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Do Managers learn from institutional investors through direct interactions?☆

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ABSTRACT

I examine whether corporate managers learn from institutional investors through direct interactions at investor conferences. I find that managers seek more direct interactions with institutional investors at conferences when they have a greater need for information about their firm's product markets and supply chains. This relation is stronger when managers expect investors to be knowledgeable. I also show that the information acquired from conference interactions is reflected in subsequent manager decisions. First, direct interactions help managers to extract information embedded in stock prices and later use it to make investments. Second, within the same firm and month, managers' personal stock trades immediately after attending a conference earn higher abnormal returns, consistent with direct interactions expanding their private information set. Overall, these findings suggest that managers can acquire decision-relevant information from direct interactions with institutional investors of their firm.

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1. Introduction

This paper examines managerial learning from direct interactions with institutional investors at investor conferences. Prior literature recognizes that corporate managers do not have perfect knowledge about every decision-relevant aspect of their firms (Hutton et al., 2012; Ben-David et al., 2013) and can learn from external parties. One mechanism is to glean information from stock prices, which aggregate informed investors' private information.[1] This study documents another

[1] See Goldstein (2022) for a review of the literature on managerial learning from information in stock prices to make real decisions. Prior studies show that prices aggregate informed investors' private information about investment opportunities (e.g., Chen et al., 2007; Edmans et al., 2017; Jayaraman and Wu, 2020; Goldstein, Yang, and Zuo, 2022; Pinto, 2022; Ye et al., 2022), cash flows (Zuo, 2016), and M&A synergies (Luo, 2005).

mechanism through which managers learn from institutional investors — direct interactions at investor conferences — and highlights the two-way information flow between managers and investors during such interactions.

There is limited large-scale evidence on whether managers of public firms learn from direct interactions with their investors, despite their regular communications.[2] An investor conference is a salient medium of manager-investor interactions; it convenes informed participants with potentially complementary information in a well-defined physical setting and facilitates two-way information flow (Bushee et al., 2011). Managerial learning from investors at a conference can occur in two ways. First, investors often express their views when asking questions during the public question-and-answer (Q&A) sessions at the conference.[3] While corporate managers usually do not ask questions during their public presentations, they can learn about investors' opinions by presenting various aspects of the firm and providing detailed answers during public Q&As to seek feedback and solicit investor questions. Second, managers can make themselves available for private breakouts and one-on-one meetings with investors at the conference for more in-depth discussions around proprietary topics.

I examine both the incentives and consequences of managerial learning through direct interactions. While managerial learning is inherently unobservable and cannot be measured directly, the conference setting allows researchers to observe the frequency, nature, and content (to a certain extent) of interactions between managers and investors. Using conference transcripts, I develop six empirical proxies that capture the frequency of public and private meetings and estimate the degree of information flow between managers and investors at the conference, building on the notion that interactions and information flow are the necessary conditions for learning to occur. I first examine whether managers seek more direct interactions when they have a greater need for external information that their institutional investors are likely to possess, e.g., information related to the product market as well as information about upstream and downstream industries. Second, I examine whether managers' subsequent decisions reflect information acquired through direct interactions. Building on prior work on managerial learning from prices, I investigate whether conference interactions help managers to extract relevant information from stock prices to make investment and acquisition decisions. Further, to shed light on whether a manager's private information set changes after attending a conference, I compare the profitability of her stock trades immediately after a conference with other insider trades made in the same month of the firm.

Using 54,742 conference transcripts collected for Russell 3000 companies, I construct a firm-quarter panel with 68,943 observations by merging the transcript sample with the Compustat/CRSP universe from 2004 to 2017. To examine managers' incentives for direct interactions, I measure a manager's demand for peer (supply chain) information using the frequency and magnitude of product-market announcements made by peer firms (suppliers and customers). The notion is that managers often need to pay attention to their peers and monitor supply chain conditions in formulating product-market strategies (Foucault and Fresard, 2014; Bernard et al., 2020). As a result, they are likely to need more information when there is an increase in product-market activities among peer firms and connected firms along the supply chain. I document a positive association between demand for product-market (supply chain) information and conference interactions. Further, I argue that this relation should be stronger when managers expect their institutional investors to be knowledgeable, specifically with regard to the types of information they need. I partition the sample based on managers' expectations of the amount of product-market (supply chain) knowledge that their institutional investors are likely to have, measured using investor portfolio holdings in these sectors. Consistently, I document a stronger association between managers' demand for product-market (supply chain) information and direct interactions when institutional investors are knowledgeable about the product market (supply chain). This relation is robust to including firm and year-quarter dummies, controlling for proxies of investor information demand, and exploiting variations on the extent of interactions conditioning on conference attendance.

One concern with this finding is that product market activities are correlated among linked firms. An increase in peer firms' announcements could be concurrent with the industry becoming more attractive, investors demanding more information, and more conferences being organized. Consequently, it is possible that managers attend conferences because of *investors demanding information*, instead of learning from investors. To address this concern, I use a subsample of conferences that 1) are regularly scheduled at fixed times of the year or 2) are not focused on a particular industry. Regular conferences are scheduled well in advance and should not cluster around new developments in a product market. Broad-themed conferences invite firms from multiple industries and are unlikely to be organized because a particular industry becomes more attractive. My results and inferences remain unchanged.

Next, I investigate how information learned through direct interactions is reflected in subsequent manager decisions. Prior literature recognizes that stock prices can reveal investors' private information that is new to the manager, who in turn uses that information to make investment decisions (e.g., Luo, 2005; Chen et al., 2007). However, price as an aggregate signal is likely to contain noise (Dessaint et al., 2019), and the aggregation process often results in a loss of dimensionality. Building on two settings of learning from prices documented in prior literature, I investigate whether direct investor interactions help managers to extract the decision-relevant information embedded in prices. First, I show that managers' ability to extract information in stock prices to make corporate investments, as reflected in investment-to-price sensitivity, is higher with more

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[2] For instance, a survey of 344 buy-side analysts shows that 95% of them communicate with corporate executives one to three times a year, and 53% of them have more than twelve private communications a year (Brown et al., 2016). Park and Soltes (2018) document that a Nasdaq-listed biotechnology firm conducted 66 private meetings with investors over nine months in 2016, out of which 30 meetings took place at investor conferences.

[3] Appendix B presents excerpts from the public Q&A sessions of an investor conference at which institutional investors express their views about product markets and supply chains.

direct conference interactions. Second, I show that the positive association between merger and acquisition (M&A) announcement market returns and the probability of subsequent deal completion increases with deal-related conference discussions between the bidder's manager and investors. Collectively, these findings suggest that conference interactions help managers extract decision-relevant information from stock prices and incorporate it into corporate investment and acquisition decisions.

Finally, research has shown that stock trades by corporate insiders often reflect their private information about their firms' future cash flows (Seyhun, 1992; Ke et al., 2003; Piotroski and Roulstone, 2005). If conference interactions expand the manager's information set, it should be reflected in the timing and profitability of her stock trades immediately after attending a conference. This is because a manager can not only acquire investors' private information (which can be impounded in prices through investors' trades) but also combine investors' information with her private information into a mosaic that generates a superior signal (which has yet been reflected in prices). I gather a sample of 28,201 open-market insider transactions executed within two months before or after a conference. My analysis focuses on the narrow window of trades made by executives from the same firm and in the same month, which controls for omitted correlated variables that do not vary within a given firm-month. First, I show that executives who participated in an investor conference (i.e., participating insiders) are more likely to use their information advantage and trade in the seven-day post-conference window. Second, I examine insider trading profits, which should reflect the trading manager's private information, and compare trades made by participating insiders immediately after the conference with other insider transactions of the same firm. I find that the trades made by participating insiders within seven days of attending a conference earn an incremental alpha of 0.03% per day, over the 30 days following the transaction. This translates to a risk-adjusted return of $511 ($143) per day, over the 30 days following the transaction, based on the average (median) dollar transaction volume in the sample. Overall, these findings are consistent with participating managers' private information sets expanding after conference interactions.[4]

While the previous test shows that conference attendance is associated with insider trading profits, consistent with managers learning at the conference, I acknowledge that my empirical methodology does not unambiguously identify a *causal* effect of managerial learning from direct interactions, as with prior studies on managerial learning (Chen et al., 2007; Foucault and Fresard, 2014; Zuo, 2016). Both a manager's learning behavior and her private information set are inherently unobservable. I attempt to overcome this challenge by estimating the extent of information flow between managers and investors, utilizing situations during which managers are likely to have a higher demand for external information, and examining conferences that are unlikely to be scheduled in response to investors' information demand. The findings in this paper rely on association tests; however, the body of evidence across the various cross-sectional tests is more consistent with managers learning from investors than with possible alternative explanations.

My study contributes to several streams of literature. First, I contribute to the literature on investor conferences. Prior studies focus almost exclusively on the transfer of information from managers to investors during these interactions and the associated benefits to brokers, investors, and firms (Green et al., 2014a, 2014b; Solomon and Soltes, 2015; Bushee et al., 2011, 2017). However, the literature has largely neglected the potential information transfer in the other direction: from investors to managers, which is the focus of this study. In addition, I document another benefit of voluntary managerial disclosure during investor conferences: by presenting various aspects of the firm and answering questions, managers can elicit valuable feedback from institutional investors. Therefore, my study relates to the work of Jayaraman and Wu (2020), who examine the use of voluntary disclosure (i.e., capital expenditure forecasts) to obtain market feedback.

Second, my study complements the literature on learning from prices (e.g., Chen et al., 2007; Luo, 2005; Zuo, 2016). Although stock prices aggregate information, managers may not be able to always extract relevant information about the nuances of their firms from price movements. This is because stock prices contain noise, and the aggregation process results in a loss of dimensionality (Bond et al., 2010; Dessaint et al., 2019). My study extends this literature by showing that direct interactions with investors can help managers understand price movements and extract decision-relevant information from prices.

Third, my study provides broad-based evidence on how institutional investors can inform corporate managers. Prior literature recognizes that venture capitalists (VCs) and hedge fund activists offer value-added advice to their portfolio firms (Brav et al., 2008; Da Rin et al., 2013). However, VCs and activists are only involved with (and therefore can only influence) a few firms. On the other hand, U.S. public firms regularly interact with institutional investors, and learning can happen without costly interventions. As a result, learning from direct interactions with investors may be more widespread, despite little empirical evidence so far.[5]

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[4] In a related study, Bushee et al. (2022) examine managerial opportunism-motivated trades before a conference and show that managers can opportunistically release good news before a conference, 'hype' the stock, and sell at inflated prices. This paper differs from Bushee et al. (2022) as I examine trades *after* a conference and compare trades made by different managers of the *same* firm. On the other hand, Bushee et al. (2022) examines trades *before* a conference and compares trades *between* firms with different pre-conference disclosure pattern. I discuss additional analyses in Section 5.2.3 that distinguish my results from managerial opportunism.

[5] The market size of firms (which are early-stage startups) that interact regularly with venture capitalists is much smaller than the market size of public firms that interact regularly with institutional investors. In 2021, total VC investment in the U.S. reached $341.5 billion (Pitchbook, 2022), while the market capitalization of U.S. public firms totaled almost $38 trillion, with institutional holdings account for around 65%. In addition, hedge fund interventions are infrequent, averaging between 78 and 142 campaigns a year (Brav et al., 2008; Klein and Zur, 2009). In comparison, the sample in this paper documents, on average, 3,910 conference interactions each year.

2. Institutional background and related literature

2.1. Manager-investor interactions at investor conferences

Initiating and maintaining investor relationships has become increasingly important for public firms. Many firms have hired dedicated investor relations officers to manage the channel of communications with investors, understand their concerns, and gather feedback (Brown et al., 2019; Hope et al., 2021). Manager-investor interactions can take place during (i) public meetings at investor conferences, (ii) private meetings at investor conferences, and (iii) private non-deal roadshows and in-house meetings (Solomon and Soltes, 2015). This paper focuses on public and private meetings at investor conferences as the medium for manager-investor interactions and learning for two reasons. First, compared to in-house meetings and non-deal roadshows, investor conferences convene many investors with diverse backgrounds and expertise, which in turn facilitate information exchange. Bushee et al. (2011) show that the information content of investor conferences depends on the composition of the audience, highlighting the role of the audiences' private information in determining the extent of information flow during conferences. Second, researchers can observe the content of public meetings, estimate the occurrence of private meetings, and estimate the degree of information flow between investors and managers at an investor conference. In contrast, there is limited information available on in-house meetings and non-deal roadshows for U.S. public firms.[6]

Investor conferences are organized by third-party brokers and involve attendees from multiple firms.[7] They usually start with managers making prepared remarks on their firm's strategy, followed by public Q&As for managers to respond to questions raised by institutional investors. At the conference, managers are careful not to release undisclosed information events because of concerns over Reg FD (Bushee et al., 2011). Outside of public meetings, some conference organizers give the attending firms the option to meet with investors privately through one-to-one meetings or breakout sessions (Bushee et al., 2017).

Managers can learn from investors during investor conferences in several ways. First, investors often express their views during Q&A sessions, and the manager can encourage investors to ask questions when she is more willing to answer them.[8] Second, while public meetings generally do not allow managers to ask a question, managers can choose to present particular aspects of the firm to learn from investors' reactions at the conference and solicit feedback. Furthermore, management presentations can further attract investor attention, encourage Q&A participation, and encourage attendance at private breakouts, all of which will facilitate learning from investors. Third, private breakouts and one-on-ones allow managers to ask investor questions, and the closed-door environment facilitates discussions around proprietary investment theses that investors might not otherwise share (Park and Soltes, 2018).

Prior work on investor conferences has focused primarily on the transfer of information *from managers to investors* at conferences. Analysts and investors benefit from selective access to management through more informative research outputs (Green et al., 2014b), higher commissions (Green et al., 2014a), and more profitable trades (Solomon and Soltes, 2015; Bushee et al., 2017). In addition, participating firms derive capital-market benefits, including increased analyst following, institutional ownership, and liquidity (Bushee et al., 2011; Green et al., 2014a). My study differs from prior work in that I document information flowing in the other direction—from *investors to managers* at conferences.

2.2. Managerial learning from external sources

Prior literature recognizes that managers learn from external sources. The sufficient condition for this learning is that the manager does not have perfect information about every decision-relevant aspect of their firm. For example, Hutton et al. (2012) suggest that managers have less accurate macroeconomic information than sell-side analysts. Ben-David et al. (2013) show that managers often miscalibrate in predicting market returns.

I focus on institutional investors as a source of information because they have superior information gathering and processing capabilities and often possess expertise in industry trends and supply chain conditions. Institutions holding shares in multiple companies also achieve economies of scale in information gathering and production (Kacperczyk et al., 2005; Kang et al., 2018). In a survey of 344 buy-side analysts, Brown et al. (2016) show that industry knowledge and primary research are the two most important sources of information in generating stock recommendations. Informed investors' private information, impounded in prices through their trades, often reveals relevant information that is new to the manager and affects her forecast and investment decisions (see Goldstein (2022) for a review).

The notion that institutional investors can directly communicate with their portfolio companies and offer advice has been documented in two specific settings. First, venture capitalists often sit on the boards of their portfolio firms and assist in talent

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[6] One exception is Bushee et al. (2018), who use corporate jet data to estimate corporate executives' trips to institutional investors' headquarters during non-deal road shows.

[7] In the sample of this paper, which collects conference transcripts from Russell 3000 firms, the average (median) number of firms attending a conference is 44 (35).

[8] In Appendix B, I present excerpts from the public Q&A sessions of an investor conference at which institutional investors express their views about product-market and supply chain conditions.

Table 1
Descriptive statistics of investor conference transcripts.

Panel A: Distribution of Transcripts by Year						
Year	All Conferences		Regular Conferences		Non-Ind-Focus Conferences	
	Count	Percent	Count	Percent	Count	Percent
2004	951	1.7	594	1.4	435	1.1
2005	2,669	4.9	1,545	3.7	1,344	3.5
2006	2,645	4.8	1,677	4.0	1,567	4.0
2007	1,798	3.3	1,034	2.4	806	2.1
2008	1,698	3.1	1,117	2.6	903	2.3
2009	3,496	6.4	2,585	6.1	2,619	6.8
2010	5,672	10.4	4,247	10.1	4,159	10.7
2011	6,082	11.1	4,775	11.3	4,454	11.5
2012	5,715	10.4	4,626	11.0	4,492	11.6
2013	5,278	9.6	4,328	10.2	4,006	10.4
2014	5,004	9.1	4,348	10.3	3,853	10.0
2015	4,892	8.9	4,316	10.2	3,779	9.8
2016	4,433	8.1	3,560	8.4	3,300	8.5
2017	4,409	8.1	3,480	8.2	2,984	7.7
Total	**54,742**	**100**	**42,232**	**100**	**38,701**	**100**

Panel B: Distribution of Transcripts by Calendar Quarter						
Year	All Conferences		Regular Conferences		Non-Ind-Focus Conferences	
	Count	Percent	Count	Percent	Count	Percent
Q1	14,828	27.1	11,736	27.8	10,634	27.5
Q2	16,380	29.9	12,174	28.8	11,705	30.2
Q3	12,093	22.1	9,894	23.4	8,666	22.4
Q4	11,441	20.9	8,428	20.0	7,696	19.9
Total	**54,742**	**100**	**42,232**	**100**	**38,701**	**100**

This table presents the distribution of conference transcripts by year (panel A) and by calendar quarter (panel B). Regular conferences are defined as conferences that take place in the same month or one month apart every year. Non-industry-focused conference is defined as having at least four Fama-French 30 industries represented at the conference.

recruitment, fundraising, and operations (Da Rin et al., 2013). Second, activist hedge funds can propose strategic, operational, and financial remedies to their target firms (Brav et al., 2008, 2015). Yet beyond these specific settings that either involve a limited subset of firms or an infrequent form of costly intervention, institutional investors regularly interact with managers of U.S. public firms, and managerial learning from investors can be much more prevalent.

3. Sample and variable measurements

3.1. Sample construction

I collect investor conference transcripts for firms that have appeared in the Russell 3000 index from Factset CallStreet and Thomson Reuters StreetEvents. My sample period starts in 2004, because the coverage of both datasets becomes much more comprehensive after the passage of Reg FD, and ends in 2017, the last year with valid data from various data sources. Using Russell 3000 firms allows me to select a sample of firms that are included in a major index, relatively liquid, and have good visibility among investors.[9] Such firms, therefore, can often choose when and how often to attend investor conferences. This procedure yields 54,742 transcripts.

The unit of analysis in most of my empirical tests is at the firm-quarter level, except for the M&A analysis (Section 5.1.2) and the insider trading analysis (Section 5.2). I construct the firm-quarter panel by merging the transcripts with quarterly financial information from Compustat/CRSP. For quarters during which no transcripts are available (that is, without any conferences), I retain an observation only if it occurs within two years before or after a conference to avoid bias in the data providers' coverage, which could be correlated with product-market activities. This approach also mitigates concerns over systematic changes in a firm's policy toward conference attendance. This results in 68,943 firm-quarter observations. I obtain additional data on investor holdings and insider trading from Thomson Reuters, supply chains from Factset Revere, and M&A activities from SDC Platinum.

Table 1 presents the descriptive statistics of the transcript sample. Panel A (B) shows the frequency of transcripts by year (calendar quarter). The number of transcripts is more concentrated from 2010 through 2012 and in the second quarter of a year, suggesting the importance of controlling for common time trends across years and quarters.

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[9] To eliminate bias introduced by Russell index re-constitution, if a firm has been included at any time in the Russell 3000 index, I include it for the entire sample period.

3.2. Measures for manager–investor interactions

Managerial learning is inherently unobservable. Nevertheless, conference transcripts make available the content of public meetings and allow researchers to estimate the degree of information flow between managers and investors. Therefore, I develop six empirical proxies that attempt to capture the manager's efforts to initiate interactions with investors at conferences. First, I measure the frequency of interactions using the number of investor conferences that a firm has attended during a quarter (*NumInteract*).[10] Second, the degree of information flow is a function of who is present at the meeting, and the firm has control over how much managerial resources to invest in attending conferences. I measure the total number of corporate participants (*NumExecs*) and the number of times that the CEO has attended a conference (*CEO*). Next, as managers can attract investor attention, gather feedback and solicit questions by presenting different aspects of the firm, I measure the total number of words in the management discussion sections (*MDWords*). Investors often express their views during Q&As, and managers' willingness to answer questions can facilitate such discussions. I calculate the average number of words in answers provided *per question* (*AnsPerQ*).[11] Firms that invest time to meet with investors privately are more likely to benefit from these closed-door discussions. I compute *PrivateMtg*, which is the number of conferences in which the firm offers private meetings, following the procedure described by Bushee et al. (2011). Finally, the six measures are reduced into the first principal factor, *direct interaction,* which accounts for most of the variance in the observed measures (Abdi and Williams, 2010).

Table 2 Panel A presents the descriptive statistics for the proxies mentioned above. Around 61% of the quarters do not have any conferences, and all proxies of interactions take the value of zero. Descriptive evidence suggests that managers interact with investors regularly. In an average quarter, a firm attends 0.668 conferences (*NumInteract*), with 0.895 corporate executives present (*NumExecs*); the CEO attends 0.394 conferences (*CEO*); the firm offers private meetings in 28.6% (0.191/0.668) of the conferences (*PrivateMtg*). In the full sample (including quarters without any interactions), the mean value of *AnsPerQ* (*MDWords*) is 54 words (2,307 words). Conditional on attending a conference, the median (median) number of words in answer per question asked is 133 (125). The mean (median) number of words in the management discussion section is 3,428 (3,478) (untabulated). Table 2 Panel B presents the factor loadings in the first principal component, *Direct Interaction*, and all six proxies load positively. *Direct Interaction* has an eigenvalue of 4.43 and explains 74% of the variance.

4. Incentives of learning from direct interactions

4.1. Demand for product-market information

Managers often need to heed the actions of their peers in formulating product-market strategies (Foucault and Fresard, 2014; Dessaint et al., 2019; Bernard et al., 2020). For example, Bernard et al. (2020) show that managers search for public disclosures made by product market peers and use them in investment and product decisions. Therefore, when a peer firm makes a product-market announcement, the focal firm manager often demands more sector-related information, which institutional investors have expertise in acquiring.

I measure the frequency and impact of product-market announcements made by peer firms to capture the focal manager's demand for product-market information. For each focal firm, *Demand for Prd Mkt Info* is the sum of absolute announcement-day adjusted returns of product-market announcements made by its peers during a fiscal quarter, scaled by the total number of peers. The purpose of scaling is to ensure that this measure captures peer activities on a per-peer-firm basis, rather than merely reflecting the number of peers. Using adjusted returns captures variations in the significance of announcements and essentially places higher weights on announcements that generate greater market reactions. I use Hoberg-Phillips text-based network industry classifications to define peer firms (Hoberg and Phillips, 2010, 2016).

4.2. Demand for supply chain information

Production networks are important forms of inter-firm linkages that can transmit production shocks from suppliers and demand shocks from customers (Acemoglu et al., 2012; Barrot and Sauvagnat, 2016). When there are more product-market activities from connected firms along the supply chain, managers are likely to demand more information about their upstream and downstream industries. I capture managers' demand for supply chain information using the sum of the absolute adjusted announcement-day returns of product-market announcements made by the focal firm's direct suppliers and customers, scaled by the total number of suppliers and customers (*Demand for Supply Chain Info*). I obtain information on the focal firm's suppliers and customers from Factset Revere.

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[10] The full sample of firm-quarters includes quarters without any conference attendance. This design choice captures variations in a manager's decisions to attend an investor conference, which is an important element of her decision set because conference attendance is costly in terms of firm resources and managerial time. I also repeat all analyses using quarters conditioning on conference attendance, with more details in Sections 4.3 and 4.4.

[11] I do not measure the number and length of investors' questions because managers have no control over which investors will attend the presentation and what questions they will ask. Although managers can make efforts (as captured in the six empirical proxies described above) to encourage investor participation and elicit questions, they are not able to control the ultimate decisions of the investors.

Table 2
Summary statistics and principal factor analysis.

Panel A: Summary Statistics (Firm-Quarter Panel)						
Variables	Count	Mean	Std	P25	P50	P75
Measures of Manager-Investor Interaction						
NumInteract	68,943	0.668	1.023	0.000	0.000	1.000
CEO	68,943	0.394	0.713	0.000	0.000	1.000
NumExecs	68,943	0.895	1.457	0.000	0.000	1.000
AnsPerQ	68,943	0.054	0.087	0.000	0.000	0.108
MDWords	68,943	2.307	3.912	0.000	0.000	3.763
PrivateMtg	68,943	0.191	0.469	0.000	0.000	0.000
Direct Interaction	68,943	0.017	1.013	−0.661	−0.661	0.561
Measures of Managers' Information Demand						
Demand for Prd Mkt Info	68,943	0.021	0.024	0.002	0.011	0.036
Demand for Supply Chain Info	47,034	0.018	0.027	0.000	0.007	0.024
Measures of Investor Knowledge						
Prd Mkt Hldgs ($ Bn)	62,935	1.790	2.127	0.467	1.098	2.215
Supply Chain Hldgs ($ Bn)	46,121	106.382	139.441	3.439	51.850	156.341
Measures of Price Informativeness						
Price NonSync	32,702	0.572	0.261	0.376	0.600	0.787
PIN	31,067	0.119	0.048	0.088	0.110	0.137
Firm-Level Controls						
Size	68,943	7.202	1.765	5.906	7.180	8.418
Inst. Ownership	68,943	4.817	1.422	4.477	5.037	5.602
Analyst	68,943	1.977	0.859	1.540	2.120	2.615
Financing	68,943	0.272	0.445	0.000	0.000	1.000
M&A	68,943	0.190	0.392	0.000	0.000	0.000
Restructuring	68,943	0.025	0.155	0.000	0.000	0.000
Firm Age	68,943	2.827	0.737	2.303	2.833	3.401
Segments	68,943	2.054	1.521	1.000	1.000	3.000
High Tech	68,943	0.348	0.476	0.000	0.000	1.000
Intangibles	68,943	0.364	0.360	0.036	0.261	0.611
R&D	68,943	0.067	0.104	0.003	0.024	0.086
BM Ratio	68,943	0.502	0.409	0.241	0.396	0.636
Returns	68,943	0.008	0.204	−0.107	−0.003	0.103
Ret Vol	68,943	0.027	0.015	0.017	0.023	0.033
Leverage	68,943	0.206	0.184	0.017	0.185	0.328
Loss	68,943	0.280	0.449	0.000	0.000	1.000
AnnFreq	68,943	1.096	2.171	0.000	0.000	1.000
AnnAR	68,943	0.020	0.046	0.000	0.000	0.017
Attended Conference	68,943	0.388	0.487	0.000	0.000	1.000
Info. Transfer (Prd Mkt)	68,943	0.017	0.021	0.002	0.008	0.025
Info. Transfer (Supply Chain)	47,034	0.011	0.013	0.000	0.009	0.016
# of Conference Peers	68,943	6.886	15.084	0.000	0.000	5.000

Panel B: Factor Loadings, Eigenvalue, and Cumulative Variance			
Factor	Eigenvalue	*Proportion of the variance explained*	*Cumulative proportion of the variance explained*
1st	4.43	0.74	0.74
2nd	0.65	0.11	0.85
3rd	0.42	0.07	0.92
Variables			*Loadings on the first factor (Direct Interaction)*
NumInteract			0.969
CEO			0.854
NumExecs			0.943
AnsPerQ			0.754
MDWords			0.912
PrivateMtg			0.690

Panel C: Summary Statistics (Insider Trades Level)						
Variables	Count	Mean	Std	P25	P50	P75
ParInsiderTrade$_{POST}$	28,201	0.027	0.163	0	0	0
ParInsiderTrade$_{PRE}$	28,201	0.029	0.167	0	0	0
1(Trade$_{POST}$)	28,201	0.132	0.338	0	0	0
1(Trade$_{PRE}$)	28,201	0.145	0.352	0	0	0
Participating Insider	28,201	0.153	0.360	0	0	0
Alpha30	28,201	0.003	0.394	−0.205	0.001	0.208
BHAR30	28,201	−0.165	7.734	−4.357	−0.198	4.014

Table 2 (*continued*)

Panel C: Summary Statistics (Insider Trades Level)						
Variables	Count	Mean	Std	P25	P50	P75
Conf Abn Ret	28,201	0.083	0.993	−0.555	−0.157	0.422
Conf Abn Turnover	28,201	0.230	1.795	−0.588	−0.053	0.620
CEO	28,201	0.242	0.428	0	0	0
Unsigned Trading Volume ($ 000)	28,201	1,702	32,463	144	476	1,326

Panel A presents descriptive statistics for the variables used in the subsequent empirical analyses using firm-quarter as the unit of analysis. The sample is formed by merging firms covered in the transcript sample (Table 1) with quarterly financial data in the Compustat/CRSP universe from 2004 to 2017, and only includes firm-quarter that occurs within two years before or after a conference that the firm has attended.

Panel B reports factor loadings from the principal factor analysis of the six proxies of direct interactions: *NumInteract, CEO, NumExecs, AnsPerQ, MDWords,* and *PrivateMtg.*

Panel C presents descriptive statistics for the variables used in the insider trading analyses. The sample includes all trades by corporate officers that occur within two months before or after an investor conference that the officer's firm has attended.

All variables are defined in Appendix A.

4.3. Main empirical specification

$$Direct\ Interaction_{it} = \beta_1 Manager\ Information\ Demand_{it-1} + \Gamma X_{it-1} + \eta_i + \varphi_t + \nu_q + e_{it} \qquad (1)$$

In the OLS estimation in Eq. (1), i denotes firm, t denotes quarter, η_i denotes firm dummies, φ_t denotes calendar-year-quarter dummies, and ν_q denotes fiscal quarter dummies. *Manager Information Demand* is either *Demand for Prd Mkt Info* or *Demand for Supply Chain Info*. The vector of controls (X) includes proxies for investor information demand and capital-market incentives for managers to provide investor access, as identified in prior literature. In other words, these are incentives for a manager to 'teach' rather than to 'learn.' X includes the focal firm's information environment (*Size*, *Inst. Ownership*, and *Analyst*), capital market activities (*Financing* and *M&A*), profitability (*Loss*), growth (*BM Ratio*), valuation uncertainty (*Firm Age*, *Leverage*, *High Tech*, *Ret*, *Ret Vol*, *R&D*, and *Intangibles*) and business complexity (*Segments* and *Restructuring*) (Bushee et al., 2011; Green et al., 2014a; Kirk and Markov, 2016). Since the full sample includes quarters without any conferences, I include an indicator for conference attendance (*Attended Conference*).[12] To mitigate concerns that activities are correlated within a product market, I control for the focal firm's own product-market activities using the number of announcements (*AnnFreq*) and the sum of absolute returns (*AnnAR*). Product market announcements of linked firms could contain information about the focal firm (Olsen and Dietrich, 1985; Baginski, 1987; Wang, 2014), consequently causing investors to demand more information about the focal firm. Therefore, I control for the extent of information transfer, measured using the focal firm's returns on days of linked firms' announcements (*Information Transfer*), as well as the number of peer firms attending the same conference (*# of Conference Peers*).

I estimate Eq. (1) with individual firm dummies to address concerns that certain types of firms are more likely to attend conferences. I include a separate dummy for each calendar-year quarter and fiscal quarter to control for time-variant macroeconomic trends and seasonality that could affect both product-market activities and conference frequency.

