

UC Berkeley

UC Berkeley Electronic Theses and Dissertations

Title

Common Ownership and Perceived Competition Networks

Permalink

<https://escholarship.org/uc/item/7439x9mk>

ISBN

9798189271243

Author

Tian, Ziqing

Publication Date

2026-05-01

Peer reviewed|Thesis/dissertation

Common Ownership and Perceived Competition Networks

By

Ziqing Tian

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Business Administration

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Xiao-Jun Zhang, Chair

Professor Sunil Dutta

Professor Tanya Paul

Professor Sarah Vaughn

Spring 2026

Copyright © 2026

By

Ziqing Tian

Abstract

Common Ownership and Perceived Competition Networks

By

Ziqing Tian

Doctor of Philosophy in Business Administration

University of California, Berkeley

Professor Xiao-Jun Zhang, Chair

Many natural competitors are co-owned by a small number of large institutional investors. While concerns about the anticompetitive potential of common ownership are growing, empirical evidence on its impact remains mixed. This study examines whether common ownership shapes whom firms internally assess as competitors. Internally assessed competitors reflect firms' attention allocation and reveal their strategic focus in investment and operational decisions. Using scraped data on named competitors disclosed in the Competition sections of 10-K filings from 1995 to 2023, I track how these relationships evolve over time. I first validate that competitor removals capture meaningful shifts by showing that they coincide with real changes in competitive interactions. Building on this validation, I use associational analyses and a difference-in-differences design leveraging exogenous institutional mergers to show that greater ownership overlap increases the likelihood that firms remove commonly owned peers from their internally assessed competitor lists. Collectively, these findings offer new insights into antitrust debates on common ownership and demonstrate the importance of perceived competitive relations.

Dedication

This dissertation marks the end of a long, challenging, and deeply memorable five-year journey. I could not have reached this point without the love, patience, and support of so many people.

I dedicate this dissertation first to my parents, whose unconditional love and generous support made this journey possible. To my father, thank you for encouraging me to begin this journey, for patiently bearing my complaints when I struggled to see its end, and for believing in me before I could fully believe in myself. To my mother, thank you for always finding a way to pull me out of my studies, and for reminding me that life is much bigger than academia and that my well-being matters more than any achievement.

I am deeply grateful to my committee members, who believed in me from the early stages of this journey, stood by me through moments of doubt, and helped me find a way forward. I could not have reached this stage without their guidance and support. I also thank the faculty members who generously shared their knowledge and advice with me, and my cohort, who walked through the many milestones of the PhD journey alongside me. I would also like to thank the PhD program office staff for their warm support.

Finally, I am also grateful to my cousins and friends outside of school for bringing me so much joy and support beyond academia.

Table of Contents

Abstract.....	1
Dedication	i
List of Tables	iv
List of Figures.....	iv
Acknowledgements.....	v
<i>I. INTRODUCTION</i>	1
<i>II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT</i>	7
Perceived Competition Network.....	7
Common Ownership and Competition	9
Hypothesis Development.....	10
<i>III. DATA AND DESCRIPTIVE STATISTICS</i>	12
Data.....	12
Summary Statistics	14
<i>IV. RESEARCH DESIGN</i>	15
Baseline Regression	15
Event Study: Institutional Mergers	18
<i>V. EMPIRICAL RESULTS</i>	19
Determinants of Competitor Disclosure.....	19
<i>Firm Characteristics and Competitor Disclosure</i>	20
<i>Industry Affiliation and Competitor Selection</i>	21
Economic Implications of Competitor Removals.....	22
<i>Firm-Level Effects</i>	22
<i>Firm-Pair Level Effects</i>	24
Baseline Results	26
Baseline Robustness.....	28
Heterogeneity by Institutional Investor Types	30
Difference-in-Differences Results.....	31
Institutional Ownership Overlap and Competitor Addition	32

<i>VI. CONCLUSION.....</i>	34
<i>References.....</i>	36
<i>Appendix A: Variable Definitions.....</i>	42
<i>Appendix B: Examples of Competitor Removals</i>	45
<i>Appendix C: Financial Institution Mergers</i>	47
<i>Online Appendix.....</i>	66
OA.1 Data Collection Procedure	67
OA.2 Economic Consequences of Institutional Mergers	69
OA.3 Robustness Tests for the DiD Analysis of Institutional Mergers.....	70

List of Tables

Table 1: Sample Description	48
Table 2: Summary Statistics	50
Table 3: Determinants of Competitor Disclosure.....	52
Table 4: Economic Implications of Competitor Removal.....	54
Table 5: Institutional Ownership Overlap and Competitor Removal.....	56
Table 6: Baseline Robustness	58
Table 7: Ownership Overlap by Different Types of Institutions.....	59
Table 8: Quasi-Natural Experiment of Institutional Mergers	61
Table 9: Institutional Ownership Overlap and Competitor Addition	64
Table OA 1: Economic Consequences of Institutional Mergers.....	71
Table OA 2: Robustness Tests for the DiD Analysis of Institutional Mergers	73
Table OA 3: Baseline Results Using FactSet Revere Sample.....	75
Table OA 4: Evidence of Common Owner Interventions	77

List of Figures

Figure 1: Percentage of Firms with Named Competitors by Year.....	49
Figure 2: Event-Time Effects of Competitor Removal on Firm-Pair Outcomes	55
Figure 3: Parallel Trend.....	63

Acknowledgements

I am sincerely grateful for the invaluable guidance and support from my dissertation committee: Xiao-Jun Zhang (Chair), Sunil Dutta, Tanya Paul. I appreciate helpful comments and suggestions from Omri Even-Tov, Panos Patatoukas, Shawn Kim, Xi Wu, Biwen Zhang, Valerie Zhang and participants at the UC Berkeley Accounting Seminar. I thank Brian Cadman (DSFI Discussant) and Jun Oh (HARC discussant) for their helpful comments and suggestions. I also thank participants at the 2025 Western Region Doctoral Student Faculty Interchange (DSFI), the 2025 AAA Annual Meeting (Emerging and Innovative Research session), the 2026 Hawai'i Accounting Research Conference (HARC), and Fordham University for their helpful comments and suggestions. I also appreciate the financial support from the Haas School of Business and the Institute for Business Innovation. All errors are my own.

I. INTRODUCTION

Over the past few decades, publicly listed firms have become increasingly linked through overlapping ownership by large institutional investors. ¹ Whereas only 17% of S&P 500 firms had a blockholder that also owned a block in a competitor firm in 1990, this had increased to 81% by the end of 2015 (Lewellen and Lowry 2021). Several legal scholars and antitrust authorities have raised concerns that growing ownership overlaps among firms in the same industry may lead to anticompetitive effects (Elhauge 2016; Phillips 2018).² These concerns have recently moved beyond theory and into regulatory practice: in May 2025, the U.S. Department of Justice and the Federal Trade Commission filed a joint *Statement of Interest*—the first federal antitrust action to explicitly address the potential anticompetitive effects of common ownership.³ Yet despite these rising concerns, empirical research provides mixed evidence on whether common ownership actually reduces competition (Azar, Schmalz, and Tecu 2018; Koch, Panayides, and Thomas 2021; Dennis, Gerardi, and Schenone 2022).

Conflicting conclusions in the literature largely stem from differences in how competition is measured. ⁴ Some studies that rely on product prices find anticompetitive effects in specific industries

¹ This growth is primarily driven by the consolidation of the asset management industry and the rise of index investing (Lewellen and Lowry, 2021).

² Elhauge (2016) suggests using antitrust law to assess transactions by institutional investors that increase cross-holdings within the same industry. Posner et al. (2017) propose that institutions have the choice between: (1) owning no more than 1% of any oligopolistic industry, (2) owning only one firm within any oligopolistic industry, or (3) being entirely passive with respect to firm governance.

³ The filing was submitted in a lawsuit brought by Republican-led states against BlackRock and other large asset managers, alleging that their overlapping ownership in competing coal companies facilitated coordinated actions that reduced output and harmed competition (U.S. Department of Justice and Federal Trade Commission, 2025).

⁴ Also due to differences in how common ownership is measured. Prior studies adopt a variety of approaches, including industry-level measures, such as Modified Herfindahl-Hirschman Index deltas (e.g., Azar et al. 2022; Pawliczek and Skinner 2019), firm-level indicator variables for cross-owning blockholders (e.g., Park et al. 2019), and sophisticated firm-peer pairwise measures of profit weights (e.g., Backus et al. 2019). See Section 2 for a literature review.

(Azar, Schmalz, and Tecu 2018; Azar, Raina, and Schmalz 2022; Backus, Conlon, and Sinkinson 2021), whereas others that examine broader product market outcomes such as profitability and investment do not find significant evidence of such effects (Koch, Panayides, and Thomas 2021; Lewellen and Lowry 2021). Although prices are widely regarded as the most direct indicator of competitive intensity, they are difficult to compare across multiproduct firms. Likewise, broader firm-level outcomes become noisy when aggregated to the industry level, which obscures the firm-pair heterogeneity in competitive intensity that is directly shaped by common owners' incentives. To address these limitations, this study provides a more comprehensive and direct way to track shifts in competitive intensity at the firm-pair level by examining whether common ownership alters whom firms internally assess as competitors.

Researchers have developed several approaches to identify a firm's competitors, but these measures are often static or constructed from realized outcomes (Hoberg and Phillips 2010; Cao, Chen, Tucker, and Wan 2025). Different from traditionally inferred competitors, firms' perceived (or internally assessed) competitors reflect managerial cognition and strategic attention (Dedman and Lennox 2009; Li, Lundholm, and Minnis 2013). Such perceptions matter because perceiving another firm as a competitor can intensify a focal firm's search and learning efforts, ultimately influencing its operating and investing decisions (Sharapov and Ross 2019, Greve and Taylor 2000). However, these perceptions can both benefit and constrain firms: noticing what others miss may spur innovation (Thatchenkery and Katila 2021), while selective attention can also create blind spots that leave firms vulnerable to unexpected competitors (Zajac and Bazerman 1991).

Given the limits of managerial attention, managers cannot monitor all potential rivals equally and instead focus on those they perceive as the most relevant threats (Halac and Prat 2016; Katila, Thatchenkery, Christensen, and Zenios 2017).⁵ Common ownership, where large investors hold significant stakes in competing firms, can reshape this selective attention by encouraging managers to prioritize portfolio-wide benefits over direct competition (Hansen and Lott 1996). As a result, managers may no longer perceive commonly owned firms as major competitors, which is reflected in the removal of those firms from their disclosed competitor lists.⁶ Such changes in perceived competitors have meaningful implications for how firms interact strategically. On one hand, competitor removals can reflect a real decline in competitive intensity or strategic relevance between firms. On the other hand, they can serve as a mechanism that drives future changes in competitive behavior. Thus, shifts in perception can both reflect and reshape the broader competitive landscape.

Using data scraped with Gemini AI on named competitors disclosed in the *Competition* sections of 10-K filings from 1995 to 2023, I first examine the determinants of competitor disclosure along two dimensions: (i) firm-level characteristics that influence the likelihood and extent of disclosure, and (ii) industry affiliation factors that shape the selection of specific competitors. I find that younger, smaller, and growing firms are more likely to disclose competitors to signal their market position, and that external monitoring pressures further increase the incentive to disclose. Regarding the selection of

⁵ The management and strategy literature defines this as the perceived competition network, see, e.g., Thatchenkery and Katila (2021), Thatchenkery and Piezunka (2024).

⁶ See Appendix B for examples of competitor removal.

specific competitors, managers tend to name peers with greater product market similarity, suggesting that competitor disclosures reflect deliberate assessments of competitive relevance.

I begin by examining whether competitor removals in 10-K filings reflect actual shifts in competitive interactions or merely changes in disclosure. At the firm level, competitor removal is followed by lower capital investment, an increased likelihood of launching new products and forming strategic alliances, and a marginal decline in acquisition activity. These patterns indicate that firms adjust their investment and product-market strategies in response to reductions in perceived competition intensity. At the firm-pair level, removals are associated with significant declines in product similarity and shared analyst coverage, suggesting a weakening of the underlying competitive relationship. Taken together, the evidence suggests that shifts in perceived competition networks are correlated with real operational adjustments. However, the timing and magnitude of these effects vary, implying that perceived changes and actual actions are related but not fully overlapping.

Next, I conduct the baseline analysis to test whether overlapping institutional ownership affects managers' assessments of who their competitors are. My baseline analysis shows that greater ownership overlap between disclosing firms and their named competitors is associated with a higher likelihood of competitor removal: a one-standard-deviation increase in ownership overlap corresponds to a 17.9 percentage point higher probability of removal. I further examine heterogeneity by investor type (Bushee 2004) and find that the effect is strongest for dedicated investors, suggesting that long-term, engaged owners have a greater influence on managerial perceptions.

To address endogeneity concerns between common ownership and competitor removal, I exploit exogenous shocks to ownership overlap resulting from institutional mergers (He and Huang 2017). When two institutions merge, a firm and its named competitor—each previously held by a different merging institution—form a firm-pair that experiences an exogenous increase in common ownership. I define these firm-pairs as the treatment sample. The control sample consists of firm-pairs in which only one firm is held by a merging institution, while the other is not owned by the other merger participant. Difference-in-differences analyses show that firm-pairs experiencing increased common ownership following mergers are significantly more likely to remove competitors and exhibit larger declines in product similarity relative to control pairs. These results provide causal evidence that common ownership reshapes managerial perceptions and drives product market differentiation.

In additional analyses, I examine whether common ownership also influences firms' addition of new competitors. If common ownership reduces managers' perceived competitive threats, it not only increases the likelihood of competitor removal but may also reduce the likelihood of recognizing new competitors among commonly owned peers. The results show that increases in ownership overlap are associated with a lower likelihood of competitor addition, while product similarity is positively associated with competitor addition. This pattern suggests that newly added competitors tend to be less commonly owned but highly similar in product space.

This study contributes to the ongoing debate about how common ownership affects competition. The academic literature on common ownership provides inconsistent evidence, which indicates the need for further research. Using product price-based measures, Azar et al. (2018, 2022)

provide evidence that common ownership leads to anticompetitive outcomes in the airline and banking industries. However, studies employing broad-sample proxies of non-price competition—such as profitability, investment, and product market fluidity—find little evidence on its effects (Koch, Panayides, and Thomas 2021; Lewellen and Lowry 2021; Kini, Lee, and Shen 2024). This study introduces a direct and comprehensive disclosure-based measure of shifts in competitive intensity, which both reflects and shapes competitive actions. Leveraging this measure, the paper provides large-sample evidence on the anticompetitive effects of common ownership, offering timely insights for antitrust policymakers.

Additionally, this paper contributes to the literature on modifications of 10-K disclosures (Brown and Tucker 2011; Cohen, Malloy, and Nguyen 2020) by focusing on a relatively understudied area: competitor disclosures. While prior research uses textual analysis of 10-K filings to infer competitiveness and product similarity (Li, Lundholm, and Minnis 2013; Hoberg, Phillips, and Prabhala 2014), relatively few studies examine how firms explicitly name their competitors (Eisdorfer, Froot, Ozik, and Sadka 2022; Eisdorfer, Ozik, and Sadka 2025). Eisdorfer et al. (2022) show that firms frequently mentioned as competitors in the 10-K disclosures of other firms tend to outperform. Building on this literature, this study shows that firms *modify* their disclosed competitor lists over time, and these modifications convey value-relevant information by reflecting meaningful strategic shifts in competitive interactions.

Lastly, this study contributes to the growing accounting literature on the effects of common ownership on corporate disclosure and its underlying mechanisms. While prior studies primarily focus

on voluntary disclosures of proprietary financial information — such as earnings forecasts and sales guidance (Park, Sani, Shroff, and White 2019; Pawliczek, Skinner, and Zechman 2022) — this study extends this literature by examining non-financial disclosures. Furthermore, whereas prior accounting research often builds on the assumption that common ownership reduces competition — thereby lowering the proprietary costs of disclosure and leading to greater transparency (Park et al. 2019)—this study provides direct empirical evidence supporting that assumption, reinforcing the broader implications of the common ownership literature.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Perceived Competition Network

Researchers have developed several approaches to identify a firm’s competitors. Traditional methods often rely on predefined industry classifications (e.g., SIC, NAICS, GICS). More recent approaches include text-based network industry classifications (TNIC) developed by Hoberg and Phillips (2010), as well as the use of generative AI to identify product market competitors (Cao et al. 2025). Although these methods offer valuable insights, they are either static in nature or constructed based on realized outcomes and ex post measures of market overlap, rather than reflecting firms’ perceived and evolving views of competition.

Different from traditionally inferred competitors, firms’ perceived (or internally assessed) competitors reflect managerial cognition and strategic attention (Porac et al. 1995; Dedman and Lennox 2009; Thatchenkery and Katila 2021). Such perceptions are important because perceiving another firm as a competitor directs the focal firm’s search and learning efforts toward that firm,

influencing how it formulates and adjusts its operating and investing decisions (Sharapov and Ross 2019; Greve and Taylor 2000). For instance, how firms price their products depends on the degree of threat they perceive from incumbent competitors and prospective entrants. Similarly, the pace of asset investment depends on managers' beliefs about the number of competitors they face and how strongly those competitors can contest their investments. However, the realized level of competition ultimately determines the subsequent payoffs to these operating and investing decisions. That is, firms can both benefit from and be constrained by their perceptions. Thatchenkery and Katila (2021) argue that when firms see what others miss, they are more likely to generate innovative ideas. At the same time, selective attention can create blind spots, leaving firms vulnerable to unexpected competitors (Zajac and Bazerman 1991).

