When Does Common Ownership Matter?

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Abstract

I find that the effects of common ownership vary depending on firms' product market characteristics. While an increase in common ownership does not have a consistent effect on gross margin, it raises a firm's gross margin by an average of two percentage points for firms with similar products. Moreover, with an increase in common ownership, firms with similar products have higher profitability and reduce their R&D expenditures. I use mergers and acquisitions of financial institutions as a quasi-natural experiment to exogenously vary a firm's common ownership levels and establish causality. My findings suggest that any regulation to curb the anticompetitive effects of common ownership needs more industry-level analysis and should take into account the product-market characteristics of firms.

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1 Introduction

Recent empirical work finds that an increase in common ownership, when two firms are (at least partially) owned by the same investors, is associated with higher product pricing in the airline (Azar, Schmalz, and Tecu (2018)) and the banking industries (Azar, Raina, and Schmalz (2016)). These findings have sparked policy debates on how to curb the potential anti-competitive effects of common ownership. Some academics suggest that antitrust agencies like the Department of Justice (DoJ) and the Federal Trade Commission (FTC) should consider common ownership of firms when reviewing mergers and acquisitions (Elhauge (2016) and Elhauge (2017)). Others recommend limiting institutional investors from investing in multiple firms in an industry (Posner, Scott Morton, and Weyl (2017)). However, competitive interactions among firms are often a function of their product characteristics (Chamberlin (1933), Robinson (1933)). Therefore, an important and unanswered question is whether the anti-competitive effects of common ownership are pervasive or do they depend upon other competitive features of a firm's product space. In this paper, I test whether the pricing effects of common ownership are concentrated in certain industries or exist across all or most industries. I find that the potential anti-competitive pricing effects of common ownership are strongest in industries with more similar products and are statistically indistinguishable from zero in industries with differentiated products.

Theoretically, common ownership among firms can result in higher price levels (Rotemberg (1984), Farrell (1985), Azar (2019)). However, if a firm has well-differentiated products with no rivals in its product space, then it can earn monopoly profits. Therefore, having overlapping shareholders with industry peers should not affect price competition. In contrast, firms offering *similar* products compete on prices to gain market share. The presence of common owners should reduce the incentives of these firms to compete on price. That is, if the firms compete in the same product space, incentives to not compete brought about

by the presence of common owners, would be strong because the firms might potentially gain from tacit collusion. Based on the above argument, this paper tests the following hypothesis: firms with *similar* products experience stronger pricing effects due to common ownership.

Ideally, to test the hypothesis that the effects of common ownership vary by product market characteristics of a firm, one will regress average product prices on various measures of common ownership and product similarity. However, firms do not report per unit prices or marginal costs. The closest widely available proxy is gross margin (measured as sales minus cost of goods sold as a percentage of sales) as a proxy for price levels. Gross margin captures the ability of a firm to price its products above the cost of goods sold and is indicative of market power. Therefore, I regress industry-adjusted gross margin on various measures of common ownership interacted with product similarity to test my hypothesis. I follow Hoberg and Phillips (2016) to define average product similarity (ATSIM) as the average similarity between a firm and its industry peer. I define industries in three ways: 3-digit SIC codes, 10-K based measure developed by Hoberg and Phillips (2010) i.e. FIC400 codes, and the closest 50 peers as measured by the product similarity score. I find that the relationship between gross margin and common ownership is stronger when the products are more similar. Specifically, a one standard deviation increase in common ownership increases gross margin by 0.8 to 3.6 percentage points (pp) when product similarity is one standard deviation above its mean.

Gross margin can increase because of an increase in product prices or because of a decrease in costs. Theoretically, in a perfectly competitive environment, a firm should price at marginal cost. The ability of a firm to not pass its cost reductions on to consumers indicates market power, which is consistent with the argument that common ownership reduces competition and increases the market power of these firms. However, to investigate whether the gross margin results are driven by product prices or cost reductions I hand-

collect data on the reasons for changes in gross margins for 100 firm-years from the MD&A section (Item 7) of annual reports and perform a difference-in-means test of whether firms with higher levels of common ownership are more likely to mention price increases. I find that firms with similar products are 2.7% to 6% more likely to mention price increases with a one standard deviation increase in Δ common ownership.

While price is one way to compete, firms can also compete on product features and quality. To the extent that common ownership has anti-competitive effects, firms with common owners should have fewer incentives to innovate. Thus, I hypothesize that firms with similar products and common ownership reduce research and development (R&D) expenditures. A competing hypothesis is that firms with common owners can invest in process improvements to reduce costs and further improve margins. I find that firms with similar products reduce their R&D spending by 0.5 to 2.5 percentage points with a one standard deviation increase in common ownership. This result is consistent with the anti-competitive effects of common ownership. Higher gross margins and reduced R&D expenditures translate to higher profitability. Firms with similar products earn 0.8 to 2.1 pp higher industry-adjusted ROA when the common ownership increases by one standard deviation. The mean level of common ownership is 13% with a standard deviation of 27% and the mean of similarity score is 0.03 with a standard deviation of 0.03. On average, a firm is connected to 23% of its industry peers and has 5.56 common owners.[1]

The results thus far show that there is a correlation in the effects of common ownership on pricing depend on the product market characteristics of a firm. To test whether the above findings indicate that the effects of common ownership are concentrated in certain industries, I sort my data into quartiles based on the average product similarity. I find that the anti-competitive effects are not the same across industries – the effects are present in

[1] All coefficients reported here are based on OLS regressions using 3-SIC as industry classification. The results are comparable if I use alternate measures of common ownership or alternate industry definitions.

industries with high average product similarity. Gross margin, R&D to sales ratio, and EBITDA to assets ratio have no reliable relation with common ownership for industries with low average product similarity scores. This finding suggests that concerns about, and potentially regulations of, common ownership should focus on some industries more than others.

Panel regressions do not clearly establish whether common ownership encourages tacit collusion among portfolio companies to charge higher prices or, alternatively, whether common ownership increases disproportionately for companies with products that are distinctive enough to generate higher product margins for shareholders. To address this reverse causality concern, I follow He and Huang (2017) and Lewellen and Lowry (2019) and use mergers and acquisitions (M&A) of financial institutions as a quasi-natural experiment. When two financial institutions merge, the merger affects the common ownership of the firms in their portfolios independent of firm characteristics. I use the portfolio holdings of the merging institutions one quarter prior to the merger announcement date to first identify treated and control firms and then use difference-in-differences estimation to test my hypotheses. The difference-in-difference estimates are similar to the panel regression estimates.

This paper adds to the literature on common ownership. With the increasing concentration of US industries (Grullon, Larkin, and Michaely (2017)), lower investments despite high Tobin's Q (Gutiérrez and Philippon (2016)), and the rise of institutional holdings and common ownership (Gilje, Gormley, and Levit (2017)), questions about the anti-competitive effects of common ownership are pertinent. Currently, there is no consensus on the effects of common ownership. Several papers find that it affects firm policies and decisions. Matvos and Ostrovsky (2008) find that investors which own both acquirer and target are more likely to vote for the merger. He and Huang (2017) show that commonly owned firms have higher market share growth and cost synergies. Semov (2017) provides

evidence that commonly owned firms hold less cash on hand and move together in the product space. Panayides and Thomas (2017) find evidence of cost reduction in manufacturing industries. Freeman (2017) documents that vertical common ownership improves customer-supplier relationships.

Others are skeptical of the effects of institutional investors on the competitive landscape of various industries.[2] In fact, some industry experts claim that the concept lacks economic foundation – Barbara Novick (co-founder and vice chairman of BlackRock) notes, "These papers lack economic logic and factual support from the real world."[3] Several other papers have challenged the findings (see: Lewellen and Lowry (2019), O'Brien and Waehrer (2017), Gramlich and Grundl (2017), Dennis, Gerardi, and Schenone (2018)). For instance, Dennis, Gerardi, and Schenone (2018) find that common ownership does not have any pricing effect in the airlines' industry once the passenger count is accounted for. Similarly, Gramlich and Grundl (2017) find mixed evidence of pricing effects in the banking industry.

This paper makes two contributions to the literature. First, I show that the anti-competitive effect of common ownership are stronger for industries that have similar products. That the anti-competitive effects of common ownership accrue to firms that have similar products is an important finding because it indicates that *any* policy implications about common ownership should take into account industry characteristics. To the extent that common ownership reduces competition, policymakers may consider taking steps to curb the anti-competitive effects of common ownership. Curtailing ownership across multiple firms in an industry with a high level of product similarity might not eliminate portfolio diversification benefits for an investor because demand across such firms would be positively correlated. On the other hand, allowing investors to invest in multiple firms

[2] See: O'Brien and Waehrer (2017); https://www.foley.com/horizontal-shareholding-is-oligopoly-pricing-a-symptom-or-the-disease-03-30-2017/

[3] https://www.wsj.com/articles/how-index-funds-democratize-investing-1483914571

in industries with lower product similarity would allow them to reap the benefits of diversification without affecting the market power of the firm.

Second, I develop measures of common ownership that are firm-specific and take into account not only blockholders (investors that hold with 5% or higher shares outstanding) but also owners that have a substantial monetary stake in a firm. For instance, in June 2011, none of the top ten investors in Microsoft were blockholders, but collectively they held 22% of its market cap, and the holding of the smallest investor of the top ten was $2 billion. My results suggest that when constructing measures of common ownership, it may be important to look beyond strictly defined blockholders. If non-blockholders with large monetary stakes are important, focusing strictly on blockholders underestimates the level of common ownership for large firms. Compared to my definition, using only blockholders underestimates the level of common ownership firms have. For instance, based solely on blockholders, 42% of firms in the Compustat universe are commonly owned. This number increases to 70% when one includes not only blockholders but also investors that may not have a large equity *percentage* stake but has a substantial *monetary* stake in the firm.

An important unanswered question is the mechanism by which common owners affect firm policy. The biggest challenge in answering this question is that tacit collusion is not observable. One plausible mechanism is that CEO incentives for commonly owned firms are aligned more with industry performance than with firm performance. Liang (2016) find evidence of this. Kwon (2016), using a different methodology, finds evidence to the contrary. Another plausible channel is that investors support the management when faced with issues involving the industry-peers.[4] However, more research is required to identify the precise mechanism(s).

[4] http://ericposner.com/martin-schmalz-how-passive-funds-prevent-competition/

2 Data and Descriptive Statistics

This section describes the data – the sample construction process, variable definitions, and the summary statistics.

2.1 Sample Construction

I start with all publicly listed firms (intersection of Compustat and CRSP) with positive assets, non-negative sales, and non-missing industry classification (3-digit SIC code and FIC400 code).[5] I drop firms that have no product similarity score in the Hoberg and Phillips data library.[6] I exclude industries with less than two firms, financial firms (SIC 6000-6999) and utility firms (SIC 4900-4999). Finally, I remove firms with negative cost of goods sold or R&D expenses.[7] My results are unchanged if I include these observations.The final sample has 63,831 firm-years. The sample period covers 1997–2017.

2.2 Variable Definitions

Appendix A contains detailed definition of all the variables used in this paper.

Dependent Variable

The primary variable of interest is gross margin, Gross margin is sales minus cost of goods sold divided by sales. It captures the ability of a firm to price its good above cost of goods sold. I also study firms' R&D expenditure as a percentage of total sales to test if common ownership has differential effect on firms' innovation spending. I replace missing R&D expenditure with zero. To test whether common ownership impacts firms' profitability, I use the EBITDA to assets ratio and net income to assets ratio (ROA) as dependent variables.

[5] FIC stands for fixed industry classification. This classification was developed by Hoberg and Phillips (2010) and Hoberg and Phillips (2016) using textual analysis of 10-Ks. The data is available on their website http://hobergphillips.usc.edu/industryclass.htm

[6] Product similarity data is available at http://hobergphillips.usc.edu/

[7] There are only 5 observations in my final sample with negative R&D expenditure and cost of goods sold.

All dependent variables are adjusted for the industry average, where the industry is defined alternately using the 3-digit SIC code (SIC) or the FIC400(FIC).[8] All continuous variables are winsorized at 1st and 99th percentile except gross margin. Gross margin is winsorized at 5th and 95th percentile because the distribution is different. My results hold if I winsorize gross margin at 1st and 99th percentile but the coefficients are implausibly large.

Calculating Common Ownership

A firm is commonly owned if its shareholders hold one or more of its industry peers. I use Thomson Reuters' (13-F) database to identify such shareholders. All financial institutions that manage $100 million or more have to report their holdings to the SEC using form 13-F. Thomson Reuters has multiple manager numbers for the same fund family. I follow Lowry, Rossi, and Zhu (2019) and Bodnaruk and Rossi (2016) to consolidate holdings data for a given fund.[9] Moreover, the data for Blackrock is split across six manager numbers. I follow Ben-David, Franzoni, Moussawi, and Sedunov (2015) to consolidate the data for Blackrock.

To calculate the level of common ownership at a given firm, it is important to identify which institutional investors should be classified as common owners. The empirical literature has either focused on blockholders (shareholders who own 5% or more common shares outstanding) or used an arbitrary percentage cutoff. While it is important that these investors hold substantial equity in the firm, the dollar value of the investment is also relevant as it is hard for an investor to be a blockholder in large firms. Focusing solely on equity stake ignores economically meaningful stakes in larger firms. For example, using only blockholders ignores common ownership links among large firms such as Apple Inc. Apple has only one blockholder in the third-quarter of 2010 but 325 investors with an aver-

[8] An alternate way to defined industries is by using product similarity score. I get similar results if, for a given firm, I define industries as consisting of top-50 firms as ranked by the product similarity score (see: appendix C).

[9] I am grateful to Marco Rossi for graciously sharing the data with me.

age of $477.66 million (median of $129.66 million) per investor invested in the firm.[10] As a result, any measure of common ownership that relies solely on blockholders underestimates the level of common ownership in an industry.

