

# Analyst Information about Peer Firms During the IPO Quiet Period

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## Abstract

The SEC limits sell-side analysts' research activities on IPO firms both before and immediately after going public (the IPO quiet period). We examine whether, in spite of these restrictions, investors uncover information about the IPO firm during the quiet period indirectly through analyst research of peer firms. Our evidence suggests peer firm research is informative about the IPO firm during the quiet period. In particular, we find that analysts' recommendation revisions issued for peer firms are more frequent around IPOs and that these revisions are predictive of future IPO performance. We also find that IPO investors trade on the information in analysts' revisions of peer firms on the IPO date. However, only institutional investors make full use of this information, while retail investors are generally inattentive to IPO-relevant information in peer firm research, except when analyst revisions are particularly salient. Our findings suggest that investors infer relevant information about IPO firms through analyst research of peer firms during the IPO quiet period.

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## 1. Introduction

In order to promote fair securities markets and equal access to relevant information, SEC rules limit the information available about IPO firms outside of the publicly disclosed prospectus. These restrictions apply during the IPO process and continue until a few weeks after the IPO (i.e., the IPO quiet period). One notable restriction during this period is on sell-side research. Specifically, the SEC limits analysts' ability to provide reports, earnings estimates, and stock recommendations about the IPO firm during the quiet period. However, although analysts are prohibited from providing information directly about the IPO firm, investors continue to have strong incentives to gain insights about the IPO firm and its future prospects. One potential source of information for investors is analyst research on peer firms. Given that analysts generally have expertise across many firms in an industry (Kadan et al., 2012), their research on peer firms may provide investors with informative signals about the IPO firm itself, even during the quiet period. Thus, we examine whether investors indirectly gain relevant information about the IPO firm during the quiet period from information analysts provide about peer firms.

This issue is important because regulators seek to limit the information available about IPO firms during the quiet period, in part because additional information may be less accessible by or salient to different types of investors (Bushee et al., 2020). To the extent that investors uncover information relevant to pricing the IPO firm through analyst research of peer firms, it would suggest that relevant information is available through intermediaries during the quiet period, arguably undermining the intent of quiet period restrictions. In particular, institutional investors may be better suited than retail investors to glean relevant information about IPO firms from analyst coverage of peer firms, creating a potential information advantage during the quiet period for sophisticated investors.

We begin by examining whether analysts' production of information about peer firms changes around an IPO in the same industry. Consistent with analysts adjusting their information production around IPOs, we find that analysts provide more recommendation revisions during the IPO quiet period relative to the period (of equal length) immediately prior to the IPO filing date.<sup>1</sup> We interpret this as evidence that an upcoming IPO influences analyst information production.

We next examine whether peer firm recommendation revisions during the quiet period are informative about the future performance of the IPO firm. We find that stock recommendation changes of peer firms during the IPO quiet period are positively associated with the future performance of the IPO firm. In other words, a downgrade (upgrade) of the peer firm in the pre-IPO period is associated with worse (better) long-term performance of the IPO firm. This finding is consistent with recent literature that shows that IPOs are driven by anticipated industry-wide prospects (Spiegel and Tookes, 2020), and suggests that during the quiet period, analysts provide informative, albeit indirect, signals about the IPO firm through their research of peer firms.

We next examine whether these pre-IPO recommendation revisions on peer firms inform post-IPO trading in the IPO firm. Given the previous finding that peer firm recommendation changes are positively associated with subsequent IPO firm performance, investors who incorporate this information into their assessment of the IPO firm will be more likely to sell (purchase) shares of the IPO firm following analysts' downgrades (upgrades) of the peer firm. Consistent with this prediction, we find more sell-initiated trading volume (buy-initiated trading volume) in the IPO firm when analysts have downgraded (upgraded) the peer firm's stock, which suggests IPO investors consider the information in analyst recommendations of peer firms when pricing the IPO firm. In addition, we

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<sup>1</sup> We focus on analyst recommendation revisions instead of other analyst research (i.e., quarterly or annual earnings forecasts) because recommendation revisions are arguably less noisy measures of analysts' beliefs, given that they are not short-term in nature and not impacted by the walkdown effect commonly associated with analysts' earnings forecasts (Richardson, Teoh, and Wysocki, 2004).

separately examine the trading activity of institutional and retail investors. We find that institutional investors trade based on analysts' recommendation revisions of peer firms, but find no such pattern among retail investors.