A key feature that differentiates perceived competitors from objectively defined ones is that the perceived competitive relationships are not inherently symmetrical but directional—firm A may perceive firm B as a competitor, while firm B does not necessarily consider firm A as a competitor (Thatchenkery and Katila 2021; Eisdorfer et al. 2022). There are several reasons why perceptual misalignment arises in how firms identify their competitors. First, misalignments can stem from firm characteristics—for example, smaller or lower-status firms are more likely to monitor larger or higher-status rivals than the reverse (Porac et al. 1995; Kilduff et al. 2010). Second, even firms that are objectively similar may apply different criteria when identifying competitors. For instance, some focus on technological similarity, while others prioritize customer overlap (Reger and Huff 1993; Baum et al. 2000; Tsai et al. 2011). Third, because managerial attention is limited (Porac et al. 1995; Katila et al.

2017), firms can only closely monitor a small number of competitors.⁷ Taken together, these factors contribute to systematic variation—and often asymmetry—in how firms perceive their competitive landscape.

Common Ownership and Competition

Early studies examine whether common ownership reduces competition by analyzing single-industry price outcomes. For example, Azar et al. (2018a) and Azar et al. (2019) document higher airline ticket prices and lower retail deposit rates in airlines and banking when firms have overlapping institutional owners. However, subsequent studies (Kennedy et al. 2017; Dennis et al. 2022) argue that the evidence of price increases largely disappears when alternative measures of common ownership are applied. These debates illustrate a broader challenge: price-based measures depend on precise product-market definitions and granular pricing data, which limits their generalizability beyond a few highly concentrated industries.

Other studies focus on non-price-based outcomes across broad industry samples and find mixed evidence. One line of work examines investment and innovation. Gutiérrez and Philippon (2017) document unusually low investment in industries with higher cross-ownership, consistent with weakened competitive pressure. In contrast, López and Vives (2019) and Kini et al. (2019) highlight a “bright side”: when technologies generate positive spillovers across firms, common ownership can increase investment and innovation by internalizing cross-firm benefits. These studies therefore yield conflicting predictions, depending on whether underinvestment or spillover-driven incentives

⁷ Survey shows managers tend to focus on between two and nine competitors (Porac et al., 1995; Clark and Montgomery, 1999).

dominate. A second line of research examines coordination-related outcomes. He and Huang (2017) find that cross-held firms gain market share and engage in more mergers, alliances, and joint ventures, and Brooks et al. (2018) similarly document higher merger likelihood among cross-owned firms. Yet Koch et al. (2020) find little evidence that cross-ownership robustly predicts profitability or other non-price competitive outcomes in cross-industry settings.

A parallel literature explores the channel that common owners influence managerial behavior. One proposed channel is through executive incentives. Antón et al. (2018) show that common ownership reduces CEOs' pay-for-performance sensitivity, whereas Liang (2016) and Kwon (2017) find mixed evidence on whether relative performance evaluation is weakened. A second channel is “doing nothing,” in which common owners refrain from pushing firms to compete aggressively (Edmans et al., 2019; He et al., 2019).

A key limitation of the broader-sample literature is that industry-level aggregation masks the firm-pair variation in competition most directly affected by common ownership. This limitation helps explain the mixed findings in the literature and underscores the need for more granular, pair-level approaches that capture changes in both competition intensity and common ownership.

Hypothesis Development

Changes in perceived competitors have meaningful implications for how firms interact strategically. There are two ways to interpret such shifts. First, they may reflect underlying changes in the competitive landscape. In particular, competitor removal may indicate that the two firms have

become less strategically relevant to one another. In this view, the change in perception captures a realignment in strategic relationships or market structure (Clark and Montgomery 1999).

Second, changes in perception may also reshape future firm behavior. Prior research suggests that managers devote more attention to firms they perceive as competitors and closely monitor their actions, which in turn influence their own decisions around pricing and investment (Zajac and Bazerman 1991; Hsieh et al. 2015). As such, once a firm is no longer perceived as a rival, it may receive less strategic attention—leading to a reduction in the intensity of competitive responses and interactions. In this sense, shifts in perceived competitors influence not only whom managers focus on, but also how they behave in the marketplace.

Taken together, the two channels suggest that competitor removal has broader implications: it can both reflect and reinforce a decline in competitive intensity between firms (Thatchenkery and Katila 2021; Thatchenkery and Piezunka 2024). Therefore, my first hypothesis is:

H1: Competitor removal is associated with a decline in competitive interactions between two firms.

Theory suggests that when investors hold stakes in competing firms, these firms have (i) weaker incentives to compete aggressively and (ii) stronger incentives to consider how their actions benefit commonly-owned peer firms (Hansen and Lott 1996; Rubin 2006). The reasoning is twofold. First, an institution that owns stakes in multiple rivals may prefer managers to make decisions that maximize the value of the overall portfolio rather than the value of individual firms. Second, if a firm's actions generate positive externalities for its rivals, common ownership encourages it to internalize these benefits (He, Huang, and Zhao 2019).

As managerial attention is limited, managers cannot monitor all potential competitors equally (Halac and Prat 2016; Katila et al. 2017). Instead, they tend to focus on those they perceive as the most relevant threats. One factor that can shape this selective attention is common ownership. When large institutional investors hold significant stakes in multiple industry peers, they may implicitly or explicitly encourage executives to prioritize portfolio-wide performance over head-to-head competition (Hansen and Lott 1996; Rubin 2006). This influence may shift managerial attention away from firms with higher levels of ownership overlap, leading managers to perceive those peers as less salient competitive threats. Therefore, my second and main hypothesis is:

H2: An increase in ownership overlap with a competitor leads firms to remove that competitor from their internally assessed competitor list.

III. DATA AND DESCRIPTIVE STATISTICS

Data

To identify internally assessed competitors, I rely on corporate 10-K filings as direct sources. This approach assumes that managers have a reasonably accurate understanding of their competitive environment and that the competitors they report reflect their true perceptions.⁸ The primary data source is firms' 10-K filings (including "10-K," "10-K405," "10KSB," and "10KSB40") for the period 1995–2023. I use Gemini AI to scrape the full text of 10-K filings and extract named competitors from

⁸ This method is consistent with management literature that uses 10-K filings in the software industry to measure firms' perceived competitors (Thatchenkery and Katila, 2021; Thatchenkery and Piezunka, 2024). Taking 10-K disclosures at face value also aligns with textual analysis approaches in accounting and finance (Hoberg and Phillips, 2010; Li et al., 2013; Basu et al., 2022). Additionally, Johnston and Petacchi (2017) analyze a large sample of SEC comment letters and find that none address firms' discussions of their 'Competitive Environment,' suggesting that this section is not a major disclosure concern for the SEC.

the “Competition” section within Item 1, where firms describe the competitive landscape and, in many cases, explicitly name their competitors. To track changes over time, I construct a firm–competitor–year panel that captures whether a specific competitor is named in each year’s filing. For each disclosing firm and competitor, I compare consecutive years to identify changes in disclosure. A competitor is considered removed when it is named in year t but no longer named in year $t+1$.⁹ For the difference-in-differences analyses, I supplement the disclosure-based competitor network with competitor relationship data from FactSet Revere.¹⁰

As shown in Table 1, Panel A, among the 271,390 10-K filings in the sample, approximately 78% contain a Competition Section. Of these, 47% include at least one named competitor. Figure 1 further illustrates the time-series trend in the proportion of firms that name at least one competitor, which remains stable between 43% and 55% throughout the 1995–2023 period. Table 1, Panel B, further highlights industry-level variation in disclosure practices. Firms operating in technology-intensive or rapidly evolving sectors—such as Business Equipment (72.07%), Telecommunications (68.82%), and Healthcare (66.96%)—are the most likely to disclose named competitors.¹¹

Other datasets used in this study include institutional ownership data from the Thomson Reuters 13F database, product announcements from Capital IQ Key Developments, alliance

⁹ See Appendix B for examples of competitor removals in the *Competition* section and Section OA.1 of the Online Appendix for details on the extraction process.

¹⁰ FactSet Revere compiles competitor relationships from both annual reports and other self-disclosed sources (e.g., press releases, investor presentations). Although 10-K disclosures are among the most credible sources, their limited coverage yields a smaller sample for DiD estimation.

¹¹ This pattern is consistent with prior evidence (e.g., Thatchenkery and Katila 2021), which documents high competitor disclosure rates in software firms, typically classified under the “Business Equipment” industry category.

information from SDC Platinum, CEO compensation data from ExecuComp, and standard control variables from Compustat, IBES, and CRSP.

Summary Statistics

Table 2 reports summary statistics for the key variables used in the analysis. Panel A presents data at the discloser–competitor pair-year level, with variables grouped into three categories: relationship characteristics, disclosing firm characteristics, and competitor firm characteristics. The main dependent variable, *CompetitorRemoval*, has a mean of 0.037, indicating that approximately 3.7 percent of named competitor relationships are removed in a given year. *CompetitorAddition* has a slightly higher mean of 0.056, suggesting that firms are more likely to add new competitors than to drop existing ones over time. The average log value of *RelationLength* is 1.609, corresponding to an average raw relationship length of roughly 5 years.

Panel A also compares the characteristics of disclosing firms and their named competitors. On average, disclosed competitors are larger, more profitable, and have greater market share than the disclosing firms. Specifically, the average log of total assets is 8.76 for competitors, compared to 7.19 for disclosers. Competitors also exhibit higher market share (0.099 compared to 0.046) and return on assets (0.045 compared to 0.002). These patterns are consistent with prior research suggesting that smaller or lower-status firms tend to focus more on larger, high-profile peers (Porac et al. 1995; Kilduff et al. 2010).¹²

¹² Eisdorfer, Ozik, and Sadka (2025) observe similar patterns but interpret them as strategic overpositioning intended to influence investor perceptions. In contrast, I view this phenomenon as a form of strategic attention allocation, which is consistent with well-established theory in the strategy and organizational literature (e.g., Porac et al., 1995; Katila et al., 2017; Thatchenkery and Katila, 2021; Thatchenkery and Piezunka, 2024).

Panel B reports firm-year level summary statistics used in the determinant and real effect tests. The variable *CompetitorDisclosure* (mean = 0.481) indicates that about 48 percent of firm-year observations contain at least one named competitor. Among disclosing firms, the average number of named competitors (*CompetitorCount*, mean = 3.397) is about 3, consistent with survey evidence showing that managers typically focus on two to nine competitors (Porac et al. 1995; Clark and Montgomery 1999). On average, about 21 percent of firm-year observations involve the removal of at least one previously disclosed competitor (*FirmRemoval*, mean = 0.213), while 19 percent involve the addition of a new competitor (*FirmAddition*, mean = 0.185). These rates suggest that managers frequently adjust competitor lists, underscoring the dynamic nature of perceived competition.

IV. RESEARCH DESIGN

Baseline Regression

To examine whether *OwnershipOverlap* influences the likelihood that firms remove previously disclosed competitors, I estimate the following linear probability model:

$$\begin{aligned} \text{CompetitorRemoval}_{d,c,t} = & \beta_0 + \beta_1 \text{OwnershipOverlap}_{d,c,t-1} + \beta_2 \text{Controls}_{d,c,t} \\ & + \tau_t + \mu_{d,c} + \varepsilon_{d,c,t}, \quad (1) \end{aligned}$$

where *CompetitorRemoval* equals 1 if disclosing firm d stops naming competitor c in year t , and 0 otherwise. To avoid misclassification, I treat certain observations as missing. Specifically, if the removal year coincides with the final year in which either firm appears in Compustat or the last year of the sample, the observation is excluded, as it is unclear whether the relationship would have continued. Similarly, if the disclosing firm ceases to report any competitors in that year, the observation is excluded to account

for potential changes in disclosure practices rather than the termination of a specific competitor relationship.

The primary independent variable is *OwnershipOverlap*, measured with a one-year lag. This variable captures the extent of common ownership by institutional blockholders—defined as institutions holding more than 5% of shares—in both the disclosing firm and its disclosed competitor.¹³ To capture different dimensions of overlap, I construct three continuous measures. These three measures capture complementary aspects of ownership overlap: *OverlapValue* reflects economic magnitude, *OverlapProduct* highlights concentration, and *OverlapBH* captures the extensive margin.

The first, *OverlapValue*, measures the economic significance of shared ownership. It is defined as the total dollar value of shares held by overlapping institutions, divided by the combined market capitalization of the two firms (Antón and Polk, 2014):

$$OverlapValue = \frac{\sum_k (V_{d,k} + V_{c,k})}{V_d + V_c} \quad (2)$$

where $V_{d,k}$ and $V_{c,k}$ denote the dollar value of shares held by overlapping institution k in the disclosing and competitor firms, respectively, and V_d and V_c are the total market capitalizations of the disclosing and competitor firms.

The second measure, *OverlapProduct*, captures the concentration of overlapping ownership relative to each firm’s institutional base. It is defined as the product of the share of each firm’s institutional holdings that is held by overlapping institutions (Hansen and Lott, 1996):

¹³ The literature typically defines a blockholder as a shareholder that holds 5% or more of a company’s stock, as this threshold triggers additional SEC disclosure requirements (Edmans and Holderness, 2017).

$$OverlapProduct = \left(\frac{\sum_k H_{d,k}}{H_d} \times \frac{\sum_k H_{c,k}}{H_c} \right) \quad (3)$$

where $H_{d,k}$ and $H_{c,k}$ represent the number of shares held by overlapping institution k in the disclosing and competitor firms, respectively, and H_d and H_c denote total institutional holdings in the disclosing and competitor firms.

The third measure *OverlapBH* counts the number of overlapping blockholders and provides a direct measure of how many large investors hold significant stakes in both firms.

One potential concern with the overlap measures is that they may inadvertently capture the broader effect of high institutional ownership in both firms, rather than isolating the specific impact of overlapping ownership. For instance, even in the absence of common institutional blockholders, high levels of institutional investment in both the disclosing and competitor firms may still influence firm behavior or disclosure decisions. To address this concern, I construct three pair-level joint institutional ownership measures—*JointInstValue*, *JointInstProduct*, and *JointBH*—each designed to serve as a counterpart to one of the three main overlap measures.¹⁴

Beyond these ownership-related variables, the models also include a comprehensive set of relationship- and firm-level controls that may affect *CompetitorRemoval*. *ProductSimilarity* captures the textual similarity between the disclosing firm and the named competitor (Hoberg and Phillips 2010). To account for relationship persistence, I include the log of firm-pair relationship length (*RelationLength*). At the firm level, I control for industry concentration (*HHI*), market share

¹⁴ See Appendix A for definitions.

(*MktShare*), size (*Size*), and profitability (*ROA*), each measured separately for the disclosing firm and its competitor.

Event Study: Institutional Mergers

To address potential endogeneity concerns, I exploit a shock to overlapping institutional ownership resulting from institutional mergers. Mergers between financial institutions are largely exogenous to the portfolio firms themselves (He and Huang 2017). They are typically driven by consolidation motives in the financial sector rather than by the investment or product market strategies of the portfolio companies.¹⁵ I construct the financial institution merger sample by following Lewellen and Lowry (2021) and retain mergers announced between 1995 and 2023 that satisfy the ownership conditions required to form treatment and control groups.¹⁶

Using portfolio holdings from the reporting date just before each merger announcement, I link the merging institutions to disclosing firms and their disclosed competitors, focusing only on relationships that existed prior to the merger. A discloser–competitor pair is classified as treated if, before the merger, the two merging institutions each hold at least a 3% ownership stake in one firm of the pair. The control group consists of pairs where one merging institution holds at least a 3% stake in a firm but the other has no ownership in its competitor, and I restrict this group to pairs that are never subsequently treated. This procedure yields a final sample of 175 treated and 13,843 control competitor-pair observations.

¹⁵ In 1997, commercial banks were permitted to acquire investment banks as Section-20 subsidiaries. The 1999 Gramm-Leach-Bliley Act further allowed banks, securities firms, and insurers to consolidate, triggering a wave of financial institution mergers.

¹⁶ See Appendix C for the list of merger events.

I then estimate the following difference-in-differences regression:

$$\begin{aligned} CompetitorRemoval_{d,c,t} = & \beta_1 Treat_{d,c,t} \times Post_{d,c,t} + \beta_2 Treat_{d,c,t} + \beta_3 Post_{d,c,t} \\ & + \beta_4 Controls_{d,c,t} + \tau_t + \mu_{d,c} + \varepsilon_{d,c,t}, \quad (4) \end{aligned}$$

where $CompetitorRemoval_{d,c,t}$ equals 1 if the disclosing firm d removes competitor c in year t . $Treat_{d,c,t}$ equals 1 for treated firm pairs, and $Post_{d,c,t}$ equals 1 for post-merger periods (excluding the merger year). Control variables include the log of relationship tenure ($RelationLength$), market share for both the disclosing firm and its competitor ($MktShare_discloser$ and $MktShare_competitor$), industry concentration ($HHI_discloser$ and $HHI_competitor$), firm size measured by the log of total assets ($Size_discloser$ and $Size_competitor$), and profitability measured by return on assets ($ROA_discloser$ and $ROA_competitor$). The models include disclosing-firm and competitor-firm fixed effects to absorb time-invariant heterogeneity at the individual firm level, event fixed effects to control for unobserved differences across mergers, and industry-by-year fixed effects to capture time-varying shocks within industries.

V. EMPIRICAL RESULTS

Determinants of Competitor Disclosure

This section examines the key factors that shape firms' decisions to disclose competitors in their 10-K filings. The analysis focuses on two dimensions: (i) firm-level characteristics that influence the likelihood and extent of competitor disclosure, and (ii) industry affiliation factors that govern the selection of specific competitors. Together, these tests provide insight into both the incentives underlying competitor disclosure and the criteria firms use to identify competitors.