Therefore, I use the following approach. For each quarter, I keep investors that either own 5% or more in the firm or that have substantial dollar amount invested in the firm. A holding is considered substantial if the dollar value of the holding is higher than the median dollar holding of a blockholder in any firm. For instance, in the third quarter of 2009, the median holding of a blockholder across all firms was $31 million. Therefore, for constructing common ownership measure as of September 2009, I consider all investors that were either blockholders or whose holdings were greater than $31 million. An investor is classified as a common owner if it owns at least one other firm in the same industry.[11] Using these institutional investors, I create three measures of common ownership.[12]

The first measure, *WtComOwn*, is the product of a common owner's stake in the firm and its industry-peer summed over all common owners and industry-peers. I first calculate the percentage of shares held by investor i in the focal firm each quarter, multiply the shares held by investor i in focal firm and its industry-peers, and then sum over all common owners and industry peer. I then average the quarterly measure over the fiscal year to get a firm-year measure. *WtComOwn* captures the degree to which the firm is commonly owned. It is similar to the measure used by Lewellen and Lowry (2019). My results are consistent if I use the percentage of shares held by common owners without the peer-weights. The second measure, *PropPeer*, is the proportion of industry-peers. I first identify

[10] The average and the median amount reported for Apple's investors excludes its sole blockholder.

[11] As reported in the robustness section, my results are similar if I use blockholders only. However, as mentioned earlier, using blockholders neglect economically meaningful holdings especially in large firms.

[12] Many empirical papers use the Modified Herfindahl Index Delta (MHHID) to capture common ownership. MHHID is an industry level measure that aggregates each firm's incentives to internalize the externalities it imposes on its industry peers. I do not use MHHID as I want to measure common ownership at the firm-level. Moreover, MHHID uses market share as weight. My main variable of interest is gross margin. Because price levels affect market share, using MHHID would make it hard to disentangle whether the variation in market share or the variation in holdings is driving my results.

the total number of unique industry peers a firm is connected to via common owners in each quarter. I then average it over the fiscal year to get an annual number. *PropPeer* is the number of unique industry peers a firm is connected to in a year divided by the total firms, excluding the firm itself, in that industry-year. Note that number of firms in an industry is available annually. Therefore, averaging the number of firms and then calculating the ratio is equivalent to averaging the ratio. For example, suppose an industry has ten firms and firm *i* is connected to three other firms in that industry. *PropPeer* is 3 divided by 9 (=10-1) i.e. 1/3. This measure captures how connected a firm is in a given industry. The third measure, *NumMgnr*, is the number of common owners a firm has in a given fiscal year. I first calculate the number of common owners a firm has in a quarter and then average it over the fiscal year to get a firm-year measure. This measure is analogous to He and Huang (2017)'s NumCross variable. An institutional investor is classified as a common owner if it owns at least one other firm in the same industry. For a given firm, this measure captures how many investors are invested in the firm as well as its industry peers. The more common owners a firm has, the more likely it is that its interests are aligned with industry peers.

Measuring Product Similarity

I use Hoberg and Phillips (2016)'s total similarity score to capture the extent to which a firm's product offerings are similar to its industry-peers. Average total similarity (ATSIM) measures how similar a firm's product description is relative to other firms. Specifically, for a given firm *i*, words in its business description, as reported in its annual report, is represented using a vector, V_i. In a given fiscal year, pairwise product similarity between firm *i* and *j* is one minus the cosine distance of the V_i and V_j. This pairwise measure is aggregated to get an annual firm-level measure of product similarity. There are two ways to aggregate the measure – average over all the firms in the sample (*ATSIM*) or average over all the firms in a given industry, where industry is defined using 3-digit SIC code

(*ATSIM-SIC*) or FIC400 code (*ATSIM-FIC*) or top-50 closest product market peers.

Control Variables

I control for the firm's size (natural log of total assets), its growth opportunities (natural log of market to book ratio), cash to asset ratio, how much it spends on advertising and R&D as a percentage of assets, and its leverage ratio (total debt to assets ratio). I also control for percentage of shares held by all institutional investors to control for any effect institutional investors might have on a firm's gross margin and profitability. I control for industry concentration using Herfindahl-Hirschman index (HHI). Since competition have non-linear effect on R&D (Aghion, Bloom, Blundell, Griffith, and Howitt (2005)), I also control for quadratic form of HHI. All control variables are measured at t-1. All ratios are winsorized at the 1st and the 99th percentile.

2.3 Summary Statistics

Table 1 gives the summary statistics. Panel A presents the descriptive statistics for the dependent as well as the key independent variables. Average (median) industry-adjusted gross margin is 0% (1%), average industry-adjusted R&D to sales ratio is 0% and average (median) industry-adjusted ROA is 1% (4%), where industry is defined using 3-digit SIC code. Average total similarity is 0.03. On average a firm is connected to 23% of its industry-peers (*PropPeer*)[13] and have an average of approximately five common owners (*NumMgnr*). The descriptive statistics are similar if I use FIC400.

Panel B presents the descriptive statistics for firm characteristics. Average firm size is $2.80 billion. The average firm has a market to book ratio of 2. The mean cash to assets ratio is 22% and leverage ratio is 22%. In a typical firm, 47% of shares are held by all institutional investors compared to 16% of shares held by blockholders. The average industry concentration (HHI) is 1900, which according to the FTC's definition is moderate.

[13] The mean market share held by the peers is 52% (40% per common owner).

72%-74% of the firms have at least one common owner.

3 Results

This section describes the empirical design and presents the panel regression results. In section 4, I use a quasi-natural experiment to establish causality.

3.1 Evidence of price increase

To test if the pricing effects of common ownership vary based on product market characteristics, I estimate the following regression equation:

$$\begin{aligned} \mathrm{Y}_{\mathrm{it}} = \beta_1 \mathrm{CommonOwnership}_{\mathrm{t-1}} + \beta_2 \mathrm{ATSIM}_{\mathrm{t-1}} + \beta_3 \mathrm{CommonOwnership}_{\mathrm{t-1}} \text{ x } \mathrm{ATSIM}_{\mathrm{t-1}} \\ + \gamma' \mathrm{X}_{\mathrm{t-1}} + \alpha_i + \eta_t + \mathrm{e}_{\mathrm{it}} \end{aligned} \tag{1}$$

where Y is alternatively measured as industry-adjusted gross margin, industry-adjusted R&D to sales ratio, industry-adjusted ROA, and industry-adjusted EBITDA to assets ratio. Common ownership is one of the three measures discussed in section 2.2, ATSIM is the measure of average product similarity defined in section 2.2, X includes firm-level controls defined in appendix A, α_i are firm fixed effects, and η_t are year fixed effects. Standard errors are clustered by firms. To make it easier to interpret the results, coefficients on common ownership and the similarity measures are standardized (with mean zero and variance one) in the tables. The coefficient of interest is β_3, the coefficient on the interaction term between common ownership and ATSIM. It measures the extent to which common ownership has a differential effect on a firm's price levels based on its product similarity.

Table 2 presents the results of the panel regressions. I first test the main dependent variable, industry-adjusted gross margin, where the industry is defined using 3-digit SIC

code in Panel A and FIC400 in Panel B. Columns (1)-(3) use the average product similarity aggregated over all firms (*ATSIM*) whereas columns (4)-(6) use average product similarity aggregated over the specific industry (*ATSIM-SIC* or *ATSIM-FIC*). The interaction coefficient is positive and statistically significant, i.e., the effects of common ownership are stronger when a firm has higher product similarity. All else equal, increase in product similarity should ideally lower a firm's ability to charge higher margins, i.e., firms with a high level of product similarity should have lower pricing power. However, the coefficient on the interaction term suggests that the anti-competitive effects of common ownership are present for firms with similar products. It is interesting to note that the main effect of common ownership is different across different specifications. This further showcases that it is important to take into account the product market characteristics of a firm.

One possible concern is that the higher gross margin is caused by reasons other than price increases. For instance, it is possible that the unit selling price and volume were constant, but the firm reduced costs. That is, the firm improved its margin because it lowered its cost per unit due to efficiency improvements. Note first that, in a competitive market, firms should pass any cost savings to consumers. A reduction in cost without a simultaneous decrease in price, therefore, indicates pricing power and stronger anti-competitive effects of common ownership for firms with homogeneous products. In section 5.1 I conduct additional tests that indicate that the gross margin results are primarily driven by price increase.

3.2 Effect on R&D expenditure

Given the results in Section 3.1 that the anti-competitive effects of common ownership vary depending on the product market characteristics of the firms, I test whether common owners also affect other product market competition related firm policies. Specifically, I focus on R&D expenditure because innovation (product or process) is one of the key determinants

of a firm's competitiveness. I test whether common ownership affects firms incentives to engage in R&D.[14]

The relationship between competition and innovation is not linear. Aghion, Bloom, Blundell, Griffith, and Howitt (2005) find that competition and innovation has an inverted-U shape relationship. A priori it is unclear whether a firm with homogeneous products and common ownership should increase its R&D expenditure or not. A firm can innovate to improve its product design or reduce its process costs. To the extent that an increase in common ownership reduces incentives to compete, firms with similar products would have fewer incentives to differentiate their products. On the other hand, firms might increase investments in R&D to improve their processes and reduce production costs, thereby improving their margins further. Given the two competing hypothesis, with an increase in common ownership, whether firms with homogeneous products invest more or less in R&D is an empirical question. Moreover, extant literature has documented mixed effects of common ownership on R&D expenditure. He and Huang (2017) find that common ownership increases innovation, Borochin, Yang, and Zhang (2018) find that R&D expenditures vary depending on the type of common owners.

To test this, I regress industry-adjusted R&D to sales ratio on common ownership, product similarity, their interaction, and firm level controls. Table 3 presents the results. While the industry-adjusted R&D ratio has a mean of zero, for a one standard deviation increase in common ownership, firms with similar products reduce their R&D spending by 0.5 percentage point. The results are consistent if I scale R&D by assets instead of sales. This result suggests that, with an increase in common ownership, firms with high product

[14] I also test firms' capacity (capital expenditure ratio) and spending on product differentiation (advertising expenditure ratio). In unreported results, I find that the coefficient on the interaction term for common ownership and product similarity is insignificant for capital expenditure ratio. To the extent that capital expenditure is a noisy proxy for the firm's capacity, this is not surprising. Consistent with the hypothesis that common ownership effects are stronger for firms with similar products, I find that the interaction coefficient of common ownership and product similarity is negative for advertising expenditure ratio. However, the coefficient is not always statistically significant.

similarity choose to reduce their R&D expenditure because they have fewer incentives to differentiate their product offerings. Common ownership leads to reduced competition because the firms' internalize the externalities they impose on their rivals and aim to seek higher industry profits. In this context, for firms with similar products, differentiating their products from its peers would be contrary to the objective function.[15]

3.3 Effect on profitability

The results so far indicate that the anti-competitive effects of common ownership are stronger for firms with similar products. However, does the increased gross margin and reduced R&D expenditure translates into improved profit margins? It is plausible that the higher gross margin and reduced R&D expenditure does not yield any differential effect on a firm's bottom line compared to firms with differentiated products. To test this, I estimate equation 1 with the net incomes to assets ratio (ROA) and EBITDA to assets ratio as the dependent variable. Tables 4 and 5 presents the results for ROA and EBITDA/AT, respectively. I find that firms with similar products have, on average, 0.8 to 2.1 percentage point higher ROA with a one standard deviation increase in common ownership.

4 Establishing Causality

The panel regression results do not rule out reverse causality and the concern that investment in a firm is an endogenous choice. Investors choose firms based on specific characteristics, and it is plausible that the level of common ownership does not drive the results documented so far. Instead, it could be that institutional investors selected into firms with higher gross margins and profitability. To try and rule out reverse causality, I rely on a

[15] A firm's R&D is positively related to its value, i.e., R&D is positively related to Tobin's Q. If with an increase in common ownership firms with similar products are reducing R&D and the effect is harmful to the firm's value, I should observe negative Tobin's Q for these firms. However, in unreported results, I find that Tobin Q of firms with high product similarity is not negatively affected by an increase in common ownership, i.e., the interaction coefficient is not significant. The result suggests that the investors do not view the reduction in R&D expenditure as harmful.

quasi-natural experiment as outlined in He and Huang (2017) and Lewellen and Lowry (2019).

4.1 Mergers of Financial Institutions

I use mergers and acquisitions (M&As) of financial institutions as an exogenous shock to the common ownership levels of firms. Two financial institutions merge for a variety of reasons – to reduce costs and improve performance by eliminating redundancies (Houston, James, and Ryngaert (2001)), to increase market power and gain economies of scale (Berger, Demsetz, and Strahan (1999)), consolidation of the financial industry, or regulatory changes. To the extent that factors orthogonal to the product market characteristics of the portfolio firms drive M&As between financial institutions, any changes in the common ownership of the portfolio firms as a result of the merger would be exogenous to firms' characteristics.[16]

Specifically, I follow He and Huang (2017) and Lewellen and Lowry (2019) to identify exogenous variation in a firm's common ownership levels due to M&As between financial institutions and test if this variation drives the outcome variables. In order to do this, I first identify mergers that were between two financial institutions, i.e., SIC code for acquirer and target was between 6000-6999, announced between 2000 and 2015, and were completed within one year of announcement.[17] There were eighteen such acquisitions between 2000 and 2014.[18] Appendix B contains the list of acquisitions. For these eighteen M&As, I get the portfolio holdings data for the target and acquirer using Thomson Reuters' 13-F database. I then identify firms where these institutions were either blockholders or had substantial dollar holdings (see 2.2 for additional details on how common owners are iden-

[16] See He and Huang (2017) for additional discussion on how considerations other than their portfolio holdings drive M&A between two financial institutions.

[17] I thank Michelle Lowry for sharing the list of M&A with me.

[18] To create a seven-year window around mergers, I need my data to start in 1997 and end in 2017, and therefore the earliest (latest) acquisition that I can use is that in 2000 (2014).

tified).