We consider whether limited attention provides a partial explanation for why retail investors' IPO-day trading fails to incorporate informative signals about the IPO firm in peer firm recommendation changes. Prior literature documents how awareness, acquisition, and integration costs may prevent investors, particularly retail investors, from identifying relevant information and incorporating it into their investment decisions. (Blankespoor, deHaan, & Marinovic 2020). We test the limited attention explanation by focusing on the subset of large, highly visible peer firms that are more likely to be familiar to retail investors. We find that retail investor trading of IPO firm shares is sensitive to analyst recommendation changes for highly visible peer firms, but is not sensitive to recommendation changes for peer firms that are less visible. These findings are consistent with limited attention providing at least a partial explanation for why retail investors often do not incorporate relevant information in analysts' peer firm recommendation revisions into IPO-day trading.

Next, we perform several additional tests to mitigate the concern that the trading activity we document for institutional and retail investors is driven by some confounding event, rather than by the recommendation revisions issued by peer firm analysts. Although our primary findings associate peer firm recommendation changes during the registration period with investor trading on the IPO date, the registration period begins several months prior to the IPO (120 days, on average), which raises the possibility that other news during this period is driving both the recommendation revisions for peer firms and the IPO-day trading we observe.<sup>2</sup> To mitigate this concern, we replicate our tests

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<sup>2</sup> Note that we control for average industry stock returns for the 90 days prior to the registration period in order to control for trading that is related to industry-wide news provided by sources unrelated to analysts' stock recommendation revisions during the registration period.

using only analyst recommendation changes of peer firms issued *after* the IPO date but *before* the expiration of the quiet period. Although this test focuses on a narrower set of stock recommendations, it allows us to measure trading reactions over the three days centered on post-IPO recommendation changes, and tightens our empirical identification by more closely linking the analysts' revisions with the timing of investor trading patterns in the post-IPO period. Our results are robust to these specifications, and we continue to find that, on average, only institutional investors trade based on information analysts provide about peer firms during the quiet period.

In addition, one specific source of information for investors during the quiet period is the IPO roadshow. Therefore, information conveyed to both investors and analysts during the road show could potentially confound our results. These meetings typically take place in the two weeks immediately prior to the IPO issue date. However, we find that our results are robust to excluding peer firm recommendations issued during this two-week period, suggesting that our findings are not driven by information conveyed to investors during roadshow presentations.

Importantly, we show that IPO trading in response to recommendation revisions for peer firms varies predictably with attributes of the issuing analyst. In particular, we find that institutional investors are more likely to trade on the recommendation revisions of peer firms when the analyst has greater industry expertise, and both institutional and retail investors exhibit heightened trading in response to recommendation revisions issued by the analyst affiliated with the brokerage underwriting the IPO. These findings are important in linking the trading behavior we document to the activity of peer firm analysts (rather than to some confounding event) because analyst characteristics are likely associated with investors' reaction to their recommendation revisions, but are unlikely to be associated with confounding factors from other sources that could impact IPO-day trading. For example, industry-level performance or periods of particularly high IPO activity (i.e., IPO "waves") are unlikely to explain these patterns in IPO-day trading, but variation in IPO-day trading based on attributes of

the issuing analyst is consistent with peer firm analyst research informing IPO investors during the quiet period.

In additional analyses, we explore whether our findings are unique to the quiet period or if they reflect the general relevance of peer firm research. Using a placebo period one year after the IPO date, we find no association between analyst recommendation revisions and investor trading during that period, suggesting that the relevance of peer firm research is unique to the IPO quiet period.

Our study contributes to three streams of research. First, our findings add to prior literature on indirect sources of information about IPO firms. Shroff et al. (2017) find that the information environment of peer firms is associated with an IPO firm's cost of capital in the year *following* the IPO. Bushee et al. (2020) document that heightened media coverage of IPO firms *during* the quiet period results in worse outcomes for retail investors who engage in attention-driven trading. We contribute to this literature by studying the role of sell-side analysts in informing investors about IPO firms during the quiet period, when information about the firm is limited.