Firm Characteristics and Competitor Disclosure

I begin by examining how firm-specific characteristics relate to competitor disclosure practices in firms' 10-K Competition sections. Two aspects of disclosure are analyzed: (i) whether a firm discloses any competitors (*CompetitorDisclosure*), and (ii) conditional on disclosure, how many competitors are named (*CompetitorCount*). Panel A of Table 3 summarizes the regression results, with Columns (1) and (2) focusing on the extensive margin (any disclosure) and Columns (3) and (4) on the intensive margin (number of competitors disclosed).

Several firm characteristics are systematically associated with disclosure decisions. Firms with lower profitability (ROA), higher growth opportunities (lower BTM), younger age are more likely to disclose competitor information. These firms face greater pressure to justify their strategies and attract capital, giving them stronger incentives to influence investor perceptions and reduce information asymmetry (Healy and Palepu 2001). Competitor disclosures help meet this need by situating the firm within its competitive landscape—clarifying how it positions itself against rivals, the intensity of industry competition, and the markets it views as most relevant. In doing so, they enhance the interpretability of financial statements and other quantitative reports, consistent with evidence that narrative disclosures shape how investors and analysts evaluate firm activities (Li, Lundholm, and Minnis 2013; Merkley 2014).

Firm scope and complexity, measured by *Size* and *BusSeg*, also influence competitor disclosure. Both variables are negatively associated with the likelihood of disclosing any competitor but positively associated with the number of competitors disclosed conditional on disclosure. Large and diversified firms may have less need to identify competitors because their market position is already well recognized.

In addition, defining relevant rivals across multiple business segments is more complex and costly than for single-segment firms, which further discourages disclosure (Harris 1998). However, once such firms disclose, their broader scope naturally leads them to list a larger set of competitors.

External monitoring further reinforces disclosure. *AnalystFollow* is positively associated with both disclosure measures, consistent with evidence that analyst coverage increases demand for corporate disclosure and transparency (Lang and Lundholm 1996). Similarly, firms audited by Big 4 auditors and those paying higher audit fees are more likely to disclose competitors, consistent with the role of audit quality in promoting credible reporting and voluntary disclosure (Ball, Jayaraman, and Shivakumar 2012; Legoria, Reichelt, and Soileau 2018). Overall, firms facing stronger scrutiny from analysts and auditors provide richer competitor disclosures that help market participants assess their competitive environment.

Industry Affiliation and Competitor Selection

Beyond firm-level characteristics, industry similarity plays a central role in determining which firms are disclosed as competitors. To directly examine this selection process, I construct a matched sample of disclosed and non-disclosed competitor candidates. For each disclosed competitor, I randomly match ten firms from the same one-digit SIC industry as the discloser. The dependent variable *Selected* equals 1 if a firm-year pair represents a disclosed competitor in the discloser's 10-K filing, and 0 otherwise.

The independent variables capture whether the potential competitor belongs to the same industry as the discloser, measured across different classification schemes: two-, three-, and four-digit

Standard Industrial Classification (SIC) codes and text-based network industry classifications (TNIC 2 and TNIC 3). The models are estimated separately for each classification to avoid multicollinearity.

Panel B of Table 3 shows that industry affiliation strongly predicts competitor selection. Firms are more likely to disclose competitors from the same industry: sharing the same SIC 2-digit, 3-digit, or 4-digit code increases the probability of disclosure by 75.7, 72.9, and 66.5 percentage points, respectively. Text-based TNIC measures (Hoberg and Phillips, 2010) yield even stronger results: TNIC 2 and TNIC 3 produce higher coefficients (0.858 and 0.844) and explanatory power ($R^2 = 0.745$ and 0.688), indicating that text-based classifications better capture competitor selection than traditional SIC codes. Overall, these findings highlight that industry classification is an important selection criterion for competitor identification, with TNIC measures providing greater explanatory power than traditional SIC codes.

Economic Implications of Competitor Removals

I begin the empirical analysis by examining whether competitor removals in 10-K filings reflect real shifts in underlying competitive relationships. This section provides evidence that competitor removals are accompanied by economically meaningful changes in both firm-level behaviors and firm-pair interactions, consistent with real economic implications rather than mere disclosure adjustments.

Firm-Level Effects

I first test whether changes in the disclosed competitor set correspond to adjustments in firms' real economic activities. If firms perceive reduced competitive pressure after removing rivals, they may alter their investment and operating strategies accordingly (Sharapov and Ross 2019, Greve and Taylor

2000). To test this prediction, I estimate ordinary least squares (OLS) regressions of future firm outcomes on two firm-year indicators: $FirmRemoval_t$, which equals 1 if a firm removes any competitors from its disclosed list in year t , and $FirmAddition_t$, which equals 1 if a firm adds new competitors (excluding the initial disclosure). I include $FirmAddition_t$ because removal and addition can occur in the same year, and omitting it could confound the interpretation of $FirmRemoval_t$.

The dependent variables capture future firm outcomes in the year following the disclosure change: capital investment ($Capx_{t+1}$), R&D expenditures ($R\&D_{t+1}$), profitability (PCM_{t+1} and ROA_{t+1}), new product announcements ($NewProduct_{t+1}$), strategic alliances ($Alliance_{t+1}$), and acquisitions ($Acquisition_{t+1}$). The models include controls for industry concentration (HHI), firm size ($Size$), growth opportunities (BTM), financial risk ($Leverage$), audit quality ($Big4$), performance pressure ($Loss$), and operating scale ($Sale$). Year and two-digit SIC industry fixed effects are included, and standard errors are clustered at the firm level.

Table 4 Panel A reports the results. $FirmRemoval_t$ is negatively and significantly associated with capital investment ($Capx_{t+1}$), consistent with firms scaling back investment when perceived competition intensity declines (Haushalter, Klasa, and Maxwell 2007; Hoberg, Phillips, and Prabhala 2014). In contrast, $FirmAddition_t$ is positively and significantly associated with $R\&D_{t+1}$, indicating that greater perceived competition intensity spurs innovation spending (Aghion, Bloom, Blundell, Griffith, and Howitt 2005). Together, these results suggest that changes in the disclosed competitor set shape firms' investment behavior in opposite directions: weaker rivalry dampens investment incentives, while stronger rivalry encourages innovation activity.

Turning to product-market strategies, both $FirmRemoval_t$ and $FirmAddition_t$ are positively associated with new product announcements ($NewProduct_{t+1}$) and alliance formation ($Alliance_{t+1}$), consistent with firms responding to shifts in perceived competition intensity through differentiation and collaboration (Kini, Lee, and Shen 2024; He and Huang 2017). At the same time, $FirmRemoval_t$ is negatively and marginally associated with acquisitions ($Acquisition_{t+1}$), suggesting that firms facing weaker rivalry reduce reliance on external growth (Hoberg and Phillips 2010). By contrast, neither measure is significantly related to short-term profitability (PCM_{t+1} , ROA_{t+1}), indicating that these strategic adjustments do not immediately translate into improved margins. This pattern suggests that changes in perceived competition primarily shape firms' strategic inputs rather than immediate performance outcomes. The absence of profitability gains also implies that firms' perceptions may at times be biased, and that ultimate payoffs of strategic inputs depend on the realized intensity of competition.

Overall, these patterns suggest that changes in perceived competition and subsequent strategic adjustments are related but not identical. The two do not necessarily occur simultaneously, indicating that perception changes capture a related yet distinct dimension of competition dynamics.

Firm-Pair Level Effects

Next, I examine how competitive interactions between discloser–competitor pairs evolve around competitor removal events. If removals reflect a genuine weakening of competitive relevance, we should observe subsequent declines in observable dimensions of interaction.

To test this, I estimate ordinary least squares (OLS) regressions where the dependent variables are *ProductSimilarity*, *SharedAnalysts* and *StockCorrelation*, capturing the degree of overlap in product offerings, the extent of common analyst coverage, and the co-movement in stock returns between a discloser and its competitor. The key explanatory variable is *PostRemoval*, which equals 1 for the three years following a removal and 0 for the three years prior. Consistent with the baseline design, the analysis is restricted to discloser–competitor pairs that share common institutional blockholders. The models include controls for industry concentration (*HHI*), firm size (*Size*), profitability (*ROA*), and market share (*MktShare*) for both the discloser and its competitors.

The results in Table 4 Panel B reveal significant declines in *ProductSimilarity* and *SharedAnalysts* after competitor removal. The coefficient on *PostRemoval* is negative and highly significant for *ProductSimilarity*, suggesting that firms become less similar in their product offerings following removal. This pattern indicates that competitor removals coincide with product market divergence, consistent with firms repositioning to avoid direct rivalry. Similarly, *SharedAnalysts* declines significantly, indicating that the informational overlap between firms weakens as fewer analysts continue to cover both firms (Martens and Sextroh 2021; Ali and Hirshleifer 2020). In contrast, *StockCorrelation* shows no significant change, indicating that investors overlook these shifts in competitive relevance embedded in 10-K filings, consistent with Eisdorfer et al. (2022).

To further strengthen the causal interpretation, I complement the baseline OLS results with an event-study analysis that traces the dynamic evolution of firm-pair outcomes around competitor removal. Figure 2 plots the event-time coefficients for *ProductSimilarity*, *SharedAnalysts*, and

StockCorrelation over a three-year window before and after the removal event. Across all panels, the pre-removal coefficients ($t = -3$ to -1) are close to zero and statistically insignificant, indicating no evidence of differential pre-trends.

Following the removal event, Panels A and B show a clear and persistent decline in *ProductSimilarity* and *SharedAnalysts*. The coefficients turn negative beginning in the event year and continue to decrease in magnitude in subsequent periods, suggesting that firms gradually diverge in both product market positioning and analyst coverage after removal. This dynamic pattern is consistent with a real weakening of competitive interactions, rather than a one-time disclosure change. In contrast, Panel C shows no systematic change in *StockCorrelation*, with coefficients fluctuating around zero throughout the event window, reinforcing the earlier finding that equity markets do not immediately reflect shifts in competitive relevance embedded in 10-K disclosures.

Taken together, these findings suggest that competitor removals reflect a decline in competitive interactions between firm pairs, rather than mere disclosure adjustments. Although such changes in competitor disclosure may appear subtle and are not immediately incorporated into stock prices due to investors' information processing constraints and limited attention (Hirshleifer and Teoh 2003), they nonetheless convey meaningful information about underlying shifts in firms' competitive environment and therefore should not be overlooked.

Baseline Results

I begin the baseline analysis by testing whether greater overlapping institutional ownership increases the likelihood that a competitor is removed from the competitor list. Table 5 reports the OLS

estimates from specification (1). Across all specifications, *OwnershipOverlap* is positively and significantly associated with *CompetitorRemoval*. For example, in Column (2), the coefficient on *OverlapValue* is 0.096 ($t = 4.97$). The results for *OverlapProduct* and *OverlapBH* remain robust and significant across specifications. To gauge the economic magnitude, I calculate the implied marginal effect based on Column (2). A one-standard-deviation increase in *OverlapValue* (0.069) is associated with a 17.9 percentage point increase in the probability of *CompetitorRemoval*, relative to the sample mean of 3.7%.¹⁷ This represents a substantial economic effect compared to the baseline probability. Collectively, these findings indicate that greater common ownership between a discloser and its competitor significantly increases the likelihood of competitor removal.

Several control variables offer additional insight into these dynamics. *ProductSimilarity* is negatively associated with *CompetitorRemoval*, suggesting that firms are more likely to stop disclosing competitors that are less similar in product space. In other words, competitors that are more dissimilar in terms of products are more likely to be dropped from competitor lists, whereas those that are closely aligned remain disclosed. This pattern supports the view that competitor disclosures reflect managers' ongoing reassessment of competitive relevance over time.

The ownership controls (*JointInstValue*, *JointInstProduct*, and *JointBH*) are consistently negatively related to *CompetitorRemoval*, implying that general institutional ownership, when not overlapping, may serve as a stabilizing force that reduces the probability of competitor removal. This

¹⁷ Based on the Column 2 coefficient, the effect is calculated as follows: $17.9\% = 100\% \times 0.096 \text{ (coefficient on OverlapValue)} \times \frac{0.069 \text{ (standard deviation of OverlapValue)}}{0.037 \text{ (mean of CompetitorRemoval)}}$.

distinction reinforces that it is specifically overlapping ownership, rather than institutional ownership more broadly, that drives disclosure revisions. *RelationLength* is positively associated with *CompetitorRemoval*, suggesting that longer-standing relationships are more likely to be revised or terminated, consistent with the notion that firms periodically reassess competitive relevance as market conditions evolve.

Industry concentration, as captured by *HHI_discloser*, is negatively associated with removal likelihood, suggesting that firms operating in more concentrated industries are less likely to remove competitors. This may reflect the smaller pool of potential rivals in concentrated markets, leading to greater disclosure stickiness. Firm size further influences disclosure dynamics. Larger disclosers (*Size_discloser*) exhibit a lower propensity to remove competitors, which is consistent with the notion that large firms maintain more stable competitive positioning. Larger competitors (*Size_competitor*) are also less likely to be removed, in line with prior research suggesting that firms are more likely to monitor and acknowledge prominent rivals (Porac et al. 1995; Kilduff et al. 2010).

Overall, the results provide compelling evidence that common ownership influences firms' competitive perceptions. Competitors with greater ownership overlap with disclosers are more likely to be removed from disclosed competitor lists, reflecting shifts in how firms internally perceive their competitive landscape.

Baseline Robustness

To address concerns about spurious correlations between common ownership and competitor removal, I conduct several robustness tests using alternative specifications and sample restrictions.

One concern is that competitor lists in 10-Ks may reflect strategic naming rather than genuine perceptions of rivalry. Although prior research suggests that such strategic behavior is not widespread — given the alignment between competitors listed in 10-Ks and those mentioned in analyst calls (Thatchenkery and Katila 2021) — some degree of manipulation remains possible. For instance, firms may list industry peers with higher CEO compensation in proxy statements to justify elevated executive pay (Bizjak, Lemmon, and Nguyen 2011).¹⁸ Although these studies do not focus specifically on the competition section of 10-Ks, a similar dynamic may apply. To account for this, I exclude potentially strategic pairs where (a) the named competitor is in the top decile of CEO pay or (b) the removed competitor is in the bottom decile. The results remain robust after removing these observations, as shown in Table 6, Column (1).

Next, I restrict the sample to economically meaningful overlaps. Following Freeman (2023), I require that combined holdings in both the discloser and competitor represent at least 1% of an investor’s portfolio (Table 6, Column (2)). I also test an alternative ownership threshold by requiring institutional ownership of at least 3% in both firms, rather than the baseline 5% definition (Table 6, Column (3)). This test ensures that the results are not sensitive to the specific ownership threshold and remain robust under a less restrictive definition.¹⁹

¹⁸ There is no clear consensus on whether peer selection is strategic. For example, Cadman and Carter (2014) argue that it may not be opportunistic and that results can depend on how researchers define the set of potential peers.

¹⁹ Additionally, I replicate the analysis using competitor links from FactSet Revere, which extend 10-K disclosures with firm-sourced information such as press releases and investor presentations. Results are reported in Table OA3 of the Online Appendix.

Across all these specifications, the effect of common ownership on competitor removal remains positive and statistically significant. Collectively, these tests reinforce that the findings are not artifacts of spurious correlations or sample construction, but instead reflect a substantive influence of shared institutional ownership on firms' competitive perceptions.

Heterogeneity by Institutional Investor Types

Following Bushee (2004), I classify institutional investors into Dedicated, Quasi-Indexers, and Transient groups, and re-estimate the baseline specification separately for each.²⁰ Table 7 shows that the effect of ownership overlap on *CompetitorRemoval* varies systematically across investor types.

The coefficient on *OverlapValue* is largest for Dedicated institutions (0.335, $t = 3.270$), compared with smaller but still significant effects for Quasi-Indexers (0.090, $t = 4.025$) and Transient investors (0.125, $t = 2.547$). This pattern indicates that long-term, actively engaged owners exert the strongest influence on firms' competitive perceptions, consistent with theoretical arguments that such investors are better positioned to shape managerial behavior (Edmans and Manso, 2011). In contrast, quasi-indexers and transient investors—whose strategies are more passive or short-term— exert a weaker influence on firms' competitive perceptions.

Overall, the results reveal meaningful heterogeneity across investor types, with the strongest effects for Dedicated owners. These findings suggest that long-term blockholders play a central role in shaping managerial perceptions of competition.

²⁰ Bushee (2004) classifies institutions into three groups: (1) “dedicated” investors, which provide stable ownership and take large positions in individual firms; (2) “quasi-indexers,” which trade infrequently but hold small stakes across many firms, resembling an index strategy; and (3) “transient” investors, which exhibit high portfolio turnover and typically hold small stakes in portfolio companies.

Difference-in-Differences Results

To establish causality between common ownership and competitor removal, I implement an event-study difference-in-differences design based on institutional mergers (see Equation (6) for the specification). Table 8 Panel A reports the baseline estimates. Across all specifications, the coefficient on the interaction term $Treat \times Post$ is positive and statistically significant. The results indicate that treated pairs—firm-pairs where institutional mergers created new overlapping ownership—are about 7 to 12 percentage points more likely to experience competitor removal after the merger compared with control pairs over the same period. Given that the mean removal probability is only 3.7%, this represents more than a two- to threefold increase in likelihood. The effect remains robust across both two- and three-year event windows and under alternative specifications with additional controls and fixed effects. Collectively, these findings indicate that institutional mergers, by creating new overlapping ownership, increase the likelihood that disclosers subsequently remove named competitors, consistent with the baseline OLS evidence that common ownership shapes competitive perceptions.²¹

I then implement propensity score matching (PSM), randomly matching each treated firm-pair with up to 15 control pairs based on firm size and two-digit SIC code to improve covariate balance. Panel B presents the results from this matched sample. The estimated treatment effects remain positive and significant across all specifications (e.g., 0.090; $t = 2.184$ in Column (1)), with consistent magnitudes over the three-year window. The persistence of these effects after matching suggests that the

²¹ The broader economic consequences of institutional mergers are discussed in Section OA.3 of the Online Appendix.

results are not driven by observable firm characteristics or industry composition differences between treated and control pairs.²²

To validate the parallel trends assumption, Figure 2 plots the probability of competitor removal for treated and control pairs in the three years before and after institutional mergers. The two groups exhibit comparable pre-trends, supporting the identification strategy and alleviating concerns that the results are driven by differential trends prior to treatment.