I classify the portfolio firms as either treated or control. Firms are treated if they were in the portfolio of either party and experienced an increase in common ownership. Firms are controls if they were in the portfolio of either party and did not experience an increase in common ownership. More precisely, in the quarter prior to the announcement date, if firm i is in acquirer's (target's) portfolio and the target (acquirer) holds another firm in the same industry, then firm i is classified as treated. Similarly, if firm j is in acquirer's (target's) portfolio and the target (acquirer) does not hold any firm in the same industry, then firm j is classified as a control firm. By choosing firms from the same set of financial institutions, this design controls for investment styles. I drop firms that were in both the acquirer and the target portfolios because these firms cannot be classified as treated or control. For instance, if firm i is held by both acquirer and target it cannot experience an increase in common ownership due to another firm in the same industry because it is already connected to it either via acquirer or target.

Using difference-in-differences estimation, I first test whether the M&As result in changes in common ownership levels for treated firm vis-à-vis control firms. I estimate the following equation:

$$Y_{it} = \beta_1 \text{Post} + \beta_2 \text{Treated} + \beta_3 \text{Post x Treated} + \gamma' \text{X}_{\text{t-p}} + \alpha_{ij} + \eta_t + \text{e}_{\text{ijt}} \tag{2}$$

where, Y_{it} is measured using natural log of *WtComOwn* as defined in section 2.2. Treated = 1 if the firm experienced an increase in common ownership due to the M&As, 0 otherwise. Post = 1 for the years post acquisition. Following He and Huang (2017), the control variables are lagged at t-p, where p = 4 for the pre-period and p = 0 for the post-period. The coefficient of interest is β_3, which captures the differential effect of common ownership based on the product market characteristics of the firm.

Table 6 Panel A presents the results. β_3 is statistically significant in all columns. The coefficient of 0.08 in column 1 implies that acquisitions between financial institutions increase a treated firm's common ownership by 8%.

Next, I test if the effect of common ownership on gross margin varies by the product similarity for the treated firms. To test this, I estimate the following multivariate difference-in-differences specification:

$$\begin{aligned} Y_{it} = \beta_1 \text{Post} + \beta_2 \text{Treated} + \beta_3 \text{ATSIM} + \beta_4 \text{Post x Treated} + \beta_5 \text{Post xATSIM} \\ + \beta_6 \text{Treated x ATSIM} + \beta_7 \text{Post x Treated x ATSIM} + \gamma' \text{X}_{\text{t-p}} + \alpha_{ij} + \eta_t + \text{e}_{\text{ijt}} \end{aligned} \tag{3}$$

where $beta_7$ is the coefficient of interest, X includes all the control variables used in the panel regressions, α_{ij} are deal x firm fixed effects and η_t are deal x year fixed effects. The sample period is three years around the acquisition. Post = 1 during the three years post-merger, 0 during the three years pre-merger. The year of acquisition is omitted from the analysis.

Table 6 Panel B presents the results for industry-adjusted gross margin. Compared to control firms, treated firms experience an increase of 3.5 percentage point. That is, with an increase in common ownership levels, treated firms have a higher gross margin than control firms. Panel C and D reports the results for R&D to sales ratio and ROA, respectively. Consistent with panel regression results, I find that the effects of common ownership are more pronounced in firms with similar products.[19]

To rule out the concern that the Blackrock and Barclays merger is driving my results, I redo my analysis by excluding that merger. Column (2) and (5) of panels A to E in table 6 reports the results. Furthermore, to rule out the concern that financial crisis of 2008

[19]Note that the average firm in the M&A test sample is larger and more profitable than the overall sample. Therefore, while the regression coefficients per the experiment are larger, they are comparable to the OLS estimates when compared to the within sample summary statistics.

might be driving my results, I redo the tests by removing all firm-years from 2007 to 2009 alongwith the Blackrock-Barclays acquisition of 2009. Columns (3) and (6) of panels A to E in table 6 reports the results. Finally, Panel F of table 6 presents the parallel trends of the dependent variables.

5 Robustness Tests

I perform several robustness tests. First, I use chain-weighted GDP price index as a proxy for price levels and test if the pricing effects of common ownership vary based on the product similarity. Further, I test if firms with similar products mention price increases in the MD&A section of 10-K. Second, I show that my results hold if I use only blockholders to calculate common ownership. That is, my results are not an artifact of my definition of common owners. Third, I also rule out the possibility that my results are driven by transient or short term investors. Finally, given that product similarity is endogenous, I rule out the concern that my results are driven by common owners increasing product similarity.

5.1 Additional evidence of price increase

To test if the pricing effects of common ownership vary based on the product market characteristics, I use the price index for manufacturing and non-manufacturing industries used in Bureau of Economic Analysis (BEA)'s national income and product accounts (NIPA). BEA produces the chain-weighted GDP price index to measure changes in the price paid for goods and services.[20] The data captures year-on-year changes in prices at an industry level. Because my analysis is at a firm level, I merge the industry data to all the firms in a given industry. Given that my dependent variable does not change across firms in an industry, I cluster my standard errors by industry. I acknowledge that the mapping of industry-level variable to firm-level observation is not ideal as it could result in noisy estimates. However,

[20]The data is available here: https://www.bea.gov/industry/

noisy estimates would increase standard errors and would bias against finding any results.

Table7 panel A presents the OLS regression results and panel B reports the results for the quasi-natural experiment where two financial institutions merge. The dependent variable is the natural log of the price index. The results are consistent with my earlier analysis. This result is suggestive that the pricing effects of common ownership is dependent on the product similarity.[21]

To further rule out the argument that the higher gross margin could be due to cost reductions or economies of scale and not price increases, I hand-collected data on drivers of gross margin from Item 7 in firms' annual reports (form 10-K). Item 7 is the management discussion and analysis (MD&A) section where management discusses current results, outlines future expectations, and describes the key drivers for the firm's growth or the lack of it. To capture whether firms with higher common ownership are more likely to mention price increases than other firms, I randomly selected 100 firms in fiscal year 2005. The choice of the year was random and reflects a mid-point in my sample. For these firms, I analyzed the MD&A section and tabulated whether it mentioned price increases. For instance, the following is an excerpt from Celgene Corporation's 2005 annual report: "net sales were higher in 2005, as compared to 2004, primarily due to price increases implemented as we move towards a cost of therapy pricing structure as opposed to a price per milligram." In table 7 panel C, I regress price increase dummy on changes in common ownership interacted with product similarity. I control for industry and year fixed effects.[22] I find that firms with common ownership are 2-6% likely to mention a selling price increase in Item 7.

[21] Note that BEA reports the data using NAICS codes. I map the NAICS code to SIC codes using crosswalk. Therefore, for this analysis I only use SIC codes.

[22] I use year fixed effects because there are a few 2004 data points in my hand collected sample. Moreover, my results hold if I drop oil & gas industry.

5.2 Using only blockholders to measure common ownership

Given that the recent empirical work has largely used blockholders to identify common owners, I redo my analysis by using only blockholders. To conserve space, I only report the results of the quasi-natural experiment. I follow the same approach as outlined in section 4.1. The only difference is that, for the analysis reported in table 8, I use only blockholders and do not use the substantial holding threshold. Column (1) and (4) uses all acquisitions, columns (2) and (5) excludes the Blackrock-Barclays merger, and columns (3) and (6) additionally remove the crisis-years of 2007-2009 for all firms. The results are consistent with my hypotheses and the coefficients are comparable to table 6. Note that the coefficients for R&D to sales are not statistically significant for most of the specifications. Given that the coefficient are similar in magnitude and sign, this indicates that the smaller sample size has higher standard errors.

5.3 Which investors are driving the results?

The results documented so far do not differentiate between the types of investors. The incentives of institutional investors vary depending on their investment horizon (see: Chen, Harford, and Li (2007) and the references therein). If firms are internalizing the externalities they impose on their industry peers, their incentives should be driven by long term investors. The presence of short-term investors or transient investors should not drive the results. To test this, I follow Bushee (1998) and Bushee (2001) and classify investors into three categories based on their portfolio turnover – dedicated, quasi-indexers, and transient.[23] Dedicated investors and quasi-indexers are long-term investors with the difference that the latter is diversified. Transient investors are short-term investors.[24]

Since common owners are expected to hold multiple firms in the same industry, I re-

[23] The data is available at http://acct.wharton.upenn.edu/faculty/bushee/IIclass.html

[24] Some mutual fund families can mimic behavior of all three. Such mutual funds are unclassified and excluded from the analysis.

run my analysis using dedicated and quasi-indexers that are common owners as defined in Section 2.2. Specifically, I repeat the analysis using the setup outlined in Section 3 and equation 1. While the results are consistent across different measures of common ownership, to conserve space, I report results for *WtComOwn*. Moreover, limiting the sample to mutual fund families that were either dedicated or quasi-indexer investors reduces the number of firms affected by the exogenous shock considerably. As a result, the exogenous tests do not have enough statistical power and therefore, I only report the OLS regression results.

Table 9 reports the results. The effects are similar to those reported in the main results. The anti-competitive effects of common ownership vary by the level of product similarity of a firm. Furthermore, as an additional test, I repeat the OLS regressions using only those investors that hold 10% or more. In un-tabulated results, I find similar results. Taken together, the results in this section provides support to the hypothesis that the results are driven by long-term investors and investors that have significant interest in the firm.

6 Does common ownership affect certain industries more?

The results thus far show that the effects of common ownership vary based on the product market characteristics of the firm. This finding raises the question whether the effects of common ownership are present across all industries or does common ownership affect some industries more than others? To test whether the anti-competitive effects of common ownership are concentrated in certain industries, I do the following. Each year I assign a similarity score equal to the average similarity scores of all the firms in that industry-year to the industry, and then sort the data into similarity quartiles. I estimate the following

regression specification:

$$\begin{aligned} \mathrm{Y_{it}} = \beta_1 \mathrm{COSimilarityQuartile_{i1,t-1}} + \beta_2 \mathrm{COSimilarityQuartile_{i2,t-1}} \\ + \beta_3 \mathrm{COSimilarityQuartile_{i3,t-1}} + \beta_4 \mathrm{COSimilarityQuartile_{i4,t-1}} \\ + \delta \mathrm{ATSIM_{it-1}} + \gamma' \mathrm{X_{it-1}} + \alpha_i + \eta_t + \mathrm{e_{it}} \end{aligned} \tag{4}$$

where, Y is alternatively measured as gross margin, R&D to sales ratio, EBITDA to assets ratio, and net income to assets ratio. All dependent variables are industry-adjusted, where industry is defined either using 3-digit SIC code or FIC400 code. *CO Similarity Quartile*$_{ij}$ measures firm-level common ownership for firm i in quartile j and is 0 otherwise, ATSIM controls for the similarity score of the firm, X includes all other firm-level control variables used in the panel regressions (see: appendix A for variable definitions), α_i are firm fixed effects, and η_t are year fixed effects. As before, to make it easier to interpret the coefficients, common ownership measures are standardized (with mean zero and variance one) in the tables. The coefficients of interest are β_1, β_2, β_3, and β_4. For each industry quartile j, β_j captures the effect of common ownership on the industry-adjusted dependent variable.

As an example of how common ownership can matter in certain industries and not in others, consider the following. Dana Inc and Tenneco Inc both belong to SIC code 3714 (motor vehicle parts and accessories). In the second quarter of 2011, out of the top 10 institutional investors in these firms, four investors (Blackrock, Fidelity, State Street, and Vanguard) held shares in both the firms: 16.5% in Dana and 23.5% in Tenneco. However, the product similarity of these two firms is low. May be not surprisingly, this industry belongs to the lowest quartile, i.e., firms in it have the least similar products. In contrast, Microsoft and Oracle belong to SIC code 7372, which falls in the second/third quartile of product similarity. In quarter two of 2011, these firms had seven common owners (Amvescap, Blackrock, Capital Research Global Investors, Capital World Investors,

Mellon Bank, State Street, and Vanguard) out of top ten investors and they held 18.7% and 16.9% shares in Microsoft and Oracle, respectively. In recent years, Oracle seems to have been competing more with Amazon's Web Services than with Microsoft, one of its main competitors.[25] In fact, in 2013, Oracle entered into a partnership with Microsoft.[26] Finally, American and United Airlines both belong to SIC 4512, which is in the highest similarity quartile. Should the presence of common owners have similar effects on both of these firm pairs or should the effect be stronger for the latter pair of firms? I hypothesize that the presence of common owners should have a stronger effect on the latter pair of firms.

Table 10 presents the results. Similarity quartile *j* is equal to *ComOwn* in columns 1 and 4, *PropPeer* in columns 2 and 5, and *NumMgnr* in columns 3 and 6. For each firm, the variable takes the value of the common ownership measure if the firm belongs to an industry in the jth similarity quartile, else it is equal to 0. To conserve space, I do not report the coefficients on the control variables. Panel A presents the results for industry-adjusted gross margin. The results show that the pricing effects of common ownership are concentrated in firms that belong to industries in the 4th similarity quartile, i.e., the effects are concentrated in industries that have high similarity scores. For firms in industries with high similarity scores, a one standard deviation increase in common ownership increases the price levels by 0.3 to 2.5 percentage points whereas the effect is either insignificant or opposite for other similarity quartiles. The difference in the coefficient for the highest similarity quartile and the lowest similarity quartile is statistically significant at 1%.

Table 10 Panel B presents the results for R&D to sales ratio. The negative effects of common ownership are limited to firms belonging to industries where the average similarity scores are high. With one standard deviation increase in common ownership, firms that belong to industries with highest level of similarity score have 0.7-2.4 percentage point lower

[25] http://www.businessinsider.com/microsoft-is-oracle-real-competitor-not-amazon-2017-10
[26] http://www.oracle.com/us/corporate/press/1964592

R&D expenditure. Increase in common ownership does not have similar effect for firms in other industries. The statistical significance and sign of the coefficients for quartiles 1, 2 and 3 vary depending on the measure of common ownership and industry. Finally, Panel C and D of Table 10 report the results for ROA and EBITDA to assets ratio, respectively. Except the highest quartile, common ownership does not seem to have a robust effect on firms' profitability.

The OLS results do not rule out the concern that investors are choosing these firms because they are profitable. To rule out this concern, I repeat the analysis for firms that experienced an exogenous change in their common ownership levels due to mergers and acquisitions (M&A) of financial institutions. The experiment is identical to the setup outlined in 4.1. Table 11 presents the results. Industry is defined using 3-digit SIC in Panel A and FIC400 code in Panel B. The coefficients on the triple interaction terms capture how the effect of common ownership vary between treated and control firms post treatment across firms that belong to industries in different similarity quartiles. $SimQuartileDummy_{ij}$ is equal to 1 for firm i that is in industry quartile j, zero otherwise. *Treated* = 1 if the firm experienced an increase in common ownership due to the merger, 0 otherwise. *Post* = 1 for the post-acquisition period, 0 otherwise. The lowest quartile is the baseline and hence, omitted. While the results are similar (and sometimes stronger) with deal, firm and year fixed effect, I only report the most stringent specification where I include deal x firm and deal x year fixed effects. Similar to the OLS regressions, the effect of common ownership is present only in industries with a high similarity score (quartile 4).

Taken together, the results in tables 10 and 11 show that the anti-competitive effects of common ownership are limited to industries with homogeneous products. This result has policy implications – if the level of common ownership does not matter for firms that are in certain industries, then any policy changes to curtail the harmful effect of common ownership must take into account the product market characteristics of the firms.

7 Conclusion

I find that the anti-competitive effects of common ownership vary based on the product market characteristics of the firm. A one standard deviation increase in common ownership raises a firm's gross margin only for firms with high product market similarity. With an increase in common ownership, the firms with homogeneous products choose to invest less in R&D consistent with the hypothesis that they have fewer incentives to innovate. These firms experience higher profitability. I use a quasi-natural experiment to exogenously vary a firm's common ownership levels and establish causality. Further, I find that the anti-competitive effects of common ownership are present only in industries with similar products. The positive relation between common ownership and gross margin holds only for the industries in the top quartile of product similarity. The findings in this paper inform the debate on common ownership by showing that common ownership worsens competition only when firms operate in relatively similar product spaces.

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Appendices

A Variable Definitions

Dependent Variables

Ind. Adjusted Gross Margin:	Industry-adjusted gross margin is the firm's gross margin minus the average gross margin of the industry. The firm's gross margin is (SALE - COGS) / SALE.
Ind. Adjusted R&D to sales ratio:	Industry-adjusted R&D to sales ratio is the firm's R&D to sales ratio minus the average R&D to sales ratio of the industry. The firm's R&D to sales ratio is XRD / SALE.
Ind. Adjusted ROA:	Industry-adjusted ROA is the firm's net income to assets minus the average NI to assets ratio of the industry. The firm's net income to assets ratio is NI / AT.
Ind. Adjusted EBITDA to assets ratio:	Industry-adjusted EBITDA to AT ratio is the firm's EBITDA to assets ratio minus the average EBITDA to assets ratio of the industry. The firm's EBITDA to assets ratio is EBITDA / AT.

Independent Variables

WtComOwn:	The product of a firm's and its peer's shares owned by institutional investor i. The product is summed over all common owners and then over all industry-peers to get the firm-level measure. I first calculate the measure in each quarter, and then average over the fiscal year to get a firm-year measure.
PropPeer:	The number of unique industry peers a firm is connected to in a year divided by the total firms, excluding the firm itself, in that industry-year. I calculate the proportion of industry peers the firm is connected to in each quarter, and then average over the fiscal year to get a firm-year measure.
NumMgnr:	The number of common owners a firm has in a year. I first calculate the number of common owners a firm has in a quarter and then average it over the fiscal year to get a firm-year measure. An institutional investor is a common owner if she holds at least one other firm in the same industry.
ATSIM:	For a firm i, the pairwise similarity score with firm j is one minus the cosine distance of vector V_i and V_j, where V_i is the vector of i's product description reported in its annual report. The pairwise measure is averaged over all firms.

ATSIM-SIC: For a firm i, the pairwise similarity score with firm j is one minus the cosine distance of vector V_i and V_j, where V_i is the vector of i's product description reported in its annual report. The pairwise measure is averaged over all firms in the industry, where industry is defined using 3-digit SIC code.

ATSIM-FIC: For a firm i, the pairwise similarity score with firm j is one minus the cosine distance of vector V_i and V_j, where V_i is the vector of i's product description reported in its annual report. The pairwise measure is averaged over all firms in the industry, where industry is defined using the FIC400 code.

ATSIM-TNIC: For a firm i, the pairwise similarity score with firm j is one minus the cosine distance of vector V_i and V_j, where V_i is the vector of i's product description reported in its annual report. The pairwise measure is averaged over all firms in the industry, where industry is defined as the top-50 firms that are closest in the product space to the focal firm i.

Control Variables

Log of Assets: Natural log of total assets (AT) of a firm.

Log of Market to Book: Natural log 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) (Chava, Huang, and Johnson (2017)).

Cash to Assets: A firm's cash and cash equivalents (CHE) to the firm's total assets (AT).

Advertising to Assets: A firm's advertising expenses (XAD) to the firm's total assets (AT). Missing XAD is replaced with zero.

R&D to Assets: A firm's research and development expenses (XRD) to the firm's total assets (AT). Missing XRD is replaced with zero.

Leverage Ratio: A firm's total debt (DLC + DLTT) divided by its total assets (AT).

HHI: Herfindahl-Hirschman Index is the sum of the square of market shares of all the firms in an industry. Market share is defined as the sale of a given firm divided by total industry sales. Industry is defined using either 3-digit SIC code or FIC400 code. Because market share is in decimal points, HHI ranges from 0 to 1. I control for both HHI and HHI^2

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Pct shares held by Inst. Inv.: The percentage of shares held by all institutional investors in a given fiscal year. This measure is calculated quarterly and

	is then averaged over the firm's fiscal year.
M&As of Financial Institutions	
Treated:	In the quarter prior to the announcement date, if firm *i* is in acquirer's (target's) portfolio and the target (acquirer) holds another firm in the same industry, then firm *i* is classified as treated.
Control:	If firm *j* is in acquirer's (target's) portfolio and the target (acquirer) does not hold any firm in the same industry, then firm *j* is classified as a control firm.
Block Diagonal Regression Variables	
WtComOwn Similarity Quartile j:	For a firm, it is equal to *WtComOwn* if the firm belongs to an industry that is in the similarity quartile j, 0 otherwise.
PropPeer Similarity Quartile j:	For a firm, it is equal to *PropPeer* if the firm belongs to an industry that is in the similarity quartile j, 0 otherwise.
NumMgnr Similarity Quartile j:	For a firm, it is equal to *NumMgnr* if the firm belongs to an industry that is in the similarity quartile j, 0 otherwise.
Sim Quartile j Dummy:	For a firm, it is equal to 1 if the firm belongs to an industry that is in the similarity quartile j, 0 otherwise.

B List of Mergers and Acquisitions

Below is the list of mergers and acquisitions that are used in the experiment outlined in Section 4.1

Announcement Date	Effective Date	Acquirer Name	Target Name
6/20/2000	10/2/2000	Alliance Capital Mgmt Hldg LP	Sanford C Bernstein & Co Inc.
9/13/2000	12/31/2000	Chase Manhattan Corp, NY	JP Morgan & Co Inc.
10/18/2000	2/14/2001	Allianz AG	Nicholas-Applegate Capt Mgmt.
10/25/2000	4/10/2001	Franklin Templeton Investments	Fiduciary Trust Co Intl.
4/16/2001	9/4/2001	First Union Corp, Charlotte, NC	Wachovia Corp, Winston-Salem, NC
4/14/2003	4/30/2003	Goldman Sachs Group Inc.	Ayco Co LP
10/27/2003	4/1/2004	Bank of America Corp.	FleetBoston Financial Corp, MA
1/14/2004	7/1/2004	JPMorgan Chase & Co.	Bank One Corp, Chicago, IL
5/26/2004	1/3/2005	Wells Fargo & Co.	Strong Financial-Fund Asts
5/19/2005	8/4/2005	Transamerica Investment Mgmt	Westcap Investors LLC
10/31/2006	12/4/2006	Morgan Stanley	FrontPoint Partners LLC
4/23/2008	9/30/2008	Lehman Brothers Holdings Inc	David J Greene & Co LLC
7/7/2008	11/7/2008	RiverSource Investments LLC	J&W Seligman & Co.
9/14/2008	1/1/2009	Bank of America Corp	Merrill Lynch & Co Inc.
9/16/2008	9/22/2008	Barclays PLC	Lehman-Invest Bkg Bus
10/3/2008	12/31/2008	Wells Fargo & Co	Wachovia Corp, Charlotte, NC
9/16/2009	12/1/2009	Blackrock Inc.	Barclays Global Fund Advisors
4/6/2010	4/6/2010	Goldman Sachs Group Inc.	Level Global Investors LP

Table 1. Summary Statistics: This table reports the descriptive statistics for the entire sample from 1997-2017. Panel A presents the summary statistics for industry-adjusted dependent variables, firm-level product similarity measures, and common ownership measures. Panel B reports summary statistics for the control variables and other firm characteristics. Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile.

Panel A: *Summary statistics for the dependent variables, similarity and common ownership measures*

	P25	Mean	Median	P75	Std. Dev.
Dependent Variables(SIC)					
IndAdj Gross Margin	-0.09	-0.00	0.01	0.13	0.24
IndAdj R&D to Sales	-0.04	-0.00	-0.00	0.00	0.18
IndAdj ROA	-0.03	0.01	0.04	0.13	0.29
IndAdj EBITDA to Assets	-0.04	0.01	0.03	0.11	0.23
Dependent Variables(FIC)					
IndAdj Gross Margin	-0.09	0.00	0.01	0.12	0.24
IndAdj R&D to Sales	-0.02	-0.00	-0.00	0.00	0.16
IndAdj ROA	-0.03	0.01	0.03	0.12	0.28
IndAdj EBITDA to Assets	-0.04	0.01	0.02	0.10	0.22
Similarity Score					
ATSIM	0.02	0.03	0.03	0.04	0.02
ATSIM-SIC	0.00	0.03	0.02	0.05	0.03
ATSIM-FIC	0.01	0.04	0.03	0.06	0.04
Common Ownership Measures					
WtComOwn(SIC)	0.00	0.13	0.02	0.10	0.27
WtComOwn(FIC)	0.00	0.09	0.02	0.10	0.15
PropPeer(SIC)	0.00	0.23	0.15	0.41	0.25
PropPeer(FIC)	0.00	0.25	0.16	0.43	0.26
NumMgnr(SIC)	0.00	5.56	1.50	4.00	12.76
NumMgnr(FIC)	0.00	5.46	1.50	4.25	12.16
Number of observations	63831				

Panel B: *Descriptive statistics for the control variables and other firm characteristics*

	P25	Mean	Median	P75	Std. Dev.
Control Variables					
AT (billion)	0.06	2.80	0.26	1.19	13.59
Log Assets	4.15	5.67	5.57	7.08	2.05
Market to Book	0.86	2.00	1.30	2.18	2.84
Log Market to Book	0.62	0.95	0.83	1.16	0.45
Cash to Assets	0.03	0.22	0.12	0.33	0.24
Advertising to Assets	0.00	0.01	0.00	0.01	0.03
R&D to Assets	0.00	0.06	0.01	0.08	0.12
Leverage Ratio	0.01	0.22	0.16	0.33	0.25
Pct share held by inst.inv.	0.17	0.47	0.48	0.76	0.32
HHI(SIC)	0.09	0.19	0.14	0.25	0.15
HHI(FIC)	0.11	0.24	0.17	0.29	0.18
Other Firm Characteristics					
CO Dummy(SIC)	0.00	0.74	1.00	1.00	0.44
CO Dummy(FIC)	0.00	0.72	1.00	1.00	0.45
Pct. shares held by CO investors(SIC)	0.00	0.17	0.11	0.27	0.18
Pct. shares held by CO investors(FIC)	0.00	0.17	0.10	0.28	0.18
Pct share held by blockholders	0.03	0.16	0.13	0.25	0.15
Number of observations	63831				

Table 2. Industry Adjusted Gross Margin: This table presents the results for the effect of common ownership and product similarity on price levels. The dependent variable is industry-adjusted gross margin. It is defined as (sales – cost of goods sold) / sales and is adjusted for the mean industry gross margin, where industry is defined using the 3-digit SIC code in Panel A and the FIC400 code in Panel B. Common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-SIC* in Panel A and *ATSIM-FIC* in Panel B) in columns (4)-(6). Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Dependent variable: Industry-Adjusted Gross Margin, where industry is defined using 3-digit SIC code*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.016***			-0.003		
	(0.000)			(0.276)		
WtComOwn x ATSIM	0.036***			0.026***		
	(0.000)			(0.000)		
NumMgnr		-0.011**			0.004	
		(0.025)			(0.129)	
NumMgnr x ATSIM		0.025***			0.009***	
		(0.000)			(0.005)	
PropPeer			-0.019***			-0.006***
			(0.000)			(0.001)
PropPeer x ATSIM			0.023***			0.008***
			(0.000)			(0.003)
ATSIM	-0.009**	-0.006	-0.011**	-0.005	0.000	-0.002
	(0.011)	(0.142)	(0.014)	(0.151)	(0.931)	(0.711)
Log Assets	0.000	-0.001	0.002	-0.000	-0.001	0.002
	(0.928)	(0.796)	(0.572)	(0.929)	(0.819)	(0.561)
Log Market to Book	0.043***	0.041***	0.044***	0.042***	0.041***	0.044***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	-0.077***	-0.078***	-0.079***	-0.078***	-0.079***	-0.081***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Advertising to Assets	0.209***	0.219***	0.211***	0.209***	0.215***	0.210***

	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)
R&D to Assets	-0.171***	-0.174***	-0.173***	-0.175***	-0.178***	-0.177***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	0.012	0.017	0.014	0.013	0.017	0.015
	(0.281)	(0.170)	(0.241)	(0.262)	(0.161)	(0.215)
Pct share held by inst.inv.	0.002	0.011	0.013*	-0.000	0.011	0.018**
	(0.835)	(0.137)	(0.092)	(0.955)	(0.149)	(0.021)
HHI(SIC)	0.045	0.030	0.030	0.052	0.028	0.028
	(0.181)	(0.379)	(0.378)	(0.127)	(0.423)	(0.413)
HHI x HHI(SIC)	-0.042	-0.024	-0.028	-0.047	-0.021	-0.026
	(0.272)	(0.529)	(0.478)	(0.220)	(0.599)	(0.503)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.67	0.67	0.67	0.67	0.67	0.67
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Dependent variable: Industry-Adjusted Gross Margin, where industry is defined using FIC400 code*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.008*			0.001		
	(0.055)			(0.735)		
WtComOwn x ATSIM	0.026***			0.017***		
	(0.000)			(0.002)		
NumMgnr		-0.012***			-0.001	
		(0.008)			(0.597)	
NumMgnr x ATSIM		0.022***			0.011***	
		(0.000)			(0.001)	
PropPeer			-0.016***			-0.009***
			(0.000)			(0.000)
PropPeer x ATSIM			0.018***			0.010***
			(0.000)			(0.000)
ATSIM	-0.005	-0.003	-0.007	-0.005*	-0.004	-0.006**
	(0.139)	(0.449)	(0.130)	(0.074)	(0.213)	(0.045)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.62	0.62	0.62	0.62	0.62	0.62
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 3. Industry Adjusted R&D to Sales Ratio: This table presents the results for the effect of common ownership and product similarity on R&D expenditure. The dependent variable is industry-adjusted R&D to sales ratio. It is defined as the firm's R&D expenditure divided by total sales and is adjusted for the mean industry R&D to sales ratio, where industry is defined using the 3-digit SIC code in Panel A and the FIC400 code in Panel B. Common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-SIC* in Panel A and *ATSIM-FIC* in Panel B) in columns (4)-(6). Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Dependent variable: Industry-Adjusted R&D to sales ratio, where industry is defined using 3-digit SIC code*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	0.008**			-0.001		
	(0.012)			(0.608)		
WtComOwn x ATSIM	-0.025***			-0.019***		
	(0.000)			(0.000)		
NumMgnr		0.007*			-0.003*	
		(0.051)			(0.054)	
NumMgnr x ATSIM		-0.016***			-0.005**	
		(0.001)			(0.011)	
PropPeer			0.015***			0.005***
			(0.000)			(0.000)
PropPeer x ATSIM			-0.018***			-0.006***
			(0.000)			(0.000)
ATSIM	0.005*	0.002	0.007**	0.003	-0.002	0.001
	(0.055)	(0.501)	(0.030)	(0.178)	(0.551)	(0.777)
Log Assets	0.009***	0.009***	0.008***	0.010***	0.009***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Market to Book	-0.014***	-0.013***	-0.014***	-0.013***	-0.013***	-0.015***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	0.160***	0.161***	0.162***	0.160***	0.162***	0.163***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Advertising to Assets	-0.142***	-0.151***	-0.145***	-0.142***	-0.148***	-0.144***

	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)
R&D to Assets	0.390***	0.394***	0.393***	0.393***	0.396***	0.395***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	-0.014	-0.017*	-0.015*	-0.014	-0.017*	-0.016*
	(0.111)	(0.065)	(0.093)	(0.105)	(0.061)	(0.081)
Pct share held by inst.inv.	-0.004	-0.016***	-0.017***	-0.003	-0.015***	-0.021***
	(0.349)	(0.001)	(0.000)	(0.534)	(0.002)	(0.000)
HHI(SIC)	0.122***	0.144***	0.142***	0.119***	0.146***	0.145***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HHI x HHI(SIC)	-0.112***	-0.134***	-0.131***	-0.110***	-0.138***	-0.133***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.75	0.75	0.75	0.75	0.75	0.75
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Dependent variable: Industry-Adjusted R&D to sales ratio, where industry is defined using FIC400 code*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.004			-0.010***		
	(0.166)			(0.001)		
WtComOwn x ATSIM	-0.011***			-0.006*		
	(0.005)			(0.079)		
NumMgnr		0.015***			0.004*	
		(0.000)			(0.064)	
NumMgnr x ATSIM		-0.022***			-0.010***	
		(0.000)			(0.000)	
PropPeer			0.011***			0.006***
			(0.000)			(0.000)
PropPeer x ATSIM			-0.010***			-0.005***
			(0.000)			(0.000)
ATSIM	0.000	0.001	0.001	0.002	0.003	0.003
	(0.904)	(0.606)	(0.685)	(0.306)	(0.122)	(0.186)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.63	0.63	0.63	0.63	0.63	0.63
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 4. Industry Adjusted ROA: This table presents the results for the effect of common ownership and product similarity on return on assets. The dependent variable is industry-adjusted ROA. It is defined as the firm's net income divided by total assets and is adjusted for the mean industry NI/AT, where industry is defined using the 3-digit SIC code in Panel A and the FIC400 code in Panel B. Common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-SIC* in Panel A and *ATSIM-FIC* in Panel B) in columns (4)-(6). Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Dependent variable: Industry-Adjusted ROA, where industry is defined using 3-digit SIC code*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.009**			-0.001		
	(0.017)			(0.623)		
WtComOwn x ATSIM	0.021***			0.015***		
	(0.000)			(0.000)		
NumMgnr		-0.022***			-0.009**	
		(0.000)			(0.027)	
NumMgnr x ATSIM		0.020***			0.008**	
		(0.001)			(0.014)	
PropPeer			-0.025***			-0.013***
			(0.000)			(0.000)
PropPeer x ATSIM			0.020***			0.008***
			(0.000)			(0.001)
ATSIM	-0.000	0.000	-0.005	-0.005	-0.003	-0.005
	(0.962)	(0.933)	(0.301)	(0.107)	(0.378)	(0.224)
Log Assets	-0.015***	-0.014***	-0.013***	-0.015***	-0.013***	-0.013***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Market to Book	0.106***	0.108***	0.107***	0.106***	0.108***	0.107***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	-0.011	-0.013	-0.012	-0.010	-0.013	-0.013
	(0.500)	(0.415)	(0.467)	(0.523)	(0.408)	(0.432)
Advertising to Assets	-0.138	-0.130	-0.138	-0.137	-0.132	-0.138

	(0.200)	(0.228)	(0.199)	(0.204)	(0.221)	(0.201)
R&D to Assets	-0.511***	-0.511***	-0.510***	-0.511***	-0.511***	-0.511***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	-0.019	-0.018	-0.019	-0.018	-0.018	-0.018
	(0.114)	(0.128)	(0.113)	(0.119)	(0.136)	(0.129)
Pct share held by inst.inv.	0.010	0.020**	0.027***	0.008	0.020**	0.032***
	(0.244)	(0.017)	(0.002)	(0.321)	(0.020)	(0.000)
HHI(SIC)	-0.144***	-0.155***	-0.146***	-0.145***	-0.163***	-0.153***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
HHI x HHI(SIC)	0.146***	0.154***	0.145***	0.147***	0.162***	0.151***
	(0.006)	(0.003)	(0.006)	(0.005)	(0.002)	(0.004)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.49	0.49	0.49	0.49	0.49	0.49
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Dependent variable: Industry-Adjusted ROA, where industry is defined using FIC400 code*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	0.003			0.008**		
	(0.357)			(0.011)		
WtComOwn x ATSIM	0.011**			0.007*		
	(0.029)			(0.097)		
NumMgnr		-0.028***			-0.013***	
		(0.000)			(0.001)	
NumMgnr x ATSIM		0.027***			0.011***	
		(0.000)			(0.002)	
PropPeer			-0.018***			-0.013***
			(0.000)			(0.000)
PropPeer x ATSIM			0.013***			0.008***
			(0.001)			(0.000)
ATSIM	0.006	0.004	0.003	-0.004	-0.006*	-0.006*
	(0.137)	(0.431)	(0.517)	(0.187)	(0.086)	(0.078)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.44	0.44	0.44	0.44	0.44	0.44
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5. Industry Adjusted EBITDA to Assets Ratio: This table presents the results for the effect of common ownership and product similarity on EBITDA to assets ratio. The dependent variable is industry-adjusted EBITDA to assets ratio. It is defined as the firm's EBITDA divided by its total assets and is adjusted for the mean industry EBITDA to assets ratio, where industry is defined using the 3-digit SIC code in Panel A and the FIC400 code in Panel B. Common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-SIC* in Panel A and *ATSIM-FIC* in Panel B) in columns (4)-(6). Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Dependent variable: Industry-Adjusted EBITDA to assets ratio, where industry is defined using 3-digit SIC code*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.008**			-0.001		
	(0.010)			(0.769)		
WtComOwn x ATSIM	0.020***			0.014***		
	(0.000)			(0.000)		
NumMgnr		-0.012***			-0.001	
		(0.003)			(0.622)	
NumMgnr x ATSIM		0.015***			0.004*	
		(0.002)			(0.073)	
PropPeer			-0.020***			-0.011***
			(0.000)			(0.000)
PropPeer x ATSIM			0.015***			0.005**
			(0.000)			(0.010)
ATSIM	0.002	0.003	-0.001	-0.001	0.002	0.000
	(0.512)	(0.300)	(0.887)	(0.626)	(0.538)	(0.889)
Log Assets	0.008***	0.008***	0.009***	0.008***	0.009***	0.010***
	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)
Log Market to Book	0.079***	0.079***	0.080***	0.079***	0.079***	0.080***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	-0.140***	-0.141***	-0.141***	-0.139***	-0.141***	-0.142***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Advertising to Assets	-0.147*	-0.140*	-0.146*	-0.146*	-0.143*	-0.146*

	(0.059)	(0.072)	(0.059)	(0.060)	(0.066)	(0.059)
R&D to Assets	-0.480***	-0.481***	-0.480***	-0.480***	-0.481***	-0.480***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	-0.009	-0.008	-0.009	-0.009	-0.008	-0.009
	(0.306)	(0.401)	(0.318)	(0.311)	(0.403)	(0.339)
Pct share held by inst.inv.	-0.005	0.003	0.013**	-0.006	0.003	0.017***
	(0.439)	(0.577)	(0.033)	(0.322)	(0.617)	(0.007)
HHI(SIC)	-0.149***	-0.160***	-0.153***	-0.150***	-0.167***	-0.158***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HHI x HHI(SIC)	0.164***	0.175***	0.165***	0.165***	0.181***	0.170***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.63	0.63	0.63	0.63	0.62	0.63
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Dependent variable: Industry-Adjusted EBITDA to assets ratio, where industry is defined using FIC400 code*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	0.002			0.007**		
	(0.573)			(0.015)		
WtComOwn x ATSIM	0.011***			0.006*		
	(0.008)			(0.067)		
NumMgnr		-0.018***			-0.007***	
		(0.000)			(0.005)	
NumMgnr x ATSIM		0.021***			0.009***	
		(0.000)			(0.001)	
PropPeer			-0.014***			-0.010***
			(0.000)			(0.000)
PropPeer x ATSIM			0.009***			0.005***
			(0.004)			(0.008)
ATSIM	0.007**	0.006*	0.006	-0.001	-0.002	-0.002
	(0.026)	(0.099)	(0.122)	(0.742)	(0.456)	(0.546)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.56	0.56	0.56	0.56	0.56	0.56
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 6. M&A of Financial Institutions: This table reports the results for the difference-in-differences analysis using the M&A of financial institutions as an exogenous shock to a firm's common ownership level. Treated firm is a firm in the portfolio of target or acquirer that experienced an increase in common ownership post M&A. Control firm is a firm in the portfolio of either target or acquirer that did not experience a change in its common ownership levels post acquisition. Panel A reports the results of whether the M&A of financial institutions affect common ownership levels of portfolio firms. Panel B presents the results for the industry-adjusted gross margin. Panel C, D and E presents the results for R&D ratio, net income to assets ratio, and EBITDA to assets ratio, respectively. Panel F presents the parallel trend tests. Columns (1) and (4) uses the entire sample. Columns (2) and (4) excludes the Blackrock-BGI merger. Columns(3) and (6) additionally drops crises years (2007-2009). Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Does M&A of financial institutions affect Common Ownership?*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated	0.080***	0.084***	0.088***	0.080***	0.084***	0.088***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ATSIM	0.002	0.003	0.002	0.005	0.003	0.005
	(0.462)	(0.241)	(0.405)	(0.136)	(0.315)	(0.150)
Log Assets	0.018***	0.015***	0.018**	0.018***	0.015***	0.018**
	(0.005)	(0.007)	(0.010)	(0.005)	(0.007)	(0.011)
Log Market to Book	0.002	0.000	-0.007	0.002	0.000	-0.007
	(0.841)	(0.992)	(0.504)	(0.826)	(0.988)	(0.516)
Cash to Assets	-0.025	-0.016	-0.014	-0.025	-0.015	-0.014
	(0.259)	(0.475)	(0.614)	(0.261)	(0.490)	(0.610)
Advertising to Assets	0.166	0.052	0.381	0.170	0.054	0.384
	(0.527)	(0.794)	(0.230)	(0.519)	(0.788)	(0.225)
R&D to Assets	0.159	-0.047	0.055	0.158	-0.047	0.054
	(0.138)	(0.603)	(0.688)	(0.139)	(0.608)	(0.692)
Leverage Ratio	-0.022	-0.018	-0.009	-0.022	-0.018	-0.009
	(0.241)	(0.274)	(0.634)	(0.247)	(0.271)	(0.631)
Pct share held by inst.inv.	0.112***	0.102***	0.112***	0.112***	0.102***	0.113***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HHI(SIC)	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HHI x HHI(SIC)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.003)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.87	0.88	0.88	0.87	0.88	0.88
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Does the effect of Common Ownership on Industry Adjusted Gross Margin vary?*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.035***	0.036***	0.037***	0.037**	0.034**	0.039**
	(0.002)	(0.005)	(0.008)	(0.015)	(0.027)	(0.014)
Post x Treated	0.011**	0.013**	0.013**	0.022***	0.022***	0.025***
	(0.047)	(0.015)	(0.043)	(0.009)	(0.008)	(0.008)
Post x ATSIM	-0.007*	-0.011**	-0.003	-0.005*	-0.005*	-0.002
	(0.051)	(0.019)	(0.445)	(0.083)	(0.085)	(0.371)
Treated x ATSIM	-0.007	-0.001	0.009	-0.004	-0.001	-0.001
	(0.562)	(0.947)	(0.332)	(0.878)	(0.982)	(0.955)
ATSIM	0.002	0.003	-0.003	0.002	0.001	-0.001
	(0.475)	(0.478)	(0.375)	(0.592)	(0.886)	(0.837)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.81	0.83	0.86	0.81	0.83	0.86
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *Does the effect of Common Ownership on Industry Adjusted R&D to sales ratio vary?*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	-0.019***	-0.019**	-0.028***	-0.025***	-0.024***	-0.032***
	(0.009)	(0.012)	(0.001)	(0.005)	(0.007)	(0.001)
Post x Treated	0.001	-0.001	-0.006	-0.007	-0.009	-0.016**
	(0.826)	(0.779)	(0.263)	(0.259)	(0.151)	(0.025)
Post x ATSIM	-0.001	0.000	-0.000	-0.001	-0.001*	-0.001
	(0.462)	(0.965)	(0.994)	(0.139)	(0.095)	(0.381)
Treated x ATSIM	0.025	0.017	0.013	0.027	0.040	0.030
	(0.167)	(0.253)	(0.363)	(0.288)	(0.115)	(0.285)
ATSIM	-0.002	-0.002	-0.002	0.001	0.002	-0.000
	(0.235)	(0.193)	(0.309)	(0.643)	(0.290)	(0.916)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.83	0.84	0.85	0.83	0.84	0.84
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. *Does the effect of Common Ownership on Industry Adjusted ROA vary?*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.016**	0.024***	0.022**	0.023***	0.032***	0.032***
	(0.013)	(0.000)	(0.011)	(0.006)	(0.000)	(0.001)
Post x Treated	-0.006	-0.001	-0.004	0.003	0.010*	0.008
	(0.311)	(0.920)	(0.537)	(0.655)	(0.097)	(0.295)
Post x ATSIM	0.004	0.002	0.008**	0.004**	0.004*	0.006**
	(0.112)	(0.466)	(0.025)	(0.035)	(0.073)	(0.012)
Treated x ATSIM	-0.010	-0.008	-0.005	-0.010	-0.034*	-0.039*
	(0.314)	(0.414)	(0.708)	(0.548)	(0.056)	(0.068)
ATSIM	-0.000	-0.000	-0.007	-0.005	-0.006	-0.003
	(0.980)	(0.959)	(0.129)	(0.180)	(0.144)	(0.462)
Log Assets	-0.027***	-0.021***	-0.043***	-0.026***	-0.021***	-0.042***
	(0.000)	(0.004)	(0.000)	(0.000)	(0.005)	(0.000)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.59	0.62	0.61	0.59	0.62	0.61
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel E. *Does the effect of Common Ownership on Industry Adjusted EBITDA to assets ratio vary?*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.019***	0.022***	0.026***	0.023***	0.027***	0.034***
	(0.003)	(0.000)	(0.004)	(0.003)	(0.000)	(0.000)
Post x Treated	-0.006	-0.003	-0.005	0.003	0.005	0.006
	(0.189)	(0.451)	(0.322)	(0.574)	(0.311)	(0.368)
Post x ATSIM	0.002	-0.000	0.004	0.002	0.002	0.002
	(0.404)	(0.988)	(0.186)	(0.164)	(0.346)	(0.296)
Treated x ATSIM	-0.008	-0.007	-0.002	0.000	-0.023	-0.025
	(0.396)	(0.461)	(0.873)	(0.986)	(0.156)	(0.210)
ATSIM	0.003	0.003	-0.002	-0.002	-0.001	-0.000
	(0.306)	(0.280)	(0.557)	(0.566)	(0.745)	(0.907)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.77	0.80	0.81	0.77	0.80	0.81
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel F. *Parallel Trend Test*

	High Similarity			Low Similarity		
	Control	Treated	p-value	Control	Treated	p-value
Δ Ind. Adj. Gross Margin	0.003	0.002	0.87	0.001	-0.001	0.27
Δ Ind. Adj. R&D to Sales	0.001	-0.002	0.31	0.002	0.003	0.50
Δ Ind. Adj. ROA	0.000	0.000	0.99	-0.003	-0.007	0.45
Δ Ind. Adj. EBITDA to Assets	0.000	0.002	0.57	-0.001	-0.002	0.71

Table 7. Pricing Effects This table presents the results for the effect of common ownership and product similarity on prices using alternate proxies for pricing. The dependent variable is natural log of price index in Panel A and B, and price increase dummy in Panel C. In Panel A, common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-SIC*) in columns (4)-(6). Panel B reports the results for the difference-in-differences estimation using the M&A of financial institutions as an exogenous shock to a firm's common ownership level. Panel C reports the results of regressing price increase dummy as mentioned in MD&A section on changes in common ownership. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by industry. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *OLS regressions*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.059**			-0.043*		
	(0.018)			(0.052)		
WtComOwn x ATSIM	0.045***			0.034***		
	(0.000)			(0.000)		
NumMgnr		0.008			0.014	
		(0.584)			(0.221)	
NumMgnr x ATSIM		0.020***			0.017**	
		(0.002)			(0.014)	
PropPeer			-0.008			-0.018*
			(0.634)			(0.060)
PropPeer x ATSIM			0.001			0.019**
			(0.958)			(0.020)
TSIM	0.005	0.010	0.014***	0.000	0.005	-0.001
	(0.587)	(0.236)	(0.010)	(0.957)	(0.478)	(0.895)
Log Assets	0.034**	0.026**	0.032**	0.033**	0.027**	0.033**
	(0.019)	(0.044)	(0.025)	(0.020)	(0.043)	(0.024)
Log Market to Book	0.057**	0.051**	0.059**	0.057**	0.052**	0.059**
	(0.012)	(0.012)	(0.010)	(0.013)	(0.011)	(0.010)
Cash to Assets	-0.013	-0.003	-0.011	-0.012	-0.003	-0.008
	(0.585)	(0.868)	(0.627)	(0.628)	(0.894)	(0.718)
Advertising to Assets	0.063	0.070	0.061	0.066	0.070	0.057

	(0.443)	(0.387)	(0.461)	(0.419)	(0.395)	(0.489)
R&D to Assets	0.006	0.003	0.005	0.006	0.005	0.010
	(0.950)	(0.970)	(0.960)	(0.948)	(0.955)	(0.917)
Leverage Ratio	-0.029	-0.025	-0.030	-0.029	-0.025	-0.031
	(0.144)	(0.199)	(0.154)	(0.144)	(0.194)	(0.141)
Pct share held by inst.inv.	-0.015	-0.057**	-0.034**	-0.018	-0.057**	-0.035**
	(0.498)	(0.012)	(0.030)	(0.429)	(0.010)	(0.038)
HHI(SIC)	-0.045	0.046	0.045	-0.047	0.036	0.040
	(0.884)	(0.893)	(0.894)	(0.881)	(0.917)	(0.907)
HHI x HHI(SIC)	0.015	-0.054	-0.066	0.017	-0.046	-0.066
	(0.960)	(0.870)	(0.843)	(0.956)	(0.891)	(0.844)
N	49189	49189	49189	49189	49189	49189
Adjusted R2	0.61	0.61	0.60	0.61	0.61	0.60
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Quasi-natural experiment*

	ATSIM			ATSIM-SIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.057***	0.059***	0.058***	0.028***	0.027***	0.029***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.007)
Post x Treated	-0.028***	-0.032***	-0.054***	-0.021***	-0.026***	-0.047***
	(0.000)	(0.000)	(0.000)	(0.004)	(0.003)	(0.000)
Post x ATSIM	-0.033***	-0.035***	-0.029***	-0.002	-0.001	0.003
	(0.000)	(0.000)	(0.000)	(0.568)	(0.791)	(0.545)
Treated x ATSIM	-0.020**	-0.018**	-0.016*	-0.003	0.007	0.003
	(0.033)	(0.048)	(0.087)	(0.854)	(0.732)	(0.919)
ATSIM	0.022***	0.024***	0.021***	0.010	0.011	0.011
	(0.001)	(0.001)	(0.002)	(0.192)	(0.205)	(0.302)
Log Assets	0.017**	0.016*	0.037***	0.015*	0.014	0.035***
	(0.042)	(0.092)	(0.002)	(0.074)	(0.149)	(0.003)
Log Market to Book	0.067***	0.069***	0.108***	0.068***	0.069***	0.108***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	-0.010	-0.015	-0.030	-0.003	-0.008	-0.026
	(0.752)	(0.704)	(0.540)	(0.928)	(0.845)	(0.598)
Advertising to Assets	0.163	0.193	0.427**	0.167	0.198	0.404*
	(0.159)	(0.203)	(0.044)	(0.163)	(0.194)	(0.068)
R&D to Assets	-0.099*	-0.082	-0.101	-0.103*	-0.075	-0.100
	(0.054)	(0.235)	(0.345)	(0.054)	(0.302)	(0.376)
Leverage Ratio	-0.026	-0.037	-0.045	-0.031	-0.039	-0.050
	(0.326)	(0.271)	(0.278)	(0.260)	(0.260)	(0.234)
Pct share held by inst.inv.	-0.123***	-0.147***	-0.172***	-0.124***	-0.151***	-0.172***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HHI(SIC)	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.359)	(0.338)	(0.213)	(0.403)	(0.341)	(0.243)
HHI x HHI(SIC)	0.000	0.000	0.000	0.000	0.000	0.000
	(0.876)	(0.794)	(0.511)	(0.887)	(0.759)	(0.546)
N	19181	15279	10804	19181	15279	10804
Adjusted R2	0.75	0.77	0.84	0.75	0.76	0.84
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *MD&A Analysis*

	SIC		FIC	
	(1)	(2)	(3)	(4)
ΔWtComOwn	-0.036		-0.058	
	(0.505)		(0.250)	
ΔWtComOwn x ATSIM	0.060***		0.070**	
	(0.009)		(0.010)	
ΔPropPeer		0.015		0.002
		(0.370)		(0.886)
ΔPropPeer x ATSIM		0.027*		0.028*
		(0.096)		(0.099)
ATSIM	-0.022	-0.017	0.021	0.028
	(0.833)	(0.828)	(0.651)	(0.550)
N	86	86	81	81
Adjusted R2	0.42	0.41	0.46	0.44
Fixed Effects	Ind. and Year	Ind. and Year	Ind. and Year	Ind. and Year

Table 8. Using blockholders to measure common ownership: This table presents the results when common ownership is measured using only blockholders. To conserve space, I only report the results for M&A experiment. Except using blockholders to measure common ownership, the setup is identical to section 4.1 and table 6. Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A: *Dependent variable: Industry Adjusted Gross Margin*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.032**	0.044**	0.048**	0.019	0.048**	0.060**
	(0.039)	(0.018)	(0.032)	(0.163)	(0.021)	(0.015)
Post x Treated	0.005	0.006	0.006	0.001	0.018**	0.021**
	(0.501)	(0.481)	(0.588)	(0.899)	(0.020)	(0.035)
N	9900	6002	4208	9900	6002	4208
Adjusted R2	0.78	0.80	0.81	0.72	0.75	0.76
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Industry Adjusted R&D to Sales Ratio*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	-0.013	-0.008	-0.024*	-0.011	-0.014	-0.029
	(0.203)	(0.450)	(0.094)	(0.181)	(0.310)	(0.105)
Post x Treated	0.010*	0.008	-0.000	0.014***	0.006	-0.002
	(0.075)	(0.252)	(0.977)	(0.003)	(0.321)	(0.822)
N	9900	6002	4208	9900	6002	4208
Adjusted R2	0.80	0.81	0.81	0.68	0.71	0.71
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *Industry Adjusted ROA*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.013	0.022**	0.039**	0.020**	0.022*	0.044**
	(0.170)	(0.026)	(0.011)	(0.038)	(0.076)	(0.011)
Post x Treated	-0.014*	-0.011	-0.005	0.002	0.011	0.011
	(0.053)	(0.222)	(0.616)	(0.759)	(0.244)	(0.370)
N	9900	6002	4208	9900	6002	4208
Adjusted R2	0.51	0.52	0.54	0.46	0.47	0.49
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. *Industry Adjusted EBITDA to Assets Ratio*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.015	0.022**	0.039**	0.019**	0.024**	0.050***
	(0.115)	(0.018)	(0.013)	(0.020)	(0.030)	(0.004)
Post x Treated	-0.011*	-0.009	-0.005	-0.012**	-0.002	0.006
	(0.055)	(0.179)	(0.598)	(0.033)	(0.753)	(0.506)
N	9900	6002	4208	9900	6002	4208
Adjusted R2	0.70	0.73	0.72	0.63	0.65	0.65
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 9. **Long-term Investors** This table presents the results for the hypothesis that the effects of common ownership are driven by longterm investors. The dependent variables are gross margin (columns 1 and 2), R&D to sales ratio (columns 3 and 4), ROA (columns 5 and 6), and EBITDA to assets ratio (columns 7 and 8). The dependent variables are industry adjusted where industry is defined using 3-digit SIC code in odd-numbered columns and FIC400 code in even-numbered columns. Common ownership is calculated as described in section 2.2 using only dedicated and quasi-indexer. Variable definitions are in Appendix A. All continuous variables are winsorized at 1st and 99th percentile. Standard errors are clustered by firm. p-values are in parentheses.

	GrossMargin		R&D		ROA		EBITDA/AT	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
WtComOwn	-0.018***	-0.011***	0.010***	-0.002	-0.011***	-0.001	-0.011***	0.001
	(0.000)	(0.002)	(0.000)	(0.549)	(0.000)	(0.741)	(0.001)	(0.869)
WtComOwn x ATSIM	0.037***	0.029***	-0.024***	-0.011***	0.020***	0.012***	0.020***	0.011**
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.002)	(0.000)	(0.015)
ATSIM	-0.009**	-0.005	0.004	-0.000	0.002	0.008**	0.001	0.007
	(0.019)	(0.139)	(0.126)	(0.890)	(0.416)	(0.021)	(0.898)	(0.108)
Log Assets	0.001	-0.001	0.009***	0.007***	0.008***	0.009***	-0.014***	-0.012***
	(0.809)	(0.784)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
Log Market to Book	0.043***	0.043***	-0.014***	-0.016***	0.079***	0.078***	0.106***	0.104***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash to Assets	-0.078***	-0.067***	0.161***	0.142***	-0.141***	-0.120***	-0.012	0.010
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.465)	(0.537)
Advertising to Assets	0.210***	0.218***	-0.144***	-0.132***	-0.145*	-0.100	-0.137	-0.036
	(0.002)	(0.001)	(0.003)	(0.007)	(0.061)	(0.192)	(0.203)	(0.724)
R&D to Assets	-0.174***	-0.177***	0.394***	0.374***	-0.482***	-0.462***	-0.514***	-0.488***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage Ratio	0.012	0.012	-0.014	-0.013**	-0.009	-0.005	-0.018	-0.013
	(0.280)	(0.288)	(0.106)	(0.037)	(0.315)	(0.632)	(0.118)	(0.277)
Pct share held by inst.inv.	0.004	0.001	-0.009**	0.003	-0.001	-0.014**	0.013	-0.003
	(0.575)	(0.935)	(0.048)	(0.504)	(0.871)	(0.024)	(0.109)	(0.747)
HHI	0.040	-0.041**	0.132***	0.052***	-0.158***	-0.048**	-0.152***	-0.049*
	(0.237)	(0.037)	(0.000)	(0.000)	(0.000)	(0.013)	(0.001)	(0.054)
HHI x HHI	-0.037	0.041*	-0.121***	-0.056***	0.172***	0.055***	0.153***	0.056**
	(0.330)	(0.060)	(0.000)	(0.000)	(0.000)	(0.009)	(0.004)	(0.045)
N	63831	63831	63831	63831	63831	63831	63831	63831
Adjusted R2	0.67	0.62	0.75	0.63	0.63	0.56	0.49	0.44
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10. Industry Quartile Analysis This table presents the results for the hypothesis that the effects of common ownership are concentrated in firms belonging to industries with high product similarity. The dependent variable is Gross Margin in panel A, R&D to sales ratio in panel B, ROA in panel C, and EBITDA to assets ratio in panel D. All dependent variables are industry-adjusted, where industry is defined using 3-digit SIC code in columns (1)-(3) and the FIC400 code in columns (4)-(6). Common ownership is equal to a firm's common ownership level if the firm belongs to an industry in the jth quartile of similarity, 0 otherwise. It is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, proportion of peers connected to a given firm (*PropPeer*) in columns 2 and 5, and number of common owners (*NumMgnr*) in columns 3 and 6. The regression includes all firm level control variables used in panel regressions (omitted to conserve space). Variable definitions are in Appendix A. All continuous variables are winsorized at 1st and 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A. *Dependent variable: Industry-adjusted Gross Margin*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
COLL Quartile 1	0.001			0.002**		
	(0.115)			(0.016)		
COLL Quartile 2	-0.006***			-0.002*		
	(0.001)			(0.073)		
COLL Quartile 3	0.001			0.002*		
	(0.470)			(0.052)		
COLL Quartile 4	0.025***			0.017***		
	(0.000)			(0.000)		
PropPeer Similarity Quartile 1		-0.002*			-0.002**	
		(0.052)			(0.022)	
PropPeer Similarity Quartile 2		-0.005***			-0.003***	
		(0.000)			(0.003)	
PropPeer Similarity Quartile 3		-0.002			-0.003**	
		(0.124)			(0.016)	
PropPeer Similarity Quartile 4		0.005***			0.003*	
		(0.003)			(0.083)	
NumMgnr Quartile 1			0.003***			0.003***
			(0.002)			(0.002)
NumMgnr Quartile 2			0.002			0.003***
			(0.260)			(0.009)
NumMgnr Quartile 3			0.006***			0.004***
			(0.000)			(0.007)
NumMgnr Quartile 4			0.016***			0.008***
			(0.000)			(0.000)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.67	0.67	0.67	0.62	0.62	0.62
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
pvalue(4-1)	0.00	0.00	0.00	0.00	0.00	0.02

Panel B. *Dependent variable: Industry-adjusted R&D to sales ratio*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
COLL Quartile 1	0.002***			0.003***		
	(0.000)			(0.000)		
COLL Quartile 2	0.006***			0.003***		
	(0.000)			(0.000)		
COLL Quartile 3	-0.005***			-0.002***		
	(0.000)			(0.001)		
COLL Quartile 4	-0.024***			-0.019***		
	(0.000)			(0.000)		
PropPeer Similarity Quartile 1		0.005***			0.006***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 2		0.005***			0.004***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 3		-0.001			0.001	
		(0.462)			(0.332)	
PropPeer Similarity Quartile 4		-0.007***			-0.008***	
		(0.000)			(0.000)	
NumMgnr Quartile 1			0.000			0.002***
			(0.554)			(0.000)
NumMgnr Quartile 2			0.000			0.002*
			(0.919)			(0.069)
NumMgnr Quartile 3			-0.005***			-0.003***
			(0.000)			(0.008)
NumMgnr Quartile 4			-0.011***			-0.011***
			(0.000)			(0.000)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.76	0.75	0.75	0.63	0.63	0.63
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
pvalue(4-1)	0.00	0.00	0.00	0.00	0.00	0.00

Panel C. *Dependent variable: Industry-adjusted ROA*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
COLL Quartile 1	-0.002***			-0.003***		
	(0.005)			(0.004)		
COLL Quartile 2	-0.009***			-0.003***		
	(0.000)			(0.005)		
COLL Quartile 3	0.009***			0.003*		
	(0.000)			(0.061)		
COLL Quartile 4	0.018***			0.018***		
	(0.000)			(0.000)		
PropPeer Similarity Quartile 1		-0.010***			-0.009***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 2		-0.011***			-0.008***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 3		-0.003*			-0.004***	
		(0.057)			(0.004)	
PropPeer Similarity Quartile 4		0.003*			0.006***	
		(0.066)			(0.000)	
NumMgnr Quartile 1			-0.005***			-0.006***
			(0.001)			(0.000)
NumMgnr Quartile 2			-0.009***			-0.007***
			(0.000)			(0.000)
NumMgnr Quartile 3			-0.001			-0.004
			(0.614)			(0.136)
NumMgnr Quartile 4			0.007**			0.008***
			(0.016)			(0.001)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.49	0.49	0.49	0.44	0.44	0.44
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
pvalue(4-1)	0.00	0.00	0.00	0.00	0.00	0.00

Panel D. *Dependent variable: Industry-adjusted EBITDA to assets ratio*

	SIC			FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
COLL Quartile 1	-0.002***			-0.003***		
	(0.000)			(0.000)		
COLL Quartile 2	-0.009***			-0.004***		
	(0.000)			(0.000)		
COLL Quartile 3	0.009***			0.002		
	(0.000)			(0.108)		
COLL Quartile 4	0.018***			0.017***		
	(0.000)			(0.000)		
PropPeer Similarity Quartile 1		-0.009***			-0.008***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 2		-0.010***			-0.007***	
		(0.000)			(0.000)	
PropPeer Similarity Quartile 3		-0.002**			-0.004***	
		(0.021)			(0.000)	
PropPeer Similarity Quartile 4		0.002			0.005***	
		(0.156)			(0.000)	
NumMgnr Quartile 1			-0.003***			-0.004***
			(0.001)			(0.000)
NumMgnr Quartile 2			-0.005***			-0.004***
			(0.000)			(0.000)
NumMgnr Quartile 3			0.004***			0.000
			(0.005)			(0.710)
NumMgnr Quartile 4			0.008***			0.009***
			(0.001)			(0.000)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.63	0.63	0.63	0.56	0.56	0.56
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
pvalue(4-1)	0.00	0.00	0.00	0.00	0.00	0.00

Table 11. Industry Quartile Analysis – M&A of Financial Institutions This table reports the results for the difference-in-differences estimation using the M&A of financial institutions as an exogenous shock to a firm's common ownership level. The dependent variable is Gross Margin in column 1, R&D to asset ratio in column 2, EBITDA to assets ratio in column 3, and net income to assets ratio in column 4. Treated firm is a firm in the portfolio of target or acquirer that experienced an increase in common ownership post M&A. Control firm is a firm in the portfolio of either target or acquirer that did not experience a change in its common ownership levels post acquisition. Similarity quartile j is 1 if the firm belongs to an industry in the jth quartile of similarity, 0 otherwise. Panel A (B) uses 3-digit SIC code (FIC400 code) as industry definition. All continuous variables are winsorized at 1st and 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% respectively.

Panel A. *Industry Quartile Analysis using 3-digit SIC code*

	GrossMargin	R&D/Sales	ROA	EBITDA/AT
	(1)	(2)	(3)	(4)
Treated=1 x Post=1	0.008	-0.010	0.003	0.004
	(0.407)	(0.107)	(0.727)	(0.806)
Sim. Quartile 2 Dummy=1	-0.005	-0.008***	0.010**	0.018***
	(0.316)	(0.005)	(0.019)	(0.004)
Treated=1 x Sim. Quartile 2 Dummy=1	-0.034	-0.012	-0.016	-0.025
	(0.125)	(0.315)	(0.408)	(0.302)
Post=1 x Sim. Quartile 2 Dummy=1	0.008	0.008**	-0.008	-0.016**
	(0.138)	(0.019)	(0.135)	(0.017)
Treated=1 x Post=1 x Sim. Quartile 2 Dummy=1	-0.009	0.020***	-0.023**	-0.009
	(0.431)	(0.004)	(0.037)	(0.622)
Sim. Quartile 3 Dummy=1	0.014*	-0.013***	0.022***	0.034***
	(0.063)	(0.000)	(0.000)	(0.000)
Treated=1 x Sim. Quartile 3 Dummy=1	-0.031	-0.015	0.022	0.013
	(0.206)	(0.299)	(0.304)	(0.665)
Post=1 x Sim. Quartile 3 Dummy=1	-0.009	0.007**	-0.010*	-0.014*
	(0.133)	(0.010)	(0.087)	(0.059)
Treated=1 x Post=1 x Sim. Quartile 3 Dummy=1	-0.006	0.007	-0.019	-0.029
	(0.636)	(0.458)	(0.179)	(0.191)
Sim. Quartile 4 Dummy=1	0.017	-0.009*	0.017**	0.031***
	(0.187)	(0.077)	(0.025)	(0.002)
Treated=1 x Sim. Quartile 4 Dummy=1	-0.011	-0.056	0.017	0.007
	(0.867)	(0.256)	(0.681)	(0.865)
Post=1 x Sim. Quartile 4 Dummy=1	-0.002	0.000	0.003	0.008
	(0.826)	(0.906)	(0.628)	(0.250)
Treated=1 x Post=1 x Sim. Quartile 4 Dummy=1	0.048**	-0.033**	0.031*	0.029
	(0.025)	(0.030)	(0.052)	(0.139)
N	13344	13344	13344	13344
Adjusted R2	0.86	0.85	0.81	0.61
Controls	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes

Panel B. *Industry Quartile Analysis using FIC400 code*

	GrossMargin	R&D/Sales	ROA	EBITDA/AT
	(1)	(2)	(3)	(4)
Treated=1 x Post=1	-0.003	-0.009	-0.003	0.006
	(0.782)	(0.146)	(0.782)	(0.683)
Sim. Quartile 2 Dummy=1	-0.014***	-0.007***	-0.007	-0.007
	(0.007)	(0.007)	(0.139)	(0.257)
Treated=1 x Sim. Quartile 2 Dummy=1	-0.017	-0.017	0.010	0.007
	(0.141)	(0.102)	(0.411)	(0.695)
Post=1 x Sim. Quartile 2 Dummy=1	0.011*	-0.007**	0.024***	0.029***
	(0.061)	(0.022)	(0.000)	(0.002)
Treated=1 x Post=1 x Sim. Quartile 2 Dummy=1	0.004	0.015	-0.007	-0.023
	(0.745)	(0.166)	(0.587)	(0.262)
Sim. Quartile 3 Dummy=1	-0.020***	-0.020***	0.009	0.019**
	(0.009)	(0.000)	(0.220)	(0.038)
Treated=1 x Sim. Quartile 3 Dummy=1	-0.030*	-0.023	0.007	0.025
	(0.052)	(0.111)	(0.688)	(0.255)
Post=1 x Sim. Quartile 3 Dummy=1	-0.004	-0.006	0.007	0.011
	(0.536)	(0.123)	(0.295)	(0.255)
Treated=1 x Post=1 x Sim. Quartile 3 Dummy=1	0.039***	-0.001	0.032**	-0.003
	(0.001)	(0.907)	(0.031)	(0.870)
Sim. Quartile 4 Dummy=1	-0.012	-0.028***	0.031***	0.040***
	(0.316)	(0.000)	(0.002)	(0.002)
Treated=1 x Sim. Quartile 4 Dummy=1	-0.045**	-0.033	-0.009	0.013
	(0.041)	(0.223)	(0.713)	(0.647)
Post=1 x Sim. Quartile 4 Dummy=1	-0.012	-0.016**	0.017*	0.026**
	(0.134)	(0.037)	(0.051)	(0.014)
Treated=1 x Post=1 x Sim. Quartile 4 Dummy=1	0.066***	-0.030*	0.053***	0.035*
	(0.004)	(0.088)	(0.005)	(0.100)
N	13344	13344	13344	13344
Adjusted R2	0.80	0.71	0.73	0.55
Controls	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes

Appendices

C Internet Appendix

Table IA 1. M&A experiment using FIC400 industry: This table presents the results for the effect of common ownership and product similarity on firm outcomes using FIC400, Hoberg and Phillip's text based industry measure, as an industry. The dependent variable is gross margin (panel A), R&D to sales ratio (panel B), ROA (panel C), and EBITDA to assets ratio (panel D). All dependent variables are adjusted for industry mean. To conserve space I only report the coefficients on the key independent variables. Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A. *Does the effect of Common Ownership on Industry Adjusted Gross Margin vary?*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.025**	0.040***	0.047***	0.024**	0.032**	0.039***
	(0.031)	(0.006)	(0.002)	(0.044)	(0.021)	(0.006)
Post x Treated	0.013***	0.020***	0.021***	0.018***	0.024***	0.028***
	(0.009)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)
Post x ATSIM	-0.002	-0.014***	-0.011***	-0.002	-0.006**	-0.005
	(0.666)	(0.000)	(0.002)	(0.487)	(0.042)	(0.122)
Treated x ATSIM	-0.025**	-0.033**	-0.038**	-0.006	-0.007	-0.007
	(0.040)	(0.022)	(0.012)	(0.570)	(0.554)	(0.562)
ATSIM	0.001	0.007***	0.005*	-0.002	0.002	0.001
	(0.759)	(0.006)	(0.061)	(0.692)	(0.564)	(0.772)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.76	0.78	0.80	0.76	0.77	0.80
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Does the effect of Common Ownership on Industry Adjusted R&D to sales ratio vary?*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	-0.013*	-0.017*	-0.022**	-0.012	-0.014	-0.018**
	(0.097)	(0.086)	(0.033)	(0.105)	(0.107)	(0.047)
Post x Treated	-0.005	-0.008	-0.011	-0.008	-0.011*	-0.017**
	(0.270)	(0.182)	(0.100)	(0.116)	(0.080)	(0.029)
Post x ATSIM	-0.002	0.001	-0.001	-0.002	-0.000	-0.001
	(0.562)	(0.830)	(0.774)	(0.278)	(0.752)	(0.408)
Treated x ATSIM	0.011	0.016	0.016	0.006	0.009	-0.000
	(0.269)	(0.169)	(0.195)	(0.630)	(0.560)	(0.985)
ATSIM	0.003	-0.001	0.001	0.002	-0.000	0.000
	(0.295)	(0.582)	(0.734)	(0.339)	(0.951)	(0.844)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.68	0.69	0.70	0.68	0.69	0.70
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *Does the effect of Common Ownership on Industry Adjusted ROA vary?*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.024***	0.029***	0.029***	0.017**	0.025***	0.025**
	(0.001)	(0.000)	(0.004)	(0.015)	(0.002)	(0.016)
Post x Treated	0.011*	0.009	0.006	0.016**	0.016**	0.013
	(0.077)	(0.197)	(0.516)	(0.014)	(0.034)	(0.157)
Post x ATSIM	-0.001	-0.002	0.001	0.003	0.002	0.003
	(0.793)	(0.634)	(0.753)	(0.193)	(0.404)	(0.201)
Treated x ATSIM	-0.021**	-0.025**	-0.022*	0.002	-0.003	0.008
	(0.025)	(0.019)	(0.053)	(0.906)	(0.808)	(0.620)
ATSIM	0.002	0.002	-0.003	-0.004	-0.001	-0.004
	(0.529)	(0.541)	(0.358)	(0.269)	(0.854)	(0.386)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.53	0.56	0.55	0.53	0.56	0.55
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. *Does the effect of Common Ownership on Industry Adjusted EBITDA to assets ratio vary?*

	ATSIM			ATSIM-FIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.020***	0.028***	0.032***	0.016**	0.022***	0.027***
	(0.002)	(0.000)	(0.001)	(0.015)	(0.003)	(0.007)
Post x Treated	0.009*	0.012**	0.016**	0.014**	0.018***	0.023***
	(0.079)	(0.038)	(0.025)	(0.010)	(0.004)	(0.003)
Post x ATSIM	0.000	-0.004	-0.002	0.003	0.001	0.001
	(0.956)	(0.184)	(0.452)	(0.153)	(0.457)	(0.583)
Treated x ATSIM	-0.017*	-0.022**	-0.024**	0.005	0.002	0.008
	(0.056)	(0.026)	(0.037)	(0.682)	(0.898)	(0.589)
ATSIM	0.004	0.006**	0.003	-0.005**	-0.003	-0.005
	(0.185)	(0.013)	(0.257)	(0.041)	(0.327)	(0.153)
Log Assets	-0.010**	-0.008*	-0.010	-0.010**	-0.008*	-0.010
	(0.041)	(0.098)	(0.127)	(0.044)	(0.086)	(0.111)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.70	0.73	0.73	0.70	0.72	0.73
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA 2. OLS Regressions using TNIC industry: This table presents the results for the effect of common ownership and product similarity on firm outcomes using the top-50 closest peers, as measured by product similarity score, as an industry. The dependent variable is gross margin (panel A), R&D to sales ratio (panel B), ROA (panel C), and EBITDA to assets ratio (panel D). All dependent variables are adjusted for industry mean. Common ownership is measured as the product of a common owner's stake in a firm and its peer aggregated over all common owners and peers (*WtComOwn*) in columns 1 and 4, number of common owners (*NumMgnr*) in columns 2 and 5, and proportion of peers connected to a given firm (*PropPeer*) in columns 3 and 6. Product similarity is averaged over all firms (*ATSIM*) in columns (1)-(3) and over firms within the industry (*ATSIM-TNIC*) in columns (4)-(6). To conserve space I only report the coefficients on the key independent variables. Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A. *Does the effect of Common Ownership on Industry Adjusted Gross Margin vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.022***			-0.017***		
	(0.000)			(0.000)		
WtComOwn x ATSIM	0.030***			0.025***		
	(0.000)			(0.000)		
NumMgnr		-0.011**			-0.004	
		(0.013)			(0.283)	
NumMgnr x ATSIM		0.021***			0.013***	
		(0.000)			(0.004)	
PropPeer			-0.020***			-0.015***
			(0.000)			(0.000)
PropPeer x ATSIM			0.026***			0.023***
			(0.000)			(0.000)
ATSIM	-0.002	0.003	-0.006	-0.007	-0.001	-0.010**
	(0.598)	(0.547)	(0.223)	(0.135)	(0.794)	(0.043)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.60	0.60	0.60	0.60	0.60	0.60
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Does the effect of Common Ownership on Industry Adjusted R&D to sales ratio vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	0.009***			0.006***		
	(0.000)			(0.000)		
WtComOwn x ATSIM	-0.013***			-0.010***		
	(0.000)			(0.000)		
NumMgnr		0.007***			0.004**	
		(0.002)			(0.015)	
NumMgnr x ATSIM		-0.010***			-0.007***	
		(0.001)			(0.001)	
PropPeer			0.010***			0.005***
			(0.000)			(0.000)
PropPeer x ATSIM			-0.013***			-0.008***
			(0.000)			(0.000)
ATSIM	0.002	0.000	0.005	-0.003	-0.005*	-0.002
	(0.424)	(0.997)	(0.105)	(0.235)	(0.092)	(0.472)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.67	0.67	0.67	0.67	0.67	0.67
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *Does the effect of Common Ownership on Industry Adjusted ROA vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.018***			-0.013***		
	(0.000)			(0.000)		
WtComOwn x ATSIM	0.022***			0.018***		
	(0.000)			(0.000)		
NumMgnr		-0.019***			-0.011***	
		(0.000)			(0.002)	
NumMgnr x ATSIM		0.016***			0.007	
		(0.007)			(0.122)	
PropPeer			-0.024***			-0.018***
			(0.000)			(0.000)
PropPeer x ATSIM			0.025***			0.019***
			(0.000)			(0.000)
ATSIM	0.005	0.008*	-0.001	0.002	0.006	-0.002
	(0.290)	(0.080)	(0.772)	(0.630)	(0.180)	(0.729)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.44	0.44	0.44	0.44	0.44	0.44
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. *Does the effect of Common Ownership on Industry Adjusted EBITDA to assets ratio vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
WtComOwn	-0.018***			-0.013***		
	(0.000)			(0.000)		
WtComOwn x ATSIM	0.019***			0.015***		
	(0.000)			(0.000)		
NumMgnr		-0.010**			-0.007**	
		(0.013)			(0.011)	
NumMgnr x ATSIM		0.011**			0.008**	
		(0.025)			(0.014)	
PropPeer			-0.020***			-0.015***
			(0.000)			(0.000)
PropPeer x ATSIM			0.020***			0.016***
			(0.000)			(0.000)
ATSIM	0.006*	0.010***	0.002	0.007*	0.010***	0.003
	(0.062)	(0.004)	(0.573)	(0.066)	(0.008)	(0.384)
N	63831	63831	63831	63831	63831	63831
Adjusted R2	0.57	0.57	0.57	0.57	0.57	0.57
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA 3. M&A experiment using TNIC industry: This table presents the results for the effect of common ownership and product similarity on firm outcomes using the top-50 closest peers, as measured by product similarity score, as an industry. The dependent variable is gross margin (panel A), R&D to sales ratio (panel B), ROA (panel C), and EBITDA to assets ratio (panel D). All dependent variables are adjusted for industry mean. To conserve space I only report the coefficients on the key independent variables. Variable definitions are in Appendix A. All continuous variables are winsorized at the 1st and the 99th percentile. Standard errors are clustered by firm. p-values are in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1% respectively.

Panel A. *Does the effect of Common Ownership on Industry Adjusted Gross Margin vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.048**	0.044**	0.057**	0.037**	0.032**	0.041**
	(0.026)	(0.023)	(0.012)	(0.046)	(0.046)	(0.029)
Post x Treated	0.021***	0.024***	0.027***	0.021***	0.024***	0.027***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Post x ATSIM	-0.009*	-0.010**	-0.010*	-0.005	-0.006	-0.006
	(0.057)	(0.035)	(0.066)	(0.166)	(0.103)	(0.202)
Treated x ATSIM	-0.020	-0.010	-0.024	-0.011	0.001	0.001
	(0.367)	(0.609)	(0.343)	(0.520)	(0.967)	(0.975)
ATSIM	0.004	0.004	0.003	-0.001	-0.004	-0.006
	(0.243)	(0.210)	(0.382)	(0.880)	(0.394)	(0.194)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.82	0.84	0.86	0.82	0.84	0.85
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. *Does the effect of Common Ownership on Industry Adjusted R&D to sales ratio vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	-0.019**	-0.026***	-0.034***	-0.017**	-0.023***	-0.030***
	(0.040)	(0.000)	(0.000)	(0.026)	(0.000)	(0.000)
Post x Treated	-0.009**	-0.011**	-0.015***	-0.009**	-0.011***	-0.015***
	(0.026)	(0.011)	(0.006)	(0.017)	(0.009)	(0.005)
Post x ATSIM	-0.002	-0.001	-0.002	-0.001	0.001	-0.001
	(0.414)	(0.790)	(0.649)	(0.799)	(0.791)	(0.826)
Treated x ATSIM	0.005	0.007	0.009	-0.008	-0.003	-0.008
	(0.663)	(0.510)	(0.522)	(0.329)	(0.738)	(0.450)
ATSIM	0.004	0.002	0.001	0.002	-0.000	0.001
	(0.239)	(0.532)	(0.616)	(0.558)	(0.951)	(0.747)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.79	0.81	0.81	0.79	0.81	0.81
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. *Does the effect of Common Ownership on Industry Adjusted ROA vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.007	0.014*	0.026**	0.010	0.016**	0.024**
	(0.387)	(0.069)	(0.034)	(0.154)	(0.016)	(0.024)
Post x Treated	0.005	0.010	0.006	0.007	0.012*	0.008
	(0.394)	(0.136)	(0.464)	(0.216)	(0.070)	(0.293)
Post x ATSIM	0.001	0.005*	0.006	0.000	0.003	0.004
	(0.674)	(0.081)	(0.122)	(0.972)	(0.300)	(0.200)
Treated x ATSIM	0.028**	0.026**	0.019	0.026**	0.023*	0.028*
	(0.031)	(0.045)	(0.248)	(0.029)	(0.051)	(0.066)
ATSIM	-0.000	-0.002	-0.004	0.003	0.002	0.000
	(0.991)	(0.398)	(0.240)	(0.379)	(0.474)	(0.994)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.58	0.60	0.57	0.58	0.60	0.57
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. *Does the effect of Common Ownership on Industry Adjusted EBITDA to assets ratio vary?*

	ATSIM			ATSIM-TNIC		
	(1)	(2)	(3)	(4)	(5)	(6)
Post x Treated x ATSIM	0.011	0.017**	0.032**	0.011	0.016**	0.026**
	(0.176)	(0.043)	(0.019)	(0.118)	(0.028)	(0.032)
Post x Treated	0.007*	0.011**	0.010*	0.008**	0.013***	0.012**
	(0.093)	(0.015)	(0.070)	(0.047)	(0.007)	(0.048)
Post x ATSIM	0.001	0.004	0.004	0.001	0.002	0.004
	(0.751)	(0.210)	(0.264)	(0.791)	(0.292)	(0.191)
Treated x ATSIM	0.010	0.011	-0.001	0.018*	0.019*	0.022
	(0.384)	(0.369)	(0.925)	(0.068)	(0.067)	(0.147)
ATSIM	0.002	0.000	-0.001	0.002	0.001	-0.003
	(0.513)	(0.995)	(0.683)	(0.576)	(0.622)	(0.387)
N	23503	18755	13344	23503	18755	13344
Adjusted R2	0.76	0.79	0.78	0.76	0.79	0.78
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Deal x Year FE	Yes	Yes	Yes	Yes	Yes	Yes