Journal of Accounting and Economics 58 (2014) 142–166

Contents lists available at ScienceDirect

Journal of Accounting and Economics

journal homepage: www.elsevier.com/locate/jae

Broker-hosted investor conferences ☆

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ARTICLE INFO

Article history:
Received 16 July 2012
Received in revised form
16 May 2014
Accepted 23 June 2014
Available online 2 July 2014

JEL classification:
G14

Keywords:
Investor conferences
Brokerage research
Institutional trading
Corporate disclosures
Investor relations

ABSTRACT

We examine the determinants and consequences of broker-hosted investor conferences. We find the number of brokers hosting a firm at conferences is positively related to institutional ownership and intangible assets, consistent with greater client demand for management access among hard-to-value firms. Younger firms and those that issue equity in the future attend more conferences, suggesting firms view conference participation as a means to enhance investor recognition. Hosting brokers are rewarded with increased commission revenue. Commission share increases by 0.61% during the conference week, with larger increases following more informative conference disclosures. Firms also benefit from conference participation. In the subsequent year, conference firms are followed by an additional 0.34 analysts, undergo a 6% reduction in bid-ask spread, and experience a 0.03 increase in Tobin's *q*.

1. Introduction

Institutional investors allocate billions of dollars in commissions each year as a payment for brokerage research (Greenwich Associates, 2011). Conventional wisdom equates brokerage research with the distribution of stock recommendations and earnings forecasts, and these forms of research have been thoroughly examined in the literature. Academics have largely overlooked other types of research services, yet abundant anecdotal and survey evidence about their importance exists. For example, institutional investors routinely rate "access to management" over published research in rankings of brokerage analysts.

In this paper, we study a widespread yet relatively unexplored brokerage activity: investor conferences. Broker-hosted investor conferences are invitation-only events where formal company presentations and private meetings with management take place. We examine the factors that influence a broker's decision to host a firm at investor conferences and investigate whether investors incrementally reward brokers that host informative conferences.

☆ We thank Phil Berger, Paul Irvine, Narasimhan Jegadeesh, Zach Kaplan, Marcus Kirk, David Lesmond, Miguel Minutti-Meza, Edward Owens, Darren Roulstone, Tjomme Rusticus, Doug Skinner, Eugene Soltes, Jerry Zimmerman, Dexin Zhou, and workshop participants at the 2011 UT Dallas Corporate Governance Conference, the 2012 FARS Midyear Meeting, the 2012 AAA Annual Meeting, University of Chicago, Erasmus University, University of Georgia, National University of Singapore, Southern Methodist University, Tilburg University, and the University of Rochester for comments. We are especially thankful to S.P. Kothari (editor) and Scott Richardson (referee), whose insightful comments helped us improve the paper greatly.

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http://dx.doi.org/10.1016/j.jacceco.2014.06.005
0165-4101/

From a firm's perspective, conferences provide an opportunity to increase investor recognition. Survey evidence suggests broker-hosted investor conferences are a significant channel for investor outreach, ranked ahead of investor visits to company headquarters and below non-deal roadshows (Gedvila, 2010). In our analysis, we explore firms' incentives to attend conferences and examine the consequences of firm participation on investor recognition and firm value.

The central feature of investor conferences is connecting select institutional clients with firm management. We hypothesize that investor demand for access to management will be greater for firms that are hard to value based on publicly available information. Consistent with this view, we find that the number of brokers that host a firm at conferences is increasing in a firm's recognized intangible assets and advertising and R&D expenditures, whereas a much weaker or opposite relation holds for the number of brokers covering a firm with published research. The notion that brokers host conferences to meet client demand for management access is further supported by our finding that firms that only attend broker-hosted conferences (without published research) are smaller but have greater institutional ownership and intangible assets than firms that only receive published research.

Firms have incentives to solicit and accept conference invitations and more generally to facilitate analyst activities as a means to improve investor awareness. Supporting this view, we find young firms, which typically lack the resources to achieve investor recognition without brokers, attend more conferences and receive more published research. Prospective equity issuers and firms that finance acquisitions using equity, both of whom have increased incentives to bolster their stock valuation, also attend more conferences and receive more published research. For example, when a firm issues stock in a seasoned equity offering in the next two years, the number of brokers hosting the firm during the year increases by 12.34% and the number of brokers publishing research increases by 5.64%. The corresponding figures for a stock acquirer are 6.72% and 2.48%, respectively.

We next explore the benefits of broker-hosted conferences from both the broker and firm perspectives. We expect the host broker to benefit through increased trading commissions. Using a large sample of daily institutional transaction data from Ancerno Ltd. to measure trade commission share across brokers, we document a significant increase in the host's commission share for conference stocks in weeks 0 and $+1$. Moreover, the commission share increase for a conference stock conditional on an informative disclosure being made is approximately twice as large as the increase for a conference stock conditional on an uninformative disclosure. The incremental effect of informative conference disclosures is generally robust to including broker and firm fixed effects, and is comparable to the incremental effect of informative stock recommendations. The variation in commissions around conferences suggests investors reward brokers for providing management access, and that these rewards are greater when management access results in a greater transfer of value-relevant information.

We gauge the economic significance of investor conferences by examining their longer-term effect on commission share. We find that the incremental effects of conference attendance on annual commission share are on par with the effects of research coverage through published research. For example, average firm-specific commission share per broker is 1.11% for firms that do not attend its conferences vs. 5.38% for conference attendees, which is larger than the analogous 3.74% increase for research coverage. After controlling for broker fixed effects, we estimate that the average conference leads to $760,000 in incremental commissions for the brokerage firm.

Potential benefits for participating firms include greater investor recognition, improvements in liquidity, and higher market values. We find strong support for increased investor awareness following conferences. Specifically, conference firms are covered by 0.34 more analysts and experience a 1.24% increase in institutional ownership in the year following the conference. Such affects are particularly strong for infrequent conference attendees, who experience increases in analyst following and institutional ownership of 0.42% and 1.75%. We also find that conference firms experience improvements in liquidity including significant reductions in price impact and bid-ask spreads. Finally, conference attendance is associated with increased valuations and a reduction in a firm's cost of capital. Specifically, presenting firms experience a 0.03 increase in Tobin's q and a 0.87% reduction in cost-of-capital in the year following the conference. We also find that the increases in Tobin's q and the reduction in cost of capital are particularly strong for firms with high idiosyncratic risk, which is consistent with the predictions of Merton (1987).

Our findings extend the equity analyst literature in several ways. The significant effect that investor conferences have on commissions revenues, and the evidence that hard-to-value firms are more likely to attend conferences than receive published research, help to establish investor conferences as a distinct research service provided by analysts to satisfy client demand for management access. Our findings of broker-host benefits in the form of greater commissions revenues complement Green et al. (2014) findings of broker-host benefits in the form of more accurate and informative research.

Further, analyst coverage, defined as the number of analysts publishing research for a firm, is a common measure of a firm's information environment (e.g., Lang and Lundholm, 1996). The differences we document between the types of firms attending conferences relative to those receiving published research suggest a broader view of analyst coverage is warranted, particularly for hard-to-value firms.

By examining the forces shaping a firm's decision to participate at a conference as well as the benefits from participation, our study adds to the emerging investor relations literature, which explores actions taken by firms to increase investor recognition (see e.g., Bushee and Miller, 2012; Kirk and Vincent, 2014). Our findings that firms attend more broker-hosted conferences prior to seasoned equity offerings and before stock-financed acquisitions is consistent with firms having stronger incentives to participate at conferences when the benefits from increased investor recognition are greater. Furthermore, our findings of extensive participation benefits, including improvements in liquidity and market valuation, suggest that broker-hosted conferences are indeed an important mechanism for increasing investor recognition.

The remainder of the paper is organized as follows. Section 2 presents anecdotal evidence on investor conferences as a research service offered to institutional clients and as an investor relations activity. Section 3 describes the investor conference and institutional transaction samples. Section 4 investigates the determinants of investor conferences. Section 5 explores the effects of conferences on broker revenues, and Section 6 examines the benefits that accrue to company presenters. Section 7 concludes.

2. Background

In the 1990s brokerage analyst research was widely distributed, which was optimal when individual traders were highly active and reports helped publicize investment banking clients. However, this arrangement also presented brokers with conflicts of interest between satisfying underwriting vs. investing clients (Lin and McNichols, 1998; Michaely and Womack, 1999), and a host of reforms were implemented to curb potential abuses. Reg FD (2000), Sarbanes Oxley (2002), and the Global Settlement (2003)[1] disconnected brokerage research from underwriting activities, and have resulted in smaller research groups and a change in the mix of clients served and research services provided (Schack, 2007).

Brokerage firms have responded to the new commission-driven economic environment by placing greater emphasis on special services allocated to top clients based on commission profitability. Hedge funds have replaced individual investors as a primary emphasis of brokerage research. For example, in 2006 a pharmaceutical industry analyst at Lehman Brothers estimated that 75% of his time was spent with hedge funds vs. 5% in 1996.[2] Hedge fund managers prefer analysts who organize conferences and meetings with management, respond to questions in a timely manner, and offer unique information such as surveys and proprietary analysis. “Hedge funds hate written product, and would rather spend two hours on the phone with the analyst.”[3] References to investor conferences in particular are common in Institutional Investor Magazine's annual ranking of brokerage analysts. For example, in 2004 institutional investors voted Robert Koort an All-Star analyst partially for “his July electronic conferences where clients got to meet actual operating personnel on the cutting edge of the industry, not just the usual CEOs.”[4] Moreover, in a recent analysis of institutional investors' ratings of analysts employed at a midsized investment bank, Maber et al. (2013) document a positive association between ratings (a.k.a. “broker votes”) and the provision of concierge services such as investor conferences.

An important goal of a firm's investor relations program is to increase and maintain investor recognition (Brennan and Tamarowski, 2000). Bushee and Miller (2012) interview and survey investor relations practitioners about the ingredients of an effective investor relations program, and conclude that making management accessible to buy-side and sell-side professionals is critical to attracting institutional investors and analyst following.

Presentations and discussions at broker conferences offer a unique opportunity for private interactions with key members of the buy side and sell side, spread awareness of the company's value proposition, obtain sell-side contacts that can be used to populate a future road show and buy-side contacts to be targeted in future funding rounds (see Chapter 3 in Bragg, 2012). More importantly, according to a 2009 Investor Relations survey of 106 companies by Hanley & Associates, broker-hosted investor conferences are the second most significant channel of investor outreach, after non-deal road shows and ahead of investor visits of company headquarters (Gedvila, 2010).[5] Thus, while brokers view investor conferences as a research service oriented toward major institutional clients, firms view conference participation as an investor relations activity.

3. Sample and descriptive statistics

Our sample consists of data on broker-hosted investor conferences, brokerage research reports, and institutional transactions. We obtain data on broker-hosted investor conferences for the period from January 2004 to December 2008 from the Bloomberg Corporate Events Database. The database includes information on the conference name, date, and hosting organization, as well as the presenting company name and ticker for 80,575 presentations by 6,260 companies at 2,891 conferences hosted by various organizations (e.g., brokerage firms, industry associations, stock exchanges, and investor relations firms). We eliminate conferences that are not hosted by IBES-listed equity research providers which employ at least five analysts in a given year. We then match companies attending investor conferences by name or ticker with the CRSP and COMPUSTAT databases.

We measure brokerage firm commission shares using institutional transaction data from Ancerno Ltd. (formerly Abel Noser), a consulting firm that helps institutional investors track and evaluate their transaction costs.[6] Each observation in the Ancerno dataset corresponds to an executed trade. For each trade, the dataset reports the date of the trade, the stock traded, volume traded, execution price of the trade, commission paid to the broker, a client identifier code, manager

[1] The 2005 “Joint Report by NASD and the NYSE on the Operation and Effectiveness of the Research Analyst Conflict of Interest Rules,” provides details on these reforms.http://www.finra.org/web/groups/industry/@ip/@issues/@rar/documents/industry/p015803.pdf.

[2] “Hedge fund managers prize Wall Street research analysts with fast delivery and doable advice. Here are their favorites.” Alpha Magazine, 30 November, 2006.

[3] “How Hedge Funds Rate Wall Street Analysts,” Alpha Magazine, Nov 21, 2005.

[4] “The Best Analysts of the Year.” Institutional Investor Magazine, October 2004.

[5] Soltes (2014) analyzes all forms of private interactions between the management of a single NYSE firm and sell-side analysts that take place from November 2010 to October 2011. The number of private interactions is 75 with 85% occurring over the phone.

[6] Other studies that have used Ancerno data include Green and Jame (2011), Goldstein et al. (2009), Chemmanur et al. (2009), and Puckett and Yan (2011).

identifier code, and a broker identifier code. The client identifier code corresponds to the institutional investor that is subscribing to the Ancerno services. Clients include pension plan sponsors (e.g., CalPERS and the YMCA Retirement Fund), and money managers (e.g., Fidelity and Vanguard). The manager code corresponds to the money management firm that is ultimately making the investment decisions (e.g., the external money management company hired by the plan sponsor). Clients and managers are identified by codes rather than names.

The broker identifier code corresponds to the specific broker who executed the trade. Ancerno provides a key which permits linking broker codes to broker names (e.g., Broker Code 5 = "Goldman Sachs").[7] This allows us to merge the Ancerno dataset with Bloomberg and IBES by broker name. The 108 research brokers in the resulting merged sample account for 56% of Ancerno dollar volume, 55% of share volume, and 64% of total commissions. These brokers also account for 60% of the number of research providers in IBES, 87% of the analysts and 86% of the recommendations. The merged sample includes 43,903 conference presentations and 1,840 conferences.

Table 1 presents the time-series averages of annual cross-sectional summary statistics, computed from 2004 to 2008, for the full set of 108 research producing brokers in our sample (Panel A) and the subset of 66 brokers which host investor conferences (Panel B). In a given year, our sample contains on average 96 brokers, 58 of which have hosted at least one conference. A conference-hosting broker organizes on average 6.6 conferences per year, although there is substantial cross-sectional variation with the top 5% of brokers hosting more than 20 conferences per year. On average, roughly 25 companies present at a given conference.