Second, our study contributes to the prior literature on the role of analysts in the IPO process (e.g., Bradley et al., 2003; James and Karceski, 2006; Jin et al., 2021; Bradley et al., 2008; Dambra et al., 2018). This literature primarily focuses on the role of analysts immediately after the quiet period ends, documenting that analysts initiate coverage of IPO firms soon after the IPO and that analysts from brokerages that assisted in the IPO process (affiliated analysts) initiate coverage promptly after the expiration of the IPO quiet period, often with favorable coverage. One exception is Pisciotta (2020), who also examines analysts' research of peer firms *during* the IPO process. However, Pisciotta (2020) focuses on the attributes of analysts' research of peer firms, and our study goes further by examining the informativeness of analysts' research of peer firms for the IPO firm itself, as well as the implications of this research for trading in the IPO firm. Therefore, our study adds new insights to

the IPO literature about the indirect information role of analysts during the quiet period through their research of peer firms.

Lastly, our findings contribute to the literature documenting various ways in which retail investors are inattentive relative to institutional investors, both in the context of IPOs and in general. For example, prior literature suggests retail investors are less likely to trade in response to complex information and costly information acquisition, or when they are unfamiliar with the firm (e.g., Asthana et al., 2004; Barber and Odean, 2008; Miller, 2010; Blankespoor et al., 2018). In the IPO setting, Bushee et al. (2020) document that media coverage during the IPO quiet period leads to worse outcomes for retail investors as a result of attention-driven trading. Our study adds to this literature by suggesting that retail investors are, on average, inattentive to analysts' recommendation revisions for peer firms during the quiet period, unless this research pertains to highly visible peers or is issued by highly visible (affiliated) analysts.

## **2. Background and Prior Literature**

### **2.1. The IPO Quiet Period**

The IPO begins when the firm files a preliminary prospectus that must be reviewed and approved by the SEC before the firm is permitted to commence marketing their shares (typically through a roadshow) and selling shares to interested investors (often with the help of an underwriter). The prospectus provides relevant information regarding various aspects of firm strategy, competitive dynamics, proprietary technologies, performance history, future plans, and leadership composition, among other topics. Because the prospectus is intended to be the exclusive direct source of public information about the IPO firm, the SEC carefully reviews it and often requests that firms expand disclosure of areas likely helpful to investors (e.g., Lowry et al., 2020).

After the filing of the prospectus (if not sooner), the IPO firm, the underwriters, and any affiliated analysts (i.e., those employed in the research division of the investment bank underwriting

the IPO) are generally prohibited from certain communications with potential investors.<sup>3</sup> While unaffiliated analysts are under no restrictions regarding research coverage of an IPO firm, prior research suggests they voluntarily wait until the expiration of the quiet period to initiate coverage and that their first research report is issued *after* that of the affiliated analyst (James and Karceski, 2006; Dambra et al., 2018).<sup>4</sup>

The purpose of the IPO quiet period is to encourage a level playing field among investors by constraining information about the IPO firm to the prospectus, which is filed with the SEC and closely reviewed by SEC staff (Bradley et al., 2003; Bushee et al., 2020). While a level playing field is always an important objective of market regulation, the period of time leading up to the IPO is arguably of elevated importance because of highly volatile returns around the IPO, combined with investor speculation and incomplete information about the firm. As a result, unsophisticated investors are particularly vulnerable to harm at this time.

While some of the rules governing the quiet period have been relaxed in recent years, the prevailing practice has been largely unchanged. Specifically, the Jumpstart Our Business Startups (JOBS) Act of 2012 permitted affiliated analysts to initiate coverage of the subset of IPO firms designated as Emerging Growth Companies (“EGCs”) soon after the IPO.<sup>5</sup> This change was one of several provisions intended to reduce the costs and increase the benefits of going public, motivated by growing concern on the part of regulators about the trend of fewer IPOs over the previous decade. In practice, however, few analysts covering EGC firms changed their behavior, in part because of

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<sup>3</sup> Some communications are permitted during the quiet period, including pre-IPO marketing of shares through the roadshow and associated private communications with investors, but even these communications are limited to information already disclosed in the prospectus.

<sup>4</sup> The SEC previously defined the end of the quiet period as 25 days after the IPO issue date, but with the Global Settlement it was changed to 40 days after the IPO issue date.

<sup>5</sup> Relaxing the quiet period restrictions under the JOBS Act only applies to companies meeting the EGC designation, which requires firms to be below \$1 billion in revenues at the time of the IPO, among other restrictions. Thus, the regulations maintaining the quiet period remain in effect for IPO firms without the EGC designation, even following the JOBS Act.



uncertainty about the new regulation and its expected enforcement (Latham and Watkins, 2014; Dambra et al., 2018). Specifically, following the JOBS Act, analysts continue to withhold initiating coverage on EGC IPOs until 25 days following the IPO, on average (Dambra et al., 2018). In summary, both affiliated and unaffiliated analysts typically do not initiate coverage of IPO firms until after the expiration of the quiet period, 25 days after the IPO issue date. Figure 1 presents a timeline of the IPO process and restrictions on analyst reports.

## 2.2. Information Acquisition During the Quiet Period

While the prospectus is the exclusive direct source of information about the IPO firm, investors have strong incentives to gain information about the firm through various indirect means in order to gain an informational advantage. Prior literature on indirect public information sources is limited to evidence on the news media (i.e., Liu et al., 2014; Bushee et al., 2020), given that news coverage of the IPO firm is outside the regulatory jurisdiction of the SEC and is, therefore, unaffected by quiet period restrictions. Liu et al. (2014) show that the intensity of pre-IPO media coverage is positively associated with post-IPO long-run liquidity, analyst coverage, and institutional ownership. More closely related to our study, Bushee et al. (2020) find that significant media coverage of firms during the IPO process harms retail investors through an increase in attention-driven trading. Our approach complements these studies by analyzing a previously unexplored source of information about the IPO firm during the quiet period, namely, sell-side analyst research on peer firms. One distinctive feature of our setting is that unlike news articles, sell-side research *is* subject to SEC regulation, which has a stated objective of maintaining a level playing field among investors during the quiet period. Furthermore, while Bushee et al. (2020) show that retail investors are harmed by placing *too much* emphasis on news coverage, our study suggests another possible mechanism through which retail investors are at a disadvantage, namely, by placing *too little* emphasis on valuable information provided by analysts.

While the information environment contains various sources of potentially relevant information about IPO firms during the quiet period (e.g., macro-level information or disclosures provided by peer firms), we focus on analysts because of their role as industry experts who cover multiple firms that compete with the IPO firm (Kadan et al., 2012). As a result, analysts have a unique perspective that may be useful to investors interested in the IPO firm and in assessing its future prospects. Further, prior literature documents information spillover effects of analyst research outside of the IPO setting (e.g., Piotroski and Roulstone, 2004; Chan and Hameed, 2006; Howe et al., 2009; Muslu et al., 2014; Hameed et al., 2015; Israelsen, 2016), suggesting that an examination of analyst research of peer firms provides a powerful test of indirect information flows in the IPO setting.<sup>6</sup>

Our study extends the prior literature that examines the role of analysts *after* the expiration of the quiet period (e.g., Bradley et al., 2003; Bradley et al., 2004; James and Karceski, 2006; Bradley et al., 2008; Highfield et al., 2008; Lach et al., 2012; Dambra et al., 2018). These papers find positive returns for the IPO firm when analysts initiate coverage after the expiration of the quiet period, and that affiliated analysts promptly initiate coverage after the quiet period that is often optimistically biased. Our results contribute to this literature by exploring analysts' information production on peer firms *during* the quiet period and its informativeness about the IPO firm.

### 2.3. Industry Peers and Empirical Tests

We perform three empirical tests to explore the role of analyst research of peer firms for the IPO firm during the quiet period. In our first test, we examine the sensitivity of analyst stock recommendations of peer firms to news of an IPO in the same industry. This test is important because it establishes the relevance of IPO news for peer firms. Therefore, we examine the frequency of peer

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<sup>6</sup> In Section 7.1, we consider the possibility that our results reflect a general spillover of peer firm research to industry peers rather than a unique feature of the IPO quiet period, and we find that peer firm recommendation changes are particularly informative during the IPO quiet period.

firm recommendation revisions during the IPO quiet period in order to assess whether analyst research on peer firms is sensitive to news of an upcoming IPO.

In our second test, we examine the extent to which analysts' recommendation changes during the IPO registration period convey information about the IPO firm's future performance. Ex ante, it is unclear whether stock recommendation changes of peer firms would be positively or negatively associated with IPO firm performance. Hsu et al. (2010) suggest the IPO gives the IPO firm a competitive advantage in the industry, and they argue that this competitive advantage stems from three sources. First, firms acquiring capital through the issuance of new equity have increased flexibility to pursue growth opportunities. Second, IPO firms have the advantage of having been recently vetted and certified by investment banks, increasing investors' willingness to purchase shares in IPO firms relative to share offered by other firms in the same industry that have not been certified as recently. Lastly, newly public firms often have non-financial competitive advantages over industry peers (e.g., superior knowledge capital), making them a more attractive investment relative to industry peers. To the extent that IPO firms exhibit these competitive advantages over peer firms, analysts' downgrades (upgrades) of peer firms during the registration period (i.e., before the IPO date) will predict strong (weak) post-IPO performance for the IPO firm.

In contrast, Spiegel and Tookes (2020) argue that IPOs are often driven by common industry shocks, which predicts a positive association between analysts' recommendations of peer firms and future IPO firm performance. Specifically, Spiegel and Tookes (2020) find IPOs are often triggered by industry-wide trends that make the benefits of remaining private relatively less attractive. Private firms respond to this industry change by going public earlier in their life cycle. Thus, an IPO signals an expected change in future performance in the same direction for both the newly public firm and its peers. Therefore, the findings of Spiegel and Tookes (2020) suggest a *positive* relation between these

recommendation changes of peer firms and future IPO performance. That is, analysts' downgrades (upgrades) of peer firms in the pre-IPO period would predict weak (strong) future IPO performance.

Finally, in our third test, we examine whether investors trade on the information conveyed about IPO firms by analysts' recommendations of peer firms during the quiet period. This test is important because it sheds light on the extent to which investors gain indirect insights about the IPO firm from research provided by analysts during the period in which they do not provide direct research of the IPO firm.

#### 2.4. Retail Investors and the Information Environment

In spite of regulators' best efforts to create a level playing field among different types of investors, prior literature documents various limitations faced by retail investors. For example, Barber and Odean (2008), Engelberg and Parsons (2011), and Hirshleifer and Teoh (2003) provide evidence that retail investors face limited attention constraints arising from costs of information acquisition (Blankespoor et al., 2020). Although information is costly for all investors to obtain, retail investors often lack the resources (i.e., staff, data access, computing power, analytical capabilities) necessary to limit these costs. The literature identifies various settings in which retail investors initiate trading following high-visibility events, such as high-profile news or extreme earnings outcomes that relax retail investors' attention constraints.

In our setting, these information acquisition costs imply that retail investors may not have ready access to sell-side research, may be unaware when analysts release new reports or revise their recommendations, or may be unable to process the implications of analyst research of peer firms for IPO firms in the industry. Therefore, conditional on analyst research of peer firms revealing information about IPO firms, we examine whether retail investors trade on this information, and whether they are less likely than institutional investors to do so. To the extent that institutional investors are better able to trade on information conveyed by research of peer firms, it would imply

that analysts are a source of an information disadvantage for retail investors during the quiet period, in spite of restrictions on analysts' direct research of IPO firms during this period.

### 3. Sample

We collect data on IPOs from Thomson Reuters' Securities Data Company (SDC) database. Our initial sample consists of all U.S. IPOs between January 1, 2010 and December 31, 2017. We begin our sample in 2010 because that is the year in which data to construct trading measures for retail investors becomes widely available (Boehmer et al., 2019), and we end our sample in 2017 because the Hoberg-Phillips' 10-K Text-based Network Industry Classifications (TNIC) database (which we use to identify peer firms) is available only through 2017.<sup>7</sup> We limit our sample to offerings on the American, New York, and NASDAQ stock exchanges. We exclude financial firms, unit issues, blank check companies, and rights issues. After merging this IPO sample with Compustat and CRSP, we exclude IPOs with missing historical financial and market information necessary to construct our variables.<sup>8</sup>

We then match each IPO firm with the top three peer firms from the Hoberg-Phillips TNIC database, which describes multiple peers for each firm based on similarity of product descriptions from 10-K filings.<sup>9</sup> IPOs with no matches to the TNIC database are excluded from the sample. We also require stock recommendation data from the I/B/E/S analyst recommendation database. Finally, we restrict our analyses to IPOs with at least one recommendation revision by an analyst for a peer firm during the IPO registration period, which yields 369 unique IPOs.<sup>10</sup> These IPOs are associated

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<sup>7</sup> We thank Gerard Hoberg and Gordon Phillips for publicly providing the data used in Hoberg and Phillips (2010, 2016) on their website. The data is available at: <https://hobergphillips.tuck.dartmouth.edu/>

<sup>8</sup> We thank Jay Ritter for publicly providing the Field-Ritter dataset of company founding dates used in Field and Karpoff (2002) and Loughran and Ritter (2004), which allows us to include firm age as a control variable in our analyses. The data is available at: <https://site.warrington.ufl.edu/ritter/ipo-data/>

<sup>9</sup> We use the IPO firm's first 10-K filing as a public company to match to peer firms.

<sup>10</sup> We impose this restriction because the absence of a recommendation revision during the registration period could mean the analyst maintains their previous recommendation or that the analyst is inattentive to the peer firm. In

with 2,225 stock recommendation revisions during the IPO registration period for 651 peer firms. Table 1 summarizes this sample selection procedure.

Table 2 provides descriptive statistics of the variables used in our analyses, and shows that in our sample, the average peer firm has approximately 2.8 stock recommendation revisions ( $Log(N\_Rev)$ ) during the IPO registration period. The average (median) IPO firm experiences a 1.3% (-5.7%) return over a one-year period after the IPO date. We observe significant selling activity on the first day of trading for both institutional ( $NetVol\_Institutional$ ) and retail ( $NetVol\_Retail$ ) investors. The average IPO firm is operating at a loss ( $ROA$ ), is audited by a Big-4 firm ( $Big4$ ), and is listed on the NASDAQ stock exchange ( $Nasdaq$ ). Approximately 48% of the IPOs are backed by venture capital. The Appendix includes detailed definitions of all variables included in our analyses.

## 4. Research Design and Empirical Results

### 4.1. Peer Firm Recommendation Changes and IPO News

In this section, we analyze whether analysts issue research on peer firms in response to an upcoming IPO in the industry. This is an important preliminary analysis because for analyst output of peer firms to contain valuable information about upcoming IPOs, it must be the case that analysts react to news about IPOs. As potential evidence that analysts respond to IPO news, we examine whether analysts increase the frequency of stock recommendation revisions for peer firms during the IPO quiet period. In particular, we estimate the following regression at the IPO peer firm level:

$$Log(N\_Rev)_{i,t} \text{ or } Avg(N\_Rev)_{i,t} = \beta_0 + \beta_1 IPO\_News_i + Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

$Log(N\_Rev)$  is the log of the number of stock recommendation revisions analysts issue for each IPO firm's peer, and  $Avg(N\_Rev)$  is the number of stock recommendation revisions analysts issue for

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untabulated robustness tests, we include IPOs with peer firms that have an analyst stock recommendation revision in the prior 120-day period but *not* during the IPO registration period, and find similar results.

each IPO firm's peer scaled by the number of days in the IPO firm's registration period. Therefore, each IPO peer has two observations: one during the IPO registration period (i.e., the treatment period) and one in the period immediately prior to the IPO filing date (i.e., the control period). For each IPO firm peer, the number of days in the pre-IPO (control) period is identical to the number of days in the registration (treatment) period. Our key independent variable, *IPO\_News*, is an indicator variable equal to one for the registration period, and equal to zero for the pre-registration period. The sample for this analysis consists of 824 peer firms of 369 IPO firms, for a total of 4,301 unique recommendation revisions issued by analysts of peer firms during either the IPO registration period or the corresponding pre-registration period.

We follow prior IPO research and include multiple IPO firm characteristics as control variables (Barth et al., 2017). Specifically, we control for assets (*Assets*), revenue (*Revenue*), firm age (*Age*), profitability (*ROA*), R&D intensity (*R&D*), audit quality (*Big4*), growth opportunities (*BTM*), high-tech industry membership (*Tech*), ownership retention (*Pct\_Retained*), backing by venture capital (*VC*), NASDAQ listing (*Nasdaq*), and underwriter reputation (*Underwriter*). All financial information is measured in the fiscal year prior to the IPO year.