I first estimate Eq. (1) using all conference transcripts. To address concerns that peer firms' announcements could increase investors' information demand and, in turn, lead to more conferences organized, I identify regular conferences that are scheduled in the same month or one month apart every year.[13] These conferences are scheduled well in advance, and their occurrence should be arguably uncorrelated with peer firm activities or changes in investor information demand. Third, time-varying industry trends could lead to a concurrent increase in product market activities, investor information demand, and the number of conferences. To mitigate this concern, I identify broad-themed conferences without an industry focus.[14] These conferences invite firms from multiple industries and are unlikely to be organized because a particular industry becomes more attractive. Moreover, managers are unlikely to attend these broad-theme conferences to respond to heightened investor interest in a particular sector. Fourth, I repeat the analyses using quarters with conferences, thus only exploiting variations in the extent of manager-initiated interactions at the conference, conditioning on attendance. Although committing to attend a

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[12] In an alternative specification, I also control for whether it is the first time the manager has attended a particular conference (e.g., whether it is the first that Autodesk has attended the Needham Growth Stock Conference) to address concerns that managers may start to attend a particular conference because of strong demand from investors. My results and inferences remain unchanged.

[13] I use transcript names to identify common conferences attended by multiple firms and held across multiple years. For instance, the following transcript names will suggest that the Needham Growth Stock Conference was held in January 2011 and January 2012: '*Autodesk, Inc at Needham Growth Stock Conference on 11 January 2011*', '*Immersion Corp at Needham & Company Growth Conference on 11 January 2011*', and '*iRobot Corp. at Needham and Company, LLC Growth Conference on 13 January 2012.*' Due to inconsistencies in how conference names are recorded in transcripts, I am able to assign conference identifiers to 86% of the transcripts in the sample. As shown in Table 1, around 77% of the conferences are identified as regular conferences.

[14] Some conferences are focused on one industry (e.g., *Deutsche Bank Global Auto Industry Conference*), while others are more general (e.g., *Raymond James 27th Annual Institutional Investors Conference*). Industry-focused conferences are defined as having few than four Fama-French 30 industries represented at the conference (Bushee et al., 2011). Consistent with Bushee et al. (2011), around 71% of conferences do not have an industry focus (Table 1).

conference is an important dimension in a manager's decision to learn from direct interactions, one might be concerned that such decisions could still reflect the manager responding to investor information demand.

4.4. Results and discussions

Table 2 presents descriptive statistics for the variables in the full sample. The firms are relatively large, with an average (median) asset size of $5.7 billion ($1.3 billion), and have 8.7 covering analysts on average. Table 3 presents the results of this analysis. Columns 1 to 3 estimate Eq. (1) on the full sample; columns 4 to 6 condition on attending a conference (column 4), a regular conference (column 5), and a non-industry-focused conference (column 6) in a quarter. In Panel A, the coefficient on *Demand for Prd Mkt Info* is positive and significant (under 1%) across all specifications, consistent with managers seeking more direct interactions with investors when they demand more information about their peer firms. The point estimate on *Demand for Prd Mkt Info* ranges from 1.356 to 3.144. In column 4, for instance, this translates to one standard deviation increase in *Demand for Prd Mkt Info* is associated with a 0.072 (3.047*0.024/1.014) standard deviation increase in *Direct Interaction*, ceteris paribus.[15] Note that the point estimates on *Demand for Prd Mkt Info* are around twice as large in columns 4 to 6, which only exploit variations in manager-initiated interactions at the conference, compared to the coefficients in columns 1 to 3, which also consider the decision to attend a conference. One possible explanation is that the decision to attend a conference is more costly in terms of firm resources and managerial time than initiating more interactions with investors once at the conference. Consequently, we see that managerial learning incentives have a stronger effect on the extent of manager-initiated interactions upon attendance than the initial decision to attend. Control variables have expected signs: larger firms, firms with more institutional investors, analysts, growth opportunities, and product-market activities provide more investor access. The number of peer firms at the conference is positively associated with the decision to attend but is negatively or not associated with the extent of manager-initiated interactions at the conference.

Similarly, in Panel B, the coefficients on *Demand for Supply Chain Info* are positive and significant (under 1%) across all specifications. In column 4, the point estimate of 1.291 translates to a one standard deviation increase in *Demand for Supply Chain Info* associated with a 0.031 (1.291*0.024/1.014) standard deviation increase in *Direct Interaction*, ceteris paribus.[16] These results consistently suggest that managers seek more investor interactions when they want to learn about their supply chain industries.

4.5. Cross-sectional analyses

The previous analyses focus on the manager's information demand when she requires *a specific type of information*, that is, information related to the product market or upstream and downstream industries. Consequently, her propensity to seek information through direct interactions depends on her expectation of investors' knowledge and expertise in these areas. In cross-sectional analyses, when the source of information demand arises from peer firms, I estimate managers' expectation of the amount of product-market knowledge that their current institutional investor base is likely to possess. Since managers commit to attending a conference before investors do, managers do not know the actual investor participants when making that commitment. However, the manager can form an expectation of which investors are likely to attend based on her firm's current investor base. Therefore, using a firm's current investor base more accurately captures the manager's expectation of investor knowledge at the conference, although it measures actual attendance with noise. Institutional investors' product-market knowledge is estimated using their dollar investments in the product market as follows:

$$Prd\ Mkt\ Hldgs_{it} = \sum_{j \in J} \sum_{p \in P}^{n} \frac{Dollar\ Holdings_{jp}}{n}$$

where J is the set of all institutional investors that hold at least 1% of the total common shares outstanding in the focal firm i and P is the set of all product-market peer firms of the focal firm i.[17] n is the total number of product-market peer firms held by investor j. *Dollar Holdings* is investor j's dollar holdings in firm p, averaged over all 13F reports made over the trailing 12 months ending before the start of the fiscal quarter t.

Correspondingly, investors' knowledge of supply chain industries is as follows:

$$Supply\ Chain\ Hldg_{it} = \sum_{k \in K} \sum_{j \in J} \frac{Industry\ Dollar\ Holdings_{jk}}{n_k}$$

where K is the set of all SIC four-digit industries in which the focal firm i has at least one direct supplier or one customer. J is the set of all institutional investors that hold at least 1% of the total common shares outstanding in the focal firm i. *Industry*

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[15] This calculation is based on the standard deviation of *Demand for Prd Mkt Info* and *Direct Interaction* in the conference quarter sample.

[16] This calculation is based on the standard deviation of *Demand for Supply Chain Info* and *Direct Interaction* in the conference quarter sample.

[17] I focus on institutional investors that hold more than 1% the firm's shares because these investors are more likely to interact with managers during investor conferences. I do not restrict holding size in peer firms.

Table 3

Managers' incentives of learning from direct interactions.

Panel A: Demand for Product Market Peer Information

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. Variable: *Direct Interaction*					
Conferences	All	Regular	Non-Ind-Focus	All	Regular	Non-Ind-Focus
Sample	All Quarters			Conference Quarters		
Demand for Prd Mkt Info	1.409***	1.356***	1.412***	3.047***	2.472***	3.144***
	(5.12)	(5.22)	(5.45)	(4.09)	(3.53)	(4.72)
Size	0.073***	0.054***	0.047***	0.142***	0.096***	0.100***
	(6.65)	(5.40)	(4.85)	(5.07)	(3.84)	(4.06)
Inst. Ownership	0.009*	0.008**	0.010**	−0.002	0.001	0.004
	(1.94)	(1.97)	(2.10)	(−0.20)	(0.15)	(0.40)
Analyst	0.034***	0.027***	0.024***	0.080***	0.056***	0.047**
	(4.59)	(4.19)	(3.77)	(3.67)	(2.88)	(2.37)
Financing	0.001	0.005	0.003	0.002	0.003	0.004
	(0.21)	(0.84)	(0.53)	(0.12)	(0.19)	(0.28)
M&A	0.006	0.003	0.010*	0.012	0.005	0.023
	(0.91)	(0.51)	(1.65)	(0.74)	(0.38)	(1.60)
Restructuring	0.012	0.010	0.013	0.015	0.019	0.030
	(0.92)	(0.82)	(1.07)	(0.45)	(0.62)	(0.93)
Firm Age	0.027	0.018	0.009	−0.099	−0.016	−0.089
	(1.04)	(0.74)	(0.43)	(−1.26)	(−0.24)	(−1.37)
Segments	0.001	0.002	0.003	0.006	0.002	0.002
	(0.21)	(0.52)	(0.87)	(0.60)	(0.22)	(0.26)
High Tech	−0.013	−0.029	−0.031	−0.041	−0.099	−0.070
	(−0.39)	(−1.05)	(−1.15)	(−0.47)	(−1.43)	(−1.03)
Intangibles	0.025	0.041	0.058**	0.040	0.087	0.132**
	(0.90)	(1.63)	(2.42)	(0.58)	(1.46)	(2.27)
R&D	−0.140*	−0.114	−0.090	−0.061	−0.135	−0.094
	(−1.75)	(−1.63)	(−1.38)	(−0.22)	(−0.58)	(−0.40)
BM Ratio	−0.034***	−0.031***	−0.013*	−0.134***	−0.133***	−0.110***
	(−3.97)	(−3.88)	(−1.71)	(−4.52)	(−4.87)	(−3.65)
Ret	−0.004	−0.010	−0.001	−0.031	−0.064**	−0.022
	(−0.40)	(−1.14)	(−0.08)	(−0.96)	(−2.00)	(−0.69)
Ret Vol	0.487**	0.391*	0.510**	1.220	1.220	1.527*
	(2.14)	(1.79)	(2.52)	(1.42)	(1.44)	(1.82)
Leverage	−0.069*	−0.065*	−0.064*	−0.086	−0.113	−0.163*
	(−1.78)	(−1.76)	(−1.77)	(−0.97)	(−1.35)	(−1.94)
Loss	−0.010	−0.012**	−0.014**	−0.037*	−0.046**	−0.046**
	(−1.47)	(−1.96)	(−2.35)	(−1.79)	(−2.52)	(−2.56)
AnnFreq	0.006**	0.004	0.006**	0.004	−0.000	0.005
	(2.15)	(1.53)	(2.34)	(0.71)	(−0.00)	(0.91)
AnnAR	−0.069	0.055	−0.033	0.018	0.333	0.184
	(−0.80)	(0.67)	(−0.43)	(0.07)	(1.52)	(0.85)
Attended Conference	1.532***	1.697***	1.744***	−	−	−
	(152.14)	(155.60)	(156.70)	−	−	−
Info. Transfer (Prd Mkt)	−0.344	−0.381*	−0.201	−0.283	−0.234	0.296
	(−1.50)	(−1.77)	(−0.89)	(−0.37)	(−0.32)	(0.41)
# of Conference Peers	0.004***	0.002***	0.002***	0.000	−0.002***	−0.002***
	(9.74)	(5.26)	(4.68)	(0.99)	(−3.97)	(−4.02)
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
N	68,943	68,943	68,943	26,224	22,502	21,060
Adj. RSQ	0.76	0.78	0.79	0.28	0.24	0.24

Panel B: Demand for Supply Chain Information

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. Variable: *Direct Interaction*					
Conferences	All	Regular	Non-Ind-Focus	All	Regular	Non-Ind-Focus
Sample	All Quarters			Conference Quarters		
Demand for Supply Chain Info	0.551***	0.584***	0.593***	1.291***	1.222***	1.435***
	(3.78)	(3.86)	(3.85)	(3.67)	(3.49)	(3.98)
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table 3 (*continued*)

Panel B: Demand for Supply Chain Information

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. Variable: *Direct Interaction*					
Conferences	All	Regular	Non-Ind-Focus	All	Regular	Non-Ind-Focus
Sample	All Quarters			Conference Quarters		
N	47,034	47,034	47,034	19,658	17,169	16,037
Adj. RSQ	0.75	0.77	0.78	0.27	0.23	0.23

This table presents the results of estimating Eq. (1). The unit of analysis is a firm-quarter observation. The dependent variable, *Direct Interaction*, is a component score capturing the frequency of and the degrees of information exchange at manager-investor interactions at investor conferences. The independent variable is i) *Demand for Prd Mkt Info*, which is the sum of the absolute market-adjusted announcement-day returns of product market announcements made by firm *i*'s peers in quarter *t*, scaled by the total number of peers (Panel A) and ii) *Demand for Supply Chain Info*, which is the sum of the absolute market-adjusted announcement-day returns of product market announcements made by firm *i*'s direct suppliers and customers in quarter *t*, scaled by the total number of direct suppliers and customers (Panel B). Columns 1 to 3 use the full sample of all quarters; columns 4 to 6 condition on attending a (specific type of) conference. Columns 1 and 4 use all investor conferences in the sample. Columns 2 and 5 use regular conferences that take place in the same month or one-month apart every year. Columns 3 and 6 use broad-themed conferences without an industry focus, defined as having at least four Fama-French 30 industries represented at the conference. All variables are defined in Appendix A. Requiring data coverage from Factset Revere results in a reduction of sample size in Panel B. Control variables in Panel B follow those presented in Panel A. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

Dollar Holdings is the dollar holdings in industry *k* by investor *j*, averaged over all 13F reports made over the trailing 12 months ending before fiscal quarter *t*. n_k is the total number of direct suppliers and customers in industry *k*. I focus on the entire industry, rather than direct suppliers and customers, because knowledge about potential suppliers and customers can also be relevant to the manager.

I hypothesize that the positive association between managers' demand for product market (supply chain) information and direct interactions is stronger when managers expect their institutional investors to be knowledgeable about the product market (supply chains). Table 4 Panel A divides the sample in column 1 (all quarters) and column 4 (conference quarters) of Table 3 Panel A based on the median value of *Prd Mkt Hldgs*. Requiring data coverage in Thomson Reuters 13F results in further sample reductions. Consistent with my hypothesis, I find that the relation between *Demand for Prd Mkt Info* and *Direct Interaction* is positive and significant only when investors are more knowledgeable about the product market. The F-statistics comparing the coefficients on *Demand for Prd Mkt Info* in the two subsamples is 11.573 (*p*-value<0.01) in the full sample and 4.077 (*p*-value<0.05) conditioning on attendance. Panel B presents similar results for *Demand for Supply Chain Info*. The F-statistics is 7.621 (*p*-value<0.01) in the full sample and 2.909 (*p*-value<0.1) conditioning on attendance.

4.6. Caveats and additional analyses

I acknowledge that the various proxies for manager information demand (*Demand for Prd Mkt Info, Demand for Supply Chain Info*) and investor knowledge (*Prd Mkt Hldgs, Supply Chain Hldgs*) are endogenous, and concerns over omitted correlated variables exist. One specific concern is that time-varying industry trends can increase the following at the same time: 1) product-market announcements, 2) investors' portfolio holdings, and 3) the number of conferences in that industry. I discuss the following steps to mitigate this concern.

First, I repeat the analysis in Table 4 using non-industry-focused conferences and regular conferences in Appendix C. Non-industry-focused conferences invite firms from multiple industries and are unlikely to be organized because one industry becomes more attractive. Managers are unlikely to attend broad-themed conferences to respond to investors demanding information about a particular industry. Further, regular conferences are scheduled well in advance and are unlikely to be driven by new product market developments of a firm or an industry. I continue to find that the association between manager information demand and direct interactions is consistently positive and higher when investors are knowledgeable.

Second, in Appendix D, I investigate and show that the number of conferences in an industry-quarter is not associated with either 1) the number of product market announcements or 2) the absolute market reactions to these announcements. Instead, time-invariant industry characteristics (i.e., industry dummies) or macroeconomic trends (i.e., year-quarter dummies) explain most of the variations (r-square = 88%) in conference occurrences at the industry level.

Finally, the correlation between proxies of manager information demand and measures of investors' knowledge is low (untabulated), ranging from −0.06 to 0.06 (Pearson correlation), alleviating concerns that a correlated omitted variable increases both manager information demand and investors' knowledge at the same time. In Appendix E, I further investigate how these proxies are associated with the characteristics of the focal firm. I find that proxies for manager information demand are generally *not* associated with firm size, leverage, profitability, and R&D, suggesting that they reasonably capture the demand for information arising from changes in external operating environments. Younger firms are likely to have a higher demand for information, possibly due to the more volatile environment in which they operate. More analyst coverage facilitates communications with investors (Brown et al., 2019). Similarly, proxies of investor knowledge are generally *not* associated with focal firm characteristics except for institutional ownership and financing activities, both of which are

Table 4

Cross-sectional analysis based on institutional investors' supply of information.

Panel A: Institutional Investors' Knowledge of the Product Market				
	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
Sub-Sample	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
	All Quarters		Conference Quarters	
Demand for Prd Mkt Info	2.446***	0.406	4.982***	1.632
	(4.82)	(1.21)	(3.98)	(1.49)
F-statistics	11.573		4.077	
p-value	0.00		0.04	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	31,473	31,462	11,903	11,925
Adj. RSQ	0.74	0.77	0.31	0.26

Panel B: Institutional Investors' Knowledge of Supply Chain Industries				
	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
Sub-Sample	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
	All Quarters		Conference Quarters	
Demand for Supply Chain Info	1.102***	0.278*	2.133***	0.860*
	(4.44)	(1.68)	(3.96)	(1.67)
F-statistics	7.621		2.909	
p-value	0.01		0.09	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	23,365	22,756	9,694	9,460
Adj. RSQ	0.73	0.76	0.29	0.26

This table estimates Eq. (1) and partitions the sample in Table 3 Panel A (Panel B) based on investors' knowledge of the product market (the supply chains). In Panel A, institutional investors' product market knowledge is measured by *Prd Mkt Hldgs*, which is the sum of firm *i*'s >1% institutional investors' absolute average dollar holdings in product market peer firms of firm *i*. In Panel B, supply chain industry knowledge is measured by *Supply Chain Hldgs*, which is the sum of firm *i*'s >1% institutional investors' absolute dollar holdings in all four-digit SIC industries whereby firm *i* has at least one direct supplier or customer, scaled by the total number of suppliers and customers. Columns 1 and 2 use the full sample of all quarters; columns 3 and 4 condition on attending a conference. All variables are defined in Appendix A. Control variables follow those presented in Table 3. The F-statistics compares the coefficients on *Demand for Prd Mkt Info* and *Demand for Supply Chain Info* across the two subsamples. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

positively associated with the size of the focal firm's institutional investor base and, therefore, their collective sector knowledge. In addition, there are *no* focal firm characteristics that are consistently associated (and in the same direction) with both measures of manager information demand and both measures of investor knowledge, alleviating concerns that an omitted correlated variable drives the collective set of results in the various incentive tests.

5. Consequences of learning from direct interactions

5.1. Learn from price

Prior literature recognizes that managers can glean from stock prices informed investors' information that is new to them and use it to estimate cash flows (Zuo, 2016) as well as make investment decisions (Luo, 2005; Chen et al., 2007; Jayaraman and Wu, 2020; Goldstein, Liu, and Yang, 2022). However, extracting relevant information from stock price movements can be difficult for the manager for several reasons. First, prices are noisy signals, and managers have limited ability to distinguish information from noise (Dessaint et al., 2019). Second, managers might require granular information that cannot necessarily be extracted from stock prices, because the process of aggregation results in a loss of dimensionality. Third, stock prices can reflect multiple equilibria, such that there is no one-to-one mapping between managers' decisions and prices (Bond et al., 2010). Direct interactions with investors can help the manager better understand price movements, extract relevant information from prices, and eventually use it to make decisions. To investigate this, I employ two well-documented settings of managerial learning from price from prior literature, that is, investment-to-price sensitivity and the association between M&A announcement returns and subsequent deal completion.

5.1.1. Investment-to-price sensitivity

Prior literature used investment-to-price sensitivity as an indirect proxy for managerial learning from prices (Chen et al., 2007; Edmans et al., 2017; Goldstein, Yang, and Zuo, 2022). Chen et al. (2007) show that investment-to-price sensitivity increases with price informativeness; they interpret this as evidence of learning because as prices reflect more information that is new to the manager, she can, in turn, extract more information from prices to make investment decisions. I follow the empirical methodology of Chen et al. (2007) and investigate how direct interactions affect the relation between price informativeness and investment-to-price sensitivity. The notion is that for a given level of new information in prices, direct investor interactions can help managers extract that relevant pieces from prices and later use them to make investment decisions. I partition the firm-quarter sample based on high (top tercile) and low (bottom two terciles) values of *Direct Interaction* and estimate Eq. (2).

$$CapxRD_{it} = \beta_1 Q_{it-1} + \beta_2 INFO_{it-1} Q_{it-1} + \Gamma X_{it-1} + \eta_i + \varphi_t + \nu_q + e_{it.} \qquad (2)$$

where subscripts and fixed effect structures follow those presented in Eq. (1).[18] Following Chen et al. (2007), I measure price informativeness (*INFO*) using 1) the probability of informed trade based on Easley et al. (2002), adjusted for insider trading (*PIN*), and 2) stock price non-synchronicity (*Price NonSync*). *CapxRD* is the sum of capital expenditure and R&D, scaled by the lagged total assets. The vector of controls includes the inverse of total assets, *INFO,* cash flow scaled by total assets and its interactions with *INFO*, as well as value-weighted market return adjusted firm return for the next three years, following Table 2 of Chen et al. (2007).

Table 5 Panel A presents the results of estimating Eq. (2) using the full sample of all quarters (columns 1, 2, 5, 6) and conditioning on attending a conference (columns 3, 4, 7, 8). Across various specifications, I find that the relation between investment-to-price sensitivity and price informativeness is consistently positive and significant when there is a high level of direct manager-investor interactions, but neither consistently positive nor significant with low direct interactions. Columns 1 and 2 use *Price NonSync* to measure price informativeness. The coefficient of *INFO* $\times$ *Q* is estimated at 0.257 (*p*-value<0.01) when direct manager-investor interactions are frequent (column 1), but is of a much smaller magnitude at 0.045 (*p*-value >0.10) when direct interactions are low (column 2). The F-statistics comparing the coefficients across the sub-samples is 4.36 (*p*-value<0.05). For a given level of private information in prices, the investment-to-price sensitivity increases by around five times when managers directly interact with investors to understand the information in prices.[19] Conditioning on conference attendance, I continue to find that the investment-to-price sensitivity is around two times larger when managers initiate more conference interactions with investors, although the F-statistics is insignificant. Results are similar using *PIN*. The coefficient on *INFO* $\times$ *Q* is only positive and significant (under 10% level) when there is a high level of direct interactions but not significant when direct interactions are low.[20] These results collectively suggest that interacting with investors at conferences helps managers understand price movements better, extract relevant information embedded in stock prices, and use it to make corporate investment decisions.

5.1.2. Deal announcement returns and the probability of acquisition closing

Prior literature also used corporate M&A as a setting for managerial learning from prices, as the deal announcement market reactions are positively associated with whether the bidder consummates the transaction in the future (Luo, 2005). The idea is that deal announcement returns contain investors' valuation of the pending acquisition, and the bidder's manager can extract and use this information in deciding whether to close the deal. I follow the empirical methodology of Luo (2005); I investigate whether the bidder's manager can learn information relevant to the deal through conference interactions with investors, either by better understanding information embedded in the announcement returns or by gathering information from investors' questions, and later use that information in deciding whether to close the deal.[21]

I gather M&A transactions from SDC Domestic M&A Database. Consistent with prior literature, I exclude hostile transactions, related transactions, repurchases and require deal values to be greater than $ 1 million and represent at least 1% of the acquirer's market capitalization (Luo, 2005; Masulis et al., 2007; Schmidt and Fahlenbrach, 2017). Next, I select transactions during which the bidder has attended a conference within 90 days of the deal announcement date and before the date of

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[18] This equation is modified from Eq. (5) of Chen et al. (2007) and estimated on the firm-quarter sample described in Section 3.1. Following Chen et al. (2007), I further exclude 1) firms with less than $10 million book value of equity, 2) firms with less than 10 days of trading activities in a quarter, and 3) firms with missing information to compute on quarterly investments and measures of price informativeness.

[19] Eq. (2) investigates how direct interactions affect investment-to-price sensitivity, holding fixed the amount of private information in prices. Although beyond the scope of this paper, it is possible that direct interaction affects price informativeness. On the one hand, institutions trade more around a conference (Bushee et al., 2011, 2017). On the other hand, firm disclosure at conferences can crowd out incentives for investors to gather information (Goldstein and Yang, 2019).

[20] In an alternative specification, I use the generalized PIN model developed and provided by Duarte et al. (2020). Because Duarte et al. (2020) only estimate their model for NYSE-listed firms, using the generalized PIN model reduces the sample size by over 50%. I continue to find that the investment-to-price sensitivity is positive and significantly associated with *PIN* in the high direct interaction sample (coefficient estimate of 0.303 and *t*-statistic of 1.73), but no association with low direct interaction (coefficient estimate of −0.068 and *t*-statistic of −0.37). The F-statistic comparing the coefficient estimates is 2.18 (*p*-value = 0.14).

[21] A recent anecdote is Intercontinental Exchange Inc. (ICE)'s attempted acquisition of eBay Inc. ICE's stock price dropped 7.5% on February 4, 2020, when ICE announced interest in eBay Inc. Two days later, ICE announced to give up on considering "strategic opportunities" with eBay, citing reasons "based on conversations with investors." I thank the reviewer for this suggestion.

Table 5
Consequences of learning from direct interactions − learning from price.

Panel A: Investment-to-Price Sensitivity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dep. Variable: *CapexR&D*							
	High *Direct Interaction*	Low *Direct Interaction*	High *Direct Interaction*	Low *Direct Interaction*	High *Direct Interaction*	Low *Direct Interaction*	High *Direct Interaction*	Low *Direct Interaction*
Sub-Sample	All Quarters		Conference Quarters		All Quarters		Conference Quarters	
INFO **is**	***Price NonSync***	***Price NonSync***	***Price NonSync***	***Price NonSync***	***PIN***	***PIN***	***PIN***	***PIN***
INFO × Q	0.257***	0.045	0.334**	0.188**	0.919*	0.078	1.266*	−0.550
	(3.29)	(0.59)	(2.48)	(2.02)	(1.77)	(0.23)	(1.74)	(−1.13)
Q	0.225***	0.361***	0.144	0.235***	0.293***	0.384***	0.221**	0.423***
	(3.83)	(6.22)	(1.50)	(3.41)	(4.38)	(7.03)	(2.54)	(6.22)
INFO	−0.084	−0.214	0.123	−0.015	−0.923	−1.038	−2.856	2.724**
	(−0.41)	(−1.08)	(0.32)	(−0.07)	(−0.66)	(−1.25)	(−1.18)	(2.01)
F-statistics	4.36		0.96		1.92		4.83	
p-value	0.04		0.33		0.17		0.03	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
N	10,560	22,142	4,153	8,488	10,029	21,038	3,919	8,003
Adj. RSQ	0.78	0.74	0.78	0.76	0.78	0.75	0.78	0.76

Panel B: M&A Analysis

		(1)	(2)	(3)	(4)
		Dep. Variable: *1(Complete)*			
Sample		All M&As		M&As with Pending Transaction Discussed	
Direct Interaction × *Ann CAR*	Pred. Sign (+)	0.176*			
		(1.91)			
Deal Discussion × *Ann CAR*	(+)		0.029**		
			(2.37)		
Neg Deal-related Qns	(−)			−0.044*	
				(−1.80)	
Pos Deal-related Qns	(?)				0.013
					(0.62)
Direct Interaction		0.004			
		(0.45)			
Deal Discussion			0.002*		
			(1.73)		
Ann CAR		0.299***	0.144	0.289	0.412*
		(2.86)	(1.18)	(1.14)	(1.67)
Controls		Yes	Yes	Yes	Yes
FE		Year	Year	Year	Year
N		754	754	197	197
Adj. RSQ		0.07	0.07	0.15	0.14

Panel A presents the results of estimating Eq. (2). The samples are partitioned based on the top tercile (high) and bottom two terciles (low) value of *Direct Interaction*. Price informativeness, *INFO*, is measured by the probability of informed trades net of insider trades, adjusted for insider trading (*PIN*) as well as price non-synchronicity (*Price NonSync*). The dependent variable is capital expenditure and R&D, scaled by total assets. Columns 1, 2, 5, and 6 use the full sample of all quarters; columns 3, 4, 7, and 8 condition on attending a conference. All variables are defined in Appendix A. Control variables follow Table 2 of Chen et al. (2007). The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

In Panel B, columns 1 and 2 report the results of estimating Eq. (3A). The sample includes all transactions for which the bidder has attended an investor conference within 90 days of the deal announcement, or before the date of the deal completion or withdrawal, whichever is earlier. *1(Complete)* is an indicator variable that takes the value of one for completed deals and zero otherwise. *Direct Interaction* is a component score capturing the frequency and the degrees of information exchange of manager-investor interactions at the investor conferences. *Deal Discussion* is the number of times the pending acquisition is mentioned in the conference transcripts. Columns 3 and 4 report the results of estimating Eq. (3B), using the subsample of transactions for which the pending transaction is mentioned at the conferences. *Negative (Positive) Deal-related Qns* is the number of negative (positive) deal-related questions asked during the Q&A session of the conference, defined using the Loughran-McDonald dictionary. *Ann CAR* is the value-weighted average of the bidder's and the target's announcement cumulative abnormal returns. All variables are defined in Appendix A. Control variables follow Table 4 of Luo (2005). The coefficients on the intercept and year fixed effects are not reported. T-statistics are in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

completion or withdrawal, whichever is earlier. This is because any effect of learning from direct interactions can be reflected in, and therefore be tested from, the eventual outcome of the transaction. The sample consists of 754 transactions. I estimate Eq. (3A) to investigate whether direct interactions help the bidder's manager understand and extract information contained in deal announcement price movements.

$$1(complete) = \beta_1 Ann\ CAR + \beta_2 Direct\ Interaction + \beta_3 Ann\ CAR \times Direct\ Interaction + \Gamma controls. \qquad (3A)$$

where *1(Complete)* is an indicator variable that equals one if the deal is completed and zero otherwise. *Direct Interaction* is either 1) the composite score, *Direct Interaction*, as described in Section 3.2, or 2) the number of times the conference transcripts mention the acquisition (*Deal Discussion*).[22] These two measures capture the amount of manager-initiated interactions and the extent of deal-related discussions at the conference. Therefore, they serve as proxies for the bidder managers' ability to learn deal-relevant information from such investor interactions. *Ann CAR* is the value-weighted average of the cumulative abnormal returns of the bidder and the target during the $(-1, +7)$ day around the announcement (Luo, 2005).[23] Year dummies are included to control for common time trends in M&A completions. Control variables include bidder's and target's post-announcement and pre-announcement *CAR*, dollar deal size, the ratio of dollar deal size to the bidder's market value, whether the bidder and the target are headquartered in the same state, and pure cash deal, following Table 4 of Luo (2005).

Next, I use the subset of 197 M&As during which the pending transaction is discussed at the conferences to estimate Eq. (3B); I investigate whether the tone of investors' questions asked during the conference provides information to the manager and predicts the probability of closing the deal, controlling for the amount of information in announcement returns.

$$1(complete) = \beta_1 Neg(Pos)\ Deal\ related\ Qns + \beta_2 Ann\ CAR + \Gamma controls. \qquad (3B)$$

where *Neg (Pos) Deal-related Qns* is the number of times that investors ask a negative (positive) question about the pending acquisition (Loughran and McDonald, 2011).

Table 5 Panel B presents this result. Columns 1 and 2 estimate Eq. (3A). The positive coefficient on *Ann CAR* is consistent with prior literature that the bidder's manager extracts decision-relevant information from deal announcement returns. The coefficient on *Direct Interaction* × *Ann CAR* is estimated at 0.176 (*p*-value <0.1) in column 1 and on *Deal Discussion* × *Ann CAR* is estimated at 0.029 (*p*-value<0.05) in column 2. These results suggest that announcement returns predict the probability of deal completion more when 1) there are more conference interactions between the bidder manager and investors after the deal is announced and 2) the pending deal is specifically discussed at these conferences. Given that a transaction is mentioned on average 4.89 times at the conference (untabulated), the association between announcement returns and deal completion almost doubles (0.029*4.89/0.144 + 1). These results suggest that, by initiating interactions with investors and discussing the transaction at conferences, the bidder's manager can better understand investors' information embedded in deal announcement price movements and later use it to decide whether to close the deal.

Columns 3 and 4 estimate Eq. (3B). Of the 197 transactions that discuss the pending transaction, investors, on average, ask 0.363 (0.660) negative (positive) questions (untabulated). The coefficient on *Neg Deal-related Qns* is estimated at -0.044 in column 3, suggesting that one additional negative question asked by investors is associated with a 4.4% lower probability of deal completion. I do not find the converse − more positive questions are not associated with a higher probability of completion (column 4). One potential explanation is that investors are more likely to challenge the manager when they do not support an acquisition. Second, it is more likely that favorable opinions about the transaction are already impounded in prices than unfavorable opinions, as speculators profit less from trading on negative information (Edmans et al., 2015). Consequently, negative questions contain more information about investors' valuation of the deal than positive questions after controlling for information in prices.

5.2. Timing and profitability of insider trades

5.2.1. Main empirical specification

Prior literature shows that insider stock trades reflect superior information about their firm's future operations (Seyhun, 1986, 1992; Ke et al., 2003; Piotroski and Roulstone, 2005).[24] Through conference interactions, the manager can learn about

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[22] I search through the entire conference transcript, instead of just the Q&A session, because investors can also express their opinions about the transaction during private breakouts and one-on-one meetings with the manager; the manager, in turn, can encourage such private information exchange when they discuss the pending transaction during her management presentations.

[23] It is possible that *AnnCAR* reflect both investors' valuation of the deal (which is new and relevant information to the manager) and 2) investors' estimate of the probability that the manager will close the transaction (which managers already know). In another specification, Luo (2005) separately estimates investors' valuation of the deal and shows that it is highly correlated with *AnnCAR* (correlation of 0.98). Therefore, I use *AnnCAR* as a proxy for investors' valuation of the deal in Eqns. (3A) and (3B), following Table 4 of Luo (2005).

[24] For instance, Piotroski and Roulstone (2005) document that insider trades are positively associated with future earnings performance. Ke et al. (2003) show that insiders trade on knowledge of economically significant forthcoming disclosures. Insider trading is positively correlated with changes in future real activities and insiders are more likely to buy (sell) following periods of stock depreciation (appreciation) (Seyhun, 1986, 1992).
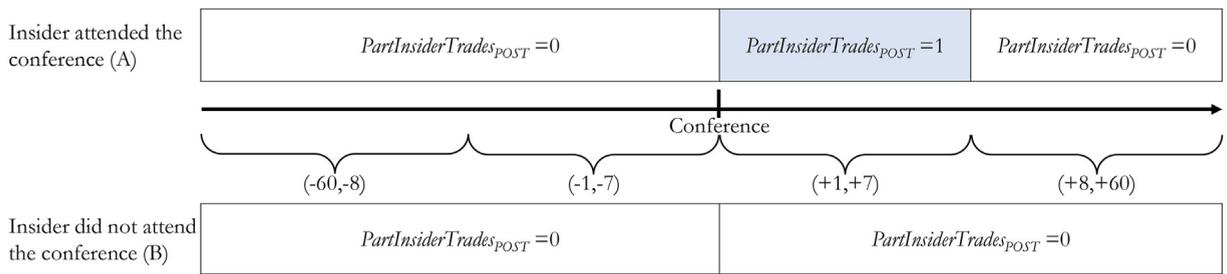
Fig. 1. Illustrate the definition of *ParInsiderTrade*$_{POST}$ and the control group of trades in the insider trading profitability tests presented in Table 6 Panel B. The sample includes all trades by corporate officers that occur within two months before or after an investor conference that the officer's firm has attended.

investors' information that is new to her (which could be impounded in prices through investors' trades) and use investors' information to fill in the mosaic around her own private information to form a superior signal about the firm's future value (which is not yet impounded in prices).[25] I predict that the timing and the profitability of managers' insider trades reflect information acquired (if any) through direct interactions. Corporate insider transactions are subject to disclosure requirements under Section 16 of the Securities Exchange Act of 1934. I obtain insider transactions made by corporate officers using the Thomson Reuters Insider Filing database and match the name of insiders to those identified in the conference transcripts (only Thomson StreetEvent transcripts cleanly identify the full name of corporate participants). My empirical analysis focuses on the short window around an investor conference and examines how a manager's private information changes after attending a conference. I gather open market stock purchases and sales made by corporate officers within two months before or after the date of a conference that their firms participated in. I require non-missing data on transaction price, number of shares traded, and transaction date; I restrict the sample to only opportunistic trades based on Cohen et al. (2012)'s trade-level classification, resulting in a sample of 28,201 trades[26]

I examine both the timing and the profitability of insider trades made by executives who participated in a conference, as the information acquired through direct interactions, if any, will likely result in these participating insiders having an information advantage over non-participating insiders from the same firm. I test two predictions. First, I expect participating insiders to use any information acquired through conference interactions in a short window after the conference. Therefore, I estimate Eqn. (4) to test whether participating insiders are more likely to trade in the seven-day window after a conference.

$$1(Trade_{POST})_{ijk} = \beta_0 + \beta_1 ParticipatingInsider_{ijk} + \Gamma X_{ijk} + Fixed\ Effects + e_{ijk}. \tag{4}$$

where i denotes firm, j denotes executive, and k denotes trade. $1(Trade_{POST})$ is an indicator variable that takes the value of one if the trade occurs within seven days after an investor conference for firm i and zero otherwise. *Participating insider* is an indicator that takes the value of one if the trade is placed by an insider j who has participated in the conference on behalf of firm i prior to the transaction date and zero otherwise.

Next, I expect information learned through conference interactions to be reflected in the profitability of participating insider trades immediately after the conference, compared to other trades executed by managers of the same firm without such interactions.

$$Profits_{ijk} = \beta_0 + \beta_1 ParInsiderTrade_{POSTijk} + \Gamma X_{ijk} + Fixed\ Effects + e_{ijk}. \tag{5}$$

As diagrammatically illustrated in Fig. (1), *ParInsiderTrade*$_{POST}$ takes the value of one if executive j placed a trade k within the seven days after attending an investor conference on behalf of firm i and zero otherwise. The control group includes (i) trades made by insiders of the same firm who did not participate in a conference and (ii) trades made by participating insiders but outside the seven-day post-conference window (collectively, non-participating insider trades).[27] *Profits* measures the (unrealized) capital gains after purchases and losses avoided after sales (Jagolinzer et al., 2011; Ravina and Sapienza, 2010). It is measured by two variables: *Alpha30* is the average risk-adjusted returns for each insider transaction calculated over the 30 days

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[25] Theories of information mosaic suggest that the combination of multiple pieces of information into a mosaic generates a superior estimate of value (Cheynel and Levine, 2020). When managers use investors' information to fill in the mosaic around their own private information, they obtain a superior signal that is not known to the investor nor has been impounded in prices.

[26] A routine trade is one for which the insider has made three trades in the same month in each of the three previous years. All other trades are opportunistic.

[27] By comparing trades made by participating insiders but differ in their timing − trades made immediately after the conference window are most likely to reflect information acquired at the conference while trades made outside of this window are likely not − it mitigates concerns that insiders who can participate in a conference serve more important roles in the firm and are systematically more likely to have better private information than insiders who do not. In Section 5.2.2, I present alternative specifications by separately comparing participating insider trades with these two control groups of trades to show that the results are not sensitive to this design choice.

Table 6
Consequences of learning from direct interactions - insider trading.

Panel A: Timing of Insider Trades

Dep. Variable	(1) $1(Trade_{POST})$		(2) $1(Trade_{POST})$
Participating Insider	0.092***		0.065***
	(9.55)		(5.98)
Conf Abn Ret	−0.000		0.013
	(−0.03)		(0.98)
Conf Abn Turnover	0.001		0.001
	(0.29)		(0.25)
CEO	−0.024***		−0.007
	(−3.11)		(−1.01)
Fixed Effects	Firm-Quarter		Firm-Month
N	28,201		24,377
Adj. RSQ	0.18		0.36

Panel B: Insider Trading Profits

Dep. Variable	(1) *Alpha30*	(2) *Alpha30*	(3) *BHAR30*	(4) *BHAR30*
ParInsiderTrade$_{POST}$	0.067***	0.030**	1.478***	0.497*
	(3.18)	(2.09)	(3.53)	(1.89)
Conf Abn Ret	0.007	0.006	0.292	0.066
	(0.81)	(0.55)	(1.63)	(0.30)
Conf Abn Turnover	0.016**	0.018**	0.295**	0.325**
	(2.28)	(2.24)	(2.21)	(2.24)
CEO	−0.002	−0.014	−0.016	−0.230
	(−0.22)	(−1.57)	(−0.12)	(−1.52)
Fixed Effects	Firm-Quarter	Firm-Month	Firm-Quarter	Firm-Month
N	28,201	24,377	28,201	24,377
Adj. RSQ	0.39	0.65	0.41	0.69

Panel A estimates Eq. (4). The sample includes all trades by corporate officers that occur within two months before or after an investor conference that the officer's firm has attended. All trades are opportunistic, following Cohen et al. (2012). $1(Trade_{POST})$ is an indicator variable that takes the value of one if a trade is placed in the seven days ***after*** an investor conference that firm i attended and zero otherwise. *Participating Insider* is an indicator that takes the value of one if a trade is placed by an insider who has participated in an investor conference on behalf of firm i prior to the trade and zero otherwise. All variables are defined in Appendix A. The coefficients on the intercept, firm-quarter, firm-month fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).
Panel B estimates Eq. (5). The sample follows that presented in Panel A. *ParInsiderTrade$_{POST}$* takes the value of one if the trade is executed by an executive in the seven days ***after*** attending an investor conference on behalf of the firm and zero otherwise. See Fig. (1) for a diagrammatic illustration. The dependent variable is either *Alpha30* or *BHAR30*. *Alpha30* measures the average risk-adjusted returns for each insider transaction (expressed as a percentage) calculated over the 30 days following an insider transaction and relative to the Fama and French (1993) three-factor models, multiplied by −1 for sales. *BHAR30* measures the market-adjusted buy and hold returns (expressed as a percentage) over 30 days following an insider transaction, multiplied by −1 for sales. All variables are defined in Appendix A. The coefficients on the intercept, firm-quarter, firm-month fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

following a transaction and relative to the Fama and French (1993) three-factor models, multiplied by −1 for sales; *BHAR30* measures the market-adjusted buy-and-hold return over 30 days following a transaction, multiplied by −1 for sales.[28]

I estimate Eqs. (4) and (5) with either firm-quarter or firm-month fixed effects. This specification focuses exclusively on variations within a firm-quarter or a firm-month (e.g., a fixed effect for Microsoft in January 2012) and subsumes all time-varying firm characteristics that do not vary during a given firm-quarter or firm-month (e.g., the number of product-market announcements made by Microsoft). This design controls for many factors that might be associated with conferences (e.g., firm performance, operating and financing changes, product market activities, and growth opportunities) and the timing and profitability of insider transactions. While the firm-month specification is the most robust in ruling out omitted firm-level characteristics, it relies on having meaningful variations in *ParInsiderTrade$_{POST}$* in a month. The vector of controls, *X*, includes a dummy variable for the CEO, as CEOs might have better private information than other executives and are more likely to attend a conference. It also includes the information content of the conference (from the investors' perspective) using conference-window abnormal returns (*Conf Abn Ret*) and abnormal trading volumes (*Conf Abn Turnover*), following Bushee

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[28] I choose to examine abnormal trading profit over a short 30-day window because I expect that participating insiders' information learned from direct interactions will be quickly incorporated into prices after the conference.

Table 7
Consequences of learning from direct interactions − insider trading alternative specifications.

Dep. Variable	(1) Alpha30	(2) Alpha30	(3) BHAR30	(4) BHAR30
Specifications:	The coefficient estimates on *ParInsiderTrade$_{POST}$*:			
A Regular Conferences	0.049***	0.030*	1.206***	0.566*
	(2.67)	(1.75)	(3.17)	(1.89)
B Participating vs	0.061***	0.020	1.659***	0.543**
non-participating insider	(2.69)	(1.45)	(3.70)	(2.14)
C Within participating insiders	0.093***	0.060***	1.725***	0.837**
	(3.31)	(2.99)	(2.86)	(2.29)
D (-7, +7) day around the	0.018	0.027**	0.774***	0.753***
conference				
	(1.35)	(2.30)	(3.19)	(3.90)
Fixed Effects	Firm-Quarter	Firm-Month	Firm-Quarter	Firm-Month

This table estimates Eq. (5). It reports the coefficient estimate on *ParInsiderTrade$_{POST}$* under various alternative specifications to Table 6 Panel B, including:
● Specification A: use the subsample of trades that were made within two months before or after a *regular* conference (i.e., conferences that are held in the same month or one month apart every year).
● Specification B: compare trades made by participating insiders in the seven-day post-conference window (*ParInsiderTrade$_{POST}$* = 1) with trades made by insiders from the same firm but did not participate in the conference (*ParInsiderTrade$_{POST}$* = 0).
● Specification C: within insiders who participated in the conference, compare trades made in the seven-day post-conference window (*ParInsiderTrade$_{POST}$* = 1) with trades made outside of this window (*ParInsiderTrade$_{POST}$* = 0).
● Specification D: use the subsample of trades made within *seven days* before or after a conference.
The coefficients on the intercept, firm-quarter, firm-month fixed effects, and control variables (following those presented in Table 6) are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

et al. (2011). The coefficient of interest is β_1. It examines whether participating insiders' trades generate higher abnormal returns, thus reflecting their superior private information, when compared to non-participating insider trades.

Panel C of Table 2 provides descriptive statistics of the sample. On average, 13.2% (14.5%) of the trades are executed in the seven days after (before) the conference, 15.3% of trades are made by executives who have participated in a conference prior to trading, and 2.7% (2.9%) trades are executed by participating insiders in the seven days after (before) a conference. The mean (median) size of transactions is $1,702,000 ($144,000).

Panel A of Table 6 presents the results. The coefficient β_1 is positive and significant across all columns. Column 2 suggests that in the same firm-month, participating insiders are 6.5% more likely to trade in the seven-day post-conference window than non-participating insiders, consistent with participating insiders trading on their information advantage after learning from investors at conferences. Table 6 Panel B presents the results for Eq. (5). Columns 1 and 2 (3 and 4) use 30-day trading alpha (buy-and-hold returns). The coefficients on *ParInsiderTrade$_{POST}$* are significantly positive across all specifications, consistent with participating manager's information set expanding after conference interactions. In column 2, compared to non-participating insider trades, participating insider trades in the same firm-month generate an incremental alpha of 0.03% per day over the 30 days following the transaction. Given that the average (median) dollar transaction value in the sample is $ 1,702,000 ($ 476,000), this translates to a risk-adjusted return of $511 ($143) per day, over the 30 days following the transaction.[29] The coefficients on the information content of the conference (*Conf Abn Turnover*) are positive and significant, consistent with reciprocal information flow between investors and managers. The coefficients on *CEO* are negative, as CEOs do not earn higher trading profits than other top executives (Wang et al., 2012).

5.2.2. Alternative specifications

I present several alternative specifications of Eqn. (5) in Table 7 to address various concerns. First, managers might strategically attend conferences when they have private information to disclose and wait to trade after the uncertainty regarding investor reactions has been resolved. To mitigate this concern, I limit the sample to trades around regular conferences; this is because these conferences have fixed schedules and give managers very little discretion in timing (specification A). Next, I separately compare participating insider trades with (1) trades made by insiders who did not participate in a conference (specification B) and (2) trades made by participating insiders outside of the seven-day post-conference window (specification C). This is to mitigate concerns that the results documented are not sensitive to the choice of control groups. Third, I restrict the analysis to trades within seven days before or after a conference to limit the comparison to a much tighter window (specification D, see Appendix G for a diagrammatic illustration). The coefficients on *ParInsiderTrade$_{POST}$* remain positive and significant (<5%) in most of these alternative specifications, and the magnitude of alpha ranges between 0.018% and 0.093%. My inferences remain unchanged.

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[29] The magnitude of alpha is comparable to the abnormal returns associated with managers' private information documented in the prior literature. For example, Jagolinzer et al. (2011) show that when general council approval is required, insider trades earn 0.04% less alpha per day, compared to trades that do not require approval.

Table 8

Consequences of learning from direct interactions - insider trading falsification tests.

Panel A: Timing of Insider Trades

	(1)	(2)
Dep. Variable	$1(Trade_{PRE})$	$1(Trade_{PRE})$
Participating Insider	-0.115***	-0.095***
	(-10.27)	(-7.51)
Fixed Effects	Firm-Quarter	Firm-Month
Controls	Yes	Yes
N	28,201	24,377
Adj. RSQ	0.19	0.38

Panel B: Insider Trading Profits

	(1)	(2)	(3)	(4)
Dep. Variable	*Alpha30*	*Alpha30*	*BHAR30*	*BHAR30*
ParInsiderTrade$_{PRE}$	0.041*	0.012	0.462	0.193
	(1.80)	(0.60)	(1.11)	(0.57)
Fixed Effects	Firm-Quarter	Firm-Month	Firm-Quarter	Firm-Month
Controls	Yes	Yes	Yes	Yes
N	28,201	24,377	28,201	24,377
Adj. RSQ	0.39	0.65	0.41	0.69

Panel A examines whether participating insiders are more likely to trade in the seven days **before** a conference. It replicates the analysis in Table 6, Panel A, but replaces the dependent variable in Eq. (4) with $1(Trade_{PRE})$, which is an indicator variable that takes the value of one if a trade is placed in the seven days **before** an investor conference and zero otherwise. All variables are defined in Appendix A. The coefficients on the intercept, firm-quarter, firm-month fixed effects, and control variables (following those presented in Table 6) are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed). Panel B examines if participating insiders' trades made in the seven-day window before an investor conference earn greater abnormal profits. It replicates the analysis in Table 6, Panel B, but replaces *ParInsiderTrade$_{POST}$* in Eq. (5) with *ParInsiderTrade$_{PRE}$*, which takes the value of one if the trade is executed in the seven days **before** attending an investor conference on behalf of the firm and zero otherwise. All variables are defined in Appendix A. The coefficients on the intercept, firm-quarter, firm-month fixed effects, and control variables (following those presented in Table 6) are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

5.2.3. Distinguish from managerial opportunism

An alternative explanation that managers can trade profitably around conference interactions is that firms can strategically disclose information during the conference and sell (buy) before the conference if they anticipate investors to respond negatively (positively).[30] While I acknowledge that opportunism is a possible explanation for managers to trade profitably around conferences, I make deliberate design choices to isolate the effect of learning. First, I compare insider trading profit *within* the same firm-month and focus on the *incremental* information advantage of participating insiders over non-participating insiders. Second, I only look at trades *after* a conference. An alternative explanation needs to explain why participating managers have better information than non-participating managers and why this information advantage occurs after a conference. This design choice is different from the empirical setup in Bushee et al. (2022), which examines trades *before* a conference and compares *across* firms with different pre-conference disclosures to investigate opportunism-motivated trading.

Furthermore, I conduct additional falsification tests to further distinguish from this alternative explanation. Managerial opportunism predicts that participating insiders can make profitable trades via front-running (that is, trading *before* the conference), while learning only predicts that the information advantage of participating insiders occurs *after* the conference. In order to distinguish between these two theories, Table 8 presents falsification tests that examine (i) whether participating insiders are more likely to trade in the seven-day window *before* a conference and (ii) whether trades that are executed in the seven-day *pre-conference* window earn more positive abnormal returns (see Appendix G for a diagrammatic illustration). Panel A modifies Eq. (4) using $1(Trade_{PRE})$ as the outcome variable, which is an indicator variable that takes the value of one if a trade is placed within the seven-day pre-conference window and zero otherwise. The coefficients on *Participating Insider* are significantly negative. This result, combined with the results in Table 6, suggests that participating insiders are less likely to

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[30] For instance, Bowen et al. (2018) examine private meetings between managers, investors, and analysts for firms listed on China's Shenzhen Stock Exchange. They find that insiders can trade profitably in the 20-day window before or after a private meeting, consistent with both managerial opportunism and learning (and they do not distinguish between these two explanations). Bushee et al. (2022) show that managers opportunistically issue voluntary disclosure to hype stock prices and sell their shares at inflated prices prior to a conference.

Table 9

Consequences of learning from direct interactions - insider trading cross-sectional analysis.

Dep. Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Alpha30	Alpha30	BHAR30	BHAR30	Alpha30	Alpha30	BHAR30	BHAR30
	Demand for Prd Mkt Info				Demand for Supply Chain Info			
Subsample	High	Low	High	Low	High	Low	High	Low
ParInsiderTrade$_{POST}$	0.065***	-0.007	1.101***	-0.143	0.047***	0.027	0.525	0.464
	3.27	-0.38	3.07	-0.44	2.64	1.28	1.46	1.24
F-statistics	7.317		6.877		0.608		0.016	
p-value	0.01		0.01		0.44		0.90	
Fixed Effects	Firm-Month	Firm-Month	Firm-Month	Firm-Month	Firm-Month	Firm-Month	Firm-Month	Firm-Month
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	12,145	11,028	12,145	11,028	10,627	9,991	10,627	9,991
Adj. RSQ	0.63	0.7	0.67	0.74	0.64	0.69	0.67	0.73

This table estimates Eq. (5) and partitions the sample in Table 6 Panel B based on the median value of *Demand for Prd Mkt Info* (columns 1 to 4) and *Demand for Supply Chain Info* (columns 5 to 8). The coefficients on the intercept, firm-month fixed effects, and control variables (following those presented in Table 6) are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

trade in the *pre-conference* window but rather wait until they have acquired information from investors during conference interactions. Panel B modifies Eq. (5) with *ParInsiderTrade$_{PRE}$*, which is an indicator variable that takes the value of one if a trade is placed by an executive in the seven-window before attending an investor conference and zero otherwise. The coefficients on *ParInsiderTrade$_{PRE}$* are positive but insignificant in three out of four columns, suggesting that participating insiders do not have an information advantage over non-participating insiders before a conference.

5.2.4. Cross-sectional analysis: nature of information learned

The above analyses focus on whether managers can learn something useful from direct interactions with investors. However, it is not clear what exactly they learn. One possibility is that investors can pass along sector- and industry-related knowledge that helps managers better predict their firm's competitive landscape and operating environment. To shed light on the types of information learned, I develop cross-sectional predictions based on the manager's demand for specific information. If participating insiders' information advantage comes from the fact that they have obtained industry or sector-related information, their trades should be more profitable when, in fact, they have a higher demand for such information. Therefore, I partition the sample based on proxies for managers' information demand, namely *Demand for Prd Mkt Info* and *Demand for Supply Chain Info*. Table 9 presents the results of this analysis. For brevity, I report the specification using firm-month fixed effects. For information related to the product market, the coefficients on *ParInsiderTrade$_{POST}$* are consistently positive and significant (under the 5% level) when *Demand for Prd Mkt Info* is high, but are negative and insignificant in the low subsample (with F-statistics significant under the 1% level). For information related to supply chain industries, the evidence is mixed. While the coefficients on *ParInsiderTrade$_{POST}$* are positive and significant (insignificant) in the high (low) subsample when using *Alpha30* as the outcome variable, the F-statistic is not significant. Overall, the evidence suggests that one source of participating insiders' information advantage comes from learning about product markets from institutional investors at conferences.[31]

6. Conclusions

This paper provides evidence on managerial learning from institutional investors through direct interactions at investor conferences. The literature shows that corporate managers can learn from institutional investors in specific settings or by gleaning information from stock prices. However, there is limited large-scale evidence on whether a manager of the average U.S. public firm learns directly from institutional investors, despite the regular manager-investor interactions. I propose that managers seek out direct interactions at investor conferences with institutional investors as a further mechanism to learn relevant information.

My empirical analyses examine both the incentives and the consequences of direct learning. I hypothesize that managers are more likely to seek direct interactions when they have a high demand for specific types of information that they expect their current base of institutional investors to possess. Focusing on industry and supply chain information, I find that managers seek more direct interactions when they demand such information and when they expect their current institutional investors to have the knowledge that would help them. Information learned through direct interactions is then

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[31] Another piece of collaborative evidence is that managers issue more forecast revisions in the quarter after the conference (details in Appendix F). This is consistent with managers acquiring information (and sector information could be one form of such information) that helps them to forecast future cash flows.

reflected in the manager's subsequent decisions. Direct interactions help managers to extract relevant information from stock prices to make investment and acquisition decisions. When comparing insider trades in the same firm-month, trades executed by participating insiders within seven days after a conference earn greater positive abnormal returns, consistent with managers learning useful information at the conference. Collectively, my results show that managers acquire decision-relevant information from their interactions with their firm's institutional investors.

Appendix A. Variable Definitions

NumInteract	The number of investor conferences that firm *i* attended or hosted in the fiscal quarter *t*.
CEO	The number of times that the CEO of firm *i* attended an investor conference during the fiscal quarter *t*.
NumExecs	The total number of executives from firm *i* who have attended an investor conference during the fiscal quarter *t*. If an executive attended more than one conference, each attendance is counted as one.
AnsPerQ	The average number of words (in thousands) that managers of firm *i* provided per questions asked in the Q—amp;A session(s) of investor conferences during the fiscal quarter *t*.
MDWords	The total number of words (in thousands) in the management discussion session(s) for all investor conferences that firm *i* has attended during the fiscal quarter *t*.
PrivateMtg	The total number of times that firm *i* offers private breakout sessions or one-on-one meetings at an investor conference during the fiscal quarter *t*. Private meetings are identified by searching through transcripts for mentions of "one-on-one," "breakout," or an indication towards the end of the transcript for "moving to another room" (and all common variants), following (Bushee et al., 2017).
Direct Interaction	The first principal component of *NumInteract, CEO, NumExecs, AnsPerQ, MDWords,* and *PrivateMtg*.
Data Source: Thomson Reuters StreetEvents and Factset CallStreet.	

Demand for Prd Mkt Info	The sum of absolute market-adjusted announcement-day returns of product market announcements made by firm *i*'s peer firms during the fiscal quarter *t*, scaled by the total number of peers. Peer groups are defined using Hoberg-Phillips text-based industry classification.
Demand for Supply Chain Info	The sum of absolute market-adjusted announcement-day returns of product market announcements made by direct suppliers and customers of firm *i* during the fiscal quarter *t*, scaled by the total number of direct suppliers and customers.
Data Source: Factset Revere, CRSP, Hoberg-Phillips Data library (http://hobergphillips.tuck.dartmouth.edu/).	

Prd Mkt Hldgs ($ Billion)	Investor *j*'s average dollar holdings in firm *i*'s peer firms, summed over all institutional investors holding at least 1% of the shares in firm *i*, computed as: $\sum_{j\in J}\sum_{p\in P}\dfrac{Dollar\ Holdings_{jp}}{n}$, where *J* is the set of all investors that hold at least 1% of the total common shares outstanding in firm *i*, *P* is the set of all product market peer firms of firm *i* (Hoberg-Phillips text-based industry classification). *n* is the total number of product market peer firms held by investor *j*. *Dollar Holdings* is the dollar holdings in firm *p* by investor *j*, averaged over all 13F reports made during the trailing 12 months ending before the start of fiscal quarter *t*.
Supply Chain Hldgs ($ Billion)	The total dollar holdings in firm *i*'s supply chain industries, summer over all institutional investors holdings at least 1% of the shares in firm *i*, computed as : $\sum_{k\in K}\sum_{j\in J}\dfrac{Industry\ Dollar\ Holdings_{jk}}{n_k}$, where *K* is the set of all SIC four-digit industries whereby firm *i* has at least one direct supplier or one customer. *J* is the set of all investors that hold at least 1% of the total common shares outstanding in firm *i*. *Industry Dollar Holdings* is the dollar holdings in industry *k* held by investor *j*, averaged over all 13F reports made during the trailing 12 months ending before the start of fiscal quarter *t*. n_k is the number of firm *i*'s direct suppliers and customers in industry *k*.
Data Source: Hoberg-Phillips Data library (http://hobergphillips.tuck.dartmouth.edu/), Factset Revere,ThomsonReuters 13F.	

CapxRD	The sum of capital expenditure and R&D expenses scaled by total assets for firm *i* in quarter *t*.
Price NonSync	One minus R^2 from regressing daily returns of firm *i* on CRSP value-weighted market return and the return of the three-digit SIC industry portfolio over quarter *t*, following Chen et al. (2007).
PIN	The probability of informed trading for firm *i* during fiscal quarter *t*, estimated following Easley et al. (2002), net of all insider transactions by multiplying with (1-*Insider*). *Insider* is the percentage of insider transactions to total number of all transactions as recorded in TAQ.
Q	Market value of equity plus book value of assets minus book value of equity, scaled by book value of assets.
Data Source: Compustat, CRSP, Thomson Reuters Insider, TAQ.	

1(Complete)	An indicator variable that takes the value of 1 for completed M—amp;A transaction, and 0 for transactions that are canceled or withdrawn.
Deal Discussion	The number of times the pending M—amp;A transaction is mentioned in the conference transcripts.
Negative (Positive) Deal-related Qns	The number of negative (positive) deal-related questions asked during the Q—amp;A session of the conference. A negative (positive) question is defined as a question that contains more negative (positive) words than positive (negative) words, using the Loughran and McDonald dictionary (Loughran and McDonald, 2011).
AnnCAR	The value-weighted average of deal announcement cumulative abnormal return (*CAR*) for the bidder and the target. If the target is private, it equals to the bidder's announcement *CAR*. *CAR* is the cumulative abnormal return during the (-1,+7) trading days around the deal announcement. Abnormal return is computed based on a market model estimated between (-250, -50) days before the announcement, following Luo (2005).
Data Source: SDC Platinum, CRSP, Thomson Reuters StreetEvents and Factset CallStreet.	

Alpha30	The risk-adjusted returns for an insider transaction (multiply by 100) calculated over the 30 days following the transaction date and relative to the Fama and French (1993) three-factor models, multiplied by -1 for sales.
BHAR30	The market-adjusted buy-and-hold returns for an insider transaction (multiply by 100) calculated over the 30 days following the transaction date, multiplied by -1 for sales. Market-adjustment is computed by subtracting the buy-and-hold returns of CRSP value-weighted index.
*1(Trade$_{POST}$)	1(Trade$_{PRE}$)*	An indicator variable that takes the value of 1 if a trade k is placed within seven days after (subscript POST) or before (subscript PRE) an investor conference that firm i has attended and 0 otherwise.
Participating Insider	An indicator variable that takes the value of 1 if a trade k is placed by an insider j from firm i who has participated in an investor conference prior to the transaction date of the trade and 0 otherwise.
ParInsiderTrade$_{POST}$ ParInsiderTrade$_{PRE}$	An indicator variable that takes the value of 1 if an insider trade k is executed by an insider j within seven days after (subscript POST) or before (subscript PRE) participating in an investor conference on behalf of firm i and 0 otherwise.
CEO	An indicator variable that takes the value of 1 if executive j is the CEO of the firm i, and 0 otherwise.
Conf Abn Ret	Three-day (-1, +1) absolute market-adjusted returns around the conference date, subtracted by the mean absolute value of three-day market-adjusted returns during the estimation period, and then divided by the standard deviation of the absolute values during the estimation period (Bushee et al., 2011). The estimation period begins 120 days prior to and ends 30 days prior to the investor conference. Market-adjustment is computed by subtracting the buy-and-hold returns of CRSP value-weighted index.
Conf Abn Turnover	Three-day (-1, +1) volume divided by shares outstanding around the conference date, subtracted by the average three-day turnover in the estimation period, times 100 (Bushee et al., 2011). The estimation period begins 120 days prior to the investor conference and ends 30 days prior to the investor conference.
Unsigned Trading Volume ($ 000)	The dollar value of an insider trading transaction, calculated as the transaction price multiplied by the number of shares purchased or sold.
Data Source: Thomson Reuters Insider, CRSP, Thomson Reuters StreetEvents, Factset CallStreet.	
Size	Natural logarithm of total asset in $ million (*ATQ*).
Inst. Ownership	Natural logarithm of one plus number of institutional owners reporting holdings of firm i's common stock based on the most recent 13-F report issued before the end of fiscal quarter t. Assumed to be 0 for any period in which the company is listed on an exchange, but has no data available in 13-F.
Analyst	Natural logarithm of one plus the number of analysts issued earnings forecasts for firm i during fiscal quarter t. Assumed to be 0 for any period in which the company is listed on an exchange, but has no data available on I/B/E/S.
Financing	An indicator variable that takes the value of 1 if firm i issues debt or equity in the prior, current, or subsequent fiscal year as reported in the SDC database, and 0 otherwise.
M&A	An indicator variable that takes the value of 1 if firm i has made an acquisition in the prior, current, or subsequent fiscal year as reported in the SDC database, and 0 otherwise.
Restructuring	Indicator variable that takes the value of 1 if firm i has a non-zero restructuring charge (*RCPQ*) to earnings in fiscal quarter t and 0 otherwise.
Firm Age	Natural logarithm of the number of years since firm i first appeared in Compustat.
Segments	The number of unique business segments reported in firm i's annual filings according to Computsat Segment database.
High Tech	Indicator variable that takes the value of 1 for firm i is in SIC codes: 2833−2836 (drugs), 8731−8734 (R−D services), 7371−7379 (programming), 3570−3577 (computers), 3600−3674 (electronics), or 3810−3845 (precise measurement instruments), and 0 otherwise (Kirk and Markov, 2016).
Intangibles	Sum of recognized intangibles (*INTAN*) and goodwill (*GDWL*) at the end of the fiscal year, scaled by total assets (*AT*).
R&D	R−amp;D expenses (*RD*) during the fiscal year scaled by total assets (*AT*). Following Kirk and Markov (2016) and Koh and Reeb (2015), I replace missing values with the two-digit SIC industry median of R−amp;D for the same year; if the latter is also missing, when I set R−amp;D to 0.
BM Ratio	Book value of equity (*ATQ - LTQ*) scaled by the market value of equity (*PRCCQ*CSHOQ*).
Ret	Cumulative buy-and-hold returns over the fiscal quarter t, less the cumulative buy-and-hold return of CRSP value-weighted index over the corresponding period.
Ret Vol	The standard deviation of daily returns over the fiscal quarter t.
Leverage	Book value of debt (*DLTTQ + DLCQ*) scaled by total assets (*ATQ*).
Loss	An indicator variable that takes the value of 1 if a firm reported negative income before extraordinary items (*IBQ*) in the fiscal quarter, and 0 otherwise.
AnnFreq	The number of product market announcements made by firm i during the fiscal quarter t.
AnnAR	The sum of absolute market-adjusted one-day returns of product market announcements made by firm i during the fiscal quarter.
Attended Conference	An indicator variable that equals to 1 if firm i attended a conference in quarter t, and 0 otherwise.
Info. Transfer (Prd Mkt)	The sum of absolute market-adjusted returns of focal firm i on the date of product market announcements made by firm i's peer firms (suppliers and customers) during the fiscal quarter t, scaled by the total number of peers (suppliers and customers).
Info. Transfer (Supply Chain)	
# of Conference Peers	The average number of firms in the same Fama-French 30 industry as the focal firm i that are present in conferences that firm i attended during fiscal quarter t.
Data Source: Compustat, I/B/E/S, S−amp;P Capital IQ, CRSP, WRDS SEC Analytics. Compustat data items are indicated in parenthesis, where applicable.	

All continuous variables presented in this appendix are winsorized 1% and 99% to remove the effect of outliers.

Appendix B. Examples of Investors Expressing View during Public Q&As at Investor Conferences

This appendix contains three transcript excerpts from investor conferences in which investors express their views about product market and supply chain conditions by asking questions during the public Q&A sessions. The Deutsche Bank Technology Conference (the William Blair Growth Conference) is regularly scheduled in September (June) every year. The William Blair Growth Conference does not have an industry focus and invites, on average, companies from 15 Fama-French 30 industries. For brevity purposes, only questions asked by institutional investors are presented.

1. Excerpts from Amgen Inc. at Goldman Sachs Key Debates in Biosimilars on April 02, 2015

Unidentified Participant
And in terms – I guess one of the things that, again, you guys have been able to retain pretty decent market share. Obviously price has eroded somewhat. Is that again somewhat of an analogy to think about on the US side as we think about biosimilars coming as a strategy? Again, Jami mentioned this too, is just this price matching and having a portfolio approach to this, as you guys obviously have a wide array of products. So how does that play into your strategy more on the defensive side in the US?

Unidentified Audience Member
I guess you're just a little bit unique in that you have some product that may come under competition obviously from biosimilars, but then you are also trying to do your own, as well. So I'd be curious, any anecdotes internally on the debates you have, in terms of wanting to preserve your estate of products while also developing these.

Unidentified Audience Member
So, I'm amused to see that your pipeline looks identical to Pfizer's pipeline.

Unidentified Audience Member
Right, point taken. I think the question really is, though, you've described your marketing strategy as really being akin to selling branded biologics. Those of us who have had a lot of experience in the generic business learned to compete on the basis of cost.

I guess the question is, in light of the fact that there may be four or five competitors on a particular molecule, to what extent is cost going to be far – is the cost discounting far greater than what we've seen so far in Europe? And I guess part B is, do you foresee the possibility that actually once these become utilized, that managed care organizations and states themselves start to turn towards a [tender] system for bidding for these products, thereby reducing any differentiation on the marketing side?

2. Excerpts from CA Inc at Deutsche Bank Technology Conference on September 13, 2017

Unidentified Audience Member
Just going back to what you – or at the beginning of your talk, you talk about how the importance in terms of going to the cloud of having all of your apps or data in a single place because of the overhead and latency of using an internal cloud as well as an external cloud, perhaps. As you pointed out, the government is a very big customer, and they've got all these legacy systems and all this data and somebody building an app in the government would just be forced to, I would think, not be able to use the public cloud. And similarly, I think Deutsche Bank has done a lot of studies that show that there's been a very – a slower than expected conversion of existing workloads to the cloud. And it's kind of a little bit of a pause because of this problem of separating. How do you see this playing out? And does that leave the government not really participating in public clouds because they just – it's just too much stickiness of big apps?

3. Excerpts from Citrix Systems at William Blair Growth Stock Conference on June 12, 2013

Unidentified Audience Member
Are you approaching the desktop as a secular change where demand (inaudible) slowdown?

Unidentified Audience Member
Can you talk about the interesting thing in XenMobile and customers and why (inaudible)? Where do you anticipate the pull through or the relationship to the XenApp and XenDesktop business? Will customers that choose to adopt (inaudible)? Is it more likely to make them adopt the desktop solutions or when you talk about the pipeline and you see (inaudible), should we anticipate that's going to be more the focus and some of that might actually come at the expense of business that may have been focused on (inaudible) ?

Appendix C. Alternative Specifications – Cross-Sectional Analysis Based on Institutional Investors' Supply of Information

This appendix presents alternative specifications of the cross-sectional analysis in Table 4 using different subsamples of the conference transcripts.

C.1: Regular Conference

Panel A: Institutional Investors' Knowledge of the Product Market

	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
Sub-Sample	All Quarters		Conference Quarters	
Demand for Prd Mkt Info	2.739***	0.139	4.380***	0.805
	(5.21)	(0.36)	(3.96)	(0.74)
F-statistics	16.617		5.334	
p-value	0.00		0.02	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	31,473	31,462	10,512	9,913
Adj. RSQ	0.65	0.66	0.27	0.21

Panel B: Institutional Investors' Knowledge of Supply Chain Industries

	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
Sub-Sample	All Quarters		Conference Quarters	
Demand for Supply Chain Info	1.282***	0.380*	1.776***	0.883*
	(4.62)	(1.93)	(3.31)	(1.83)
F-statistics	7.222		1.546	
p-value	0.01		0.21	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	23,365	22,756	8,552	8,151
Adj. RSQ	0.64	0.66	0.24	0.22

This table repeats the analysis in Table 4 using the subsample of regular conferences. Regular conferences are defined as conferences that take place in the same month or one month apart every year. Columns 1 and 2 use the full sample of all quarters; columns 3 and 4 condition on attending a regular conference. All variables are defined in Appendix A. Control variables follow those presented in Table 3. The F-statistics compares the coefficients on *Demand for Prd Mkt Info* and *Demand for Supply Chain Info* across the two subsamples. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

C.2: Non-Ind-Focus Conference

Panel A: Institutional Investors' Knowledge of the Product Market

	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
Sub-Sample	All Quarters		Conference Quarters	
Demand for Prd Mkt Info	2.485***	0.326	4.410***	1.965*
	(4.60)	(0.80)	(4.43)	(1.72)
F-statistics	10.394		2.543	
p-value	0.00		0.11	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	31,473	31,462	9,780	9,329
Adj. RSQ	0.62	0.63	0.27	0.21

Panel B: Institutional Investors' Knowledge of Supply Chain Industries

	(1)	(2)	(3)	(4)
	Dep. Variable: *Direct Interaction*			
	High Knowledge	Low Knowledge	High Knowledge	Low Knowledge
Sub-Sample	All Quarters		Conference Quarters	
Demand for Supply Chain Info	1.114***	0.606***	2.099***	0.972*
	(3.75)	(2.70)	(3.85)	(1.86)
F-statistics	1.917		2.269	
p-value	0.17		0.13	
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
Controls	Yes	Yes	Yes	Yes
N	23,365	22,756	7,959	7,628
Adj. RSQ	0.62	0.63	0.25	0.22

This table repeats the analysis in Table 4 using the subsample of conferences that do not have an industry focus. Industry-focused conference is defined as having fewer than four Fama-French 30 industries represented at the conference. Columns 1 and 2 use the full sample of all quarters; columns 3 and 4 condition on attending a non-industry-focused conference. All variables are defined in Appendix A. Control variables follow those presented in Table 3. The F-statistics compares the coefficients on *Demand for Prd Mkt Info* and *Demand for Supply Chain Info* across the two subsamples. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

Appendix D. Clustering of Conferences around Product Announcements

	(1)	(2)	(3)	(4)
	Dep. Variable: *Ln (1 + Num Conferences)*			
Num Prd Mkt Ann	−0.070	−0.078		
	(−0.39)	(−0.51)		
Prd Mkt Ann Ret			−0.047	−0.042
			(−1.04)	(−1.34)
Ind Size		0.460***		0.455***
		(5.31)		(5.01)
Ind ROA		−0.018		−0.020
		(−0.94)		(−1.04)
Ind BM		−0.041		−0.043
		(−0.23)		(−0.24)

(continued)

	(1)	(2)	(3)	(4)
	Dep. Variable: *Ln (1 + Num Conferences)*			
Fixed Effects	Ind, YQ	Ind, YQ	Ind, YQ	Ind, YQ
N	1,485	1,485	1,485	1,485
Adj. RSQ	0.88	0.89	0.88	0.89

This table investigates the relation between investor conference frequency and product market announcement. The unit of analysis is at the industry-quarter level. The dependent variable is the natural logarithm of one plus the number of investor conferences for each industry quarter. *Num Prd Mkt Ann* is the count of product market announcements by firms in an industry during the quarter, scaled by the total number of firms in the industry. *Prd Mkt Ann Ret* is the sum of absolute announcement-day returns of product market announcements made by firms in an industry during the quarter, scaled by the total number of firms in the industry. *Ind Size* is the natural logarithm of the total asset size of all firms in an industry. *Ind ROA* is the average returns on asset of all firms in an industry. *Ind BM* is the average book-to-market ratio of all firms in an industry. Industry is defined using Fama-French 30 industries. The coefficients on the intercept, industry, and year-quarter fixed effects are not reported. T-statistics based on robust standard errors clustered by industry are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

Appendix E. How Measures of Manager Information Demand and Investor Knowledge are Associated with Firm Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Variable:	*Demand for Prd Mkt Info*		*Demand for Supply Chain Info*		*Prd Mkt Hldgs*		*Supply Chain Hldgs*	
Sample	All Qtr	Conf Qtr	All Qtr	Conf Qtr	All Qtr	Conf Qtr	All Qtr	Conf Qtr
Size	0.001*	0.001	0.000	0.001	0.112**	0.100	7.678	4.907
	(1.77)	(1.39)	(0.21)	(0.45)	(2.03)	(1.10)	(1.62)	(0.67)
Inst. Ownership	0.000	−0.000	−0.001**	−0.000	0.581***	0.694***	29.166***	31.733***
	(0.37)	(−0.06)	(−2.11)	(−0.50)	(15.53)	(12.51)	(13.42)	(11.54)
Analyst	0.000*	0.001**	0.002**	0.000	0.030	0.075	4.487	2.940
	(1.77)	(2.01)	(2.53)	(0.27)	(0.81)	(1.08)	(1.56)	(0.71)
Financing	−0.000	−0.000	0.000	0.001**	0.085***	0.099**	3.979*	3.882
	(−1.30)	(−1.39)	(0.90)	(2.04)	(2.67)	(2.30)	(1.94)	(1.28)
M&A	0.001***	0.000*	0.000	−0.000	−0.056*	−0.067	−3.754*	−5.131*
	(2.97)	(1.86)	(0.70)	(−0.40)	(−1.93)	(−1.61)	(−1.92)	(−1.69)
Restructuring	0.001	0.000	−0.000	0.000	−0.061	−0.071	4.761	3.769
	(1.48)	(0.02)	(−0.60)	(0.19)	(−1.30)	(−0.87)	(1.27)	(0.70)
Firm Age	−0.002*	−0.003**	−0.006***	−0.007**	0.135	0.264	−39.869***	−66.586***
	(−1.94)	(−2.47)	(−2.58)	(−2.38)	(0.77)	(0.88)	(−3.38)	(−3.21)
Segments	−0.000	0.000	0.000	−0.000	0.017	0.007	4.125**	4.037*
	(−0.01)	(0.23)	(0.15)	(−0.00)	(0.66)	(0.18)	(2.53)	(1.65)
High Tech	0.001	0.000	−0.002	−0.000	0.034	0.188	−1.160	5.416
	(0.38)	(0.08)	(−0.37)	(−0.06)	(0.18)	(0.80)	(−0.07)	(0.19)
Intangibles	−0.002***	−0.003**	−0.002	−0.002	0.240**	0.187	8.597	13.274
	(−2.69)	(−2.26)	(−0.90)	(−1.04)	(2.20)	(1.09)	(0.96)	(1.02)
R&D	0.003	0.006	0.002	0.010	0.286	0.831*	−8.442	30.581
	(1.59)	(1.48)	(0.27)	(0.93)	(1.50)	(1.80)	(−0.35)	(0.55)
BM Ratio	−0.001*	−0.001	0.002**	−0.000	−0.115***	−0.291***	0.475	−7.093
	(−1.67)	(−1.21)	(2.11)	(−0.08)	(−3.02)	(−3.91)	(0.13)	(−1.06)
Ret	0.000	0.000	−0.001*	0.000	0.016	0.020	0.755	4.371
	(0.94)	(0.63)	(−1.86)	(0.36)	(0.75)	(0.44)	(0.40)	(1.18)
Ret Vol	0.013	0.018	0.043**	0.055*	−0.513	1.764	93.359	105.690
	(1.63)	(1.31)	(2.10)	(1.83)	(−0.64)	(1.10)	(1.43)	(0.82)
Leverage	−0.001	−0.001	0.000	0.000	0.189	0.412	4.179	10.638
	(−0.60)	(−0.32)	(0.06)	(0.07)	(1.05)	(1.53)	(0.30)	(0.56)
Loss	−0.000	−0.000	−0.000	0.000	−0.019	−0.019	2.568	3.501
	(−1.25)	(−0.32)	(−0.68)	(0.24)	(−0.87)	(−0.50)	(1.56)	(1.32)
Fixed Effects	Firm, YQ, FQ,	Firm, YQ, FQ	Firm, YQ, FQ,	Firm, YQ, FQ	Firm, YQ, FQ,	Firm, YQ, FQ	Firm, YQ, FQ,	Firm, YQ, FQ
N	68,943	26,224	47,034	19,658	62,935	23,828	46,121	19,154
Adj. RSQ	0.79	0.80	0.49	0.46	0.66	0.69	0.64	0.65

This table relates measures of manager information demand (*Demand for Prd Mkt Info, Demand for Supply Chain Info*) and measures of investor knowledge (*Prd Mkt Hldgs, Supply Chain Holdgs*) to various focal firm characteristics. Columns 1, 3, 5, and 7 use the full sample of all quarters; columns 2, 4, 6, and 8 condition on attending a conference. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).

Appendix F. Consequences of Learning from Direct Interactions - Management Forecast Frequency and Accuracy
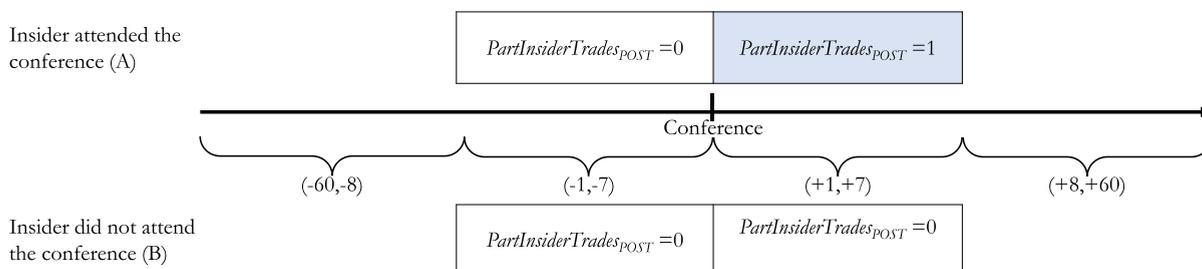
Dependent Variables:	(1) Ln(1+ Forecasts)	(2) Ln(1+ Forecasts)	(3) Ln(1+ Revisions)	(4) Ln(1+ Revisions)
Sample	Full	Conference Quarter	Full	Conference Quarter
Direct Interaction	0.006*	0.001	0.020***	0.012***
	(1.84)	(0.48)	(4.96)	(3.35)
Earnings Vol	0.000	-0.000	0.000*	0.000
	(1.34)	(-0.39)	(1.66)	(0.23)
Bid-ask Spread	-0.000	-0.000	0.000	-0.000
	(-0.44)	(-0.33)	(0.06)	(-0.59)
Turnover	0.006	0.010*	0.010***	0.018***
	(1.51)	(1.71)	(2.73)	(2.70)
RegFDDiscl.	0.030***	0.036***	0.029***	0.037***
	(9.58)	(8.01)	(9.01)	(7.79)
PctAnnFcast	0.007***	0.007***	0.007***	0.007***
	(60.25)	(39.05)	(70.74)	(46.44)
All other controls in Table 3	included	included	included	included
Fixed Effects	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ	Firm, YQ, FQ
N	68,943	26,224	68,943	26,224
Adj. RSQ	0.76	0.76	0.62	0.64

This table investigates whether corporate managers issue more forecasts following learning from direct interactions with institutional investors. The unit of analysis is a firm-quarter observation. The independent variable, *Direct Interaction*, is a composite score capturing the frequency and the degrees of information exchange of manager-investor interactions at investor conferences. The dependent variable is the number of management forecasts (*Forecasts*) in columns 1 and 2, the number of forecasts that are revisions (*Revisions*) in columns 3 and 4. Additional control variables include the standard deviation of quarterly net income (*IBQ*) over the previous 16 quarters (*Earning Vol*), quarterly average bis-ask spread (*Bid-ask Spread*), quarterly average of daily volume traded over shares outstanding (*Turnover*), the number of 8K filings that contains item 7.01 (Regulation Fair Disclosure) (*RegFDDiscl*), and the percentage of annual management forecasts (*PctAnnFcast*). Columns 1 and 3 use the full sample of all quarters; columns 2 and 4 condition on attending a conference. The coefficients on the intercept, firm (Firm), calendar-year-quarter (YQ), and fiscal quarter (FQ) fixed effects as well as the remaining control variables (follow those presented in Table 3) are not reported. T-statistics based on robust standard errors clustered by firm are indicated in parenthesis below coefficient estimates. ***, **, and * indicate significance level at 1%, 5%, and 10% respectively (two-tailed).
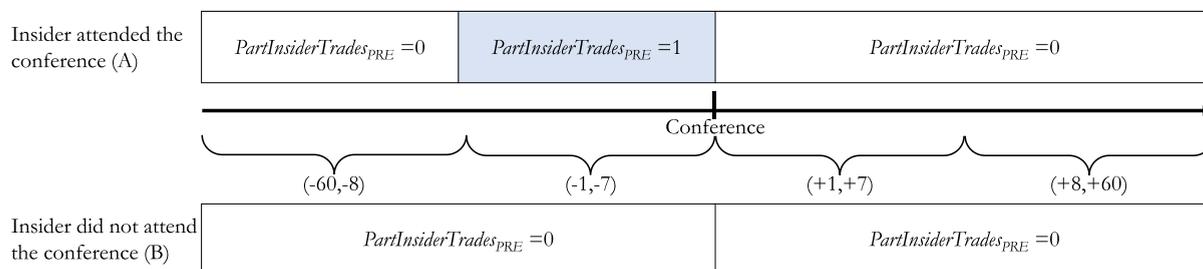
Appendix G. Diagrammatic Illustration of Alternative Insider Trading Analysis

This appendix illustrates the definition of *ParInsiderTrade$_{POST}$*, *ParInsiderTrade$_{PRE}$*, and the control group of trades in the alternative specifications in Tables 7 and 8. In Panel A, the reduced sample includes all trades by corporate officers that occur within the $(-7, +7)$ day window before or after an investor conference that the officer's firm has attended (Table 7 specification D). In Panel B, the falsification specification examines the profitability of participating insider trades in the seven-day pre-conference window (Table 8 Panel B).

Panel A: Trades within the $(-7, +7)$ Day Window Around the Conference.

Panel B: Trades in the Pre-conference Window.

Insider attended the conference (A)	$PartInsiderTrades_{PRE}=0$	$PartInsiderTrades_{PRE}=1$	$PartInsiderTrades_{PRE}=0$	

Conference

(-60,-8)   (-1,-7)   (+1,+7)   (+8,+60)

Insider did not attend the conference (B)	$PartInsiderTrades_{PRE}=0$	$PartInsiderTrades_{PRE}=0$

References

Abdi, H., Williams, L.J., 2010. Principal component analysis. Wiley Interdiscip. Rev.: Comput. Stat. 2, 433−459.

Acemoglu, D., Carvalho, V.M., Ozdaglar, A., Tahbaz-Salehi, A., 2012. The network origins of aggregate fluctuations. Econometrica 80, 1977−2016.

Baginski, S.P., 1987. Intraindustry information transfers associated with management forecasts of earnings. J. Account. Res. 196−216.

Barrot, J.-N., Sauvagnat, J., 2016. Input specificity and the propagation of idiosyncratic shocks in production networks. Q. J. Econ. 131, 1543−1592.

Ben-David, I., Graham, J.R., Harvey, C.R., 2013. Managerial miscalibration. Q. J. Econ. 128, 1547−1584.

Bernard, D., Blackburne, T., Thornock, J., 2020. Information flows among rivals and corporate investment. J. Financ. Econ. 136, 760−779.

Bond, P., Goldstein, I., Prescott, E.S., 2010. Market-based corrective actions. Rev. Financ. Stud. 23, 781−820.

Bowen, R.M., Dutta, S., Tang, S., Zhu, P., 2018. Inside the "black box" of private in-house meetings. Rev. Account. Stud. 23, 487−527.

Brav, A., Jiang, W., Kim, H., 2015. The real effects of hedge fund activism: productivity, asset allocation, and labor outcomes. Rev. Financ. Stud. 28, 2723−2769.

Brav, A., Jiang, W., Partnoy, F., Thomas, R., 2008. Hedge fund activism, corporate governance, and firm performance. J. Finance 63, 1729−1775.

Brown, L.D., Call, A.C., Clement, M.B., Sharp, N.Y., 2016. The activities of buy-side analysts and the determinants of their stock recommendations. J. Account. Econ. 62, 139−156.

Brown, L.D., Call, A.C., Clement, M.B., Sharp, N.Y., 2019. Managing the narrative: investor relations officers and corporate disclosure. J. Account. Econ. 67, 58−79.

Bushee, B.J., Gerakos, J., Lee, L.F., 2018. Corporate jets and private meetings with investors. J. Account. Econ. 65, 358−379.

Bushee, B.J., Jung, M.J., Miller, G.S., 2011. Conference presentations and the disclosure milieu. J. Account. Res. 49, 1163−1192.

Bushee, B.J., Jung, M.J., Miller, G.S., 2017. Do investors benefit from selective access to management? J. Financ. Report. 2, 31−61.

Bushee, B.J., Taylor, D.J., Zhu, C., 2022. The Dark Side of Investor Conferences: Evidence of Managerial Opportunism. The Accounting Review. https://doi.org/10.2308/TAR-2020-0624.

Chen, Q., Goldstein, I., Jiang, W., 2007. Price informativeness and investment sensitivity to stock price. Rev. Financ. Stud. 20, 619−650.

Cheynel, E., Levine, C.B., 2020. Public disclosures and information asymmetry: a theory of the mosaic. Account. Rev. 95, 79−99.

Cohen, L., Malloy, C., Pomorski, L., 2012. Decoding inside information. J. Finance 67, 1009−1043.

Da Rin, M., Hellmann, T., Puri, M., 2013. A survey of venture capital research. Handb. Econ. Finance 2, 573−648.

Dessaint, O., Foucault, T., Frésard, L., Matray, A., 2019. Noisy stock prices and corporate investment. Rev. Financ. Stud. 32, 2625−2672.

Duarte, J., Hu, E., Young, L., 2020. A comparison of some structural models of private information arrival. J. Financ. Econ. 135, 795−815.

Easley, D., Hvidkjaer, S., O'hara, M., 2002. Is information risk a determinant of asset returns? J. Finance 57, 2185−2221.

Edmans, A., Goldstein, I., Jiang, W., 2015. Feedback effects, asymmetric trading, and the limits to arbitrage. Am. Econ. Rev. 105, 3766−3797.

Edmans, A., Jayaraman, S., Schneemeier, J., 2017. The source of information in prices and investment-price sensitivity. J. Financ. Econ. 126, 74−96.

Foucault, T., Fresard, L., 2014. Learning from peers' stock prices and corporate investment. J. Financ. Econ. 111, 554−577.

Goldstein, I., Yang, L., 2019. Good disclosure, bad disclosure. J. Financ. Econ. 131, 118−138.

Goldstein, I., 2022a. Information in financial markets and its real effects. Rev. Finance 1, 32.

Goldstein, I., Liu, B., Yang, L., 2022b. Market Feedback: Evidence from the Horse's Mouth. Working Paper.

Goldstein, I., Yang, S., Zuo, L., 2022c. The Real Effects of Modern Information Technologies Evidence from the EDGAR Implementation. Working Paper.

Green, T.C., Jame, R., Markov, S., Subasi, M., 2014a. Broker-hosted investor conferences. J. Account. Econ. 58, 142−166.

Green, T.C., Jame, R., Markov, S., Subasi, M., 2014b. Access to management and the informativeness of analyst research. J. Financ. Econ. 114, 239−255.

Hoberg, G., Phillips, G., 2010. Product market synergies and competition in mergers and acquisitions: a text-based analysis. Rev. Financ. Stud. 23, 3773−3811.

Hoberg, G., Phillips, G., 2016. Text-based network industries and endogenous product differentiation. J. Polit. Econ. 124, 1423−1465.

Hope, O.-K., Huang, Z., Moldovan, R., 2021. Wall Street analysts as investor relations officers. J. Corp. Finance 67, 101893.

Hutton, A.P., Lee, L.F., Shu, S.Z., 2012. Do managers always know better? The relative accuracy of management and analyst forecasts. J. Account. Res. 50, 1217−1244.

Jagolinzer, A.D., Larcker, D.F., Taylor, D.J., 2011. Corporate governance and the information content of insider trades. J. Account. Res. 49, 1249−1274.

Jayaraman, S., Wu, J.S., 2020. Should I stay or should I grow? Using voluntary disclosure to elicit market feedback. Rev. Financ. Stud. 33, 3854−3888.

Kacperczyk, M., Sialm, C., Zheng, L., 2005. On the industry concentration of actively managed equity mutual funds. J. Finance 60, 1983−2011.

Kang, J.-K., Luo, J., Na, H.S., 2018. Are institutional investors with multiple blockholdings effective monitors? J. Financ. Econ. 128, 576−602.

Ke, B., Huddart, S., Petroni, K., 2003. What insiders know about future earnings and how they use it: evidence from insider trades. J. Account. Econ. 35, 315−346.

Kirk, M.P., Markov, S., 2016. Come on over: analyst/investor days as a disclosure medium. Account. Rev. 91, 1725−1750.

Klein, A., Zur, E., 2009. Entrepreneurial shareholder activism: hedge funds and other private investors. J. Finance 64, 187−229.

Koh, P.S., Reeb, D.M., 2015. Missing R&D. J. Account. Econ. 60, 73−94.

Loughran, T., McDonald, B., 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. J. Finance 66, 35−65.

Luo, Y., 2005. Do insiders learn from outsiders? Evidence from mergers and acquisitions. J. Finance 60, 1951−1982.

Masulis, R.W., Wang, C., Xie, F., 2007. Corporate governance and acquirer returns. J. Finance 62, 1851−1889.

Olsen, C., Dietrich, J.R., 1985. Vertical information transfers: the association between retailers' sales announcements and suppliers' security returns. J. Account. Res. 144−166.

Park, J., Soltes, E.F., 2018. What Do Investors Ask Managers Privately? Working Paper.

Pinto, J., 2022. Mandatory disclosure and learning from external market participants: evidence from the JOBS Act. J. Account. Econ. 101528. https://doi.org/
    10.1016/j.jacceco.2022.101528 in press.
Piotroski, J.D., Roulstone, D.T., 2005. Do insider trades reflect both contrarian beliefs and superior knowledge about future cash flow realizations? J. Account.
    Econ. 39, 55–81.
Pitchbook, 2022. Q2 2022 PitchBook-NVCA Venture Monitor First Look. https://pitchbook.com/news/reports/q2-2022-pitchbook-nvca-venture-monitor-
    first-look.
Ravina, E., Sapienza, P., 2010. What do independent directors know? Evidence from their trading. Rev. Financ. Stud. 23, 962–1003.
Schmidt, C., Fahlenbrach, R., 2017. Do exogenous changes in passive institutional ownership affect corporate governance and firm value? J. Financ. Econ. 124,
    285–306.
Seyhun, H.N., 1986. Insiders' profits, costs of trading, and market efficiency. J. Financ. Econ. 16, 189–212.
Seyhun, H.N., 1992. Why does aggregate insider trading predict future stock returns? Q. J. Econ. 107, 1303–1331.
Solomon, D., Soltes, E., 2015. What are we meeting for? The consequences of private meetings with investors. J. Law Econ. 58, 325–355.
Wang, C., 2014. Accounting standards harmonization and financial statement comparability: evidence from transnational information transfer. J. Account.
    Res. 52, 955–992.
Wang, W., Shin, Y.-C., Francis, B.B., 2012. Are CFOs' trades more informative than CEOs' trades? J. Financ. Quant. Anal. 47, 743–762.
Ye, M., Zheng, M., Zhu, W., 2022. The effect of tick size on managerial learning from stock prices. J. Account. Econ. 101515. https://doi.org/10.1016/j.jacceco.
    2022.101515 in press.
Zuo, L., 2016. The informational feedback effect of stock prices on management forecasts. J. Account. Econ. 61, 391–413.