Brokers hosting conferences are considerably larger than non-hosting brokers. For example, the average broker that hosts conferences (average IBES broker) employs 85 (65) analysts, covers 512 (382) companies, issues 798 (596) recommendations, is a lead underwriter for 15 (9) different companies per year, and generates annual commission revenues (within our Ancerno sample) of over $20 ($12) million. Analysts who host investor conferences tend to be more experienced and more reputable. In untabulated results, we find that conference-hosting analysts have 5.5 years of experience on average compared to 4.1 years for other analysts working at conference-hosting brokerage firms. In addition, on average 13.5% of conference-hosting analysts are rated All-Stars by Institutional Investor magazine each year, compared with 6.5% for non-hosting analysts also employed by conference-hosting brokers.

Panel C compares three subsets of stocks: (1) all firms with non-missing data in the CRSP-COMPUSTAT merged database, (2) all firms with analyst coverage in the IBES dataset, and (3) all firms that attended at least one conference along multiple dimensions: analyst coverage, conference attendance, firm characteristics known to determine the provision of published research, intangible assets, incentives to seek investor recognition, and the level of disclosure. The determinants of published research are the percentage of a firm's shares owned by institutions (*Institutional Ownership*), the number of institutions owning shares (*Number of Institutions*), market capitalization of equity (*Firm Size*), average daily share turnover (*Turnover*), and the R^2 from an annual regression of a firm's daily stock returns on daily market returns (R^2) (Bhushan, 1989; Hong et al., 2000). Measures of intangible assets are recognized intangible assets (including goodwill) divided by total assets (*Recognized Intangibles*), and the sum of R&D and advertising expenditures divided by operating expenses, $((R\&D+ADV)/OE)$ (Barth et at., 2001). Measures of incentives to seek investor recognition are the issuance of equity in the next two years (*SEO*), stock-financed acquisitions in the next two years (*M&A-Acquirer*), the number of years since initial public offering (*Firm Age*), and the root mean squared error from a market model regression (*Idiosyncratic Risk*). Firm disclosure is the number of earnings forecasts issued by the firm during the year (*Earnings Guidance*). Additional details of variable construction are provided in Appendices A.1, A.2, and A.3.

In an average year, the sample contains 5,116 unique firms of which 3,692 are covered by at least one analyst and 2,275 attend at least one conference. The average firm has 5.28 recommendations made by 3.71 different analysts, and attends 1.62 conferences hosted by 1.49 different brokers. Not surprisingly, firms that have analyst coverage (IBES sample) tend to be larger and have greater institutional ownership than the average firm (CRSP sample). Similarly, on average, firms that attend broker conferences (Conference Sample) tend to be larger than firms with analyst coverage. Interestingly, there is a subset of companies (5%) that attend a conference but have no analyst coverage. Finally, firms that attend broker conferences tend to have higher measures of intangibles assets, are more likely to issue equity in the future, and provide earnings guidance more frequently than firms with coverage.

4. Determinants of broker-hosted investor conferences

Bhushan (1989) views the number of analysts following a firm as a proxy for the total resources spent on acquiring private information and identifies several firm characteristics that reflect the demand and supply for analyst services (e.g., size, institutional following). His model has been adopted by many, and the findings generally confirmed (Brennan and Subrahmanyam, 1995; Rock et al., 2001; Johnston et al., 2009). Obtaining information directly from management at a broker-hosted conference is a special case of private information acquisition which suggests that firm characteristics that explain the number of analysts following a firm will also explain the number of brokers hosting a firm.

We conjecture that relative to published research, the demand for management access through investor conferences will be greater for firms with high intangible assets. Intangible assets are inherently more difficult to value than tangible assets

[7] Ancerno is unable to identify the broker in roughly 20% of the transactions. These observations are excluded from our analysis.

Table 1
Descriptive statistics.

This table reports the time-series average of annual cross-sectional summary statistics from 2004 to 2008. Panel A reports for all 108 research brokers in the merged IBES and Ancerno sample. Panel B reports summary statistics for the subset of 66 brokers that hosted at least one conference during a given year. Panel C reports summary statistics for three subsets of firms: firms in the CRSP/COMPUSTAT merged database, firms in the IBES database, and firms that made at least one conference presentation. All variables are defined in Appendix A The sample includes 6,874 firms and 25,581 firm-year observations. In an average year, our sample contains 5,116 unique firms (*CRSP Sample*). 3,692 are covered by at least one analyst (*IBES Sample*) and 2,275 attend at least one conference (*Conf. Sample*).

Panel A: Annual summary statistics for all brokers

	Mean	Std dev	5th	25th	Median	75th	95th
Commission Share (%)	1.04	2.29	0.00	0.02	0.12	0.74	7.33
Number of Analysts	65	110	5	10	22	64	352
Recommendations	596	1026	28	92	208	582	2829
Companies Followed	382	591	20	65	153	401	1964
Offerings Underwritten	9	21	0	0	1	4	62
Volume ($*Millions*)	12,289	22,916	2	153	966	6,407	91,038
Share Volume (*Millions*)	381	882	0.10	5	36	194	2,756
Comm. per Share (¢)	3.67	0.73	2.23	3.34	3.84	4.12	4.51
Commission ($*1000s*)	12,101	27,099	4	206	1,343	8,056	87,728
Shortfall (%)	0.09	0.42	−0.28	0.00	0.10	0.19	0.56

Panel B: Annual summary statistics for conference hosting brokers

	Mean	Std dev	5th	25th	Median	75th	95th
Conferences	6.6	6.4	1.0	2.0	4.0	9.2	20.9
Company Presentations	157.4	1692	2.0	26.2	82.8	253.2	540.7
Number of Companies	144.8	151.2	2.0	24.6	79.4	237.9	482.2
Commission Share (%)	1.78	2.89	0.02	0.13	0.46	1.75	8.99
Number of Analysts	85	134	8	17	31	69	392
Recommendations	798	1248	75	159	275	699	3596
Companies Followed	512	713	55	117	198	507	2183
Offerings Underwritten	15	26	0	0	2	13	77.9
Volume ($*Millions*)	20,610	36,265	129	974	3,754	17,352	110,946
Share Volume (*Millions*)	642	1093	5	36	134	574	3.282
Comm. per Share (¢)	3.68	0.54	2.78	3.42	3.81	4.04	4.33
Commission ($*1000s*)	20,715	33,697	202	1,389	5,343	19,989	106,494
Shortfall (%)	0.09	0.27	−0.17	0.04	0.11	0.18	0.32

Panel C: Annual firm-level summary statistics

	CRSP sample		**IBES sample**		**Conf. sample**	
	Mean	Median	Mean	Median	Mean	Median
Number of Brokers Hosting a Firm	1.49	0.40	1.99	0.80	3.23	2.80
Total Number of Conferences	1.62	0.40	2.17	1.00	3.51	2.80
Brokers Publishing Research	3.71	2.40	5.14	4.00	6.02	5.20
Number of Recommendations	5.28	3.20	7.31	5.20	8.50	6.80
Conference Dummy	0.45	0.40	0.59	0.80	1.00	1.00
Coverage Dummy	0.72	1.00	1.00	1.00	0.95	1.00
Recognized Intangibles	0.23	0.07	0.26	0.10	0.28	0.13
(R&D+ADV)/OE	0.08	0.01	0.09	0.02	0.11	0.02
Institutional Ownership (%)	43.71	41.78	52.95	59.59	63.07	71.49
Number of Institutions	109	59	139	93	171	119
Firm Size ($*M*)	3,323	402	4,378	723	5,366	936
Turnover (%)	0.84	0.57	0.97	0.72	1.04	0.80
R^2 (%)	17.52	15.80	21.26	20.50	22.16	21.58
SEO (%)	7.82	0.00	9.53	0.00	10.96	0.00
M&A Acquirer (%)	3.32	0.00	3.93	0.00	4.90	0.00
Firm Age (*Years*)	16.26	11.67	16.36	11.55	16.92	11.74
Idiosyncratic Risk (%)	0.11	0.06	0.09	0.06	0.09	0.06
Earnings Guidance	1.85	0.00	2.44	0.00	3.22	0.80

and are generally unrecognized in the financial statements.[8] Since firms with a higher level of intangibles are harder to value based on publicly available information, client demand for access to management will likely be higher for these firms.

[8] Intangible assets are "generated by innovation (discovery), unique organizational designs, or human resource practices, and interact with tangible assets to create corporate value" (Lev, 2001, p. 7).

Table 2
Industry characteristics and brokerage research service.

This table reports industry averages of various firm characteristics for the entire CRSP/COMPUSTAT universe for the 2004–2008 period. An industry average is calculated by averaging first over firms in an industry based on the Fama-French ten-industry classification, and then over years. *Brokers Hosting* (*Brokers Covering*) report the average number of brokers hosting the firm (covering a firm through published recommendations). *Hosting*/*Covering* is the ratio of these two variables, and is used to sort the industries. All other variables are defined in Appendix A.1. The sample includes 6,874 firms and 25,581 firm-year observations.

	Healthcare and drugs	Business equipment	Telephone and television	Manufacturing	Other	Wholesale and retail	Consumer durables	Consumer non-durables	Utilities	Oil, gas, and coal
Brokers Hosting	2.75	1.92	1.69	1.11	1.00	1.43	0.88	0.85	0.97	1.13
Brokers Covering	3.70	4.55	4.55	3.06	2.94	4.24	3.01	3.07	3.62	5.36
Hosting/*Covering*	0.74	0.42	0.37	0.36	0.34	0.33	0.29	0.28	0.26	0.21
Recognized Intangibles (%)	25.6	32.7	43.1	26.3	13.0	22.2	27.0	37.5	5.0	8.6
(*R&D*+*ADV*)/*OE* (%)	34.2	15.8	3.9	4.2	1.6	2.6	4.9	3.8	0.0	0.2
Institutional Ownership (%)	42.7	44.4	35.8	49.3	36.9	52.2	44.5	44.5	43.0	43.1
Number of Institutions	98	97	107	125	85	118	88	127	169	150
Firm Size	2,819	2,567	5,019	2,953	2,790	2,774	2,069	3,883	4,342	7,140
Turnover	0.9	1.1	0.8	1.0	0.7	1.0	0.8	0.8	0.6	1.1
R^2 (%)	10.7	15.1	18.5	21.4	17.7	16.0	17.5	14.3	26.7	20.1
SEO (%)	11.4	4.8	4.0	5.2	10.9	3.4	6.4	3.6	17.6	16.0
M&A Acquirer (%)	2.56	3.79	3.57	1.28	4.66	1.28	1.02	0.95	3.03	5.01
Firm Age (*Years*)	12.1	12.9	10.1	22.8	13.0	16.4	19.8	21.7	34.6	16.0
Idiosyncratic Risk (%)	3.6	3.4	2.7	2.8	2.5	2.9	3.0	2.6	1.6	2.9
Earnings Guidance	1.55	2.14	0.49	1.98	1.19	3.43	1.89	2.77	2.95	0.48
Observations	598	1,021	207	587	1,912	448	113	246	140	233

In sum, we predict a positive relationship between intangible assets and the provision of investor conferences, and in particular a higher coefficient for conferences than for published research.

From a firm's perspective, investor conferences and published research are mechanisms for increasing liquidity and investor recognition, and ultimately reducing cost of capital (Merton, 1987; Lehavy and Sloan, 2008; Jung et al., 2012; Kirk and Vincent, 2014). Thus, firms have incentives to supply management access and more generally to facilitate the provision of research services. Incentives to cooperate with brokerage analysts are likely to be stronger for young firms, which lack investor recognition and often the resources needed to achieve it without the help of brokers. Firms planning to issue equity in a seasoned equity offering or those using equity to acquire another firm have increased incentives to attend conferences in order to increase investor awareness and bolster the stock price.

We first examine broker-hosted conferences and published research at the industry level using the Fama-French 10-industry classification Table 2 presents the results. The sample includes all firms in the CRSP/COMPUSTAT universe for the 2004–2008 period. The first row reports the average number of brokers hosting a firm, calculated by averaging first over firms in an industry and then over years (*Brokers Hosting*). The second row reports the average number of brokers covering a firm through published recommendations (*Brokers Covering*). The average of the ratio of these variables (*Hosting*/*Covering*) is reported in row 3, and used to sort the industries. The remaining columns include average values for intangible assets and other relevant firm characteristics.

The average *Hosting*/*Covering* ratio varies substantially from 0.74 in the Healthcare, and Drugs industry to 0.21 in the Oil, Gas, and Coal industry. The *Hosting*/*Covering* ratio also varies systematically: the average (*R&D*+*ADV*)/*OE* in these two industries are 34.2% and 0.2%, respectively. Moreover, the untabulated correlations between *Hosting*/*Covering* and (*R&D*+*ADV*)/*OE* and *Hosting*/*Covering* and *Recognized Intangibles* are 0.95 and 0.27 respectively, consistent with the idea that brokers emphasize management access over published reports for hard-to-value industries.

We also find evidence that the *Hosting*/*Covering* ratio is larger for industries comprised of younger firms, and in industries with higher levels of idiosyncratic risk. Specifically, the untabulated correlations between *Hosting*/*Covering* and *Firm Age* and *Hosting*/*Covering* and *Idiosyncratic Risk* are -0.45 and 0.63. The correlations are consistent with younger firms and those with high idiosyncratic risk (i.e., firms with greater incentives to increase investor recognition) seeking out conference invitations, which are easier to garner than analyst coverage with published research.

4.1. A multinomial logit model of conference participation

In this section, we investigate what determines whether investors will have access to firm management at broker-hosted conferences and published research. Specifically, we analyze the aggregate outcome of brokerage research services with a multinomial logit model

$$\Pr(\textit{Research Service}_{kt} = j|\mathbf{x}_{kt}) = \frac{\exp(\mathbf{x}'_{kt}\boldsymbol{\beta}_j)}{\sum_{j=1}^{4}(\mathbf{x}'_{kt}\boldsymbol{\beta}_j)'}, \quad (1)$$

where j represents the following outcomes in year t: brokers as a group neither host firm k at their conferences nor publish research on the firm ($j=1$), brokers publish but do not host ($j=2$), brokers host but do not publish ($j=3$), and brokers host and publish ($j=4$).

The independent variable vector $\mathbf{x}_{kt}$ for firm k in year t includes characteristics related to demand for access to management, *Recognized Intangibles* and *(R&D+ADV)/OE*; factors broadly influencing the demand for and supply of analyst research, *Institutional Ownership*, *Number of Institutions*, R^2, Ln(*Size*), Ln(*Turnover*) (Bhushan, 1989; Hong et al., 2000), and firms' incentives to facilitate analyst activities, *SEO*, *M&A Stock-Acquirer*, Ln(*Firm Age*), and *Idiosyncratic Risk*. We include *Earnings Guidance* as a measure of firm's disclosure practices because disclosure and investor relations activities influence analyst coverage, defined as published research (e.g., Lang and Lundholm, 1996; Bushee and Miller, 2012).[9]

The results of the multinomial logit model are reported in Panel A of Table 3. In columns 1–3, we choose firms with no research service (firms with neither coverage nor conferences) as the benchmark group and report the coefficients for different combinations of research services. Specifically, Panel A reports the coefficient vectors for the groups of firms with at least one form of research service (i.e., $\boldsymbol{\beta}_2$, $\boldsymbol{\beta}_3$, and $\boldsymbol{\beta}_4$) after normalizing the benchmark groups' coefficient vector to zero (i.e., $\boldsymbol{\beta}_1=0$). For example, positive $\boldsymbol{\beta}_2$ coefficients indicate that various firm characteristics are associated with a higher probability that brokers will publish research on a firm without hosting it at their conferences, relative to the benchmark case of neither publishing research nor hosting the firm.

The probability that brokers offer a research service regarding a firm is increasing in *Recognized Intangibles* and *(R&D+ADV)/OE* (consistent with greater demand for management access for hard-to-value firms) firm size, institutional ownership, turnover (consistent with greater investor demand for information), and future SEO issuance and stock-based acquisitions (measures of firms' incentives to seek and facilitate research services).

Our emphasis is on contrasting published reports with investor conferences. In column 4, we normalize to zero the coefficients for the group of firms with published research only (i.e., we set $\boldsymbol{\beta}_2=0$) and report the vector of $\boldsymbol{\beta}_3$ coefficients (conference-only stocks). We find modest evidence that firms with high *Recognized Intangibles* are more likely to be hosted without being covered by brokers than be covered without being hosted (the coefficient is significant at a 10% level). There is stronger evidence that firms with higher levels of (R&D+ADV)/OE are significantly more likely to attend conferences without being covered than vice versa. Collectively, these findings are consistent with the idea that higher intangibles are associated with increased client demand for management access relative to published research. The positive coefficient on *Institutional Ownership* suggests that as a service, investor conferences are more oriented towards institutional clients than published research.

We find negative and significant coefficients on Ln(*Firm Size*) and Ln(*Turnover*) which indicates that brokers are more likely to host than cover small, illiquid firms. This is consistent with the joint hypothesis that management seeks to improve investor recognition through brokerage research (particularly for small, illiquid firms) and managers have more success obtaining conference invitations than published research. Consistent with this view, firms with high idiosyncratic risk, which have the most to gain from improved investor recognition (Merton, 1987), are also more likely to be hosted than to be covered. Finally, the positive coefficient on *SEO* indicates that investor conferences are more likely to be offered as a research service for firms that issue equity in the subsequent two years, consistent with firms planning to raise capital seeking out opportunities to interact with investors.[10]

In specification 5, we add the Fama-French 48 industry dummies. The inclusion of industry fixed effects eliminates the significance of Recognized Intangibles and *(R&D+ADV)/OE*, which highlights the importance of industry-related variation in valuation difficulty in the provision of research services. However, the coefficients on the remaining variables remain largely unchanged.

4.2. A negative binomial model of the number of brokers providing a research service

In this section, we investigate what determines the level of broker-provided management access and published research, as measured by the number of brokers hosting and covering a firm, respectively. Following Rock et al. (2001), we estimate a zero-truncated negative binomial regression model.[11] The general form of the likelihood equation is

$$L(\boldsymbol{\beta},\alpha|\mathbf{y},\mathbf{X}) = \prod_{i=1}^{KT} \Pr(y_{kt}|y_{kt}>0,\mathbf{x}_{kt}), \tag{2}$$

[9] Moreover, firms that experience an exogenous loss in coverage increase the volume of earnings guidance (Anantharaman and Zhang, 2011), consistent with firms understanding that coverage is beneficial and reacting to loss in coverage.

[10] Tasker (1998) examines several industry-level measures of financial statement informativeness, which are also likely related to valuation difficulty, and finds firms with less informative financial statements are more likely to host conference calls. In untabulated analysis, we include Tasker's (1998) variables, specifically median Market-to-Book (MTB), *R*-squared from a regression of market value on book value of equity and earnings per share, MTB Range, and Median Sales Growth. The coefficients on *Recognized Intangibles* and *(R&D+ADV)/OE* in Column (4) are reduced from 0.09 to 0.06 (*t*-stat of 1.2), and from 0.32 to 0.22 (*t*-stat of 3.37), respectively. Of the additional variables only median MTB is statistically significant, implying firms from higher growth industries are more likely to be hosted at investor conferences than covered.

[11] Rock et al. (2001) examine the determinants of analyst following using count-data econometrics and conclude "the negative binomial model with adjustment for the truncation appears to fit the data best." (p. 376). The relation we observe between intangible assets and conference hosting (and published research) is robust to alternative methodologies including OLS, Poisson, and truncated Poisson models. The results also hold when measuring

Table 3
Determinants of research services.

Panel A models the choice to provide research service for a stock through published research and invitations to investor conferences with a multinomial logit model

$$Prob(\text{Research Service}_{kt} = j|\boldsymbol{x}_{kt}) = \frac{\exp(\boldsymbol{x}'_{kt}\boldsymbol{\beta}_j)}{\sum_{j=1}^{4}(\boldsymbol{x}'_{kt}\boldsymbol{\beta}_j)},$$

where j represents the following broker choices in year t: in aggregate brokers neither host firm k at their conferences nor publish research on the firm ($j=1$), brokers publish but do not host ($j=2$), brokers host but do not publish (j=3), and brokers host and publish ($j=4$); $\boldsymbol{x_{kt}}$ includes the following characteristics of firm k in year t: *Recognized Intangibles*, *(R&D+ADV)/OE*, *Institutional Ownership*, *Number of Institutions*, Ln(*Firm Size*), Ln(*Turnover*),R^2, *SEO*, *M&A Acquirer*, *Firm Age*, *Idiosyncratic Risk*, *and Earnings Guidance* as defined in Appendix A.1. In columns 1–3, the benchmark is no research service (i.e., $\boldsymbol{\beta}_1=0$) and we report the coefficients for the different research levels ($j=2$, 3, and 4). Column 4 reports the coefficients for conference only ($\boldsymbol{\beta}_3$) when published only ($\boldsymbol{\beta}_2=0$) is the benchmark. Intercepts are estimated but unreported. Standard errors are clustered by firm (6,874 clusters). Panel B explores variation in the number of brokers providing a service using a zero-truncated negative binomial model. The general form of the likelihood equation is

$$L(\boldsymbol{\beta}, \alpha|\boldsymbol{y}, \boldsymbol{X}) = \prod_{i=1}^{KT} \Pr(y_{kt}|y_{kt} > 0, x_{kt})$$

where y_{kt} is defined as the number of brokers hosting firm k at conferences in year t or the number of brokers publishing recommendations on firm k in year t, $\boldsymbol{x_{kt}}$ is the vector of firm characteristics, $\boldsymbol{\beta}$ is the vector of parameter estimates, and α is the overdispersion parameter. Intercepts are estimated but unreported. Standard errors are clustered by firm (3,673 clusters). The number of observations in Panel A (B) is 25,581 (10,795).

Panel A: The choice to provide research services: multinomial logit

	Benchmark: no research			Benchmark: pub. research only	
	Pub. research, no conferences [1]	Conferences, no pub. research [2]	Pub. research and conferences [3]	Conferences, no pub. research [4]	[5]
Recognized Intangibles	0.12	0.21	0.24	0.09	0.08
	[3.83]	[4.00]	[6.39]	[1.75]	[1.34]
(R&D+ADV)/OE	0.14	0.47	0.53	0.32	0.03
	[3.41]	[8.32]	[12.03]	[6.04]	[0.41]
Institutional Ownership	0.32	0.72	0.96	0.40	0.38
	[6.61]	[7.75]	[18.48]	[4.54]	[4.48]
Number of Institutions	−0.34	−0.22	−0.32	0.12	0.12
	[−4.50]	[−1.00]	[−4.33]	[0.56]	[0.55]
Ln(Firm Size)	0.62	0.27	0.87	−0.35	−0.32
	[15.55]	[4.72]	[18.78]	[−6.57]	[−5.94]
Ln(Turnover)	0.46	0.21	0.70	−0.24	−0.23
	[16.17]	[3.30]	[20.81]	[−3.74]	[−3.47]
R^2	0.19	0.04	0.11	−0.15	−0.14
	[3.85]	[0.50]	[1.97]	[−1.90]	[−1.75]
SEO	0.59	0.96	1.04	0.38	0.42
	[5.15]	[4.92]	[8.64]	[2.06]	[2.21]
M&A – Acquirer	0.36	0.73	1.18	0.37	0.34
	[2.35]	[2.45]	[7.18]	[1.30]	[1.24]
Ln(Firm Age)	−0.29	−0.10	−0.48	0.19	0.19
	[−8.30]	[−1.40]	[−11.69]	[2.78]	[2.59]
Idiosyncratic Risk	−0.10	0.12	0.05	0.22	0.21
	[−2.48]	[1.58]	[0.96]	[2.91]	[2.69]
Earnings Guidance	0.51	0.65	0.81	0.14	0.16
	[6.92]	[6.71]	[10.57]	[1.92]	[2.10]
Industry Dummies	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Pseudo-R^2 (%)		30.15		32.3	

Panel B: The number of brokers providing research services. Zero – truncated negative binomial model

	Hosting the firm at conferences		Publishing research	
	[1]	[2]	[3]	[4]
Recognized Intangibles	0.08	0.03	−0.01	−0.01
	[7.36]	[2.62]	[−1.23]	[−1.53]
(R&D+ADV)/OE	0.24	0.14	0.04	0.06
	[22.14]	[9.10]	[5.01]	[5.53]
Institutional Ownership	0.09	0.09	0.05	0.07
	[5.70]	[6.04]	[4.68]	[6.98]
Number of Institutions	−0.05	−0.07	−0.05	−0.06
	[−3.32]	[−4.87]	[−5.88]	[−7.78]
Ln(Firm Size)	0.24	0.25	0.34	0.35

Table 3 (*continued*)

Panel B: The number of brokers providing research services. Zero−truncated negative binomial model

	Hosting the firm at conferences		Publishing research	
	[1]	[2]	[3]	[4]
	[17.34]	[19.29]	[39.26]	[41.27]
Ln(*Turnover*)	0.17	0.15	0.29	0.26
	[10.73]	[9.98]	[25.06]	[23.21]
R^2	−0.07	−0.00	−0.06	−0.06
	[−4.53]	[−0.22]	[−6.31]	[−6.37]
SEO	0.05	0.15	0.03	0.06
	[1.77]	[5.29]	[1.46]	[2.93]
M&A-Acquirer	0.10	0.08	0.09	0.02
	[2.30]	[1.92]	[3.03]	[0.92]
Ln(*Firm Age*)	−0.11	−0.09	−0.08	−0.06
	[−8.12]	[−7.53]	[−9.26]	[−7.67]
Idiosyncratic Risk	0.00	0.03	0.09	0.09
	[0.19]	[1.43]	[6.36]	[6.64]
Earnings Guidance	0.05	0.06	0.01	0.02
	[5.87]	[7.48]	[2.29]	[4.12]
Industry Dummies	No	Yes	No	Yes
Year Dummies	Yes	Yes	Yes	Yes
Ln(alpha) (Overdispersion)	−1.43	−1.78	−2.52	−2.85
	[−23.43]	[−25.96]	[−41.44]	[−38.35]
Pseudo-R^2	7.30	9.39	12.72	14.29

where y_{kt} is defined as the number of brokers hosting firm k at conferences in year t or the number of brokers publishing recommendations on firm k in year t, $\mathbf{x}_{kt}$ is the same vector of firm k's characteristics defined in Eq. (1), $\boldsymbol{\beta}$ is the vector of slope coefficients, and α is the overdispersion parameter (see p. 240 in Long (1997) for details). In contrast to regression (1), this regression is limited to the sub-sample of firms that are covered by at least one broker and attend at least one conference (i.e., $j=4$). We again include year dummies and cluster standard errors by firm.

Panel B of Table 3 presents the results. We find that a higher level of intangibles is associated with a larger number of brokers hosting the firm at investor conferences for both measures of intangibles. In particular, from column 1, a one standard deviation increase in a firm's *Recognized Intangibles* ((*R&D*+*ADV*)/*OE*) increases the mean number of brokers hosting the firm by 6.22% (21.60%).[12] These estimates are economically large. By way of comparison, a one standard deviation increase in institutional ownership is associated with a 4.72% increase in the number of brokers covering the firm and a 7.66% increase in the number of brokers hosting the firm at conferences. The effects are weaker but remain statistically significant after including industry fixed effects.

On the other hand, we find that a higher level of *Recognized Intangibles* is negatively associated with the number of brokers covering the firm with published research (although the relation is insignificant). Our other measure of intangibles, (*R&D*+*ADV*)/*OE*, has a positive effect on the number of brokers covering the firm, but the effect is considerably smaller than the effect on conferences. Specifically, a one standard deviation increase in (*R&D*+*ADV*)/*OE* is associated with a 21.60% increase in conference attendance as compared to a 3.90% increase in analyst coverage (from columns 1 and 3). With industry fixed effects included, these figures are 11.59% and 6.48%, respectively.

Firm incentives to seek investor recognition also play an important role in explaining the number of brokers hosting a firm at conferences and publishing research on a firm. Specifically, a one standard deviation increase in Ln(*Firm Age*) is associated with a 6.61% (5.86%) decrease in the number of brokers hosting (covering) the firm, which is consistent with young firms having greater incentives to cooperate with analysts. In the same specifications, the incremental effect of issuing equity in the next two years on the number of brokers hosting (covering) a firm is 12.34% (5.64%) (industry fixed effects included). Similarly, firms that use equity to pay for an acquisition in the next two years are more likely to be hosted and covered by brokerage research firms (6.72% and 2.48%, respectively), although the coverage effect is not robust to the inclusion of industry dummies.[13] Finally, idiosyncratic risk has no

(*footnote continued*)
research service using the number of recommendations published and conferences attended, and when winsorizing the independent variables at 1% to address concerns about outliers.

[12] Specifically, we calculate the expected count when all independent variables are at their mean values. We then increase each independent variable by one standard deviation and examine the increase in the expected count. For example, the expected number of hosting brokers when all independent variables are at their mean is 2.67. Increasing (*R&D*+*ADV*)/*OE* by one standard deviation increases the expected count to 3.25, a 21.60% increase.

[13] The sensitivity of the results to the inclusion of industry effects is not surprising. Investors are generally aware of all 48 industries but not equally aware of the stocks within an industry. Also, brokers may choose industries to emphasize at conferences without regard to financing needs, and once the industry is chosen, firms with future financing needs are more likely to attend.

effect on the number of brokers hosting a firm and has a significantly positive effect on the number of brokers publishing research on a firm. In untabulated analysis, we partition the sample into high and low idiosyncratic risk based on the median. When idiosyncratic risk is high, we find future stock acquisitions and seasoned equity offerings exhibit a significantly stronger relation with the number of brokers hosting a firm (excluding industry dummies), which is consistent with Merton's prediction that high idiosyncratic risk firms have greater incentives to increase recognition.

5. The effect of conferences on brokerage revenues

If institutional investors reward brokers hosting conferences with a greater allocation of transaction order flow and higher average commissions (e.g., Irvine, 2001; Goldstein et al., 2009), then we would expect hosting brokers to experience increases in commissions around conferences.

We measure brokerage commission using two approaches. Our first measure is commission share (*CS*), defined as total commissions for broker *j* in stock *k* during period *t* scaled by total Ancerno commissions across all 66 hosting brokers in stock *k* during period *t*. Scaling by total Ancerno commissions removes variation in total dollar commissions in stock *k* at time *t* as a potential source of bias (Irvine, 2001).[14] In particular, total commissions are driven by factors outside of the broker's control (e.g., press releases, security filings, earnings guidance, etc.), and therefore an increase in dollar commissions does not necessarily imply the broker has provided a research service for which investors are willing to allocate commissions. On the other hand, an increase in commission share following an event does suggest clients are shifting trade allocation towards the host. Commission share also has fewer outliers than dollar commissions. In order to further reduce the effect of extreme observations, we winsorize commissions per share at $0.10 (less than 2% of the sample). While commission share is better well suited for hypothesis testing, in practice brokers are primarily concerned with maximizing dollar commissions. We therefore also consider dollar commissions, *$Com*, defined as Ln(1+total dollar commissions) for broker *j* in*stock k*.

Our event-time analysis focuses on the trading day interval [−120, 30], where day 0 is the conference day. We require that firms have non-missing return and volume data each day in this interval. We also require that at least 10 IBES brokers have a non-zero commission share in the stock during the year of the conference (roughly 3,500 stocks meet this criterion per year). Our final sample includes 41,791 conference presentations (out of a possible 43,903). We benchmark the effects of hosting conferences against the effects of issuing stock recommendations. The recommendations sample consists of 84,733 recommendations issued by hosting brokers.

We partition the interval [−13,13] into nine three-day intervals. For each interval, we explore how returns (*Return*), volatility (*Std_Abs_Ret*), turnover (*Std_Abn_Turn*), broker's commission share (*Abn_CS*), and broker's commission revenue (*Abn_$Com*) are affected. *Return* is the three-day cumulative DGTW-adjusted return computed as the return on the stock less the equally weighted return of a benchmark portfolio matched on size, book-to-market, and past 12-month return.[15] *Std_Abs_Ret* is the difference between the absolute value of the three-day DGTW-adjusted return and the mean three-day absolute DGTW-adjusted return estimated over the period [−120, −30], scaled by the standard deviation of the mean absolute DGTW-adjusted return during the estimation period. Similarly, *Std_Abn_Turn* is the difference between the three-day turnover and the mean three-day turnover estimated over the period [−120, −30], scaled by the standard deviation of the mean three-day turnover during the estimation period. *Abn_CS* is the difference between the broker's commission share during the three-day event window and the broker's mean commission share from the estimation period [−120, −30]. Similarly, *Abn_$Com* is the difference between the broker's total dollar commissions during the three-day event window and the broker's mean dollar commissions from the estimation period [−120, −30].

Panel A of Table 4 describes the effects of conferences and Panel B describes the effects of stock recommendations on returns, volume, and commissions. Consistent with Bushee et al. (2011), we find evidence of higher returns, volatility, and trading around conference days. For example, we find that returns increase by roughly 21 bps during the event window, while absolute returns increase by 0.16 standard deviations. More importantly, we find that the hosting broker benefits from the increase in trading more than other brokers. The average commission share for the host broker during the benchmark period is 5.03%; this jumps by 0.54% (roughly 11%) during the conference window and remains elevated for another 6 days. Intuitively, the significant increase in turnover and commission share translates into significantly larger dollar commissions for the hosting broker.

We find a significantly negative average return around recommendations and highly significant increases in *Std_Abs_Ret*, *Std_Abn_Turn*, *Abn_CS*, and *Abn_$Com*. The increase in return volatility and turnover around recommendations is noticeably larger than around conferences, although this is unsurprising. In general, analysts issue recommendations in response to new information or when they possess material nonpublic information. Investor conferences, on the other hand, are planned in advance and attended by roughly 25 firms on average. It is unlikely that the hosting analyst will arrive at a conference with material nonpublic information regarding each firm in attendance. While firm executives are more likely to possess material nonpublic information, Regulation FD specifically prevents managers in attendance from disclosing this information. Thus, most of the information that clients obtain at investor conferences is likely to be nonmaterial and soft in nature, adding to their mosaic of information and facilitating their decision making over longer horizons.[16]

[14] Our main results are similar when we do not winsorize commissions per share or when we use the logarithm of (1+commission share). Specifically, in all settings in which *CS* is statistically significant, Log (1+*CS*) is also statistically significant.

[15] See Daniel et al. (1997) and Wermers (2004) for a more detailed discussion of the construction of the DGTW benchmark portfolio.

[16] The extent to which violations of Regulation FD take place at investor conferences is an empirical question outside the scope of our study.

Table 4
Brokerage research and returns, turnover, and commission share around the event.

This table reports average three-day return, absolute return, turnover, commission share, and $com around the event. Day 0 is the day a broker hosts a firm at a conference (Panel A) or the day a broker issues a recommendation on a firm (Panel B). The number of conference and recommendations observations is 41,791 and 84,733, respectively. *Return* is the three-day cumulative DGTW-adjusted return. *Std_Abs_Ret* is the difference between the absolute value of the DGTW-adjusted return during the event window and its mean from the estimation period [−120, −30], scaled by its standard deviation from the estimation window. *Std_Abn_Turn* is the event window turnover, similarly standardized. *Abn_CS* is the difference between a broker's event window commission share and the broker's mean commission share from the estimation period. *Abn_$Com* is the difference between log (1+dollar commissions) for the broker during the event window less log(1+dollar commissions) for the broker during the estimation period. *, ** denote statistical significance at a 5% and 1% significance level, respectively. Statistical significance is computed from standard errors clustered by month.

Window	Return	Std_Abs_Ret	Std_Abn_Turn	Abn_CS	Abn_$Com
Panel A: Hosting a firm					
[10,−8]	4.97	0.10**	0.21**	0.16	−0.00
[−7,−5]	−0.90	0.10**	0.24**	0.05	−0.01
[−4,−2]	5.72	0.12**	0.29**	−0.01	0.00
[−1,1]	20.72**	0.16**	0.39**	0.54**	0.09**
[2,4]	10.97*	0.08*	0.28**	0.48**	0.03
[5,7]	5.02	0.06	0.26**	0.31**	0.03
[8,10]	−1.55	0.07	0.27**	0.11	0.01
Panel B: Issuing a recommendation					
[10,−8]	−2.50	0.12**	0.32**	0.04	0.00
[−7,−5]	−3.59	0.15**	0.37**	0.02	0.01
[−4,−2]	−2.95	0.24**	0.51**	0.05	0.03*
[−1,1]	−49.26**	1.20*	2.11**	1.69**	0.39**
[2,4]	−1.65	0.18**	0.80**	0.61**	0.13**
[5,7]	5.07	0.13**	0.59**	0.43**	0.08**
[8,10]	1.79	0.14**	0.50**	0.38**	0.06**

5.1. The incremental effect of informative conference disclosures

The increase in commission share around investor conferences indicates that investors reward brokers for hosting conferences. If investors specifically value access to management, they will likely value it more when it results in a greater transfer of information. A positive relation between informative disclosures and broker commissions also helps rule out conferences being primarily an entertainment or advertising tool. We define a firm as making an informative conference presentation when its standardized absolute returns (*Std_Abs_Ret*) during the interval [−1,1] is greater than 1.65 (i.e., we can reject the null hypothesis that the event has no effect on absolute returns at a 5% significance level using a one-sided test).

We split the interval [−121, 28] into 30 non-overlapping five trading day intervals, which we refer to as weeks. Week 0, the conference week, spans the interval [−1, 3]. For each week we estimate the average broker's commission share (CS_t) and dollar commissions ($\$Com_t$) by averaging across all 41,791 company presentations hosted by our 66 brokers. We then regress each variable on four dummy variables: *Week* (−1), equal to one for the week spanning trading days [−6, −2], and zero otherwise, *Week*(0), *Week*(1), and *Week*(2), defined analogously. The resulting equation is as follows:

$$CS_t = \alpha + \beta_1\, Week(-1)_t + \beta_2\, Week(0)_t + \beta_3\, Week(1)_t + \beta_4\, Week(2)_t + \varepsilon_t. \quad (3)$$

The coefficient β_2 measures the effect of an average conference on commission share during the week of the conference (i.e., event days −1 to 3). We explore whether investors reward analysts more when companies make informative disclosures by estimating Eq. (3) on a sample of informative disclosures and on a sample of non-informative disclosures, and contrasting the estimates of β_2.

Consistent with the univariate results in Table 4, Panel A.1 of Table 5 shows a significant increase in commission share around the event. Specifically, the average commission share of 5.24%, measured by the intercept, increases by 0.61% during the event week.[17] Panel A.2 presents our tests of whether informative disclosures lead to a significantly greater increase in commission share. We find that informative disclosures are associated with a 1.29% increase in commission share during the conference week. In contrast, non-informative disclosures are associated with a 0.54% increase in commission share. The difference of 0.75% is highly significant. Our findings remain when we examine $Com. Specifically, we find that informative

[17] We also explore whether hosting brokers are rewarded with additional commissions in non-conference stocks. We consider spillover effects for two subsets of non-conference stocks. Host non-conference stocks are stocks that were in the top 10% of total trading commissions for the hosting broker in the year prior to the conference, but did not attend the conference. Analyst non-conference stocks are stocks covered by host analyst (those working for the host that cover at least 3 of the conference stocks) that did not present at the conference. We repeat the regression of Panel A.1 but replace conference stocks with either host non-conference stocks or analyst non-conference stocks. For both variables, we find a find positive but statistically insignificant increases in CS (and $Com) during the week of the conference.

Table 5
Brokerage research and weekly commission share around the event.
This table presents the results of the following event-time time-series regression

$$CS_t = \alpha + \beta_1\ Week(-1)_t + \beta_2\ Week(0)_t + \beta_3\ Week(1)_t + \beta_4\ Week(2)_t + \varepsilon_t.$$

CS_t [$Com] is the average weekly commission share (or log of total dollar commissions) of a broker in week t for a conference stock, where t spans from 24 weeks before to 6 weeks after the conference. *Week*(−1) is a dummy variable equal to one if the observation occurs one week prior to the conference (i.e., trading days [−6, −2]). *Week*(0) is a dummy variable which equals one if the observation occurs during the conference week (i.e., trading days [−1, −3]). *Week*(1) and *Week*(2) are defined analogously. Panel A.1 presents the results for the full sample of conference presentations. Panel A.2 reports the results for sub-samples of informative and non-informative presentations. Informative (non-informative) observations are classified based on whether *Std_Abs_Ret* during the window [−1,1] is greater (equal to or less) than 1.65. The last row tests whether coefficients differ between the sub-samples. Panel B presents the results from analogous analysis of recommendations. *t*-Statistics are reported in brackets.

		Commission Share				Dollar Commissions			
	Obs.	Int.	Week −1	Week 0	Week 1	Int.	Week −1	Week 0	Week 1
Panel A: Hosting a Firm									
Panel A.1: All Conference Presentations									
All	41,791	5.24	−0.03	0.61	0.25	1.48	0.01	0.10	0.04
		[267.31]	[−0.33]	[6.05]	[2.48]	[153.66]	[0.11]	[1.96]	[0.73]
Panel A.2: Sorts by Event Day Returns									
Informative	4,093	5.21	0.34	1.29	0.44	1.44	0.10	0.37	0.15
		[131.66]	[1.64]	[6.28]	[2.13]	[148.96]	[1.94]	[7.39]	[2.93]
Non-Informative	37,698	5.23	−0.07	0.54	0.23	1.48	−0.01	0.07	0.02
		243.39	[−0.66]	[4.85]	[2.07]	[151.24]	[−0.09]	[1.34]	[0.48]
Difference		−0.02	0.41	0.75	0.21	−0.05	0.10	0.30	0.12
		[−0.45]	[1.71]	[3.12]	[0.86]	[−7.54]	[3.24]	[9.56]	[3.88]
Panel B: Issuing a Recommendation									
Panel B.1: All Recommendations									
All	84,733	4.42	0.00	1.47	0.44	1.32	0.04	0.40	0.10
		[173.94]	[0.1]	[1.47]	[0.44]	[184.96]	[1.09]	[10.69]	[2.65]
Panel B.2: Sorts by Event Day Returns									
Informative	21,734	4.58	0.16	2.22	0.47	1.25	0.06	0.79	0.16
		[181.12]	[1.18]	[16.91]	[3.55]	[185.88]	[1.72]	[22.70]	[4.59]
Non-Informative	62,999	4.37	−0.05	1.22	0.43	1.34	0.03	0.26	0.08
		[153.97]	[−0.35]	[8.25]	[2.89]	[178.19]	[0.86]	[6.60]	[1.96]
Difference		0.22	0.21	1.01	0.04	−0.09	0.03	0.54	0.08
		[8.82]	[1.62]	[7.87]	[0.32]	[−22.36]	[1.32]	[26.25]	[4.11]

presentations are associated with a statistically significant 37% increase in *$Com* as compared to a statistically insignificant 7% increase for non-informative presentations. These findings support the view that investors reward brokers for facilitating the transfer of value-relevant information.

In Panel B, we conduct the same commission share analysis around conference hosts' stock recommendations as a point of comparison for the conference results. We find that brokers that publish stock recommendations increase their commission shares and commission revenue around recommendation days. Moreover, the effects are considerably larger for informative recommendations than for non-informative recommendations, and the differences are statistically significant. Taken together, the results suggest that brokers have incentives to issue informative research and to facilitate informative corporate disclosures.

5.2. Cross-sectional approach

The time-series regressions in the previous section are useful for examining variation in commission share around the event. However, they are ill-suited for examining the relative influence of different conference factors on abnormal commission share, and they do not permit controls for unobservable broker or firm effects. We therefore adopt a cross-sectional approach. Specifically, we run the following regression on abnormal commission share:

$$Abn\_CS_{j,k} = \alpha + \beta_1\ Informative_{j,k} + \boldsymbol{\beta}_2 \mathbf{x}_{\mathbf{j,k}} + \varepsilon_{j,k}, \quad (4)$$

Table 6
Determinants of commission share following brokerage research events.
This table presents the results of the following event-time cross-sectional regression:

$$Abn\_CS_i = \alpha + \beta_1\ Informative_i + \mathbf{\beta_2 X_i} + \varepsilon_i$$

where Abn_CS_i is the commission share of the hosting broker in stock i during the event week less the average commission share of the hosting broker during weeks [−24, −6]. In specification 9, Abn_Cs is replaced with *Abn[Log(1+$Com)]*. *Informative* is a measure of whether the conference presentation was informative and $\mathbf{X_i}$ is a vector of firm and broker characteristics. Our measures of *Informative* include: *Inf_Ret*, *Std_Abs_Ret*, *Inf_Turn*, and *Std_Abn_Media*. *Std_Abs_Ret* is defined as in Table 4. *Inf_Ret* is a dummy variable which equals one if *Std_Abs_Ret* > 1.65. *Inf_Turn* is a dummy variable which equals one if *Std_Abn_Turn* > 1.6. Std_Abn_Media is the difference between the number of media mentions in the three-day conference period and the mean three-day median mention over days [−240, −30]. Our firm and broker characteristics include: *Small*, *Low_Cov*, and *Big_Broker*. *Small* is a dummy variable which equals one if the firm is in the bottom half of size based on NYSE breakpoints. *Low_Cov* is a dummy variable which equals one if the firm as five or fewer total recommendations in the year. *Big_Broker* is a dummy variable which equals one if the hosting broker is in the top quintile of commission share across the 108 IBES brokers in the sample. Panel A presents the results around conference presentations. Standard errors are clustered by broker. *t*-Statistics are reported in brackets.

Panel A: Commissions around conferences

	1	2	3	4	5	6	7	8	9
Intercept	0.56	0.61	0.51	0.56	0.54				
	[3.70]	[3.90]	[3.25]	[3.39]	[2.22]				
Informative Return	0.76				0.70	0.75	0.64	0.73	0.30
	[2.31]				[2.18]	[2.24]	[2.19]	[1.72]	[4.09]
Std. Absolute Return		0.17							
		[2.35]							
Informative Turnover			0.99						
			[3.23]						
Std. Abnormal Media				0.18					
				[1.51]					
Small					0.45	0.39	0.45	0.30	−0.21
					[2.35]	[1.84]	[0.77]	[0.38]	[−0.25]
Low Coverage					0.24	0.22	−0.06	−0.41	−0.03
					[1.10]	[0.98]	[−0.16]	[−0.83]	[−0.66]
Big Broker					−0.49	0.78	−0.48	0.83	0.06
					[−1.63]	[1.47]	[−1.58]	[1.57]	[0.64]
Confounding Flags	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Fixed Effects	No	No	No	No	No	Broker	Firm	Broker-Firm	Broker-Firm
Dependent Variable	CS	CS	CS	CS	CS	CS	CS	CS	$Com
Observations	41791	41791	41791	18202	41791	41791	41791	41791	41791
Adjusted R^2 (%)	0.02	0.02	0.03	0.02	0.07	0.33	9.78	46.60	44.80

where $Abn\_CS_{j,k}$ is the commission share of the hosting broker j in stock k during the event week less the average commission share of hosting broker j during weeks [−24, −6]. *Informative* is a measure of whether the conference disclosure was informative, and $\mathbf{X_{j,k}}$ is a vector of firm and broker characteristics. Standard errors are clustered by broker.[18]

Table 6 presents the results of the regression. In specification 1, the independent variable is *Inf_Ret*, which equals one if the conference disclosure was informative (i.e., if *Std_Abs_Ret* > 1.65) and zero otherwise. Consistent with Table 5, we find that *Abn_CS* is 0.76% higher when the conference disclosure is informative.

In specifications 2–4, we examine whether our results are robust to alternative measures of informativeness. In specification 2, we replace the *Inf_Ret* dummy with the continuous measure of *Std_Abs_Ret* and find similar results. We also consider a trade-based measure of informativeness, *Inf_Turn*, which equals one if *Std_Abn_Turn* is greater than 1.65 and zero otherwise. In specification 3, we find that *Inf_Turn* has a larger impact on commission share than *Inf_Ret*.

After Reg FD firms typically issue press releases following the disclosure of any material information (see Neuhierl et al., 2012). As an alternative measure of informative disclosure, we compute abnormal media coverage (*Std_Abn_Media*). Specifically, we hand collect from Factiva a listing of media coverage from the *Wall Street Journal*, the *New York Times*, the *USA Today*, the *Washington Post*, and a number of smaller market newspapers (e.g., the *Atlanta Journal Constitutions*). We calculate *Std_Abn_Media* as the difference between the number of media mentions (across all sources) in the three-day conference period and the mean three-day media mentions count over the [−240, −30] estimation period, scaled by the standard deviation of the media counts during the estimation window.[19] We find that a one unit increase in *Std_Abn_Media* is associated with a 0.18% increase in abnormal commissions (Specification 4). Although the estimate is not statistically

[18] Clustering by both broker and firm results in very similar standard errors.
[19] Many firms have no media coverage in the [−120, 30] window. Lengthening the estimation window to [−240, 30] allows us to calculate *Std_Abn_Media* for 3,000 more observations, 18,202 in total.

significant (perhaps due to the smaller sample size), it is reassuring that its magnitude is virtually identical to the coefficient on *Std_Abs_Ret*.

We next add dummy variables for stocks in the bottom half of NYSE market capitalization (*Small*) and for stocks with five or fewer total recommendations (*Low Coverage*). We also include a dummy called *Big_Broker*, which equals one if the broker is in the top quintile of the commission share distribution across all 108 IBES brokers during year *t*. A potential concern is that we classify some conference disclosures as informative only because they occur on days when analysts issue published research (e.g., recommendations and earnings forecasts), or earnings are announced or forecasted. We therefore include as controls dummy variables for conference presentations that coincide with earnings announcements, earnings guidance, or published research. We find that the coefficient on *Inf_Ret* remains largely unchanged when the above variables are included. We also find that hosting brokers experience a significantly larger increase in commission share for smaller attendees.

Specifications 6 and 7 augment specification 5 by including broker and firm fixed effects, respectively. The coefficient on *Inf_Ret* remains virtually unchanged suggesting suggesting time-invariant broker characteristics are not driving the results. Next, we include broker-firm fixed effects. In other words, we examine the effects of informative vs. non-informative conferences on commission share over time for the same broker-firm pair. We find that the coefficient on *Inf_Ret* is largely unchanged, although the standard errors do increase and the estimate is no longer reliably different from zero at a 5% significance level. Finally, in specification 9, we repeat the analysis in specification 8, but change the dependent variable from *CS* to *$Com*. Using *$Com*, we find a positive and significant coefficient on *Inf_Ret* even after including broker-firm fixed effects.

In untabulated findings, we repeat the determinants analysis for commission share around recommendation changes. We continue to find that abnormal commission share around recommendations is significantly greater for informative recommendations. Although conferences are attended by a much smaller set of investors than those that receive recommendations, the evidence suggests investors reward analysts for hosting informative disclosures similar to how they reward analysts for distributing informative published research.

5.3. Investor conferences and annual brokerage revenues

The event-time analysis establishes a strong information-based link between conferences and broker commissions. It is also possible that conferences are correlated with broker revenues over longer horizons. For example, interacting with management at conferences could help investors better interpret future information releases and lead to trading at later dates. Hosting a firm at a conference may also signal an ability on the part of the analyst to provide other types of special research services regarding the firm, such as arranging additional private meetings with management. We examine the relation between hosting a firm at a conference and longer-horizon commission share in the firm's stock using a panel regression similar to the approach in Irvine (2001)

$$CS_{j,k,t} = \alpha + \beta_1\, Conf_{j,k,t} + \boldsymbol{\beta}_2 \boldsymbol{X}_{\boldsymbol{j,k,t}} + \varepsilon_{j,k,t}, \tag{5}$$

where $CS_{j,k,t}$ equals the commission share of broker *j* in firm *k* in month *t* and $\boldsymbol{X}_{\boldsymbol{j,k,t}}$ is a vector of control variables.$Conf_{j,k,t}$ is a dummy variable that equals 1 if firm *k* attended a conference hosted by broker *j* in the past year (i.e., months *t* to $t-11$). $Coverage_{j,k,t}$ is a dummy variable equal to 1 if broker *j* covered firm *k* in the past year (i.e., issued a report), and $NmRecs_{j,k,t}$ is the total number of recommendations issued by broker *j* on firm *k* in the past year. $Offerings\ Underwritten_{j,k,t}$ is the total number of Initial and Seasoned Equity Offerings for which broker *j* was the lead underwriter for firm *k* in the past year.[20]

Finally, to control for a broker's skill in executing trades, we include $Shortfall_{j,k,t}$, the volume-weighted execution shortfall for all trades executed by broker *j* in firm *k* during the past year. Following Anand et al. (2012), we define shortfall as the difference between the execution price and the market price at the time of the order placement, scaled by the market price at the time of the order placement (for sell orders we multiply by -1). We exclude stocks that were traded by fewer than 10 brokers in a given year. The sample includes 66 hosting brokers and roughly 3,500 stocks per month over the 2005–2008 sample period (for a total of roughly 10 million broker-firm-month observations).[21] Standard errors are clustered by broker.

Table 7 reports the results from the estimation of Eq. (5). In a univariate setting, we estimate an intercept of 1.26 and a slope coefficient of 4.83%, meaning that a broker's average monthly commission share is 1.26% for firms that did not attend its conferences in the past year vs. 6.09% for conference attendees. The 4.83% increase reflects the average increase for all stocks that attended a conference in the last 12 months. Presumably, the commission share benefits of hosting a firm should be strongest in the month of the conference and decay over time. To explore this conjecture, we decompose $Conf_{j,k,t}$ by month. Specifically, we re-estimate Eq. (5) (without any controls) and include 13 conference dummy variables ranging from $Conf_{j,k,0}$ (which equals one if the firm *k* attended broker *j's* conference this month) to ($Conf_{j,k,>11}$) (which equals one if the firm *k* attended broker *j*'s conference more than 11 months ago). The results of this regression are plotted in Fig. 1. All the estimates are positive and significantly greater than zero at a 1% significance level. The strongest effect is in the month of the conference ($Conf_{j,k,0}=5.52$), followed by the month after the conference ($Conf_{j,k,1}=5.21$), while the weakest effect is for firms that attended a conference more than 11 months ago ($Conf_{j,k,>11}=4.57$).

[20] Lead underwriters tend to be the dominant market makers for companies in the months following an IPO or SEO (e.g., Ellis et al., 2000, 2002; Huang and Zhang, 2011).

[21] We exclude 2004 because $Conf_{j,k,t}$ requires conference data for the prior 12 months.

Table 7
Brokerage research and longer-horizon commission share.

This table presents the results of regressions of commission share on firm-specific measures of brokerage services. The general model is

$$CS_{j,k,t} = \alpha + \beta_1\ Conf_{j,k,t} + \boldsymbol{\beta_2 X_{j,k,t}} + \varepsilon_{j,k,t}$$

where $CS_{j,k,t}$ is the commission share of broker j in firm k in month t. Specification 5 changes the dependent variable to *$Com*. $Conf_{j,k,t}$ is a dummy variable equal to 1 if firm k attended a conference hosted by broker j in the past year (i.e., months t to $t-11$). $\boldsymbol{X_{j,k,t}}$ is a vector of the following control variables. $Cover_{j,k,t}$ is a dummy variable equal to 1 if broker j covered firm k in the past year. $NmRecs_{j,k,t}$ is the total number of recommendations issued by broker j in firm k in the past year. $Offerings\ Underwritten_{j,k,t}$ is the number of IPOs and SEOs for which broker j was the lead underwriter for stock k in the past year and $Shortfall_{j,k,t}$ is the value-weighted execution shortfall across all trades executed by broker j in firm k in the past year. Standard errors are clustered by broker (66 broker clusters and 10,048,339 broker-firm-month observations), and t-statistics are reported below each estimate.

	[1]	[2]	[3]	[4]	[5]
Intercept	1.26	1.06			
	[4.99]	[4.78]			
Conference	4.83	3.36	1.89	0.65	0.32
	[12.04]	[11.48]	[7.20]	[5.85]	[9.19]
Coverage		2.15	1.19	0.25	0.15
		[7.85]	[9.38]	[2.88]	[4.03]
Num. of Recommendations		1.37	0.88	0.50	0.16
		[15.93]	[11.03]	[9.21]	[4.03]
Offerings Underwritten		7.23	5.36	3.22	0.60
		[7.17]	[6.43]	[7.71]	[7.64]
Shortfall		−0.04	−0.03	0.00	−0.01
		[−2.35]	[−1.58]	[−0.11]	[−4.00]
Dependent Variable	CS	CS	CS	CS	$Com
Fixed Effects	No	No	Broker	Broker-firm	Broker-firm
Adjusted R^2 (%)	1.22	2.48	8.25	16.48	51.20

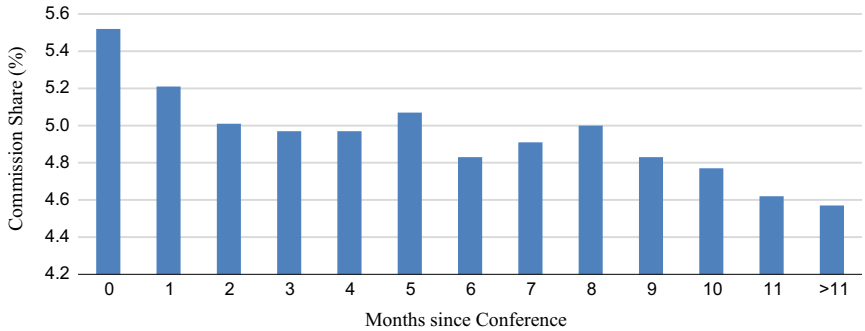

Fig. 1. Brokerage research and longer-horizon commission share by month.
This figures plots the coefficient from the following panel regression:

$$CS_{j,k,t} = \alpha + \sum_{t=0}^{12} \beta_t\ Conf_{j,k,t} + \varepsilon_{j,k,tt}.$$

$CS_{j,k,t}$ is the commission share of broker j in firm k in month t. β_t measures the effect of hosting a conference t months ago on this month's commission share. For example, β_0 (β_1) measures the average commission share for broker j in firm k when the broker hosted the firm this month (last month). β_2 to β_{11} are defined analogously. β_{12} reflects the commission share for broker j in firm k when the broker last hosted the firm more than 11 months ago and is labeled (>11).

We next examine the effect on conferences on commission share in the multivariate regression outlined in Eq. (5). Consistent with prior work, we find that publishing research is associated with greater commission share. However, even after controlling for published research, the effects of conferences on commission share remain economically large. In fact, the commission share benefits of hosting a firm (3.36%) are on par with the benefits of issuing a recommendation on a covered firm (2.15+1.37%).

In specification 3, we include broker fixed effects to control for unobserved broker characteristics potentially correlated with hosting a firm at a conference and commission share. The slope coefficients on all three measures of research services are reduced but are still statistically and economically significant.

One issue when examining conferences and commissions over longer horizons is endogeneity: a broker with high commission share in a certain stock may be more likely to invite the company to its conferences. To address this concern, we include broker-firm fixed effects, which enable us to compare commission share for a given broker-stock pair in years with

and without conferences.[22] We continue to find a positive and statistically significant, albeit weaker, relationship between conferences, coverage, and recommendations and commission share.[23] In specification 5, we repeat the analysis in specification 4, but change the dependent variable from *CS* to *$Com*. Consistent with specification 4, we find that all three research services are associated with significant increases in total commissions. We also continue to find the commission benefits from hosting a firm at a conference are on par with the benefits of issuing a recommendation.

The coefficients from Table 7 suggest that conferences have a sizeable impact on commissions. The annual commission revenue for the median conference-attending firm is roughly $130,000.[24] Our Ancerno sample comprises roughly 8% of institutional trading.[25] Extrapolating to the full sample of institutional trading, we estimate average firm-specific commission revenues of $1,625,000. The conference slope coefficient of 1.89% in specification 3 therefore corresponds to roughly a $30,700 increase in firm-specific commission revenues. Multiplying this estimate by 25 (the average number of firms attending a conference) yields an increase in commission revenues of greater than $765,000. Using the more conservative estimates from specification 4, we find that hosting one additional conference is associated with a $260,000 increase in annual commissions.

Finally, in untabulated analysis, we repeat specifications 4 and 5 after adding a dummy variable equal to one if the broker hosted a firm that made an informative conference presentation in the previous year. In both specifications, we find a positive yet statistically insignificant relation between informative presentations and annual commissions, which suggests the incremental commission benefits of informative presentations are relatively short-lived.

6. The effects of investor conferences on firms

Drawing on a vast literature on how disclosure and equity analyst activities benefit firms (see recent survey by Beyer et al. (2010)), we investigate the relation between conference participation and subsequent investor recognition, liquidity, and market valuation.[26] Using all firm-quarters in the intersection of the CRSP-COMPUSTAT datasets for the 2004–2008 time period, we estimate the following panel regression[27]:

$$\Delta Z_{it} = \alpha + \beta_1\, Conference_{it} + \beta_2\, First\_Conf\_in\_a\_Year_{it} + \boldsymbol{\beta}_3\, \boldsymbol{Controls_{it}} + \varepsilon_{it}, \tag{6}$$

where ΔZ_{it} denotes the change in investor recognition, liquidity, or market valuation measured from quarter $t-1$ to quarter $t+3$ (one-year difference), as defined in Appendix A.4. $Conference_{it}$ is a dummy variable equal to one if the company participates at a conference in quarter *t*. $First\_Conf\_in\_a\_Year_{it}$ is a dummy variable equal to one if the firm participates in quarter t but not in the previous four quarters and is designed to capture the incremental effect of conference participation when prior conference participation is limited.[28] $\boldsymbol{Controls_{it}}$ include relevant firm characteristics, industry and year fixed effects, and Z_{it-1} to control for mean reversion or persistence.

Table 8 examines the effects of conference participation on analyst following and institutional ownership, measures of investor recognition. The dependent variables are the change in the number of analysts following from quarter $t-1$ to quarter $t+3$ (Δ*Analyst Following*) and the change in the percentage of shares held by 13f institutions over the same period (Δ*%Institutional Ownership*). The regression also includes a number of controls, including ΔLn(*Earnings Guidance*), ΔLn (*Share Turnover*), *CAR*, and Ln(*Firm Age*), and they all are defined in Appendix A.5.

Specifications 1 and 2 in Table 8 indicate that attending a conference is associated with an increase of 0.34 analysts and 1.24% (percentage point) increase in institutional ownership. If a conference participant has not participated at a conference in the past four quarters, analyst following and institutional ownership further increase by 0.08% and 1.51%. These effects are economically large, when related to the average analyst following and percentage institutional ownership of 4.92% and

[22] A drawback to this approach is reduced power. On average, the time series variation in commission share for a broker-firm pair is 1.58, significantly lower than the cross-broker variation in commission share for a firm-year of 8.41. The corresponding values for the conference dummy are 0.04 and 0.12, respectively.

[23] In unreported results, we also examine whether average commissions per share are higher for conference stocks using an approach similar to Goldstein et al. (2009), which includes year dummies and controls for the modal commission charged by a given broker to a given institution as well as the average commission charged across brokers for a given stock. We find an average commission per share of 3.8 cents, with the coefficient on conference attendance being a statistically significant 0.13 cents. The coefficient on coverage is also 0.13 cents and statistically significant.

[24] We report the results for the median firm since total commissions are skewed and the benefits of hosting a conference on commission share are likely weaker for larger firms (see Table 5). Estimates based on average firm commissions are roughly 2.5 times as large.

[25] Puckett and Yan (2011) estimate that Ancerno data account for approximately 10% of institutional trading. However, roughly 20% of the Ancerno observations have a missing broker code and are excluded from our analysis.

[26] We thank the referee (Scott Richardson) for suggesting an analysis of how conference participation benefits firms.

[27] Bushee et al. (2011) also examine the relation between investor conferences and analyst following and institutional ownership. They only consider conference stocks, and their focus is on different kinds of conferences (e.g., industry vs. broker-hosted vs. investor relations firms-sponsored). In our analysis, we include non-conference firms which makes the coefficient on the conference variable analogous to a difference-in-difference estimator. We also control for changes in firm characteristics that influence changes in following and ownership, and consider additional firm benefits such as greater liquidity and market valuation. Another related study is Francis et al. (1997). They examine a small sample of presentations to the New York Society of Security Analysts during the period from 1986 to 1992. According to Bushee et al. (2011), the number of conference presentations at analyst society conferences has declined to 1% in 2007, and most conferences in recent years are hosted by brokerage houses.

[28] Our sample period is five years and conferences are annual affairs, which makes it difficult to reliably identify "first ever" conference participation (accordingly, we set $First\_Conf\_in\_a\_Year_{it}$ equal to zero in the first year in the sample). The results are qualitatively similar when defining infrequent as first time in two years.

Table 8
Conference participation and changes in analyst coverage and institutional ownership.

This table reports coefficient estimates from firm-quarter panel regressions of changes in analyst following and institutional ownership on whether a firm presented at a conference in a given quarter. The general model is

$$\Delta Z_{it} = \alpha + \beta_1\, Conference_{it} + \beta_2\, First\ Conf\ in\ Year_{it} + \beta_3\, Controls_{it} + \varepsilon_{it}.$$

ΔZ_{it} is the change in *Analyst Following* or *%Institutional Ownership*$_{it}$ from quarter $t+3$ to quarter $t-1$, defined in Appendix A.4. *Conference*$_{it}$ is a dummy variable equal to one if the company presents at a conference in quarter t. *First Conf in Year*$_{it}$ is a dummy variable equal to one if the firm presents in quarter t but not in the previous four quarters. *Controls*$_{it}$ include firm characteristics and Z_{t-1} (untabulated for brevity). See Appendix A.5 for detailed definitions of all independent variables. Standard errors are clustered by firm (6,273 clusters and 86,864 firm-quarter observations), and *t*-statistics are reported below each estimate.

	Change in Analyst following	**Change in Institutional ownership**
Intercept	−0.12	6.52
	[−1.42]	[15.02]
Conference	0.34	1.24
	[13.06]	[9.64]
First Conference in a Year	0.08	1.51
	[2.17]	[7.87]
Δ*Ln(Earnings Guidance)*	0.38	0.47
	[12.53]	[3.24]
Δ*Ln(Turnover)*	0.23	2.45
	[20.25]	[23.12]
CAR	0.38	3.67
	[17.17]	[23.30]
Ln(Firm Age)	−0.17	−0.78
	[−11.67]	[−10.22]
Δ*Financial Leverage*	−0.49	−1.76
	[−4.59]	[−2.32]
Δ*Return Variability*	−3.49	−45.58
	[−10.29]	[−11.93]
Δ*R-squared*	−0.34	3.42
	[−6.26]	[12.34]
Δ*Ln(Firm Size)*	0.22	0.40
	[20.86]	[8.14]
Δ*SP500 Index*	0.23	0.96
	[1.36]	[1.58]
Δ*Recognized Intangibles*	0.52	0.24
	[5.15]	[0.42]
Δ*(RD+ADV)/OE*	0.12	0.79
	[0.95]	[1.09]
Δ*EP*	0.20	1.25
	[4.54]	[4.28]
Δ*BP*	−0.10	−0.79
	[−4.29]	[−3.99]
Sales Growth	0.05	−0.00
	[2.31]	[−0.03]
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Adjusted R^2	9.41	15.48
Conference+First Conference in a Year	0.42	2.75
t-Statistic	[12.83]	[14.67]

52.4%, respectively. In comparison, a one standard deviation increase in Ln(*Earnings guidance*) is associated with 0.13 increase in analyst following and 0.16% increase in institutional ownership.

Table 9 examines the effects of conference participation on liquidity. We employ three liquidity proxies: *Price Impact*, *Bid-Ask Spread*, and *Execution Shortfall. Price Impact* is the quarterly median of the daily ratio of absolute stock return to dollar trading volume (Amihud, 2002). *Bid-Ask Spread* is the quarterly median of the spread between bid and ask price quoted at the end of the trading day, divided by the mid-point of the spread. *Execution Shortfall* is the quarterly average execution shortfall, defined consistent with Anand et al. (2012), as the difference between the execution price and the market price at the time of the order placement, scaled by the market price at the time of the order placement (for sell orders we multiply by −1).[29] We calculate the changes in these variables, after taking the logarithm where indicated, from quarter $t-1$ to

[29] In calculating execution shortfall for each firm-quarter, we lose 11,445 observations since not all firms in the CRSP-COMPUSTAT universe are traded by Ancerno investors. The results are similar using alternative liquidity measures such as the proportion of zero day returns in a quarter and Lesmond et al.'s (1999) measure of overall trading costs (e.g., Daske et al., 2008).

Table 9
Conference participation and changes in firm liquidity.

This table reports coefficient estimates from firm-quarter panel regressions of changes in liquidity on whether a firm presented at a conference in a given quarter. The general model is

$$\Delta Z_{it} = \alpha + \beta_1\, Conference_{it} + \beta_2\, First\ Conf\ in\ Year_{it} + \beta_3\, Controls_{it} + \varepsilon_{it}.$$

ΔZ_{it} is the change in *Price Impact*, *Bid-Ask Spread*, and *Execution Shortfall* from quarter $t-1$ to quarter $t+3$. See Appendix A.4 for detailed definitions. $Conference_{it}$ is a dummy variable equal to one if the company presents at a conference in quarter t. $First\ Conf\ in\ Year_{it}$ is a dummy variable equal to one if the firm presents in quarter t but not in the previous four quarters. $Controls_{it}$ include relevant firm characteristics and Z_{t-1} (untabulated for brevity). See Appendix A.5 for detailed definitions of all independent variables. Standard errors are clustered by firm (6,273 clusters in the first two columns and 5,774 clusters in the last column), and *t*-statistics are reported below each estimate.

	Change in Price impact	Change in Bid-ask spread	Change in Execution shortfall
Intercept	0.13	−0.74	24.36
	[5.09]	[−37.80]	[14.44]
Conference	−0.04	−0.06	−2.56
	[−5.96]	[−12.49]	[−5.83]
First Conference in a Year	−0.03	−0.03	0.04
	[−2.91]	[−4.03]	[0.04]
ΔLn(Earnings Guidance]	−0.07	−0.03	0.42
	[−10.22]	[−6.56]	[1.17]
ΔLn(Turnover]	−0.91	−0.30	−2.42
	[−35.91]	[−23.15]	[−4.22]
ΔReturn Variability	17.72	9.26	74.31
	[5.93]	[5.97]	[3.41]
ΔSP500 Index	−0.07	−0.03	0.52
	[−2.25]	[−1.37]	[0.89]
Ln(Firm Age]	0.02	0.03	−0.71
	[5.23]	[10.57]	[−2.62]
Ln(Size]	−0.13	−0.10	−1.96
	[−20.53]	[−28.60]	[−10.53]
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Adjusted R^2	65.88	43.27	44.20
Observations	86,864	86,864	75,419
Conference + First Conference in a Year	−0.07	−0.08	−2.52
t-Statistic	[−7.56]	[−13.03]	[−3.07]

quarter $t+3$ (results are similar if we do we do not log the continuous variables). The control variables are ΔLn(*Earnings Guidance*), ΔLn(*Turnover*), Δ*Return Variability*, Δ*SP500 Index*, Ln(*Firm Age*), and Ln(*Size*) as defined in Appendix A.5.

We document a consistent pattern of improvements in liquidity following conference participation. The slope coefficients on *Conference* range between −0.04 and −0.08, which means that when a firm participates at a conference in quarter *t*, liquidity improves by 4% to 8% over the subsequent year. By way of comparison, the effect of conferences on liquidity are similar in magnitude to the effect of being added to the S&P 500 index, which varies between 3% and 11%. We find improvements in liquidity are incrementally larger for firms that have not attended a conference in the prior year. Specifically, for new or infrequent participants the price impact and the bid-ask spread each decrease by an additional 3% in the period following the conference.

In Table 10, we examine the effect of conference participation on cost of equity capital and Tobin's *q*. We construct a composite measure of implied cost of capital (ICC) by averaging five ICC measures introduced by Claus and Thomas (2001), aston (2004), Gebhardt et al. (2001), Gordon and Gordon (1997), and Ohlson and Juettner-Nauroth (2005). Our empirical approach closely follows Hou et al.'s (2012) approach with one exception related to timing. To maintain consistency with our analyses of changes in investor recognition and liquidity around an event, we calculate the change in cost of capital from end of quarter $t-1$ to end of quarter $t+3$. In each case, we estimate cost of capital as the discount rate that equates the market value of equity at the end of a quarter to the present value of future earnings or ROE (depending on the model used), which we forecast by estimating Hou et al.'s (2012) cross-sectional earnings prediction model. Appendix B provides more details on how the individual ICC measures are computed. We measure Tobin's *q* as (*total assets − book value of equity + market value of equity*)/*total assets* at the end of a given quarter. We winsorize the top and the bottom 1% of the variable to minimize the effect of extreme observations.

Panel A of Table 10 reports our findings when the dependent variable is Δ*Cost of Capital*. The table presents the results for the full sample as well as subsamples of low and high idiosyncratic risk stocks (based on the median), as the effect of investor recognition on cost of capital is expected to be greater when idiosyncratic volatility is higher (Merton, 1987).[30]

[30] Low and high idiosyncratic risk are determined based on the sample median of this variable. The results are similar using the 25th and 75th percentile cutoffs for low and high.

Table 10
Conference participation and firm valuation.
This table reports coefficient estimates from the firm-quarter panel regression

$$\Delta Z_{it} = \alpha + \beta_1\, Conference_{it} + \beta_2\, First\ Conf\ in\ Year_{it} + \beta_3\, Controls_{it} + \varepsilon_{it}.$$

In Panel A (Panel B) ΔZ_{it} is the change in *Cost of Capital* (Tobin's *q*) from the end of quarter $t-1$ to the end of quarter $t+3$. See Appendix A.4 for definitions and Appendix B for details about cost of capital computations. $Conference_{it}$ is a dummy variable equal to one if the company presents at a conference in quarter *t*. $First\ Conf\ in\ Year_{it}$ is a dummy variable equal to one if the firm presents in quarter *t* but not in the previous four quarters. $Controls_{it}$ include firm characteristics and Z_{t-1} (untabulated for brevity). Detailed definitions of all independent variables appear in Appendix A.5. The sample in panel A includes all observations for which any of the five measures of cost of capital is non-missing or non-zero. The sample in panel B is the same as the sample in Tables 8 and 9. Standard errors are clustered by firm (5,907 clusters in panel A and 6,273 clusters in Panel B), and *t*-statistics are reported below each estimate.

Panel A: Change in cost of capital

	All	Idiosyncratic risk sorts	
		Low risk	High risk
Intercept	6.11	2.24	8.21
	[20.04]	[8.42]	[16.06]
Conference	−0.87	−0.38	−1.45
	[−10.45]	[−5.60]	[−10.42]
First Conference in a Year	−0.07	−0.09	−0.01
	[−0.72]	[−0.99]	[−0.08]
Δ*Ln(Earnings Guidance)*	−0.51	−0.26	−0.81
	[−7.33]	[−5.58]	[−6.01]
Δ*Beta*	0.00	−0.16	0.00
	[0.00]	[−3.95]	[0.05]
Ln(Total Assets)	−0.13	0.29	−0.39
	[−4.81]	[10.96]	[−7.81]
Ln(Firm Age)	−0.23	−0.16	−0.30
	[−4.29]	[−3.47]	[−3.47]
Δ*Financial Leverage*	5.98	2.29	8.79
	[9.72]	[3.66]	[10.45]
Δ*SP500 Index*	0.32	−0.13	1.34
	[0.49]	[−0.28]	[1.01]
Δ*Return Variability*	33.05	48.53	32.80
	[3.93]	[11.95]	[3.30]
Δ*Industry Cost of Capital*	1.07	0.63	1.24
	[23.45]	[16.60]	[19.10]
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	77,216	38,894	38,322
Adjusted R^2 (%)	28.91	27.34	30.46
Conference + First Conference in a Year	−0.94	−0.47	−1.47
t-Statistic	[−10.06]	[−5.31]	[−9.17]

Panel B: Change in Tobin's *q*

	All	Idiosyncratic risk sorts	
		Low risk	High risk
Intercept	0.61	0.38	0.90
	[18.96]	[14.42]	[17.23]
Conference	0.03	−0.00	0.06
	[3.17]	[−0.12]	[4.33]
First Conference in a Year	0.00	0.03	−0.02
	[0.08]	[3.01]	[−0.69]
Δ*Ln(Earnings Guidance)*	0.04	0.02	0.07
	[5.13]	[2.20]	[4.94]
Δ*Beta*	0.00	0.00	0.01
	[0.94]	[0.60]	[1.37]
Ln(Total Assets)	−0.01	−0.01	−0.03
	[−4.81]	[−3.30]	[−6.10]
Ln(Firm Age)	0.01	0.01	−0.00
	[1.84]	[1.15]	[−0.52]
Δ*Financial Leverage*	0.03	−0.05	0.04
	[0.61]	[−0.98]	[0.54]
Δ*SP500 Index*	−0.01	−0.04	−0.04
	[−0.31]	[−1.20]	[−0.76]

Table 10 (*continued*)

Panel B: Change in Tobin's *q*

	All	Idiosyncratic risk sorts	
		Low risk	High risk
Asset Growth	−0.21	−0.20	−0.20
	[−13.69]	[−9.97]	[−10.89]
Δ(*RD*+*ADV*)/*OE*	−0.00	−0.14	0.05
	[−0.03]	[−1.17]	[0.67]
Δ*Industry q*	0.84	0.60	0.91
	[37.61]	[24.21]	[31.17]
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	86,864	43,435	43,444
Adjusted R^2	34.44	28.25	38.06
Conference+First Conference in a Year	0.03	0.03	0.04
t-Statistic	[2.40]	[3.36]	[2.18]

Conference participation is associated with a cost of capital reduction of 0.87 percentage points in the full sample and 1.45 percentage points in the high idiosyncratic risk sample. These estimates are economically meaningful relative to the average implied cost of capital of 6.95%. In comparison, a one standard deviation increase in Ln(*Earnings Guidance*) is associated with a 0.18 percentage point reduction in cost of capital. The coefficients on *First Conference in a Year* are all negative as expected, but none are statistically distinguishable from zero.

Panel B of Table 10 reports the results when the dependent variable is Δ*Tobin's q*. As in Panel A, we find that conference participation has a beneficial incremental valuation effect as evidenced by a 0.03 (0.06) increase in Tobin's *q* in the full (high idiosyncratic risk) sample. This effect is economically meaningful. By way of comparison, a one standard deviation increase in Ln(*Earnings Guidance*) is associated with a 0.014 (0.023) increase in Tobin's *q* for the full (high idiosyncratic risk) sample. However, there is no evidence of an incremental increase in Tobin's *q* for conference attendees that had not attended a conference in the prior year.

In summary, we find strong evidence that firms that attend conferences experience subsequent increases in investor recognition, liquidity, and market valuation. Furthermore, we find that investor recognition and liquidity benefits are even greater when the firm has not participated at a conference in the past year. Finally, we observe that the valuation benefits of conference participation are greater when idiosyncratic risk is higher, consistent with Merton's prediction that idiosyncratic risk strengthens the link between investor recognition and cost of capital. The evidence, however, does not suggest that non-conference firms leave money on the table in the form of missed opportunities for investor recognition improvements. Although all firms have incentives to solicit and accept conference invitations, broker incentives to invite a firm vary with client interest in access to management.

7. Conclusions

We examine the determinants and consequences of broker-hosted investor conferences, invitation-only events that allow select institutional clients access to management. We find that firms with high institutional ownership and high intangibles assets attend more conferences, consistent with brokers catering to institutional clients and greater client demand for management access when difficulty of valuation is high. We also find that younger firms and those that issue equity in the future attend more conferences, consistent with firms viewing conference participation as a vehicle for increasing investor recognition. Finally, we document substantial benefits for brokers, in the form of increased trading revenues, and for firms, with improved investor recognition, liquidity, and valuation. Our findings shed light on broker-hosted conferences as an equilibrium arrangement benefitting both the broker-host and firm-participants, and underscore the interconnected nature of corporate investor relations activities and brokerage analyst activities.

We conjecture, but leave for future research to explore, the existence of additional benefits for brokers from hosting investor conferences. For example, the significant increases in the host broker's trading volumes may help the host coordinate flow and improve the execution quality of their trades, in turn resulting in greater commissions revenues. Also, investor conferences could also benefit brokerage firms' investment banking activities. Previous work suggests issuers reward underwriters that publish high quality research (e.g., Krigman et al., 2001; Cliff and Denis, 2005). Our findings that firms attend more conferences prior to raising capital and that conference participation increases investor recognition and market liquidity raise the possibility of firms rewarding conference hosts with future underwriting business. Exploring this issue is particularly interesting in light of recent reforms curtailing investment bankers' interactions with research analysts.

Appendix A. Description of variables

A.1. Determinants of research services

- *Recognized Intangibles* – recognized intangible assets including goodwill divided by total assets (*Source*: COMPUSTAT).
- (*R&D+ADV*)/*OE* – *R&D* expense plus advertising expense divided by operating expense (*Source: COMPUSTAT*).
- *Institutional Ownership* – the percentage of the firm's shares held by institutions at year end (*Source*: Thomson Reuters Institutional Holdings s34).
- *Number of Institutions* – the number of institutions holding firm shares at year end (*Source*: Thomson Reuters Institutional Holdings s34).
- *Firm Size* – the market capitalization computed as share price times total shares outstanding at the end of the year (*Source*: CRSP).
- *Turnover* – the average daily turnover (i.e., share volume scaled by shares outstanding) over all the trading days in the year (*Source*: CRSP).
- R^2 – the R^2 from an annual regression of a firm's daily returns on the market (value-weighted CRSP index) returns.
- *SEO* – a dummy variable equal to one if the firm has a Seasoned Equity Offering in the next two years (*Source*: SDC Platinum).
- *M&A-Acquirer* – a dummy variable equal to one if the firm acquires another firm in the next two years and more than 50% of the consideration is stock (*Source*: SDC Platinum).
- *Firm Age* – number of years since Initial Public Offering (*Source*: CRSP).
- *Idiosyncratic Risk* – the square root of the mean squared residual from an annual regression of a firm's daily returns on the market (value-weighted CRSP index) returns.
- *Earnings Guidance* – the number of earnings forecasts of any horizon issued by the firm during the year (*Source*: First Call: Company Issued Guidelines database).

A.2. Measures of brokerage commissions

- *CS* – commission share computed as the total commissions for broker j in stock k during period t scaled by total Ancerno commissions (across all hosting brokers) for stock k in period t (*Source*: Ancerno).
- *$Com* – the natural log of 1 plus the total dollar commissions for broker j in stock k during period t (*Source*: Ancerno).
- *Abn_CS* – the CS (as defined above) of hosting broker j in firm k less broker *j's* mean commission share during an estimation window (*Source*: Ancerno).
- *Abn_$Com* – $Com (as defined above) of hosting broker j in firm k less broker *j's* mean $Com during an estimation window (*Source*: Ancerno).

A.3. Determinants of brokerage commissions

- *Std_Abs_Ret* – the absolute value of DGTW-adjusted returns during the 3 days centered around the conference less the mean absolute value of three-day DGTW-adjusted returns estimated during the estimation period of $(-120, -30)$, scaled by the standard deviation of the three-day absolute DGTW-adjusted returns during the estimation period (*Source*: CRSP and Russ Wermers).
- *Inf_Ret* – a dummy variable equal to one if *Std_Abs_Ret* is greater than 1.65.
- *Std_Abn_Turn* – the turnover in the 3 days centered around the conference less the mean three-day turnover during the estimation period of $(-120, -30)$, scaled by the standard deviation of the three-day turnover during the estimation period (*Source*: CRSP).
- *Inf_Turn* – a dummy variable equal to one if *Std_Abn_Turn* is greater than 1.65.
- *Std_Abn_Media* – total media coverage in the three days surrounding the conference less the mean three-day media coverage during the estimation period of $(-240, -30)$, scaled by the standard deviation of the three-day media count during the estimation period (*Source*: *Factiva*).
- *Small* – a dummy variable equal to one if the firm market capitalization is above the median NYSE breakpoint at the end of the prior year.
- *Low_Coverage* – a dummy variable equal to one if the firm had five or fewer total recommendations (*Source*: IBES).
- *Big Broker* – a dummy variable which equals one if the hosting broker is in the top quintile of commission share across the 108 IBES brokers in the sample (*Source*: Ancerno).
- *Confounding Flags* – dummy variables capturing other information events around the time of the conference. These flags include:
  - Earnings Flag – a dummy variable equal to one if the firm issued earnings in the 3 days around the conference.
  - Guidance Flag – a dummy variable equal to one if the firm issued earnings guidance in the 3 days around the conference.
  - Recommendation Flag – a dummy variable equal to one if a recommendation was issued for a firm on the same day as its conference presentation.

  - Forecast Flag – a dummy variable equal to one if an earnings forecast was issued for the firm on the same day as its conference presentation.
- *Conf* – a dummy variable equal to one if broker *j* hosted firm *k* over the prior 12 months (*Source:* Bloomberg Corporate Events Database).
- *Coverage* – a dummy variable equal to one if broker *j* published research on firm *k* over the prior 12 months (*Source*: IBES).
- *Recommendations* – the total number of recommendations issued by broker *j* on firm *k over* the prior 12 months. (*Source*: IBES).
- *Offerings Underwritten* – the total number of Initial and Seasoned Equity Offerings for which broker *j* was the lead underwriter for firm *k* during the prior 12 months (*Source*: SDC Platinum).
- *Execution Shortfall* – the value-weighted execution shortfall across all trades executed by broker *j* in firm *k* over the prior year. Following Anand et al. (2012), we measure execution shortfall as

$$\frac{P_{1t}-P_{0t}}{P_{0t}} \times D_t$$

where P_{1t} measure the value-weighted execution price of ticket *t*, P_{0t} is the price at the time when the broker receives the ticket, and D_t is an indicator variable that equals one for a buy ticker and minus one for a sell ticket (*Source*: Ancerno).

A.4. Measures of firm benefits

Measures of firm benefits are defined as the change in the following variables from quarter $t-1$ to quarter $t+3$, where quarter *t* is the calendar quarter of the conference.

- *Analyst Following* – the number of analysts issuing earnings forecasts during the quarter (*Source*: IBES).
- *%Institutional Ownership* – the percentage of shares held by institutions at the end of the quarter (*Source*: Thomson Reuters Institutional Holdings s34).
- *Price Impact* – the quarterly median of the ratio of daily absolute stock return to daily US$ trading volume (Amihud, 2002) (*Source*: CRSP).
- *Bid-Ask Spread* – the quarterly median quoted spread (i.e., difference between the bid and ask price divided by the midpoint and measured at the end of each trading day) (*Source*: CRSP).
- *Execution Shortfall* – the quarterly average execution shortfall defined as the difference between the execution price and the market price at the time of the order placement, scaled by the market price at the time of the order placement (for sell orders we multiply by -1).
- *Cost of Capital* – the average of five measures of implied cost of capital introduced by the following models: Claus and Thomas (2001), Easton (2004), Gebhardt et al. (2001), Gordon and Gordon (1997), and Ohlson and Juettner-Nauroth (2005). Each of the individual cost of capital measures the discount rate which equates market value at the end of quarter *t* to discounted future payoffs estimated as in Hou et al. (2012). See Appendix B for more details.
- *Tobin's q* – the ratio of (total assets − book value of equity + market value of equity) to total assets, both measured at the end of the quarter (*Source:* CRSP/Compustat).

A.5. Determinants of firm benefits and control variables

- *Conference* – dummy variable equal to 1 if the firm participates at a conference during the current quarter.
- *First_Conf_in_a_Year* – dummy variable equal to one if the firm participates at a conference during the quarter but does not participate during the past four quarters.
- *Ln*(*Earnings Guidance*) – the natural logarithm of one plus the number of management forecasts issued during the quarter (*Source*: First Call: Company Issued Guidelines database).
- *Ln*(*Turnover*) – the natural logarithm of the quarterly US$ trading volume divided by the market value of outstanding equity at the end of the quarter (*Source*: CRSP).
- *CAR* – the cumulative abnormal returns (raw return minus CRSP value weighted index return) from the beginning of quarter $t-1$ to the end of quarter $t+3$.
- *Ln*(*Firm Age*) – the natural logarithm of the number of months since the IPO date to the beginning of quarter *t* (*Source*: CRSP).
- *Financial Leverage* – the ratio of total liabilities to total assets at fiscal year-end prior to a given quarter (*Source*: Compustat).
- *Return Variability* – the standard deviation of daily stock returns in a quarter (*Source*: CRSP).
- *R-squared* – the R^2 from market model regression of daily stock returns on CRSP value-weighted index returns in a given quarter.

- *Ln*(*Firm Size*) – the natural logarithm of market value at fiscal year-end (FYE) prior to a given quarter (*Source*: CRSP).
- *SP500 Index* – a dummy variable that equals one if a firm is listed in the S&P 500 index at FYE in a given quarter (*Source*: Compustat).
- *Recognized Intangibles* – recognized intangible assets including goodwill divided by total assets at FYE prior to a given quarter (*Source*: Compustat).
- (*RD*+*ADV*)/*OE* – R&D expense plus advertising expense divided by operating expense at FYE prior to a given quarter (*Source*: Compustat).
- *EP* – the earnings to price ratio at FYE prior to a given quarter (*Source*: CRSP/Compustat).
- *BP* – book-to-price ratio at FYE prior to a given quarter (*Source*: Compustat)
- *Sales Growth* – growth in sales from quarter $t-1$ to quarter $t+3$ (*Source:* Compustat)
- *Beta* – the coefficient on market returns (CRSP value weighted index returns) from a regression of a firm's daily returns on daily market returns in a given quarter.
- *Ln*(*Total Assets*) – natural logarithm of Total Assets as of the most recent FYE prior to a given quarter (*Source*: Compustat)
- *Asset Growth* – growth in assets from quarter $t-1$ to quarter $t+3$ (*Source*: Compustat).
- *Industry Cost of Capital* – average cost of capital across all firms in a given industry in a given quarter.
- *Industry q* – average Tobin's *q* across all firms in a given industry in a given quarter (*Source:* CRSP/Compustat).

Appendix B. Implied cost of capital measures

We compute a composite measure of implied cost of capital as the average of five individual measures described below. We follow the composite approach of Hou et al. (2012), whose primary innovation is to forecast earnings for up to five years into the future using the following pooled cross-sectional earnings prediction model:

$$E_{i,t+\tau} = \alpha_0 + \alpha_1 A_{i,t} + \alpha_2 D_{i,t} + \alpha_3\, DD_{i,t} + \alpha_4 E_{i,t} + \alpha_5\, NegE_{i,t} + \alpha_6\, AC_{i,t} + \varepsilon_{i,t+\tau},$$

where $E_{i,t+\tau}$ denotes the dollar earnings of firm i in year $t+\tau$ (τ=1–5), $A_{i,t}$ is total assets, $D_{i,t}$ is the dividend payment, $DD_{i,t}$ is a dummy variable that equals 1 for dividend payers and 0 otherwise, $NegE_{i,t}$ is a dummy variable that equals 1 for firms with negative earnings and 0 otherwise, and $AC_{i,t}$ is accruals calculated using the cash flow statement method as the difference between earnings and cash flows from operations. All explanatory variables are measured as of year t.

For each year from 2004 and 2008, we estimate the prediction model using the previous ten years of data. For each firm i and each year t, we forecast earnings in years $t+1$ through $t+5$ by multiplying the independent variables as of year t with the corresponding slope coefficients from the prediction model. We only require a firm to have non-missing values for the independent variables in year t to estimate its earnings forecasts.

We compute ICC estimates for each firm as of the end of each calendar quarter using earnings forecasts generated above with financial data available prior to the end of that calendar quarter. An ICC estimate is the rate that equates the market value of equity at the end of the calendar quarter to the present value of future cash flows calculated according to the valuation model. We require a firm to have at least one non-missing individual ICC estimate to compute its composite ICC (results are similar when we require non-missing values for all five components).

Descriptions of the Individual ICC estimates

Gebhardt et al. (2001)

$M_t = B_t + \sum_{K=1}^{11} \frac{E_t[(ROE_{t+K} - R) \times B_{t+K-1}]}{(1+R)^K} + \frac{E_t[(ROE_{t+12} - R) \times B_{t+11}]}{R \times (1+R)^{11}}$,

where M_t is the market equity in year t, R is the implied cost of capital (ICC), B_t is the book equity, $E_t[.]$ denotes market expectations based on information available in year t, and $(ROE_{t+k} - R) \times B_{t+k-1}$ is the residual income in year $t+k$, defined as the difference between the return on book equity and the ICC multiplied by the book equity in the previous year. Following Hou et al. we estimate the expected ROE in years $t+1$ to $t+3$ using the model-based earnings forecasts and book equity determined based on clean surplus accounting ($B_{t+k} = B_{t+k-1} + E_{t+k} - D_{t+k}$, where E_{t+k} is the earnings in year $t+k$, D_{t+k} is the dividend in year $t+k$, computed using the current dividend payout ratio for firms with positive earnings, or using current dividends divided by 0.06 × Total Assets as an estimate for the payout ratio for firms with negative earnings). After year $t+3$, we assume that the expected ROE mean-reverts to the historical industry median value by year $t+11$, after which point the residual income becomes perpetuity. Consistent with Hou et al. (2012) and Gebhardt et al. (2001), we exclude loss firms when calculating the industry median ROE.

Claus and Thomas (2001)

$M_t = B_t + \sum_{K=1}^{5} \frac{E_t[(ROE_{t+K} - R) \times B_{t+K-1}]}{(1+R)^K} + \frac{E_t[(ROE_{t+5} - R) \times B_{t+4}](1+g)}{(R-g) \times (1+R)^5}$,

where M_t is the market equity in year t, R is the implied cost of capital (ICC), B_t is the book equity, $E_t[.]$ denotes market expectations based on information available in year t, and $(ROE_{t+k} - R) \times B_{t+k-1}$ is the residual income in year $t+k$, defined as the difference between the return on book equity and the ICC multiplied by the book equity in the previous year. Following Hou et al. we estimate the expected ROE in years $t+1$ to $t+3$ using

the model-based earnings forecasts and book equity determined based on clean surplus accounting ($B_{t+k}=B_{t+k-1}+E_{t+k}-D_{t+k}$, where E_{t+k} is the earnings in year $t+k$, D_{t+k} is the dividend in year $t+k$, computed using the current dividend payout ratio for firms with positive earnings, or using current dividends divided by 0.06 × Total Assets as an estimate for the payout ratio for firms with negative earnings). We set g to the current risk-free rate minus 3% as in Claus and Thomas (2001) and Hou et al. (2012).

Ohlson and Juettner-Nauroth (2005)

$$R=A+\sqrt{A^2+\frac{E_t[E_{t+1}]}{M_t}\times(g-(\gamma-1))},$$

where $A=0.5\left((\gamma-1)+\frac{E_t[D_{t+1}]}{M_t}\right), g=0.5\left(\frac{E_t[E_{t+3}]-E_t[E_{t+2}]}{E_t[E_{t+2}]}+\frac{E_t[E_{t+5}]-E_t[E_{t+4}]}{E_t[E_{t+4}]}\right)$.

M_t is the market equity in year t, R is the implied cost of capital (ICC), $E_t[.]$ denotes market expectations based on information available in year t, E_{t+1} is the earnings in year $t+1$, and D_{t+1} is the dividend in year $t+1$, computed using the current dividend payout ratio for firms with positive earnings, or using current dividends divided by 0.06 × Total Assets as an estimate of the payout ratio for firms with negative earnings. g is the short-term growth rate. Consistent with Hou et al. (2012) and Gode and Mohanram (2003), we use the average of forecasted near-term growth and five-year growth as an estimate of g.γ is the perpetual growth rate in abnormal earnings beyond the forecast horizon. It is set to the current risk-free rate minus 3%.

Easton (2004)

$$M_t=\frac{E_t[E_{t+2}]+R\times E_t[D_{t+1}]-E_t[E_{t+1}]}{R^2},$$

where M_t is the market equity in year t, R is the implied cost of capital, $E_t[.]$ denotes market expectations based on information available in year t, E_{t+1} and E_{t+2} are the earnings in years $t+1$ and $t+2$, respectively, D_{t+1} is the dividend in year $t+1$ computed using the current dividend payout ratio for firms with positive earnings, or using current dividends divided by 0.06 × Total Assets as an estimate of the payout ratio for firms with negative earnings.

Gordon and Gordon (1997)

$$M_t=\frac{E_t[E_{t+1}]}{R},$$

where M_t is the market equity in year t, R is the implied cost of capital (ICC), $E_t[.]$ denotes market expectations based on information available in year t, and E_{t+1} is the earnings in year $t+1$.

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