Institutional Ownership Overlap and Competitor Addition

The prior analyses demonstrate that increases in overlapping ownership are associated with competitor removal. However, a natural follow-up question is whether ownership overlap also affects firms' decisions to add new competitors to their disclosure lists. If common ownership softens managers' perceptions of rivalry, it may not only increase the likelihood of competitor removal but also decrease the likelihood that firms add commonly owned peers as competitors.

To analyze this, I follow the same empirical framework used in the baseline removal analysis, estimating the following linear probability model:

$$\begin{aligned} CompetitorAddition_{d,c,t} = & \beta_0 + \beta_1 OwnershipOverlap_{d,c,t-1} + \beta_2 Controls_{d,c,t} \\ & + \tau_t + \mu_{d,c} + \varepsilon_{d,c,t}, \quad (5) \end{aligned}$$

where *CompetitorAddition* equals 1 if firm *d* newly discloses firm *c* as a competitor in year *t*, and 0 otherwise. To ensure consistency in the interpretation of addition events, I exclude firm-year observations where the disclosing firm names competitors for the first time. This restriction ensures that

²² To further strengthen the causal interpretation, I conduct several additional robustness tests discussed in Section OA.4 of the Online Appendix.

CompetitorAddition captures instances where a firm updates its existing list of disclosed competitors by adding a new one, rather than simply beginning to disclose competitors for the first time. In doing so, the measure focuses on additions made as part of an ongoing disclosure practice, allowing for a cleaner interpretation of changes in perceived competition over time.

The key explanatory variables are alternative measures of institutional ownership overlap (*OverlapValue*, *OverlapProduct*, *OverlapBH*), all lagged by one year. Aligned with the baseline specifications, I control for product similarity between the disclosing firm and its competitor (*ProductSimilarity*), joint institutional ownership beyond the primary overlap measure (*JointOwnership*), and the log of relationship tenure (*RelationLength*). Additional controls include market share (*MktShare_discloser* and *MktShare_competitor*), industry concentration (*HHI_discloser* and *HHI_competitor*), firm size (*Size_discloser* and *Size_competitor*), and profitability, measured by return on assets (*ROA_discloser* and *ROA_competitor*).

Table 9 reports the results. Across all specifications, higher *OwnershipOverlap* is significantly negatively associated with *CompetitorAddition*. These consistent negative effects suggest that as ownership overlap between firm pairs increases, disclosing firms become less likely to identify the commonly owned firm as a competitor in subsequent reporting periods. This pattern mirrors earlier findings on competitor removal and supports theoretical arguments that common owners may reduce perceived rivalry (Azar, Schmalz, and Tecu, 2018). As firms become more interconnected through shared institutional investors, disclosing firms may no longer view commonly owned peers as meaningful threats, reducing the likelihood of adding them to the disclosed competitor list. Additionally,

ProductSimilarity remains strongly and positively associated with *CompetitorAddition*, suggesting that newly added competitors are more similar to the disclosing firm in the product space than existing named competitors.

Taken together, these findings indicate that common ownership influences firms' *perceived* competitive landscape. Firms are more likely to add highly similar but less commonly owned competitors, while dissimilar and commonly owned competitors are more likely to be removed—reflecting shifts in perceived relevance shaped by ownership ties.

VI. CONCLUSION

This study shows that as ownership overlap increases, firms become less likely to view commonly owned peers as major competitive threats, consistent with the notion that common ownership attenuates firms' incentives to compete. These shifts in managerial perception are economically meaningful, as whom managers internally identify as competitors is closely associated with the firm's investment and product-market decisions.

I acknowledge three caveats. First, while the findings suggest that common ownership leads to changes in perceived competitors—and that these shifts in perception are associated with subsequent competitive actions—this study does not provide causal evidence that changes in perception directly drive behavioral change. It is also possible that shifts in perception reflect underlying changes in competitive dynamics and thus serve as a proxy for competitive intensity. This paper does not attempt to disentangle these two channels but acknowledges the plausibility of both interpretations.

Second, this study does not directly provide evidence of the mechanism through which common owners influence managerial perceptions. Among the potential channels, direct engagement appears particularly plausible but remains difficult to systematically capture in large-sample empirical research. Nevertheless, anecdotal evidence suggests that large institutional investors have demonstrated their capacity to influence product market outcomes through private engagement.²³

Third, this study intends to provide large-sample evidence of the potential anticompetitive incentives of common ownership but acknowledges that the findings are not universal, as the sample is limited to firms that disclose named competitors in their competition sections. Prior studies similarly document effects in specific contexts. For example, Azar et al. (2018) find anticompetitive outcomes in the airline industry, Bloomfield et al. (2024) detect effects only in extreme cases where small funds take concentrated, industry-specific positions, and Kini et al. (2024) show that common ownership inhibits competition primarily in industries prone to quasi-monopoly outcomes.

²³ For example, The Wall Street Journal reports that BlackRock and other fund giants have pressured coal companies to adopt carbon emission targets, which directly affect output in energy industries and thereby influence product market outcomes (Michaels, 2025). See Table OA4 for additional examples.

References

- Aghion, P., Bloom, N., Blundell, R., Griffith, R., and Howitt, P. (2005). Competition and Innovation: An Inverted-U Relationship. *The Quarterly Journal of Economics*, 120(2), 701–728. <https://doi.org/10.1093/qje/120.2.701>
- Ali, U., and Hirshleifer, D. (2020). Shared analyst coverage: Unifying momentum spillover effects. *Journal of Financial Economics*, 136(3), 649–675. <https://doi.org/10.1016/j.jfineco.2019.10.007>
- Antón, M., Ederer, F., Giné, M., and Schmalz, M. (2023). Common Ownership, Competition, and Top Management Incentives. *Journal of Political Economy*, 131(5), 1294–1355. <https://doi.org/10.1086/722414>
- Antón, M., and Polk, C. (2014). Connected Stocks. *The Journal of Finance*. <https://www.jstor.org/stable/43611180>
- Azar, J., Raina, S., and Schmalz, M. (2022). Ultimate ownership and bank competition. *Financial Management*, 51(1), 227–269. <https://doi.org/10.1111/fima.12368>
- Azar, J., Schmalz, M. C., and Tecu, I. (2018). Anticompetitive Effects of Common Ownership. *The Journal of Finance*. <https://doi.org/10.1111/jofi.12698>
- Backus, M., Conlon, C., and Sinkinson, M. (2021). *Common Ownership and Competition in the Ready-to-Eat Cereal Industry* (Working Paper 28350). National Bureau of Economic Research. <https://doi.org/10.3386/w28350>
- Ball, R., Jayaraman, S., and Shivakumar, L. (2012). Audited financial reporting and voluntary disclosure as complements: A test of the Confirmation Hypothesis. *Journal of Accounting and Economics*, 53(1–2), 136–166. <https://doi.org/10.1016/j.jacceco.2011.11.005>
- Basu, S., Ma, X., and Briscoe-Tran, H. (2022). Measuring Multidimensional Investment Opportunity Sets with 10-K Text. *The Accounting Review*, 97(1), 51–73. <https://doi.org/10.2308/TAR-2019-0110>
- Baum, J. A. C., Calabrese, T., and Silverman, B. S. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal*, 21(3), 267–294. [https://doi.org/10.1002/\(SICI\)1097-0266\(200003\)21:3<267::AID-SMJ89>3.0.CO;2-8](https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<267::AID-SMJ89>3.0.CO;2-8)
- Bizjak, J., Lemmon, M., and Nguyen, T. (2011). Are all CEOs above average? An empirical analysis of compensation peer groups and pay design. *Journal of Financial Economics*, 100(3), 538–555. <https://doi.org/10.1016/j.jfineco.2011.02.007>
- Bloomfield, M. J., Friedman, H. L., and Kim, H. Y. (2024). Common Ownership, Executive Compensation, and Product Market Competition. *The Accounting Review*, 99(2), 31–56. <https://doi.org/10.2308/TAR-2021-0649>

- Brown, S. V., and Tucker, J. W. (2011). Large-Sample Evidence on Firms' Year-over-Year MD&A Modifications. *Journal of Accounting Research*, 49(2), 309–346. <https://doi.org/10.1111/j.1475-679X.2010.00396.x>
- Bushee, B. (2004). Identifying and Attracting the “Right” Investors: Evidence on the Behavior of Institutional Investors. *Journal of Applied Corporate Finance*, 16(4), 28–35. <https://doi.org/10.1111/j.1745-6622.2004.tb00671.x>
- Botosan, C. A., and Stanford, M. (2005). Managers' Motives to Withhold Segment Disclosures and the Effect of SFAS No. 131 on Analysts' Information Environment. *The Accounting Review*, 80(3), 751–772. <https://doi.org/10.2308/accr.2005.80.3.751>
- Cadman, B., and Carter, M. E. (2014). Compensation Peer Groups and Their Relation with CEO Pay. *Journal of Management Accounting Research*, 26(1), 57–82. <https://doi.org/10.2308/jmar-50598>
- Cao, Y., Chen, L., Tucker, J. W., and Wan, C. (2025). Can generative AI help identify peer firms? *Review of Accounting Studies*. <https://doi.org/10.1007/s11142-025-09892-6>
- Chu, J., He, Y., Hui, K. W., and Lehavy, R. (2024). New product announcements, innovation disclosure, and future firm performance. *Review of Accounting Studies*. <https://doi.org/10.1007/s11142-024-09820-0>
- Clark, B. H., and Montgomery, D. B. (1999). Managerial Identification of Competitors. *Journal of Marketing*. <https://doi.org/10.1177/002224299906300305>
- Cohen, L., Malloy, C., and Nguyen, Q. (2020). Lazy Prices. *The Journal of Finance*, 75(3), 1371–1415. <https://doi.org/10.1111/jofi.12885>
- Condon, M. (2022). Externalities and the Common Owner. *Washington Law Review*, 95.
- Dedman, E., and Lennox, C. (2009). Perceived competition, profitability and the withholding of information about sales and the cost of sales. *Journal of Accounting and Economics*, 48(2–3), 210–230. <https://doi.org/10.1016/j.jacceco.2009.07.003>
- Dennis, P., Gerardi, K., and Schenone, C. (2022). Common Ownership Does Not Have Anticompetitive Effects in the Airline Industry. *The Journal of Finance*, 77(5), 2765–2798. <https://doi.org/10.1111/jofi.13176>
- Department of Justice. (2025, May 22). *Justice Department and Federal Trade Commission File Statement of Interest on Anticompetitive Uses of Common Shareholdings to Discourage Coal Production*. <https://www.justice.gov/opa/pr/justice-department-and-federal-trade-commission-file-statement-interest-anticompetitive-uses>
- Ederer, F., and Pellegrino, B. (2021). A Tale of Two Networks: Common Ownership and Product Market Rivalry. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3964304>
- Edmans, A., and Holderness, C. G. (2017). Blockholders: A Survey of Theory and Evidence. *The Handbook of the Economics of Corporate Governance* (Vol. 1, pp. 541–636). <https://doi.org/10.1016/bs.hecg.2017.11.002>

- Edmans, A., and Manso, G. (2011). Governance Through Trading and Intervention: A Theory of Multiple Blockholders. *Review of Financial Studies*, 24(7), 2395–2428. <https://doi.org/10.1093/rfs/hhq145>
- Eisdorfer, A., Froot, K., Ozik, G., and Sadka, R. (2022). Competition Links and Stock Returns. *The Review of Financial Studies*, 35(9), 4300–4340. <https://doi.org/10.1093/rfs/hhab133>
- Eisdorfer, A., Ozik, G., and Sadka, R. (2025). Competition Management in Corporate Filings. *Working Paper*.
- Elhauge, E. (2016). Horizontal Shareholding. *Harvard Law Review*.
- Faulkender, M., and Yang, J. (2010). Inside the black box: The role and composition of compensation peer groups. *Journal of Financial Economics*, 96(2), 257–270. <https://doi.org/10.1016/j.jfineco.2010.01.006>
- Federal Trade Commission. (2025, May 22). *FTC and DOJ File Statement of Interest in Energy Collusion Case Against BlackRock, State Street, and Vanguard*. Federal Trade Commission. <https://www.ftc.gov/news-events/news/press-releases/2025/05/ftc-doj-file-statement-interest-energy-collusion-case-against-blackrock-state-street-vanguard>
- Freeman, K. M. (2023). Overlapping Ownership Along the Supply Chain. *Journal of Financial and Quantitative Analysis*, 1–30. <https://doi.org/10.1017/S0022109023001266>
- Galeotti, A., and Ghiglini, C. (2021). Cross-ownership and portfolio choice. *Journal of Economic Theory*, 192, 105194. <https://doi.org/10.1016/j.jet.2021.105194>
- Greve, H. R., and Taylor, A. (2000). Innovations as Catalysts for Organizational Change: Shifts in Organizational Cognition and Search. *Administrative Science Quarterly*, 45(1), 54–80. <https://doi.org/10.2307/2666979>
- Gilje, E. P., Gormley, T. A., and Levit, D. (2020). Who’s paying attention? Measuring common ownership and its impact on managerial incentives. *Journal of Financial Economics*, 137(1), 152–178. <https://doi.org/10.1016/j.jfineco.2019.12.006>
- Halac, M., and Prat, A. (2016). Managerial Attention and Worker Performance. *American Economic Review*, 106(10), 3104–3132. <https://doi.org/10.1257/aer.20140772>
- Hansen, R. G., and Lott, J. R. (1996). Externalities and Corporate Objectives in a World with Diversified Shareholder/Consumers. *The Journal of Financial and Quantitative Analysis*, 31(1), 43. <https://doi.org/10.2307/2331386>
- Harris, M. S. (1998). The Association between Competition and Managers’ Business Segment Reporting Decisions. *Journal of Accounting Research*, 36(1), 111–128. <https://doi.org/10.2307/2491323>
- Haushalter, D., Klasa, S., and Maxwell, W. (2007). The influence of product market dynamics on a firm’s cash holdings and hedging behavior. *Journal of Financial Economics*, 84(3), 797–825. <https://doi.org/10.1016/j.jfineco.2006.05.007>

- He, J. (Jack), and Huang, J. (2017). Product Market Competition in a World of Cross-Ownership: Evidence from Institutional Blockholdings. *The Review of Financial Studies*. <https://doi.org/10.1093/rfs/hhx028>
- He, J. (Jack), Huang, J., and Zhao, S. (2019). Internalizing governance externalities: The role of institutional cross-ownership. *Journal of Financial Economics*, 134(2), 400–418. <https://doi.org/10.1016/j.jfineco.2018.07.019>
- Healy, P. M., and Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1), 405–440. [https://doi.org/10.1016/S0165-4101\(01\)00018-0](https://doi.org/10.1016/S0165-4101(01)00018-0)
- Hoberg, G. (2010). Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis. *The Review of Financial Studies*. <https://doi.org/10.1093/rfs/hhq053>
- Hoberg, G., Phillips, G., and Prabhala, N. (2014b). Product Market Threats, Payouts, and Financial Flexibility. *The Journal of Finance*, 69(1), 293–324. <https://doi.org/10.1111/jofi.12050>
- Hsieh, S., Li, J., and Tang, Y. (2021). How do passive funds act as active owners? Evidence from mutual fund voting records. *Journal of Corporate Finance*, 66, 101692. <https://doi.org/10.1016/j.jcorpfin.2020.101692>
- Hirshleifer, D., and Teoh, S. H. (2003). Limited attention, information disclosure, and financial reporting. *Journal of accounting and economics*, 36(1-3), 337-386. <https://doi.org/10.1016/j.jacceco.2003.10.002>
- Hsieh, K.-Y., Tsai, W., and Chen, M.-J. (2015). If They Can Do It, Why Not Us? Competitors as Reference Points for Justifying Escalation of Commitment. *Academy of Management Journal*, 58(1), 38–58. <https://doi.org/10.5465/amj.2011.0869>
- Johnston, R., and Petacchi, R. (2017). Regulatory Oversight of Financial Reporting: Securities and Exchange Commission Comment Letters. *Contemporary Accounting Research*, 34(2), 1128–1155. <https://doi.org/10.1111/1911-3846.12297>
- Katila, R., Thatchenkery, S., Christensen, M. Q., and Zenios, S. (2017). Is There a Doctor in the House? Expert Product Users, Organizational Roles, and Innovation. *The Academy of Management Journal*, 60(6), 2415–2437.
- Kennedy, P., O'Brien, D. P., Song, M., and Waehrer, K. (2017). The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3008331>
- Kilduff, G. J., Elfenbein, H. A., and Staw, B. M. (2010). The Psychology of Rivalry: A Relationally Dependent Analysis of Competition. *Academy of Management Journal*, 53(5), 943–969. <https://doi.org/10.5465/AMJ.2010.54533171>
- Kini, O., Lee, S., and Shen, M. (2024). Common Institutional Ownership and Product Market Threats. *Management Science*, 70(5), 2705–2731. <https://doi.org/10.1287/mnsc.2023.4830>

- Koch, A., Panayides, M., and Thomas, S. (2021). Common ownership and competition in product markets. *Journal of Financial Economics*, 139(1), 109–137. <https://doi.org/10.1016/j.jfineco.2020.07.007>
- Kwon, H. J. (2016). Executive Compensation under Common Ownership. <https://www.semanticscholar.org/paper/Executive-Compensation-under-Common-Ownershippu%CC%81-Kwon/b40f4ce87569f8d7ceb28d9f510660127b0ba847>
- Lang, M. H., and Lundholm, R. J. (1996). Corporate Disclosure Policy and Analyst Behavior. *The Accounting Review*, 71(4), 467–492. <http://www.jstor.org/stable/248567>.
- Lang, M., and Lundholm, R. (1993). Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures. *Journal of Accounting Research*, 31(2), 246–271. <https://doi.org/10.2307/2491273>
- Legoria, J., Reichelt, K. J., and Soileau, J. S. (2018). Auditors and Disclosure Quality: The Case of Major Customer Disclosures. *Auditing: A Journal of Practice & Theory*, 37(3), 163–189. <https://doi.org/10.2308/ajpt-51835>
- Lewellen, K., and Lowry, M. (2021). Does common ownership really increase firm coordination? *Journal of Financial Economics*, 141(1), 322–344. <https://doi.org/10.1016/j.jfineco.2021.03.008>
- Li, F., Lundholm, R., and Minnis, M. (2013). A Measure of Competition Based on 10-K Filings. *Journal of Accounting Research*, 51(2), 399–436. <https://doi.org/10.1111/j.1475-679X.2012.00472.x>
- Martens, T., and Sextroh, C. J. (2021). Analyst Coverage Overlaps and Interfirm Information Spillovers. *Journal of Accounting Research*, 59(4), 1425–1480. <https://doi.org/10.1111/1475-679X.12391>
- Merkley, K. J. (2014). Narrative Disclosure and Earnings Performance: Evidence from R&D Disclosures. *The Accounting Review*. <https://dx.doi.org/10.2308/accr-50649>
- Michaels, D. (2025, May 22). *Antitrust Cops Say BlackRock, Other Fund Giants May Have Hurt Coal Competition*. WSJ. <https://www.wsj.com/finance/regulation/antitrust-cops-say-blackrock-other-fund-giants-may-have-harmed-energy-competition-c6052082>
- Park, J., Sani, J., Shroff, N., and White, H. (2019). Disclosure incentives when competing firms have common ownership. *Journal of Accounting and Economics*, 67(2–3), 387–415. <https://doi.org/10.1016/j.jacceco.2019.02.001>
- Pawliczek, A., Skinner, A. N., and Zechman, S. L. C. (2022). Facilitating Tacit Collusion Through Voluntary Disclosure: Evidence from Common Ownership. *Journal of Accounting Research*, 60(5), 1651–1693. <https://doi.org/10.1111/1475-679x.12452>
- Phillips, N. J. (2018). Taking Stock: Assessing Common Ownership. *US Federal Trade Commissioner's Speech at Concurrences Review and NYU Stern: The Global Antitrust Economics Conference, New York, 2018(029r1)*. <https://doi.org/10.17016/feds.2017.029r1>
- Porac, J. F., Thomas, H., Wilson, F., Paton, D., and Kanfer, A. (1995). Rivalry and the Industry Model of Scottish Knitwear Producers. *Administrative Science Quarterly*, 40(2), 203. <https://doi.org/10.2307/2393636>

- Posner, E. A., Scott Morton, F. M., and Weyl, E. G. (2017). A Proposal to Limit the Anti-Competitive Power of Institutional Investors. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2872754>
- Reger, R. K., and Huff, A. S. (1993). Strategic Groups: A Cognitive Perspective. *Strategic Management Journal*, 14(2), 103–123.
- Rubin, A. (2006). Diversification and corporate decisions. *Corporate Ownership and Control*, 3(3), 209–212. <https://doi.org/10.22495/cocv3i3c1p6>
- Schmalz, M. C. (2021). Recent Studies on Common Ownership, Firm Behavior, and Market Outcomes Symposium: Common Ownership: Illuminating a Great 21st Century Antitrust Debate. *Antitrust Bulletin*, 66(1), 12–38.
- Sharapov, D., and Ross, J. (2023). Whom should a leader imitate? Using rivalry-based imitation to manage strategic risk in changing environments. *Strategic Management Journal*, 44(1), 311–342. <https://doi.org/10.1002/smj.3120>
- Shekita, N. (2022). Interventions by Common Owners. *Journal of Competition Law & Economics*, 18(1), 99–134. <https://doi.org/10.1093/joclec/nhab006>
- Thatchenkery, S., and Katila, R. (2021). Seeing What Others Miss: A Competition Network Lens on Product Innovation. *Organization Science*, 32(5), 1346–1370. <https://doi.org/10.1287/orsc.2021.1430>
- Thatchenkery, S., and Piezunka, H. (2024). Competition in Collaboration: The Problem of (Mis)Aligned Perception. *Administrative Science Quarterly*. <https://doi.org/10.1177/00018392241299787>
- Tsai, W., Su, K., and Chen, M. (2011). Seeing Through the Eyes of a Rival: Competitor Acumen Based on Rival-Centric Perceptions. *Academy of Management Journal*, 54(4), 761–778. <https://doi.org/10.5465/amj.2011.64870138>
- Zajac, E. J., and Bazerman, M. H. (1991). Blind Spots in Industry and Competitor Analysis: Implications of Interfirm (Mis)perceptions for Strategic Decisions. *Academy of Management Review*, 16(1), 37–56. <https://doi.org/10.5465/AMR.1991.4278990>

Appendix A: Variable Definitions

Variable	Definition	Data Source
<i>Acquisition</i>	Indicator variable that equals to 1 if the firm has a material acquisition (Computat:acq_t/at_t > 0.05) during the fiscal year and 0 otherwise	Compustat
<i>Alliance</i>	An indicator that equals 1 if the firm entered into strategic alliances during the fiscal year, and 0 otherwise.	SDC
<i>AnalystFollow</i>	The natural logarithm of one plus the number of analysts following the firm	I/B/E/S
<i>AuditFees</i>	Audit fees scaled by total assets for the previous fiscal year.	Audit Analytics
<i>Big4</i>	Indicator variable that equals to 1 if the firm has a Big Four auditor (Computat:au<9) during the fiscal year and 0 otherwise	Compustat
<i>BTM</i>	Book-to-market ratio calculated as the ratio of book value of equity to market value of equity at the end of the fiscal period	Compustat
<i>BusSeg</i>	The log number of business segments of the firm.	Compustat
<i>Capx</i>	Total capital expenditures scaled by total assets.	Compustat
<i>CompetitorAddition</i>	An indicator equal to 1 if a competitor relationship is not disclosed in the prior year but is disclosed in the current year, and 0 otherwise.	10-K
<i>CompetitorCount</i>	The number of distinct public competitors named by the firm in the Competition Section, conditional on the firm disclosing at least one competitor.	10-K
<i>CompetitorDisclosure</i>	An indicator equal to 1 if the firm-year includes named competitors in the Competition Section, and 0 otherwise.	10-K
<i>CompetitorRemoval</i>	An indicator equal to 1 if a competitor relationship is disclosed in the prior year but not in the current year, and 0 otherwise.	10-K

<i>FirmAge</i>	The natural logarithm of one plus the number of years since a firm first appeared in CRSP monthly file.	CRSP
<i>FirmRemoval</i>	A firm-level indicator that equals 1 if a firm removes any competitors from its disclosed competitor list in a given year, and 0 otherwise (aggregated from the firm-pair level <i>CompetitorRemoval</i> measure).	10-K
<i>FirmAddition</i>	A firm-level indicator that equals 1 if a firm removes any competitors from its disclosed competitor list in a given year (excluding the initial disclosure), and 0 otherwise.	10-K
<i>HHI</i>	The sum of squared market shares in an industry (based on 2-digit SIC code) and year, where market share is measured using sales.	Compustat
<i>IO</i>	The percentage of company shares owned by institutional investors	Thomson Reuters 13F
<i>JointBH</i>	The average total number of blockholders across the disclosing and competitor firms. This measure captures the overall size of the blockholder base at the firm-pair level, irrespective of whether any individual investors hold positions in both firms.	Thomson Reuters 13F
<i>JointInstProduct</i>	The product of institutional ownership shares in the disclosing and competitor firms. $JointInstProduct = (\frac{\sum_i H_{d,i}}{H_d} \times \frac{\sum_i H_{c,i}}{H_c})$, where $H_{d,i}$ and $H_{c,i}$ represent the number of shares held by institution i in the disclosing and competitor firms, and H_d and H_c denote the total institutional holdings in each firm.	Thomson Reuters 13F
<i>JointInstValue</i>	The proportion of the combined market value of disclosing firms and competitor firms held by institutional owners. $JointInstValue = \frac{\sum_i (V_{d,i} + V_{c,i})}{V_d + V_c}$, where $V_{d,i}$ and $V_{c,i}$ denote the dollar holdings of institution i in the disclosing and competitor firms, respectively, and V_d and V_c represent the total market capitalization of each firm.	Thomson Reuters 13F
<i>Leverage</i>	Ratio of total debt (debt in current liabilities + long term debt) to the book value of equity	Compustat
<i>MktShare</i>	The firm's sales as a percentage of its industry's total sales.	Compustat
<i>NewProduct</i>	An indicator variable that equals 1 if a firm introduces new products during the fiscal year, and 0 otherwise. It is based on product-related announcements where the headline includes words indicating a product launch, such as 'unveil,' 'launch,' or 'new product' (Chu et al., 2024).	Capital IQ Key Developments

<i>OverlapBH</i>	The total number of overlapping blockholders between the disclosing firms and the competitor firms.	Thomson Reuters 13F
<i>OverlapProduct</i>	The proportion of the disclosing firm's shares held by overlapping blockholders multiplied by the proportion of the competitor's shares held by the same blockholders.	Thomson Reuters 13F
<i>OverlapValue</i>	The proportion of the total market value of both firms (the discloser and the competitor) held by overlapping blockholders. (Antón & Polk, 2014).	Thomson Reuters 13F
<i>PCM</i>	The price-cost margin is calculated as the sum of sales minus the cost of goods sold and the change in inventories, divided by the sum of sales and the change in inventories.	Compustat
<i>ProductSimilarity</i>	Product similarity measure by Hoberg and Phillips (2014) between a firm and its product market competitors identified using TNIC.	Hoberg and Phillips (2014)
<i>PostRemoval</i>	An indicator equals 1 for the three years following the removal of a disclosed competitor and 0 for the three years before.	10-K
<i>RelationLength</i>	The log of the number of years since the competitor pair was first disclosed.	10-K
<i>ROA</i>	Income before extraordinary items scaled by the book value of assets at the beginning of the fiscal period	Compustat
<i>R&D</i>	Research and development expenses scaled by the book value of assets at the beginning of the fiscal period	Compustat
<i>Sale</i>	Sales divided by total assets	Compustat
<i>SharedAnalyst</i>	The total number of analysts following both disclosing firms and competitor firms in the same year.	I/B/E/S
<i>Size</i>	The natural logarithm of one plus the market value as of fiscal period end.	Compustat
<i>StockCorrelation</i>	The yearly stock correlation calculated using monthly stock returns.	CRSP

Appendix B: Examples of Competitor Removals

(1) Microsoft

[2022 10-K](#)

Competition

Competitors to Office include software and global application vendors, such as Apple, Cisco Systems, Meta, Google, IBM, Okta, Proofpoint, Slack, Symantec, Zoom, and numerous web-based and mobile application competitors as well as local application developers. Apple distributes versions of its pre-installed application software, such as email and calendar products, through its PCs, tablets, and phones. Cisco Systems is using its position in enterprise communications equipment to grow its unified communications business. Google provides a hosted messaging and productivity suite. Slack provides teamwork and collaboration software. Zoom offers videoconferencing and cloud phone solutions. Okta, Proofpoint, and Symantec provide security solutions across email security, information protection, identity, and governance. Web-based offerings competing with individual applications have also positioned themselves as alternatives to our products and services. We compete by providing powerful, flexible, secure, integrated industry-specific, and easy-to-use productivity and collaboration tools and services that create comprehensive solutions and work well with technologies our customers already have both on-premises or in the cloud.

LinkedIn faces competition from online professional networks, recruiting companies, talent management companies, and larger companies that are focusing on talent management and human resource services; job boards; traditional recruiting firms; and companies that provide learning and development products and services. Marketing Solutions competes with online and offline outlets that generate revenue from advertisers and marketers, and Sales Solutions competes with online and offline outlets for companies with lead generation and customer intelligence and insights.

Dynamics competes with cloud-based and on-premises business solution providers such as Oracle, Salesforce, and SAP.

[2023 10-K](#)

Competition

Competitors to Office include software and global application vendors, such as Apple, Cisco Systems, Meta, Google, Okta, Proofpoint, Slack, Symantec, Zoom, and numerous web-based and mobile application competitors as well as local application developers. Apple distributes versions of its pre-installed application software, such as email and calendar products, through its PCs, tablets, and phones. Cisco Systems is using its position in enterprise communications equipment to grow its unified communications business. Meta offers communication tools to enable productivity and engagement within organizations. Google provides a hosted messaging and productivity suite. Slack provides teamwork and collaboration software. Zoom offers videoconferencing and cloud phone solutions. Okta, Proofpoint, and Symantec provide security solutions across email security, information protection, identity, and governance. Web-based offerings competing with individual applications have also positioned themselves as alternatives to our products and services. We compete by providing powerful, flexible, secure, integrated industry-specific, and easy-to-use productivity and collaboration tools and services that create comprehensive solutions and work well with technologies our customers already have both on-premises or in the cloud.

LinkedIn faces competition from online professional networks, recruiting companies, talent management companies, and larger companies that are focusing on talent management and human resource services; job boards; traditional recruiting firms; and companies that provide learning and development products and services. Marketing Solutions competes with online and offline outlets that generate revenue from advertisers and marketers, and Sales Solutions competes with online and offline outlets for companies with lead generation and customer intelligence and insights.

Dynamics competes with cloud-based and on-premises business solution providers such as Oracle, Salesforce, and SAP.

This example highlights a case of competitor removal in Microsoft's *Competition* section between 2022 and 2023. While most of the competition section remained unchanged, one notable difference is the removal of "IBM" from the list of named competitors in the 2023 filing. This change coincides with public reports of a strategic partnership between IBM and Microsoft, signaling a shift from their historical competitive relationship to increased collaboration. (See: [HFS Research, "From competitors to collaborators: IBM and Microsoft partner to unleash OneEcosystem"](#))

(2) Coca-Cola

2018 10-K

Competition

The nonalcoholic beverage segment of the commercial beverage industry is highly competitive, consisting of numerous companies ranging from small or emerging to very large and well established. These include companies that, like our Company, compete in multiple geographic areas, as well as businesses that are primarily regional or local in operation. Competitive products include numerous nonalcoholic sparkling soft drinks; various water products, including flavored and enhanced waters; juices and nectars; fruit drinks and dilutables (including syrups and powdered drinks); coffees and teas; energy, sports and other performance-enhancing drinks; milk and other dairy-based drinks; functional beverages, including vitamin-based products and relaxation beverages; and various other nonalcoholic beverages. These competitive beverages are sold to consumers in both ready-to-drink and other than ready-to-drink form. In many of the countries in which we do business, including the United States, PepsiCo, Inc., is one of our primary competitors. Other significant competitors include, but are not limited to, Nestlé S.A., Keurig Dr Pepper Inc., Groupe Danone, Mondelēz International, Inc., The Kraft Heinz Company, Suntory Beverage & Food Limited and Unilever. We also compete against numerous regional and local companies and, increasingly, against smaller companies that are developing micro brands and selling them directly to consumers through e-commerce retailers and other e-commerce platforms. In addition, in some markets, we compete against retailers that have developed their own store or private label beverage brands.

2019 10-K

Competition

The nonalcoholic beverage segment of the commercial beverage industry is highly competitive, consisting of numerous companies ranging from small or emerging to very large and well established. These include companies that, like our Company, compete in multiple geographic areas, as well as businesses that are primarily regional or local in operation. Competitive products include numerous nonalcoholic sparkling soft drinks; various water products, including flavored and enhanced waters; juices and nectars; fruit drinks and dilutables (including syrups and powdered drinks); coffees and teas; energy, sports and other performance-enhancing drinks; milk and other dairy-based drinks; functional beverages, including vitamin-based products and relaxation beverages; and various other nonalcoholic beverages. These competitive beverages are sold to consumers in both ready-to-drink and other than ready-to-drink form. In many of the countries in which we do business, including the United States, PepsiCo, Inc., is one of our primary competitors. Other significant competitors include, but are not limited to, Nestlé S.A., Keurig Dr Pepper Inc., Groupe Danone, The Kraft Heinz Company, Suntory Beverage & Food Limited and Unilever. We also compete against numerous regional and local companies and, increasingly, against smaller companies that are developing micro brands and selling them directly to consumers through e-commerce retailers and other e-commerce platforms. In addition, in some markets, we compete against retailers that have developed their own store or private label beverage brands.

This appendix highlights a clear example of competitor removal in Coca-Cola's 10-K competition section between 2018 and 2019. While the majority of the text remained unchanged across the two filings, one notable difference is the removal of "Mondelez International, Inc." from the list of named competitors in 2019.

Appendix C: Financial Institution Mergers

Announcement Date	Completion Date	Acquiror Name	Target Name	Acquirer Mgrno	Target Mgrno
2009-09-16	2009-12-01	Blackrock Inc	Barclays Global Fund Advisors	9385	7900
2008-10-03	2008-12-31	Wells Fargo & Co	Wachovia Corp,Charlotte,NC	65850	37700
2008-09-16	2008-09-22	Barclays PLC	Lehman-Invest Bkg Bus	7900	50200
2008-09-14	2009-01-01	Bank of America Corp	Merrill Lynch & Co Inc	62890	56780
2006-10-31	2006-12-04	Morgan Stanley	FrontPoint Partners LLC	58950	7759
2004-01-14	2004-07-01	JPMorgan Chase & Co	Bank One Corp,Chicago,IL	58835	5955
2003-10-27	2004-04-01	Bank of America Corp	FleetBoston Financial Corp,MA	62890	38260
2000-10-18	2001-02-14	Allianz AG	Nicholas-Applegate Capt Mgmt	1275	64240
2000-09-13	2000-12-31	Chase Manhattan Corp,NY	JP Morgan & Co Inc	15345	58835
2000-06-20	2000-10-02	Alliance Capital Mgmt Hldg LP	Alliance Capital Mgmt Hldg LP	25610	8650
1996-08-30	1997-01-06	NationsBank Corp,Charlotte,NC	Boatmen's Bancshares,St Louis	62890	9480

Table 1: Sample Description**Panel A: Sample Selection Procedure**

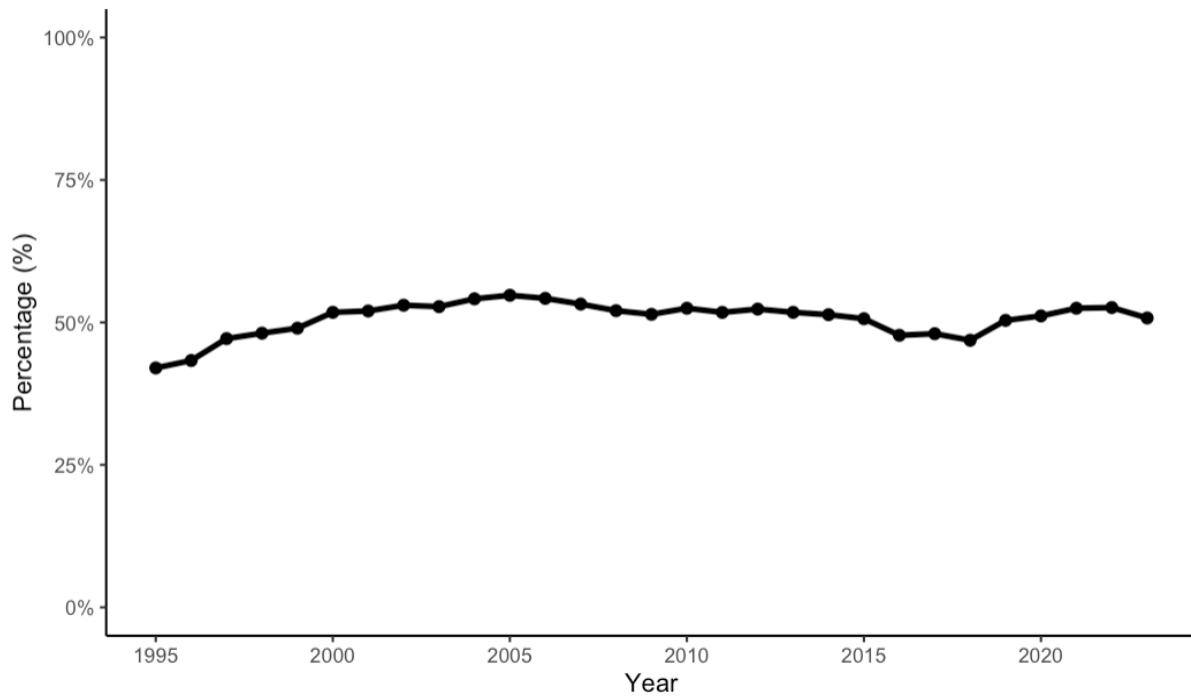
Sample filter	Number of observations
Total number of 10-K filings (including “10-K,” “10-K405,” “10KSB,” and “10KSB40”) from the SEC EDGAR system (1995–2023)	271,390
Less: Firm-year observations without Competition Sections	(60,504)
Less: Firm-year observations without competitor names in Competition Sections	(111,244)
Extending to the firm-pair-year level, then matching extracted competitor names with company identifiers, and dropping unmatched firm-pairs	246,718
Less: Firm-pairs with no overlapping blockholder ($\geq 5\%$ ownership) in any sample year	(163,815)
Less: Observations with missing controls	(13,612)
Final sample of firm-pair-year observations	69,291

Panel B. Industry Distribution of Named Competitor Disclosures

Industries	Proportions (%)
Business Equipment	72.07
Telecommunications	68.82
Healthcare	66.96
Consumer Durables	54.17
Manufacturing	53.41
Consumer Non-Durables	52.75
Chemicals	49.08
Retail and Wholesale Shops	43.78
Miscellaneous	43.11
Utilities	32.77
Energy	23.69
Finance	23.25

Panel A outlines the step-by-step sample construction process. Starting from 271,390 10-K filings from 1995 to 2023, the sample is restricted to filings with Competition Sections and named competitors. The data are then extended to the firm-pair-year level, matched with company identifiers, and filtered for overlapping blockholder ownership and complete control variables. The final sample includes 69,291 firm-pair-year observations. Panel B reports the proportion of firms with listings by Fama-French 12 industries classification.

Figure 1: Percentage of Firms with Named Competitors by Year



The figure plots the annual percentage of firms with named competitors in the Competition sections from 1995 to 2023. The x-axis represents the calendar year, ranging from 1995 to 2023, while the y-axis represents the percentage of firms that name at least one competitor in the Competition sections of their filings.

Table 2: Summary Statistics**Panel A: Discloser–Competitor Pair-Level Sample**

Variables	N	Mean	SD	p25	Median	p75
Relationship Characteristics						
<i>CompetitorRemoval</i>	69291	0.037	0.188	0	0	0
<i>CompetitorAddition</i>	69291	0.056	0.231	0	0	0
<i>OverlapValue</i>	69291	0.052	0.069	0	0	0.092
<i>OverlapBH</i>	69291	0.656	0.837	0	0	1
<i>OverlapProduct</i>	69291	0.008	0.014	0	0	0.008
<i>JointInstValue</i>	69291	0.752	0.328	0.654	0.828	0.957
<i>JointBH</i>	69291	2.542	1.258	1.5	2.5	3.5
<i>JointInstProduct</i>	69291	0.622	0.38	0.341	0.666	0.89
<i>ProductSimilarity</i>	69291	0.046	0.056	0	0.025	0.078
<i>RelationLength</i>	69291	1.609	0.865	1.099	1.792	2.303
Disclosing Firm Characteristics						
<i>HHI_discloser</i>	69291	0.136	0.142	0.051	0.083	0.167
<i>Size_discloser</i>	69291	7.191	1.845	5.928	7.157	8.376
<i>MktShare_discloser</i>	69291	0.046	0.11	0.001	0.005	0.031
<i>ROA_discloser</i>	69291	0.002	0.193	-0.016	0.039	0.088
Competitor Firm Characteristics						
<i>HHI_competitor</i>	69291	0.138	0.147	0.049	0.082	0.17
<i>Size_competitor</i>	69291	8.757	2.088	7.303	8.761	10.288
<i>MktShare_competitor</i>	69291	0.099	0.166	0.005	0.031	0.107
<i>ROA_competitor</i>	69291	0.045	0.124	0.012	0.055	0.103

Panel B: Discloser Level Sample

Variables	N	Mean	SD	p25	Median	p75
<i>CompetitorDisclosure</i>	112877	0.481	0.5	0	0	1
<i>FirmAge</i>	112877	2.463	0.918	1.792	2.526	3.175
<i>Size</i>	112877	5.853	2.195	4.218	5.795	7.388
<i>ROA</i>	112877	-0.083	0.627	-0.049	0.016	0.067
<i>BTM</i>	112877	0.59	1.06	0.253	0.498	0.843
<i>BusSeg</i>	112877	0.916	0.497	0.693	0.693	1.386
<i>AnalystFollow</i>	112877	1.286	1.009	0	1.386	2.079
<i>IO</i>	112877	36.625	37.016	0	25.481	72.228
<i>Leverage</i>	112877	0.245	0.306	0.034	0.178	0.37
<i>Acquisition</i>	112877	0.077	0.266	0	0	0
<i>Big4</i>	112877	0.705	0.456	0	1	1
<i>AuditFees</i>	88302	13.479	1.368	12.445	13.496	14.43
<i>CompetitorCount</i>	58316	3.397	2.844	1	2	4
<i>FirmRemoval</i>	34656	0.213	0.41	0	0	0

<i>FirmAddition</i>	34656	0.185	0.388	0	0	0
<i>NewProduct</i>	34656	0.266	0.442	0	0	1
<i>Alliance</i>	34656	0.201	0.401	0	0	0
<i>Capx</i>	34656	0.038	0.042	0.012	0.025	0.05
<i>R&D</i>	34656	0.076	0.136	0	0.016	0.1
<i>PCM</i>	34656	0.022	3.069	0.237	0.41	0.607

This table reports summary statistics for the key variables used in the analysis. Panel A presents statistics at the discloser–competitor pair-year level, and variables are grouped into three categories: (1) Relationship Characteristics, (2) Disclosing Firm Characteristics, and (3) Competitor Firm Characteristics. Panel B presents statistics at the discloser-year level, covering variables used in firm-level analyses of disclosure determinants and real effects. All continuous variables are winsorized at the 1st and 99th percentiles. Definitions of all variables are provided in Appendix A. The sample sizes may vary due to data availability across different variables.

Table 3: Determinants of Competitor Disclosure

Panel A: Firm Characteristics and Competitor Disclosure

Dependent Variables:	(1)	(2)	(3)	(4)
	<i>CompetitorDisclosure</i>		<i>CompetitorCount</i>	
<i>ROA</i>	-0.113*** (-3.545)	-0.073*** (-2.651)	-0.004 (-0.073)	0.062 (0.925)
<i>BTM</i>	-0.058*** (-4.694)	-0.060*** (-4.177)	-0.026* (-1.774)	-0.022 (-1.302)
<i>FirmAge</i>	-0.412*** (-20.657)	-0.388*** (-17.129)	-0.037 (-0.890)	-0.031 (-0.642)
<i>Size</i>	-0.035*** (-2.827)	-0.083*** (-5.081)	0.101*** (3.966)	0.044 (1.341)
<i>BusSeg</i>	-0.066* (-1.792)	-0.087** (-2.148)	0.237*** (3.155)	0.190** (2.316)
<i>Leverage</i>	-0.221*** (-4.172)	-0.234*** (-3.916)	-0.221* (-1.897)	-0.342** (-2.496)
<i>IO</i>	0.001 (0.933)	0.001 (0.782)	0.002* (1.824)	0.002 (1.461)
<i>Acquisition</i>	-0.024 (-0.745)	-0.005 (-0.132)	0.041 (0.741)	0.058 (0.887)
<i>AnalystFollow</i>	0.117*** (5.086)	0.138*** (4.922)	0.335*** (7.763)	0.384*** (7.192)
<i>Big4</i>	0.103** (2.424)	0.064 (1.284)	0.234*** (2.981)	0.171* (1.784)
<i>AuditFees</i>		0.084*** (3.198)		0.147*** (2.750)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	112,844	88,272	58,316	47,100
R ²	0.145	0.152	0.101	0.102

Table 3 (continued)

Panel B: Industry Affiliation and Competitor Selection

Dependent Variable:	<i>Selected = one if selected as a competitor</i>				
	(1)	(2)	(3)	(4)	(5)
<i>Same SIC 2</i>	0.757*** (64.758)				
<i>Same SIC 3</i>		0.729*** (56.644)			
<i>Same SIC 4</i>			0.665*** (44.808)		
<i>Same TNIC 2</i>				0.858*** (143.421)	
<i>Same TNIC 3</i>					0.844*** (82.924)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	573,203	573,203	573,203	573,203	573,203
R ²	0.512	0.437	0.306	0.745	0.688

This table reports regression results examining the determinants of competitor disclosure in firms' 10-K filings. Panel A analyzes firm-level characteristics that influence disclosure behavior. The dependent variables are *CompetitorDisclosure*, an indicator equal to 1 if the firm-year includes named competitors in the Competition Section, and 0 otherwise. *CompetitorCount*, defined as the number of competitors disclosed, conditional on disclosure. The regression includes various firm characteristics as explanatory variables. Continuous variables are winsorized at the 1st and 99th percentiles. The *t*-statistics reported in parentheses are based on standard errors clustered at the firm level. Panel B examines how industry affiliation influences competitor selection. To construct the estimation sample, each disclosed competitor is matched with ten randomly selected firms (without replacement) that share the same one-digit SIC code as the disclosing firm. The dependent variable *Selected* equals 1 if firm *i* identifies firm *j* as a competitor. Independent variables are alternative industry similarity measures. *Same SIC 2* is an indicator equal to 1 if the firm pair shares the same two-digit Standard Industrial Classification (SIC) code. Other variables—*Same SIC 3*, *Same SIC 4*, *Same TNIC 2*, and *Same TNIC 3*—are defined similarly. All regressions are estimated using a linear probability model with year fixed effects. The *t*-statistics reported in parentheses are based on standard errors clustered at the year level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix A.

Table 4: Economic Implications of Competitor Removal**Panel A: Firm-Level Effects of Competitor Removal**

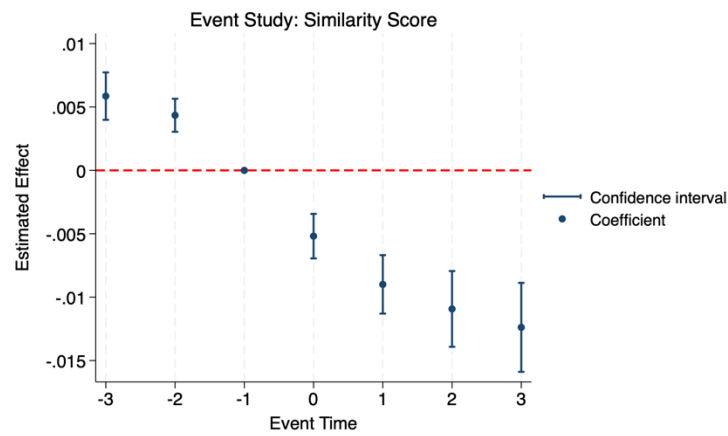
Dependent Variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	$Capx_{t+1}$	$R\&D_{t+1}$	$NewProduct_{t+1}$	$Alliance_{t+1}$	$Acquisition_{t+1}$	PCM_{t+1}	ROA_{t+1}
$FirmRemoval_t$	-0.002*** (-4.423)	0.003 (1.610)	0.017*** (2.723)	0.017*** (3.171)	-0.008* (-1.949)	-0.050 (-0.933)	0.139 (1.016)
$FirmAddition_t$	0.000 (0.723)	0.009*** (4.095)	0.024*** (3.704)	0.037*** (6.110)	0.006 (1.283)	-0.023 (-0.365)	0.061 (0.958)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	34,656	34,656	34,656	34,656	34,656	34,656	34,656
R ²	0.265	0.408	0.205	0.140	0.038	0.134	0.003

Panel B: Firm-Pair Level Effects of Competitor Removal

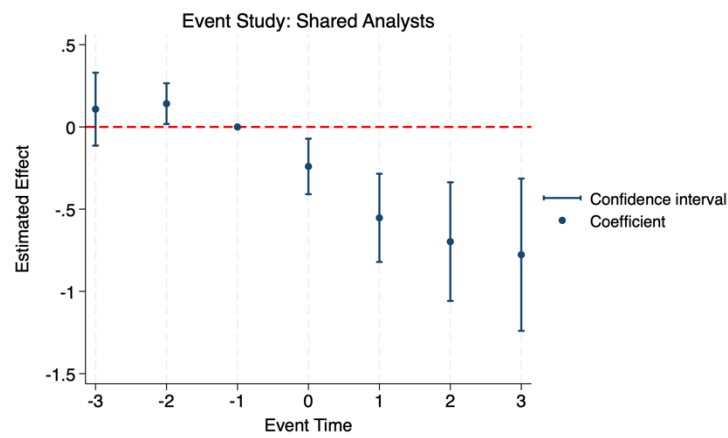
Dependent Variables:	(1)	(2)	(3)
	$ProductSimilarity$	$SharedAnalysts$	$StockCorrelation$
$PostRemoval$	-0.011*** (-6.959)	-0.617*** (-2.864)	-0.010 (-0.822)
Controls	Yes	Yes	Yes
Discloser Firm FE	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes
Discloser Industry × Year FE	Yes	Yes	Yes
Competitor Industry × Year FE	Yes	Yes	Yes
Observations	11,993	11,993	11,993
R ²	0.880	0.871	0.571

This table examines the economic implications of competitor removals at both the firm and firm-pair levels. Panel A reports the association between competitor removal and subsequent firm-level outcomes. The key variable, $FirmRemoval_t$, is an indicator equal to 1 if a firm removes any competitors from its disclosed list in year t , aggregated from firm-pair-level observations. $FirmAddition_t$ is an indicator equal to 1 if a firm adds any new competitors to its disclosed list in year t (excluding the initial disclosure), and 0 otherwise. Dependent variables include future firm outcomes: capital investment ($Capx_{t+1}$), R&D expenditures ($R\&D_{t+1}$), new product announcements ($NewProduct_{t+1}$), strategic alliances ($Alliance_{t+1}$), acquisitions ($Acquisition_{t+1}$), and profitability (PCM_{t+1} and ROA_{t+1}). Panel B investigates whether competitor removals lead to real changes in competitive relationships between discloser–competitor pairs. The dependent variables include $ProductSimilarity$, $SharedAnalysts$ and $StockCorrelation$, capturing different dimensions of competitive overlap. The key independent variable, $PostRemoval$, equals 1 for the three years following the removal of a disclosed competitor and 0 for the three years prior. Continuous variables are winsorized at the 1st and 99th percentiles. The t -statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

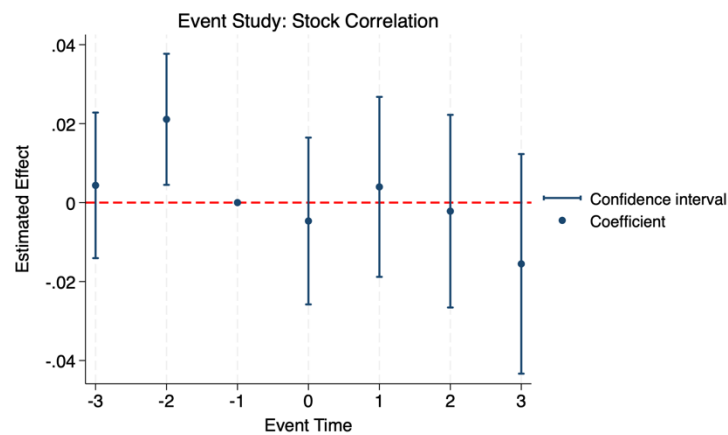
Figure 2: Event-Time Effects of Competitor Removal on Firm-Pair Outcomes



Panel A: Product Similarity



Panel B: Shared Analyst Coverage



Panel C: Stock Return Correlation

Table 5: Institutional Ownership Overlap and Competitor Removal

Dependent Variable:	<i>CompetitorRemoval</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>OwnershipOverlap</i> Measures:	<i>OverlapValue</i>		<i>OverlapProduct</i>		<i>OverlapBH</i>	
<i>OwnershipOverlap</i>	0.089*** (4.949)	0.096*** (4.973)	0.206** (2.198)	0.265*** (2.621)	0.008*** (5.036)	0.007*** (4.582)
<i>ProductSimilarity</i>	-0.335*** (-12.793)	-0.344*** (-12.540)	-0.334*** (-12.746)	-0.343*** (-12.478)	-0.334*** (-12.784)	-0.344*** (-12.561)
<i>JointOwnership</i>	-0.016*** (-5.201)	-0.017*** (-5.150)	-0.010*** (-3.241)	-0.010*** (-3.028)	-0.005*** (-5.527)	-0.005*** (-5.234)
<i>RelationLength</i>	0.027*** (20.348)	0.025*** (17.788)	0.027*** (20.274)	0.024*** (17.679)	0.027*** (20.207)	0.024*** (17.643)
<i>MktShare_discloser</i>	0.017 (0.724)	-0.005 (-0.148)	0.016 (0.689)	-0.005 (-0.151)	0.015 (0.628)	-0.007 (-0.204)
<i>MktShare_competitor</i>	-0.028 (-1.525)	-0.018 (-0.818)	-0.026 (-1.447)	-0.017 (-0.757)	-0.029 (-1.569)	-0.020 (-0.903)
<i>HHI_discloser</i>	-0.040*** (-2.682)	-0.032* (-1.805)	-0.039*** (-2.581)	-0.030* (-1.708)	-0.039*** (-2.600)	-0.031* (-1.725)
<i>HHI_competitor</i>	0.004 (0.202)	0.027 (1.151)	0.003 (0.165)	0.026 (1.101)	0.003 (0.167)	0.028 (1.174)
<i>ROA_discloser</i>	-0.000 (-0.012)	0.002 (0.321)	-0.000 (-0.080)	0.002 (0.254)	-0.001 (-0.222)	0.001 (0.084)
<i>ROA_competitor</i>	-0.000 (-0.025)	0.005 (0.428)	-0.000 (-0.019)	0.005 (0.422)	-0.001 (-0.098)	0.004 (0.334)
<i>Size_discloser</i>	-0.003** (-2.337)	-0.005*** (-3.583)	-0.003** (-2.114)	-0.005*** (-3.392)	-0.003** (-2.524)	-0.006*** (-3.678)
<i>Size_competitor</i>	-0.007*** (-3.851)	-0.009*** (-4.816)	-0.007*** (-3.905)	-0.009*** (-4.865)	-0.007*** (-4.204)	-0.010*** (-5.093)
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes		Yes		Yes	
Discloser Industry × Year FE		Yes		Yes		Yes
Competitor Industry × Year FE		Yes		Yes		Yes
Observations	69,291	69,291	69,291	69,291	69,291	69,291
R ²	0.130	0.193	0.130	0.193	0.130	0.193

This table reports linear probability model estimates of the association between *CompetitorRemoval* and alternative measures of *OwnershipOverlap*. The dependent variable equals 1 if a competitor disclosed in the prior year is not disclosed in the current year. Columns (1)–(2) use *OverlapValue* (overlapping blockholders' share of combined firm value); Columns (3)–(4) use *OverlapProduct* (product of overlapping ownership shares in each firm); and Columns (5)–(6) use *OverlapBH*

(number of overlapping blockholders). Each specification includes a corresponding *JointOwnership* control: *JointInstValue*, *JointInstProduct*, and *JointBH*, respectively, constructed analogously without requiring ownership overlap. All ownership variables are lagged one year. Control variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. The t-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 6: Baseline Robustness

Dependent Variable:	<i>CompetitorRemoval</i>		
	(1)	(2)	(3)
Conditions:	Drop Potential Strategic Naming	Combined Institutional Stake $\geq 1\%$	IO $\geq 3\%$ in Both Firms
<i>OverlapValue</i>	0.076*** (3.020)	0.140** (2.300)	0.034** (2.269)
<i>ProductSimilarity</i>	-0.012*** (-2.731)	-0.262*** (-4.008)	-0.426*** (-17.428)
<i>JointInstValue</i>	0.024*** (12.443)	-0.019** (-2.320)	-0.007** (-2.456)
<i>RelationLength</i>	-0.348*** (-9.383)	0.028*** (6.760)	0.030*** (24.720)
<i>MktShare_discloser</i>	0.002 (0.052)	-0.026 (-0.384)	0.015 (0.527)
<i>MktShare_competitor</i>	-0.030 (-0.948)	-0.065 (-0.944)	0.001 (0.068)
<i>HHI_discloser</i>	-0.040* (-1.761)	-0.091** (-2.571)	-0.009 (-0.560)
<i>HHI_competitor</i>	-0.018 (-0.588)	0.117 (1.576)	0.027 (1.313)
<i>ROA_discloser</i>	-0.014 (-1.433)	0.000 (0.028)	-0.002 (-0.358)
<i>ROA_competitor</i>	0.001 (0.055)	0.033 (1.300)	0.005 (0.496)
<i>Size_discloser</i>	-0.002 (-0.883)	-0.009*** (-2.691)	-0.005*** (-3.812)
<i>Size_competitor</i>	-0.010*** (-3.419)	-0.013*** (-2.595)	-0.009*** (-6.105)
Observations	39,807	18,910	98,752
Discloser Firm FE	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes
Discloser Industry $\times$ Year FE	Yes	Yes	Yes
Competitor Industry $\times$ Year FE	Yes	Yes	Yes
R ²	0.285	0.227	0.238

This table reports regression results testing the robustness of the relationship between *OverlapValue* and *CompetitorRemoval* under alternative conditions. Column (1) drops observations where the disclosed competitor is in the top decile of CEO compensation or where a removed competitor is in the bottom decile, to address potential strategic naming. Column (2)

includes only cases where the combined ownership stake in disclosing firm and its disclosed competitors represents at least 1% of their portfolio. Column (3) restricts the sample to firm-pairs in which at least one institutional investor holds a stake of at least 3% in each of the two firms in the pair. All regressions include discloser firm, competitor firm, and industry-by-year fixed effects for both firms. Continuous variables are winsorized at the 1st and 99th percentiles. The t -statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 7: Ownership Overlap by Different Types of Institutions

Dependent Variable:	<i>CompetitorRemoval</i>		
Institution Types:	(1) Dedicated	(2) Quasi-Indexers	(3) Transient
<i>OverlapValue</i>	0.335*** (3.270)	0.090*** (4.025)	0.125** (2.547)
<i>ProductSimilarity</i>	-0.343*** (-12.489)	-0.343*** (-12.509)	-0.343*** (-12.471)
<i>JointInstValue</i>	-0.011*** (-3.473)	-0.015*** (-4.469)	-0.013*** (-4.042)
<i>RelationLength</i>	0.024*** (17.682)	0.025*** (17.724)	0.025*** (17.741)
<i>MktShare_discloser</i>	-0.006 (-0.175)	-0.005 (-0.155)	-0.005 (-0.156)
<i>MktShare_competitor</i>	-0.018 (-0.782)	-0.017 (-0.767)	-0.018 (-0.803)
<i>HHI_discloser</i>	-0.031* (-1.756)	-0.031* (-1.768)	-0.032* (-1.799)
<i>HHI_competitor</i>	0.026 (1.110)	0.026 (1.123)	0.026 (1.107)
<i>ROA_discloser</i>	0.002 (0.308)	0.002 (0.334)	0.002 (0.281)
<i>ROA_competitor</i>	0.005 (0.394)	0.005 (0.446)	0.005 (0.399)
<i>Size_discloser</i>	-0.005*** (-3.493)	-0.005*** (-3.524)	-0.005*** (-3.565)
<i>Size_competitor</i>	-0.009*** (-4.820)	-0.009*** (-4.820)	-0.009*** (-4.844)
Discloser Firm FE	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes
Discloser Industry × Year FE	Yes	Yes	Yes
Competitor Industry × Year FE	Yes	Yes	Yes
Observations	69,291	69,291	69,291
R ²	0.193	0.193	0.193

This table explores heterogeneity by institutional investor types. The sample is split based on whether the overlapping ownership is held by *Dedicated* institutions (Column 1), *Quasi-Indexers* (Column 2), or *Transient* investors (Column 3). All regressions include discloser firm, competitor firm, and industry-by-year fixed effects for both firms. Continuous variables are winsorized at the 1st and 99th percentiles. The *t*-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 8: Quasi-Natural Experiment of Institutional Mergers

Panel A: Baseline DiD Test of the Effect of Institutional Mergers on Competitor Removal

Dependent Variable:	<i>CompetitorRemoval</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Treat</i> × <i>Post</i>	0.116*** (3.012)	0.114*** (3.051)	0.079** (2.228)	0.103*** (2.899)	0.098*** (2.858)	0.077** (2.348)
<i>Treat</i>	-0.082*** (-3.178)	-0.057** (-2.480)	-0.040* (-1.822)	-0.063*** (-2.720)	-0.051** (-2.527)	-0.041** (-2.028)
<i>Post</i>	0.254*** (7.983)	0.203*** (8.022)	0.143*** (5.015)	0.191*** (11.848)	0.117*** (8.865)	0.113*** (8.390)
Sample Window	-2 to +2	-2 to +2	-2 to +2	-3 to +3	-3 to +3	-3 to +3
Controls		Yes	Yes		Yes	Yes
Discloser Firm FE,	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes		Yes	Yes	
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Discloser Industry FE × Year FE			Yes			Yes
Competitor Industry FE × Year FE			Yes			Yes
Observations	40,989	37,292	37,069	55,494	50,382	50,172
R ²	0.324	0.285	0.351	0.281	0.243	0.305

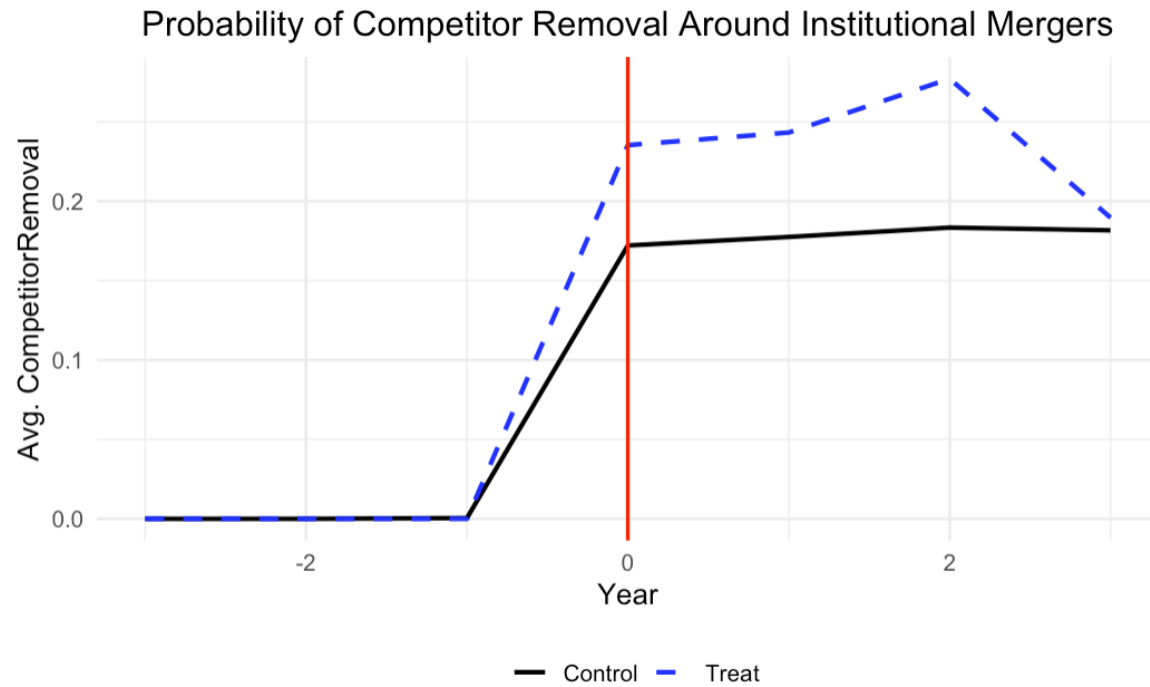
Panel B: Propensity Score Matched (PSM) Sample

Dependent Variable:	<i>CompetitorRemoval</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Treat</i> × <i>Post</i>	0.090** (2.184)	0.107** (2.498)	0.081* (1.742)	0.090** (2.363)	0.096** (2.438)	0.082** (2.006)
<i>Treat</i>	-0.024 (-0.704)	-0.046 (-1.341)	-0.045 (-1.396)	-0.021 (-0.663)	-0.029 (-0.948)	-0.021 (-0.731)
<i>Post</i>	0.282*** (3.769)	0.204*** (3.084)	0.044 (0.439)	0.195*** (3.945)	0.113** (2.362)	0.037 (0.694)
Sample Window	-2 to +2	-2 to +2	-2 to +2	-3 to +3	-3 to +3	-3 to +3
Controls		Yes	Yes		Yes	Yes
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes		Yes	Yes	
Event FE	Yes	Yes	Yes	Yes	Yes	Yes

Discloser Industry FE $\times$ Year FE			Yes			Yes
Competitor Industry FE $\times$ Year FE			Yes			Yes
Observations	7,655	7,136	6,914	10,459	9,699	9,456
R ²	0.374	0.367	0.513	0.314	0.304	0.463

Panel A presents difference-in-differences regression results examining the impact of institutional mergers on competitor disclosure practices. The dependent variable, *CompetitorRemoval*, equals 1 if a previously disclosed competitor is no longer disclosed in the current year. *Treat* equals 1 if each merging institution held more than 3% ownership in different firms within the pair pre-merger. *Post* equals 1 for post-merger years, excluding the merger year. Regressions are estimated over both ± 2 -year and ± 3 -year event windows. Panel B restricts the sample to firm pairs selected using propensity score matching based on firm size and two-digit SIC code. Continuous variables are winsorized at the 1st and 99th percentiles. The *t*-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Figure 3: Parallel Trend



This figure plots the average probability of competitor removal for treated and control firm pairs over a five-year window surrounding institutional mergers (event year = 0). The blue dashed line represents treated pairs, and the black solid line represents control pairs. The red vertical line indicates the merger year.

