(0.094)
HHI x HHI		0.185*		0.244**		0.386***		0.175*
		(0.081)		(0.032)		(0.003)		(0.091)
Ad/Assets		0.508*		0.102		0.325		0.258**
		(0.056)		(0.501)		(0.105)		(0.026)
R&D Capital		0.020		0.014		0.032		0.007
		(0.345)		(0.437)		(0.116)		(0.344)
N	10,630	10,630	10,630	10,630	10,630	10,630	10,630	10,630
Adjusted R^2	0.758	0.760	0.674	0.679	0.546	0.555	0.562	0.594
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.5. Using ln(Assets) instead of ln(MVE): This table replicates the main difference-in-differences analysis (Equation 3) but controls for firm size using ln(Assets) rather than ln(MVE). This table is otherwise identical to Table 5.

	Gross Margin		EBITDA-to-sales		NOPM		ROA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Treated x ATSIM	0.015**	0.013*	0.019**	0.015*	0.022**	0.021**	0.012***	0.012***
	(0.037)	(0.065)	(0.021)	(0.058)	(0.016)	(0.017)	(0.001)	(0.000)
Post x Treated	0.019***	0.016***	0.017**	0.014*	0.011	0.013	-0.004	0.004
	(0.001)	(0.005)	(0.032)	(0.063)	(0.223)	(0.107)	(0.382)	(0.294)
ATSIM	0.009**	0.010**	0.007	0.007*	0.004	0.004	0.003	0.003
	(0.025)	(0.018)	(0.124)	(0.096)	(0.426)	(0.385)	(0.284)	(0.346)
Post x ATSIM	0.002	0.003	-0.000	0.001	-0.004	-0.002	-0.001	0.001
	(0.327)	(0.275)	(0.969)	(0.612)	(0.287)	(0.557)	(0.662)	(0.496)
Treated x ATSIM	0.004	-0.000	-0.005	-0.008	-0.010	-0.010	-0.009	-0.008
	(0.719)	(0.977)	(0.711)	(0.545)	(0.502)	(0.471)	(0.154)	(0.172)
ln(Assets)		0.008**		-0.001		-0.023***		-0.031***
		(0.044)		(0.888)		(0.000)		(0.000)
ln(Mkt/Book)		0.043***		0.055***		0.061***		0.048***
		(0.000)		(0.000)		(0.000)		(0.000)
Cash/Assets		-0.022		-0.132***		-0.138***		-0.064***
		(0.467)		(0.000)		(0.001)		(0.000)
Leverage		0.056**		0.079***		0.021		0.036***
		(0.018)		(0.005)		(0.513)		(0.004)
Inst. Ownership		0.042**		0.044**		0.021		0.010
		(0.016)		(0.018)		(0.382)		(0.324)
HHI		-0.025		0.021		-0.006		0.034
		(0.596)		(0.707)		(0.918)		(0.364)
HHI x HHI		-0.011		-0.075		-0.046		-0.030
		(0.844)		(0.253)		(0.536)		(0.525)
Ad/Assets		0.246**		0.001		-0.030		0.058
		(0.014)		(0.995)		(0.864)		(0.584)
R&D Capital		0.008		-0.005		0.010		-0.023***
		(0.535)		(0.751)		(0.589)		(0.001)
N	38,790	38,790	38,790	38,790	38,790	38,790	38,790	38,790
Adjusted R^2	0.763	0.767	0.684	0.690	0.570	0.576	0.566	0.590
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes