

Institutional Cross-Ownership and Corporate Financing of Investment Opportunities*

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Abstract

When institutional blockholders cross-own multiple firms within the same industry, they are expected to have more private information about each individual firm, which, in turn, can improve monitoring and coordination. We document that cross-ownership facilitates external financing of investment opportunities, consistent with expectations

1. Introduction

Public firms are becoming increasingly interconnected through institutional investors stock ownership. One reason for this is the large and growing number of individual investors who invest their excess cash and retirement savings through financial institutions (Matvos and Ostrovsky, 2008; Harford, Jenter, and Li, 2011; He and Huang, 2017; He, Huang, and Zhao, 2017). Similar to He and Huang (2017), we refer to a firm with institutional cross-ownership as one whose institutional blockholders that also have significant stakes in other firms within the same industry. For the firm, this cross-ownership presents interesting and important dynamics for the firm because it now has an investor with the incentive to maximize their welfare through their joint ownership of the different firms within the same industry. From an information perspective, this investor also has access to private information about peers in addition to that about the firm, thus making her a relatively more informed investor.¹ The existing literature on institutional cross-ownership has examined how such cross-ownership influences operating activities such as product market coordination, corporate governance, and corporate acquisitions (e.g., Hansen and Lott, 1996; Matvos and Ostrovsky, 2008; He and Huang, 2017; He, Huang, and Zhao, 2017; Azar, Schmalz, and Tecu, 2018; Kang, Luo, and Na, 2018). In this paper, we examine how the presence of investors with cross-ownership affects the ability of the firm to raise capital to finance investment opportunities.

Investment opportunities are vitally important to firms as opportunities to generate shareholder value (Jensen, 1986; Stulz, 1990). After an investment opportunity arises, a firm

¹ Kacperczyk, Sialm, and Zheng

goes through a typical business cycle: financing the opportunity, making investments with that financing, and finally engaging in operations to produce and sell the resultant product (Smith and Ross, 1992; Gaver and Gaver, 1993; Gul, 1999; Ho, Lam, and Sami, 2004; Bolton, Chen, and Wang, 2011). Not surprisingly, investors

(2017) find that cross-ownership of same-industry firms is associated with better monitoring in that institutional cross-owners are more likely to vote against management on shareholder-sponsored governance proposals. Consistent with financial reporting monitoring, He, Li, and Yeung (2018) find that cross-
-wide information advantage discourages earnings management, resulting in negative accruals that increase the association between accruals and cash flows.

Second, institutional investors with cross-ownership can use their private information about different firms to engage in product market coordination among the firms. He and Huang (2017) provide evidence that institutional cross-ownership facilitates product market coordination. Specifically, they find that cross-held firms have higher market share growth than non-cross-held firms. They also find that these firms benefit from explicit forms of product market collaboration such as within-industry joint ventures and they also experience greater innovation productivity and operating profitability. Azar, Schmalz, and Tecu (2018) find that cross-ownership is associated with reduced product market competition in the U.S. airline industry. From the perspective of its capital providers, greater product market coordination can reduce financial risk.

On the other hand, the presence of institutional cross-owners can make investors more concerned about losses from adverse trades and self-dealing, thus hindering financing of investment opportunities. First, potential capital providers might be concerned that institutional cross-owners use their information advantage to engage in trades that are adverse to the other shareholders. For example, cross-owners could sell (buy) shares upon knowledge of news good (bad) for the firm using information gleaned from another firm, and their

cross-ownership increases the likelihood that they privately obtain such information from time to time (Foster, 1981; Holden and Subrahmanyam, 1992; Hou, 2007). Concerns about the potential for adverse trades by existing cross-owners can be likened to concerns that investors have about insider trading when providing the firm with capital (Bhattacharya and Daouk, 2002). Consistent with informed investors trading in the equity market based on information spillovers, Bushman, Smith, and Wittenberg-Moerman (2010) provide evidence that institutional lenders exploit confidential syndicate information by using this information to trade in the equity markets.

Furthermore, institutional cross-owners might induce firms to engage in self-dealing that expropriates the wealth of other capital providers (La Porta et al., 2000; Djankov et al., 2008).³ An institutional investor with cross-ownership has the incentive to trade-off the interest of one firm against another cross-held firm to maximize the benefits of jointly owning multiple firms. Self-dealing can take many different forms such as inter-corporate loans and transfer pricing. Matvos and Ostrovksy (2008) show that when a mutual fund owns both the acquirer and target in an merger setting, it will vote for a merger that is bad for acquirer because the gains from owning the target compensate for the losses from owning the acquirer.

Ultimately, it is an empirical question whether institutional cross-ownership facilitates or hinders corporate financing of investment opportunities. Improved monitoring of agency problems and better product market coordination predict a positive association between

³ While the literature on self-dealing typically portrays the process as involving a controlling party (a ma4h2TJET153se

institutional cross-ownership and corporate financing, whereas concerns about losses from adverse trades and self-dealing predict a negative association.

Using a large sample of U.S. firms during the 1981-2016 period, we find that firms with institutional cross-ownership are able to obtain more external financing in face of investment opportunities, consistent with investors expecting better post-financing outcomes with the presence of institutional blockholders. The effect of institutional cross-ownership is not only statistically, but also economically, significant. When there are investment opportunities, firms with cross-ownership are able to obtain more than double the external financing compared to those without it. Our findings are robust to alternative institutional cross-ownership measures,

agency problems and ii) better product market coordination. We explore these explanations further by examining how the relation between cross-ownership and the financing of investment opportunities varies cross-sectionally with conditions under which these two roles are likely to be more important.

Prior literature has highlighted the fact that when offering financing, capital providers are concerned about agency problems. Prior literature has also emphasized the importance of good public disclosure

dedicated institutional investors, which have low portfolio turnover and high stockholding concentration, more likely to engage in monitoring activities than other types of institutional investors (e.g., Bushee, 1998, 2001). Integrating the techniques use to classify institutional investors in this literature with that in the cross-ownership literature, we find the effect of institutional cross-ownership on corporate financing of investment opportunities is stronger if the cross-owners are dedicated institutional investors. This result provides further support that private-information-based monitoring is one possible channel explaining the positive effect of cross-ownership on the financing of investment opportunities.

Finally, we explore whether firms with institutional cross-ownership use the increased financing to fund more investment projects. As noted earlier, the typical business cycle involves making investments with the financing obtained to leverage on investment opportunities. Consistent with the expectation that firms with more financing engage in more investment, we find that in face of investment opportunities, firms with institutional cross-ownership make more capital, as well as research and development (R&D), investments. We also find that institutional cross-ownership eases firm financial constraints by reducing the sensitivity of investments to operating cash flow.

Our paper contributes to the literature in two ways. First, we extend the literature that examines how additional corporate financing is affected by considerations of presence, incentives, and possible actions by the nature of existing capital providers, all of which could affect the assessment of the risks and returns of providing the financing. For example, the literature on initial public offerings (IPOs) has examined how lockups that restrict share sales by existing shareholders affect the attention of new investors, IPO pricing, stock returns when

the lockup expires, and disclosure strategies (e.g., Field and Hanka, 2001; Bradley et al., 2001; Aggarwal, Krigman, and Womack, 2002; Ertimur, Sletten, and Sunder, 2014). Prior studies have also examined how managerial equity ownership affects financing activities (e.g., Stulz, 1988; Datta, Iskandar-Datta, and Raman, 2005). Giannetti et al. (2011) find that firms that obtain more credit from suppliers are also more likely to obtain more bank lending, especially less informed bank lending, consistent with the presence of trade creditors providing a useful signal to other lenders.⁴ Consistent with agency problems in family firms, Chen, Dasgupta, and Yu (2014) find that greater scope for expropriation in family firms limits external financing that is more sensitive to information asymmetry. Our paper contrasts and complements the above literature by investigating how cross-ownership of same-industry firms by institutional investors can facilitate a firm's financing of investment opportunities. An interesting insight from our paper is that more private information held by an investor can help a firm attract financing if the private information is expected

from our study is that the institutional cross-ownership of same-industry firms not only benefits the firm in terms of its current product markets, it enables the firm to obtain the necessary financing to take advantage of investment opportunities. Consistent with the existing literature that has documented the benefits of cross-ownership in terms of monitoring of agency problems, we find evidence that suggests that capital providers take these benefits into account when providing capital. Overall, institutional cross-ownership appears to be beneficial to a firm at various stages in its business cycle after an investment opportunity arises. It suggests that the trend towards greater institutional cross-ownership might be good

Section 2 describes our sample and variables. The empirical analyses examining the relation between institutional ownership and the corporate financing of investment opportunities are presented in Section 3. Section 4 provides further cross-sectional tests of this relation. Section 5 discusses results of supplementary analyses. Finally, Section 6 concludes.

2. Sample and Variables

2.1. Sample

We obtain data used to compute institutional cross-ownership from Thomson Financial's CDA Spectrum database, which collects and reports quarterly institutional ownership information from form 13F. Financial statement information is obtained from Compustat and stock return information from the Center for Research in Security Prices (CRSP). To be included in our sample, a firm

belong to an industry with at least two firms. We also exclude firms in the financial (SIC 6000-6999) and utility (SIC 4900-4999) industries because these are regulated industries and have distinct external financing and investment opportunities. To mitigate the effect of outliers, we winsorize all the variables (except dummy variables) at both the upper and lower one percentiles. Since the institutional ownership data starts from 1980, we restrict our sample period to 1981-2016. Our final sample consists of 125,017 firm-year observations for 14,803 unique firms listed in the U.S.

2.2. Variable Construction

2.2.1. Cross-Ownership Variables

To construct our cross-ownership variables, we follow He and Huang (2017) and calculate for each firm the proportion of shares held by each institutional investor in each quarter using the Thomson Financial 13F database. We define an institutional investor as the blockholder of a firm if it holds a proportion of shares that exceeds 5% of shares outstanding. Cross-ownership is defined as the case when an institutional investor is the blockholder of more than one firm in the same four-digit SIC industry at a given point in time.

Our main independent variable is the cross-ownership dummy (*DCROSS*), which is a dummy variable equal to one if the firm is cross-owned by at least one institutional blockholder in any of the four quarters

quarter. The average number of all cross-owned firms (*AVGNUM*) is the average number of

our tests.

3. Relation between Institutional Cross-Ownership and the Corporate Financing of Investment Opportunities

3.1. Baseline Analysis

In this section, we conduct our baseline analysis on the effect of institutional cross-ownership on the corporate financing of investment opportunities. The regression design is as follows.

$$\begin{aligned}
 & FINANCING_{i,t} = \beta_1 DCROSS_{i,t-1} + \beta_2 SALEGR_{i,t-1} + \beta_3 DCROSS_{i,t-1} \\
 & \quad + \beta_4 SALEGR_{i,t-1} + \beta_5 CASH_{i,t-1} + \beta_6 SIZE_{i,t-1} + \beta_7 LEV_{i,t-1} + \beta_8 ROA_{i,t-1} \\
 & \quad + \beta_9 PPE_{i,t-1} + \beta_{10} CFO_{i,t-1} + \beta_{11} DIV_{i,t-1} + \beta_{12} ALTMAN_{i,t-1} + \beta_{13} HHI_{i,t-1} \\
 & \quad + IND + YR + \epsilon_{i,t}
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 & FINANCING_{i,t} = \beta_1 DCROSS_{i,t-1} + \beta_2 TOBINQ_{i,t-1} + \beta_3 DCROSS_{i,t-1} \\
 & \quad + \beta_4 TOBINQ_{i,t-1} + \beta_5 CASH_{i,t-1} + \beta_6 SIZE_{i,t-1} + \beta_7 LEV_{i,t-1} + \beta_8 ROA_{i,t-1} \\
 & \quad + \beta_9 PPE_{i,t-1} + \beta_{10} CFO_{i,t-1} + \beta_{11} DIV_{i,t-1} + \beta_{12} ALTMAN_{i,t-1} + \beta_{13} HHI_{i,t-1} \\
 & \quad + IND + YR + \epsilon_{i,t}
 \end{aligned} \tag{2}$$