Table 9: Institutional Ownership Overlap and Competitor Addition

Dependent Variable:	<i>CompetitorAddition</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>OwnershipOverlap</i> Measures:	<i>OverlapValue</i>		<i>OverlapProduct</i>		<i>OverlapBH</i>	
<i>OwnershipOverlap</i>	-0.091*** (-5.404)	-0.078*** (-4.274)	-0.431*** (-5.407)	-0.371*** (-4.354)	-0.004*** (-2.842)	-0.003** (-1.977)
<i>ProductSimilarity</i>	0.132*** (4.858)	0.181*** (6.250)	0.132*** (4.828)	0.179*** (6.182)	0.140*** (5.154)	0.188*** (6.502)
<i>JointOwnership</i>	0.043*** (11.552)	0.043*** (10.913)	0.031*** (8.590)	0.032*** (8.189)	0.002** (2.344)	0.003*** (2.837)
<i>RelationLength</i>	-0.256*** (-96.037)	-0.262*** (-97.560)	-0.255*** (-95.902)	-0.262*** (-97.493)	-0.254*** (-95.281)	-0.261*** (-96.816)
<i>MktShare_discloser</i>	0.034 (1.540)	0.015 (0.485)	0.035 (1.570)	0.014 (0.486)	0.033 (1.512)	0.016 (0.524)
<i>MktShare_competitor</i>	0.024 (1.311)	0.011 (0.506)	0.022 (1.212)	0.009 (0.405)	0.022 (1.229)	0.010 (0.479)
<i>HHI_discloser</i>	-0.049*** (-3.023)	-0.049** (-2.381)	-0.052*** (-3.209)	-0.053** (-2.572)	-0.051*** (-3.135)	-0.050** (-2.432)
<i>HHI_competitor</i>	0.006 (0.327)	0.018 (0.783)	0.008 (0.420)	0.019 (0.830)	0.008 (0.412)	0.017 (0.710)
<i>ROA_discloser</i>	0.015* (1.915)	0.020** (2.401)	0.017** (2.081)	0.021** (2.544)	0.018** (2.209)	0.023*** (2.705)
<i>ROA_competitor</i>	0.015 (1.247)	0.025** (1.970)	0.014 (1.193)	0.025** (1.975)	0.013 (1.146)	0.025** (1.976)
<i>Size_discloser</i>	-0.003** (-2.421)	-0.002 (-1.464)	-0.004*** (-2.824)	-0.003* (-1.908)	-0.003** (-2.081)	-0.002 (-1.291)
<i>Size_competitor</i>	-0.005*** (-2.953)	-0.004** (-2.368)	-0.005*** (-2.743)	-0.004** (-2.280)	-0.004** (-2.261)	-0.003* (-1.784)
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes		Yes		Yes	
Discloser Industry × Year FE		Yes		Yes		Yes
Competitor Industry × Year FE		Yes		Yes		Yes
Observations	69,729	69,729	69,729	69,729	69,729	69,729
R ²	0.400	0.438	0.398	0.437	0.399	0.438

This table reports linear probability model estimates of the association between *CompetitorAddition* and alternative measures of *OwnershipOverlap*. The dependent variable, *CompetitorAddition*, is an indicator equal to 1 if a competitor relationship is not disclosed in the prior year but is disclosed in the current year, and 0 otherwise. Columns (1)–(2) use *OverlapValue* (overlapping blockholders' share of combined firm value); Columns (3)–(4) use *OverlapProduct* (product of overlapping

ownership shares in each firm); and Columns (5)–(6) use *OverlapBH* (number of overlapping blockholders). Each specification includes a corresponding *JointOwnership* control: *JointInstValue*, *JointInstProduct*, and *JointBH*, respectively, constructed analogously without requiring ownership overlap. All ownership variables are lagged one year. Control variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. The t-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Online Appendix for
“Common Ownership and Perceived Competition Networks”

OA.1 Data Collection Procedure

I begin by downloading the URLs of all 10-K filings (including “10-K,” “10-K405,” “10KSB,” and “10KSB40”) from the SEC EDGAR system for the period 1995–2023. Using the SEC API, I extract Item 1: Business from each filing. Then, I apply Gemini AI to identify the Competition section within Item 1 and extract the names of companies explicitly mentioned as competitors. This process involves two steps:

1. Competition Section Extraction

Step 1: Section Identification

Gemini is prompted to locate and extract all content under the “Competition” section heading, returning the full section text until the next section header or content boundary. If no such section is found, Gemini returns “COMPETITION_NOT_FOUND”. A representative excerpt of the prompt is shown below:

“Locate and extract all content under the ‘Competition’ section heading. If no ‘Competition’ section is found, return ‘COMPETITION_NOT_FOUND’.”

Step 2: Competitor Name Extraction

From the extracted Competition section, Gemini is prompted to identify and extract valid company names explicitly or implicitly mentioned as competitors. The model returns a list of organization names or “COMPETITOR_NOT_FOUND” if no competitors are identified. A representative excerpt of the prompt is shown below:

“Return a list of competitor company names, separated by commas. If no competitors are found, return ‘COMPETITOR_NOT_FOUND’.”

2. Name Matching Procedure

To validate and link extracted competitor names to structured firm identifiers, I match the extracted names to FactSet Revere’s competitive relationships database.²⁴

Step 1: Match Source Firms

I first match each disclosing firm (by *gvkey*) from the 10-K dataset to its corresponding source firm in the Revere database.

Step 2: Match Competitor Names

I compare the extracted competitor names to Revere’s target firm names using Sentence-BERT embeddings (all-MiniLM-L6-v2) with cosine similarity. Matches with similarity scores $\geq 65\%$ are accepted automatically. Matches between 60% and 65% are flagged for further review using Gemini. The model is prompted with both names and asked to confirm if they refer to the same entity even if they are formatted differently (Yes/No). Only confirmed matches are retained.

Step 3: Reconcile Disclosure Dates

To define the full disclosure window for each firm-pair, I reconcile disclosure dates across sources. The start date is defined as the earlier of the Revere-reported and 10-K-extracted start dates, and the end date as the later of the two. This procedure ensures that the relationship period captures the full interval during which the competitive relationship may have been disclosed.

²⁴ I confirmed with FactSet Revere that company mentions in 10-K *Competition* sections are one of the sources used in constructing their competitive relationships database.

OA.2 Economic Consequences of Institutional Mergers

To investigate broader economic consequences, I examine how product similarity between discloser–competitor pairs evolve following institutional mergers that exogenously increase ownership overlap.

Institutional mergers that increase common ownership appear to have meaningful economic consequences for firms’ competitive behavior and valuation. As shown in Table OA1, Panel A, product similarity between affected discloser–competitor pairs decline relative to control pairs following the mergers. This divergence suggests that, once common ownership arises, firms gradually reposition their product offerings to reduce direct competition. This pattern is consistent with prior theoretical and empirical research showing that common ownership relaxes competitive pressure and allows firms to shift away from direct competition toward less overlapping market positions (Galeotti and Ghiglino 2021; Ederer and Pellegrino 2021).

To further explore the broader economic consequences, I examine changes in firm valuation following institutional mergers. The results in Table OA1, Panel B show that institutional mergers lead to higher Tobin’s Q for both disclosers and competitors relative to control firms. This evidence is consistent with the interpretation that increased common ownership reduces product market competition and facilitates tacit coordination between rivals, ultimately improving profitability and firm value (He and Huang 2017). The valuation gains reinforce the broader narrative that competitor removals and product market divergence observed after ownership overlap are not merely disclosure artifacts but reflect real reductions in competitive intensity that markets reward. Together, these

findings support the view that common ownership dampens competition incentives and suggest that institutional co-ownership can create conditions favorable to collusive outcomes.

OA.3 Robustness Tests for the DiD Analysis of Institutional Mergers

To further strengthen causal interpretation of DiD results, I conduct several additional robustness tests reported in Table OA2. First, I exclude mergers announced in 2008 to mitigate concerns that the global financial crisis may have distorted competitive dynamics independently of ownership changes, following Lewellen and Lowry (2021) recommendation to test robustness to crisis-period exclusions. Second, I apply a stricter treatment definition that requires one firm in the pair to be held at a 5% ownership threshold by one merging institution and the other firm to be held at a 3% threshold by the other merging institution. This ensures that at least one side of the pair involves blockholder-level ownership prior to the merger. In both cases, the results remain positive and statistically significant, reinforcing the conclusion that institutional mergers influence competitor removal even when addressing crisis-related shocks and applying more stringent ownership overlap conditions.

Table OA 1: Economic Consequences of Institutional Mergers

Panel A: Effect of Institutional Mergers on Product Similarity

Dependent Variable:	<i>ProductSimilarity</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Treat</i> × <i>Post</i>	-0.005 (-1.562)	-0.006** (-1.995)	-0.003 (-0.952)	-0.006* (-1.825)	-0.007** (-2.311)	-0.005 (-1.491)
<i>Treat</i>	0.002 (0.504)	0.000 (0.047)	-0.001 (-0.168)	0.002 (0.619)	0.001 (0.342)	0.001 (0.270)
<i>Post</i>	-0.002 (-0.932)	-0.000 (-0.251)	-0.003 (-1.352)	-0.004*** (-3.198)	-0.000 (-0.347)	-0.000 (-0.080)
Sample Window	-2 to +2	-2 to +2	-2 to +2	-3 to +3	-3 to +3	-3 to +3
Controls		Yes	Yes		Yes	Yes
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes		Yes	Yes	
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Discloser Industry FE × Year FE			Yes			Yes
Competitor Industry FE × Year FE			Yes			Yes
Observations	41,494	37,686	37,460	56,151	50,889	50,676
R ²	0.766	0.823	0.833	0.749	0.814	0.824

Panel B: Effect of Institutional Mergers on Firm Valuation (Tobin's Q)

Dependent Variables:	<i>AvgTobinQ</i> (1)	<i>TobinQ_discloser</i> (2)	<i>TobinQ_competitor</i> (3)
<i>Treat</i> × <i>Post</i>	0.203*** (2.868)	0.233** (2.065)	0.174** (2.531)
<i>Treat</i>	-0.344*** (-3.865)	-0.413*** (-3.163)	-0.276*** (-2.796)
<i>Post</i>	0.037 (1.605)	0.112*** (2.972)	-0.040 (-1.550)
Sample Window	-3 to +3	-3 to +3	-3 to +3
Controls	Yes	Yes	Yes
Discloser Firm FE	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes
Event FE	Yes	Yes	Yes
Discloser Industry FE × Year FE	Yes	Yes	Yes
Competitor Industry FE × Year FE	Yes	Yes	Yes

Observations	50,670	50,670	50,676
R ²	0.813	0.760	0.806

Panel A presents difference-in-differences regression results examining the effect of institutional mergers on product similarity between competing firms. The dependent variable, *ProductSimilarity*, is measured using the text-based product similarity score developed by Hoberg and Phillips (2016). Panel B reports results on firm valuation, measured by Tobin's Q. The dependent variables include the average Tobin's Q of both firms (*AvgTobinQ*), the Tobin's Q of the disclosing firm (*TobinQ_discloser*), and that of the competitor (*TobinQ_competitor*). In both panels, the treatment indicator (*Treat*) equals 1 if each of the two merging institutions held more than a 3% ownership stake in different firms within a competitor pair prior to the merger. *Post* equals 1 for post-merger years and 0 for pre-merger years, excluding the merger year. Continuous variables are winsorized at the 1st and 99th percentiles. The *t*-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels

Table OA 2: Robustness Tests for the DiD Analysis of Institutional Mergers

Panel A: Baseline DiD Results Excluding Mergers Announced in 2008

Dependent Variable:	<i>CompetitorRemoval</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Treat</i> × <i>Post</i>	0.209*** (3.143)	0.195*** (3.022)	0.137** (2.207)	0.193*** (2.976)	0.193*** (3.188)	0.145** (2.507)
<i>Treat</i>	-0.129*** (-3.095)	-0.088** (-2.273)	-0.056 (-1.464)	-0.114*** (-2.905)	-0.084** (-2.368)	-0.075** (-2.201)
<i>Post</i>				0.283*** (11.727)	0.215*** (10.068)	0.168*** (7.354)
Sample Window	-2 to +2	-2 to +2	-2 to +2	-3 to +3	-3 to +3	-3 to +3
Controls		Yes	Yes		Yes	Yes
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes		Yes	Yes	
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Discloser Industry FE × Year FE			Yes			Yes
Competitor Industry FE × Year FE			Yes			Yes
Observations	21,912	19,852	19,623	29,725	26,953	26,713
R ²	0.361	0.306	0.388	0.304	0.255	0.338

Panel B: Sample with Blockholder Ownership in at Least One Firm of the Pair

Dependent Variable:	<i>CompetitorRemoval</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Treat</i> × <i>Post</i>	0.129*** (2.683)	0.098** (2.196)	0.069 (1.617)	0.103** (2.336)	0.077* (1.902)	0.051 (1.334)
<i>Treat</i>	-0.045 (-1.463)	-0.017 (-0.658)	-0.009 (-0.333)	-0.032 (-1.148)	-0.013 (-0.588)	-0.007 (-0.312)
<i>Post</i>	0.256*** (8.027)	0.204*** (8.035)	0.145*** (5.065)	0.192*** (11.940)	0.118*** (8.995)	0.115*** (8.571)
Sample Window	-2 to +2	-2 to +2	-2 to +2	-3 to +3	-3 to +3	-3 to +3
Controls		Yes	Yes		Yes	Yes
Discloser Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes		Yes	Yes	
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Discloser Industry FE × Year FE			Yes			Yes

Competitor Industry FE × Year FE			Yes			Yes
Observations	40,977	37,281	37,062	55,486	50,378	50,174
R ²	0.324	0.283	0.349	0.281	0.242	0.304

This table presents robustness tests for the difference-in-differences (DiD) analysis examining the effect of institutional mergers on competitor removal. Panel A excludes mergers announced in 2008. The treatment variable, *Treat*, equals 1 if each of the two merging institutions held more than a 3% ownership stake in different firms within a competitor pair prior to the merger. *Post* equals 1 for post-merger years and 0 for pre-merger years, excluding the merger year. Panel B modifies the definition of treatment. In this specification, *Treat* equals 1 if at least one firm in the competitor pair is held by a blockholder (defined as $\geq 3\%$ or $\geq 5\%$ ownership) from each merging institution. Control variables are included in some specifications, as noted in the table. Continuous variables are winsorized at the 1st and 99th percentiles. The *t*-statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table OA 3: Baseline Results Using FactSet Revere Sample

Dependent Variable:	<i>CompetitorRemoval</i>			
	(1)	(2)	(3)	(4)
<i>OwnershipOverlap</i> Measures:	<i>OverlapValue</i>		<i>OverlapBH</i>	
<i>OwnershipOverlap</i>	0.201*** (11.091)	0.196*** (10.802)	0.021*** (14.100)	0.020*** (13.152)
<i>ProductSimilarity</i>	-0.486*** (-21.291)	-0.462*** (-20.448)	-0.486*** (-21.327)	-0.462*** (-20.512)
<i>JointOwnership</i>	-0.018*** (-5.084)	-0.017*** (-4.849)	-0.009*** (-8.469)	-0.008*** (-8.177)
<i>RelationLength</i>	0.046*** (33.181)	0.041*** (29.674)	0.046*** (33.259)	0.041*** (29.716)
<i>MktShare_discloser</i>	0.004 (0.175)	-0.044 (-1.592)	0.000 (0.013)	-0.048* (-1.732)
<i>MktShare_competitor</i>	0.023 (1.281)	0.028 (1.350)	0.020 (1.146)	0.024 (1.170)
<i>HHI_discloser</i>	-0.027* (-1.842)	-0.002 (-0.139)	-0.024* (-1.682)	0.001 (0.032)
<i>HHI_competitor</i>	-0.039** (-2.113)	-0.047** (-2.188)	-0.039** (-2.127)	-0.044** (-2.065)
<i>ROA_discloser</i>	-0.001 (-0.183)	0.004 (0.634)	-0.003 (-0.591)	0.001 (0.240)
<i>ROA_competitor</i>	-0.041*** (-3.705)	-0.020* (-1.761)	-0.044*** (-3.956)	-0.022** (-1.998)
<i>Size_discloser</i>	-0.000 (-0.197)	-0.005*** (-2.941)	-0.001 (-0.489)	-0.005*** (-3.174)
<i>Size_competitor</i>	-0.004** (-2.339)	-0.009*** (-4.561)	-0.005*** (-2.812)	-0.009*** (-4.943)
Discloser Firm FE	Yes	Yes	Yes	Yes
Competitor Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes		Yes	
Discloser Industry × Year FE		Yes		Yes
Competitor Industry × Year FE		Yes		Yes
Observations	142,070	142,070		
R ²	0.179	0.246	0.180	0.247

This table replicates the baseline analysis from Table 5 using competitor relationships from FactSet Revere, which aggregates competitor links from annual reports and other firm-disclosed sources. The dependent variable, *CompetitorRemoval*, equals 1 if a competitor disclosed in the prior year is no longer disclosed in the current year. *OwnershipOverlap* is measured using both *OverlapValue* (Columns 1–2) and *OverlapBH* (Columns 3–4). Control variables, fixed effects, and model

specifications follow those used in Table 5. Variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. The t -statistics reported in parentheses are based on standard errors clustered by firm-pair. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table OA 4: Evidence of Common Owner Interventions

Common Owner	Ownership in	Date	Summary	Primary Source
BlackRock, Vanguard, State Street	U.S. Coal Firms	Nov 2024	Texas and other states filed an antitrust lawsuit alleging these asset managers used their ownership stakes to coordinate ESG-driven coal output reductions across portfolio firms, aiming to influence market structure and raise prices.	Reuters
Twelve major shareholders	Shale-oil-and-gas producers	Dec 2017	Portfolio managers and fund officials holding large stakes in twenty shale companies gathered in Manhattan to 'discuss how to make frackers pump less and profit more.' Subsequent meetings and letters demanded limiting or halting production growth plans.	WSJ
Hodges Capital Management	United, Delta, American, Southwest	Jul 2016	Hodges Capital portfolio manager urged Southwest to boost fares and cut capacity. Other airlines followed suit, and earnings calls confirmed executives reiterated discipline in capacity growth.	Bloomberg
T. Rowe Price, Fidelity, Wellington	Biogen, Acorda, BIO, PhRMA	May 2016	Investor group held private meetings in Boston with biotech and pharma executives and lobbyists to urge better defense of drug pricing. Noted a substantial stake in healthcare holdings.	Bloomberg
Fidelity, BlackRock, Aviva, Janus, Amundi, etc.	Pharmaceutical firms	Jul 2016	In response to COVID-19, large asset managers told drug companies to 'put aside any qualms about collaborating with rivals' and pushed for coordinated development of treatments.	FT
Institutional investors	Royal Dutch Shell	Dec 2018	Institutional owners pressured Shell to set emission reduction targets despite board opposition. Shows owners overriding management on long-term strategy.	WSJ
Norges Bank, T. Rowe Price,	Clorox, Walmart, Coca-Cola, and others	Mar 2020	Investors held private, exclusive meetings with CEOs of major consumer-staples firms. Format enabled	WSJ

Fidelity, Capital Group			unregulated influence over managerial decisions.	
SoftBank	Uber and DoorDash	Jan 2020	SoftBank pushed Uber and DoorDash to merge. DoorDash was reluctant but joined talks due to SoftBank's dual ownership. Deal failed on antitrust grounds.	FT
BlackRock	Deutsche Bank and other EU banks	Oct 2016	BlackRock's vice chair publicly discouraged a national merger and encouraged cross-border consolidation among commonly owned banks.	FAZ
BlackRock	AstraZeneca and Pfizer	May 2014	After AstraZeneca rejected Pfizer's bid, BlackRock—top owner in both—urged re-engagement. Showed active use of cross-holdings to push M&A.	Bloomberg