where i denotes the firm, t denotes the year, IND is industry fixed effects based on the two-digit SIC code, YR is year fixed effects, and $\epsilon_{i,t}$ is the error term. The regression is performed using ordinary least squares (OLS). The t -statistics are computed using standard errors clustered at both the firm and year levels. The dependent variable is total financing ($FINANCING$) and the independent variable of interest is the interaction term between institutional cross-ownership and investment opportunities (i.e., $DCROSS \times SALEGR$ and $DCROSS \times TOBINQ$), which captures the financing of investment opportunities in the presence of institutional cross-ownership.

institutional cross-ownership, there is a further increase in total financing of $0.007 \times 4.212 = 0.029$. The results further confirm our findings in terms of economic significance.

With respect to control variables, Table 3 shows that total financing is positively and significantly related to tangibility, dividend dummy, and the Altman's Z-score, while negatively and significantly related to cash holdings, firm size, leverage, return on assets, and operating cash flow. The results are largely consistent with prior literature (e.g., Lemmon and Roberts, 2010).

Overall, the findings in the baseline regression suggest that firms with institutional cross-ownership are able to obtain more external financing when they have investment opportunities, consistent with institutional cross-ownership leading to an expectation of improved operations and enhanced monitoring, which benefits future capital providers and makes them more willing to provide finance for

48 industry classification, respectively.⁷ The results are presented in Panel A of Table 4 and show that the coefficients of the interaction terms between these measures and the two investment opportunity measures are all positive and statistically significant, suggesting that our findings hold for alternative institutional cross-ownership measures.

Second, we examine whether our findings hold for alternative industry classification in calculating industry-
two growth opportunity measures based on two-digit SIC industry. In this section, we just the
-French 48 industry classifications,
respectively. The results are reported in Panel B of Table 4. For both alternative industry classifications, the coefficients of the interaction terms between institutional cross-ownership and the two investment opportunity measures are positive and statistically significant, suggesting that our findings hold for alternative industry classifications in adjusting sales

Third, we examine whether our results hold in alternative samples and report the results in Panel C of Table 4. First, we restrict our sample to manufacturing industries (SIC codes 2000-3999), as these industries are capital intensive and should have greater demand for external financing for investment opportunities. Second, we use a refined industry classification by removing industries for which the fourth digit of their SIC codes is 0 or 9. Clarke (1989) and Kahle and Walking (1996) state that these SIC codes may not define economic markets accurately. Third, we only include firm-years with non-zero block-

firm -years to have at least 20 observations. The results show that the coefficient on the interaction term between the cross-ownership dummy and investment opportunities is positive and statistically significant in almost all the samples, suggesting the robustness of our findings to alternative samples.

Last, we investigate the robustness of our results to alternative model specifications and report the results in Panel D of Table 4. In the first test, we replace industry fixed effects with firm fixed effects. The purpose of this test is to mitigate the omitted variable concerns by further controlling for time-invariant firm characteristics. We continue to find that cross-ownership increases the financing of investment opportunities. In the second test, we use the decile ranking of all the variables in the regression to make sure that our findings are not driven by skewness in some of the variables. The results show that the coefficient on the interaction term between the cross-ownership dummy and investment opportunities is positive and statistically significant in all the specifications, suggesting that our findings are robust to alternative model specifications.

3.3. Endogeneity

There are concerns that our results may be driven by endogeneity problems. It is likely that firm financing, investment opportunities, and institutional cross-ownership are all correlated with variables omitted from the regression. Even if we control for a bunch of variables and various fixed effects, we still could not completely rule out this possibility. It is also likely that firms with greater investment opportunities and easier financing are more attractive to institutional investors, which results in more cross-ownership. In this section, we follow He and Huang (2017) and address the potential omitted variable and reverse causality

problems using a quasi-natural experiment of financial institution mergers that cause exogenous changes in institutional cross-ownership.

Financial institution mergers are common in the U.S. and usually occur for reasons unrelated to the institutional stock holdings. For example, many of the mergers between financial institutions are due to consolidation in the financial sector in response to deregulations such as the Gramm-Leach-Bliley Act of 1999, which allowed the consolidation of commercial banks, investment banks, securities companies, and insurance companies. He and Huang (2017) note that over 60% of the financial institution mergers in their sample are due to banking sector consolidation. Jayaraman, Khorana, and Nelling (2002) also mention that mergers between asset management firms are largely motivated by business strategy considerations such as economies of scale in fund operations and the expansion of financial product offerings.

Due to liquidity constraints, the institutional investors (IIB) are forced to sell their shares in the market. This is particularly true for the institutional investors who are not actively involved in the company's operations. The institutional investors who are actively involved in the company's operations are more likely to hold their shares for a longer period of time. This is because they are more likely to have a long-term investment horizon and are more likely to be involved in the company's operations. The institutional investors who are not actively involved in the company's operations are more likely to be short-term investors and are more likely to sell their shares in the market. This is because they are more likely to be looking for a quick return on their investment and are more likely to be influenced by market conditions. The institutional investors who are actively involved in the company's operations are more likely to be long-term investors and are more likely to hold their shares for a longer period of time. This is because they are more likely to have a long-term investment horizon and are more likely to be involved in the company's operations. The institutional investors who are not actively involved in the company's operations are more likely to be short-term investors and are more likely to sell their shares in the market. This is because they are more likely to be looking for a quick return on their investment and are more likely to be influenced by market conditions.

We use 12 financial institution merger events identified by He and Huang (2017). The authors use the SDC Mergers and Acquisitions database and search mergers between two 13F institutions (or their parent firms) in the financial sector (SIC codes 6000-6999) between 1983 and 2011. They further require the merger to have been completed within one year after the initial announcement and the target institution to have stopped filing 13F forms within one year after the completion of the deal.

We conduct a difference-in-difference (*DiD*) test around financial institution mergers. We define the treatment firms as firms that were block-held by one of the merging institutions during the quarter immediately before the merger announcement date and the other merging institution did not block-hold the firm but block-held at least one of its same industry peers during the same pre-merger quarter. The idea is that the treatment firms should not have been cross-held by the merging institutions before the merger and are likely to be cross-held by the merged institution after it. We define the control firms as firms that were block-held by the same merging institution that block-holds the treatment firms during the quarter immediately before the merger announcement date while the other merging institution block-held none of the firm's same-industry peers during the same pre-merger quarter. The reason for selecting the control firms from the same merging institution is to control for the merging institution managerial skills and investment styles that might be related to firm characteristics such as financing and investment opportunities. We create two dummy variables. The treatment dummy (*TREAT*) is a dummy variable equal to one for the treatment firms and zero for the control firms. The post-merger dummy (*POST*) is a dummy variable equal to one for the three years after the merger and zero for the three years before it. We include the interaction terms

between the two dummies and the measures of growth opportunities in the regression specification in Equations (1) and (2).

The DiD results are presented in Table 5. The sample of the test is much smaller (2,832 observations) as compared to the main analysis. In Columns (1) and (2) in which firm-merger fixed effects

more financing when they have good investment opportunities. We propose that institutional cross-ownership enhances shareholder monitoring, which mitigates agency conflicts between managers and capital providers and that institutional cross-ownership improves product market coordination among competitors, which reduces the downside risk of capital providers and that. In this section, we conduct cross-sectional tests to differentiate the channels through which institutional cross-ownership enhances firm financing of investment opportunities.

4.1. The Role of Monitoring by Institutional Cross-owners

External capital providers usually do not have access to firm inside information and thus mainly rely on public information from firm disclosures in monitoring managers. Prior studies have examined the role of the quality of public information in the monitoring of firms. As a result, the quality of firm financial reporting plays an important role in shareholder

where i denotes the firm, t denotes the year, and ϵ is the error term. TA is the total accruals of the firm, calculated as income before extraordinary items minus cash flow from operating activities adjusted for extraordinary items and discontinued operations. AT is the firm's book assets. $Sales$ is the change in sales. PPE denotes gross property, plant, and equipment. The above model attempts to capture the extent to which reported accruals deviate from the absolute values of accruals represent larger deviations from normal/expected levels, higher values of items

$DCROSS \times SALEGR$ and $DCROSS \times TOBINQ$ are larger for the subsample of firms with high financial statement opacity and the differences are statistically significant (p -value 0.014 and 0.061, respectively). The results show that the effect of institutional cross-ownership on corporate financing for investment opportunities is stronger for firms with higher financial statement opacity. Overall, the findings are consistent with the argument that better private monitoring by institutional cross-owners is more important when a more opaque public environment makes it typically more difficult for external monitoring based on publicly available information (Biddle, Hilary, and Verdi, 2009).

In the main analysis, we treat all the institutional investors as a homogenous group in defining cross-ownership. Bushee (1998, 2001) classifies institutional investors into three types based on their past investment behavior. Dedicated institutional investors are characterized as having low portfolio turnover and high stockholding concentration, portfolio turnover and highly diversified portfolio holdings. These investors are more interested in short-term trading profits than long-

Columns (1)-(8) of Table 9 presents the results. Columns (1) and (2) show that the coefficients of $DCROSS \times SALEGR$ and $DCROSS \times TOBINQ$ are both positive and statistically significant (t -statistics 3.88 and 5.47, respectively) when capital expenditure is the dependent variable. The finding suggests that cross-held firms increase their investments in capital assets when there are more growth opportunities. The results for R&D expenditure are presented in Columns (3) and (4) and show that cross-held firms also increase their investments in R&D projects when they have more growth potential. Columns (5) and (6) show that the coefficient of $DCROSS \times SALEGR$ is insignificant and the coefficient of $DCROSS \times TOBINQ$ is statistically significant (t -statistics 4.54) in the regressions in which acquisition expenditure is the dependent variable. Last, Columns (7) and (8) show that the coefficients of $DCROSS \times SALEGR$ and $DCROSS \times TOBINQ$ are both positive and statistically significant (t -statistics 3.82 and 8.73, respectively), indicating that institutional cross-ownership increases the net investments of firms with more growth opportunities.

Further, we investigate whether institutional cross-ownership affects the sensitivity of firm investments to operating cash flow, because prior studies (e.g., Fazzari, Hubbard, and Petersen, 1988; Hovakimian, 2009) argue that higher investment-cash flow sensitivity indicates a greater cost of external financing and hence higher financial constraint. We follow Biddle and Hilary (2006) and Hovakimian and Hovakimian (2009) and measure investment-cash flow sensitivity ($CFSI$) as the difference between the cash-flow-weighted time-series average investment of a firm and its unweighted arithmetic time-series average investment.

We replace total financing with investment-cash flow sensitivity in the regression

specifications in Equations (1) and (2). The results are presented in Columns (9)-(10) of Table 8, which show that the coefficients of $DCROSS \times SALEGR$ and $DCROSS \times TOBINQ$ are negative and statistically significant in both columns (t -statistics -2.07 and -3.33, respectively) in which investment-cash flow sensitivity is the dependent variable. The results suggest that institutional cross-ownership also reduces the cost of external financing and hence financial constraint for growth firms.

Overall, the findings are consistent with our argument that institutional cross-ownership increases external financing when firm investment opportunities are high. Increased financing makes firms better able to fund their capital and R&D investments, which eases firm

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Our paper extends the literature that examines how corporate financing is affected by considerations of the presence, incentives, and possible actions of existing capital providers, all of which could affect the assessment of the risks and returns to providing financing. Our paper contrasts and complements this set of literature by investigating how institutional cross-ownership of same- investment opportunities. Our paper also extends the nascent literature on the cross-ownership of same-industry firms by institutional investors. Consistent with the existing literature that has documented the benefits of cross-ownership in terms of the monitoring of agency problems, we find evidence that suggests that capital providers take these benefits into account when providing financing. The findings help deepen our understanding of the role of cross-ownership and

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APPENDIX: VARIABLE DEFINITIONS

Variables	Variable Definitions
Financing Variables	
<i>FINANCING</i>	= External financing, measured as

<i>CFO</i>	=	assets. Source: Compustat. Cash flow from operations, measured as operating cash flow divided by total assets. Source: Compustat.
<i>DIV</i>	=	Dividend dummy, measured as a dummy variable equal to one if the firm pays a dividend and zero otherwise. Source: Compustat.
<i>ALTMAN</i>	=	-score, measured following Altman (1968) as $(3.3 * \text{operating income after depreciation} + 0.999 * \text{sales} + 1.4 * \text{retained earnings} + 1.2 * \text{working capital}) / \text{total assets} + (0.6 * \text{common shares outstanding} * \text{share price}) / \text{total liabilities}$. Source: Compustat.
<i>HHI</i>	=	Hirschman Index, measured as the sum of squared market shares -digit SIC industry in Compustat. Source: Compustat.

Other Variables

<i>PCM</i>	=	Price-cost margin, measured as aggregate sales divided by aggregate -digit SIC industry, where operating costs include the cost of goods sold; selling, general, and administrative expenses; depreciation; depletion; and amortization. Source: Compustat.
<i>ACCTCOMP</i>	=	Financial statement comparability, measured following De Franco, Kothari, those

TABLE 1. Summary Statistics

Mean	S.D.
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TABLE 3. Institutional Cross-Ownership and Corporate Financing of Investment Opportunities

VARIABLE	FINANCING	
	(1)	(2)
$DCROSS_{i,t-1} \times SALEGR_{i,t-1}$	0.026 ^{***} (3.51)	
$DCROSS_{i,t-1} \times TOBINQ_{i,t-1}$		0.007 ^{***} (6.07)
$DCROSS_{i,t-1}$	0.001 (0.52)	-0.001 (-0.03)
$SALEGR_{i,t-1}$	0.019 ^{***} (6.24)	
$TOBINQ_{i,t-1}$		0.006 ^{***} (10.79)
$CASH_{i,t-1}$	-0.127 ^{***} (-15.68)	-0.119 ^{***} (-14.88)
$SIZE_{i,t-1}$	-0.113 ^{***} (-40.10)	-0.109 ^{***} (-39.01)
$LEV_{i,t-1}$	-0.134 ^{***} (-11.83)	-0.143 ^{***} (-12.43)
$ROA_{i,t-1}$	-0.134 ^{***} (-11.27)	-0.126 ^{***} (-10.76)
$PPE_{i,t-1}$	0.118 ^{***} (13.49)	0.129 ^{***} (14.94)
$CFO_{i,t-1}$	-0.086 ^{***} (-7.37)	-0.093 ^{***} (-8.02)
$DIV_{i,t-1}$	0.041 ^{***} (12.95)	0.039 ^{***} (12.32)
$ALTMAN_{i,t-1}$	0.004 ^{***} (10.29)	0.003 ^{***} (7.39)
$HHI_{i,t-1}$	-0.018 (-1.64)	-0.014 (-1.21)
Obs.	125,017	125,017
Adj. R ² (%)	34.2	34.7

This table reports the regression results of the relation between institutional cross-ownership and the corporate financing of investment opportunities. The regressions are performed using OLS, with the t -statistics (in parentheses) corrected for error heteroskedasticity and within-firm error clustering. The intercept, year fixed effects, firm fixed effects are included in all the regressions but not reported. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are available

$TOBINQ_{i,t-1}$		0.00548 ^{***} (10.78)
(3) Block-held firm-years only (Obs. 62,998)		
$DCROSS_{i,t-1} \times SALEGR_{i,t-1}$	0.006 (0.59)	
$DCROSS_{i,t-1} \times TOBINQ_{i,t-1}$		0.008 ^{***} (5.50)
$DCROSS_{i,t-1}$	-0.014 ^{***} (-5.03)	-0.014 ^{***} (-4.98)
$SALEGR_{i,t-1}$	0.020 ^{***} (3.22)	
$TOBINQ_{i,t-1}$		0.004 ^{***} (4.72)
(4) Four digit SIC Industry-years with more than 20 observations only (Obs. 59,561)		
$DCROSS_{i,t-1} \times SALEGR_{i,t-1}$	0.026 ^{***} (2.65)	
$DCROSS_{i,t-1} \times TOBINQ_{i,t-1}$		0.009 ^{***} (5.47)
$DCROSS_{i,t-1}$	-0.002 (-0.49)	-0.005 (-1.08)
$SALEGR_{i,t-1}$	0.016 ^{***} (3.96)	
$TOBINQ_{i,t-1}$		0.006 ^{***} (7.76)

Panel D. Alternative Specifications

This table reports the results of the difference-in-differences (DiD) test around financial institution mergers. We place a firm in the treatment group if it is block-held by one of the merging institutions during the quarter immediately before the merger announcement date and at least one

TABLE 6. The Role of Monitoring by Institutional Cross-owners

Panel A: Partition by Financial Statement Comparability

VARIABLE	<i>FINANCING</i>			
	Low (1)	High (2)	Low (3)	High (4)
$DCROSS_{i,t-1} \times SALEGR_{i,t-1}$	0.029** (1.97)	-0.005 (-0.38)		
$DCROSS_{i,t-1} \times TOBINQ_{i,t-1}$			0.012*** (4.55)	0.001 (0.62)
$DCROSS_{i,t-1}$	-0.010	-0.005*		

TABLE 7. The Role of Product Market Coordination by Institutional Cross-owners

Panel A: Partition by Herfindahl-Hirschman Index

VARIABLE	<i>FINANCING</i>			
	Low (1)	High (2)	Low (3)	High (4)
$DCROSS_{i,t-1} \times SALEGR_{i,t-1}$	0.031*** (3.18)	0.014 (1.13)		
$DCROSS_{i,t-1} \times TOBINQ_{i,t-1}$			0.009*** (5.46)	0.004** (2.52)
$DCROSS_{i,t-1}$	0.002 (0.44)	0.004 (1.37)	0.001 (0.02)	0.004 (1.14)
$SALEGR_{i,t-1}$	0.013*** (3.15)	0.023*** (4.84)		
$TOBINQ_{i,t-1}$			0.005*** (6.20)	0.006*** (8.59)
Controls and fixed effects included				
Obs.	62,480	62,537	62,480	62,537
Adj. R ² (%)	35.4	34.0	35.9	34.4
Difference test	0.69 (<i>p</i> = 0.405)		2.57 (<i>p</i> = 0.108)	

Panel B: Partition by Price-Cost Margin

VARIABLE

TABLE 9.