We also control for peer firm characteristics that potentially explain analysts' recommendation revisions of the peer firm, including profitability (*ROA\_Peer*), the most recent three-month stock returns (*Returns\_Peer*), meeting or beating prior quarter's consensus analyst forecast (*MOB\_Peer*), and the number of analysts following the firm (*Analysts\_Peer*). If analysts revise their stock recommendations of peer firms in response to news of an upcoming IPO in the same industry, we expect a positive coefficient estimate on *IPO\_News*.

Table 3 reports the results of this analysis. In Column 1 we report the results using industry fixed effects, and in Column 2 we use using IPO firm fixed effects, given that for each IPO firm we examine the frequency of analyst recommendation revisions for up to three peer firms. Consistent

with our predictions, we find a significantly positive coefficient on *IPO\_News*. These results suggest that analysts increase the frequency of peer firm recommendation revisions when an IPO is expected in the industry.

Because some registration periods are particularly long, in Column 3 we limit the sample to IPO firms with registration periods less than 90 days to mitigate the concern that the results are potentially attributable to the relatively infrequent instances in which IPO registration periods extend beyond several months which would result in very long treatment and control periods based on how our sample is constructed. In addition, Column 4 reports the results after scaling the dependent variable by the number of days in the registration period ( $Avg(N\_Rev)$ ) in order to further control for variation in the length of the registration period. We continue to find a positive coefficient on *IPO\_News*. These findings are important because they suggest analysts are aware of the implications of the IPO firm for other firms in the industry and that they incorporate this information into their assessments of peer firms.

#### 4.2. Peer Firm Recommendation Changes and Future IPO Performance

Our finding that analysts incorporate news of an upcoming IPO into their research of peer firms does not necessarily imply that their research is informative about the IPO firm. Therefore, in our next analysis we examine whether analysts' recommendation revisions for peer firms during the IPO registration period are informative about the future performance of the IPO firm. We estimate the following regression:

$$Returns\_PostIPO_{i,t} = \beta_0 + \beta_1 Mean\_Revision_i + Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

*Returns\_PostIPO* is either *Returns\_90days* or *Returns\_1yr*. *Returns\_90days* (*Returns\_1yr*) is the IPO firm's cumulative abnormal returns over a 90-day (one-year) window starting the day after the IPO issue date. *Mean\_Revision* is the average recommendation revision by all peer firm analysts during the registration period (i.e., between the IPO filing date and the IPO issue date). We include the same



IPO characteristics as control variables that are included in Equation 1. We also include time and industry fixed effects and cluster standard errors by time and industry.

We report the results of this analysis in Table 4. We find that the coefficient on *Mean\_Revision* is positive and statistically significant in both columns (t-stat = 2.29 in Column 1 and 2.30 in Column 2), consistent with analyst stock recommendation revisions of peer firms during the registration period conveying information about the future prospects of the IPO firm.<sup>11</sup> In particular, a downgrade (upgrade) of the peer firm in the pre-IPO period is predictive of weaker (stronger) long-term IPO performance. This positive association between peer firm recommendation revisions and post-IPO performance is consistent with recent literature showing that a significant proportion of IPOs are motivated, at least in part, by anticipated industry trends (Spiegel and Tookes, 2020).

#### 4.3. Peer Recommendation Changes and IPO Trading by Institutional and Retail Investors

In the previous two sections, we provide evidence that (i) analysts incorporate information about upcoming IPOs in their recommendation changes for peer firms during the IPO quiet period, and (ii) these recommendation changes predict future IPO firm performance. These findings suggest analysts play an indirect information role during the quiet period through their coverage of peer firms. We now examine our primary research question of whether investor trading at the IPO date is informed by analysts' pre-IPO recommendation revisions for peer firms. Our finding of a positive association between peer firm recommendation changes and long-term IPO performance suggests investors will be more likely to buy (sell) shares of the IPO firm when analysts have upgraded (downgraded) the peer firm. We test this prediction by estimating the following regression:

$$NetVol_{i,t} = \beta_0 + \beta_1 Mean\_Revision_i + Controls_{i,t} + \varepsilon_{i,t} \quad (3)$$

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<sup>11</sup> Our empirical analysis does not distinguish between (a) information that originates with analysts, and (b) information that originates elsewhere and comes to the market through analysts' role in integrating information from other sources (Bradshaw et al., 2017).

The dependent variable, *NetVol*, is defined as either *NetVol\_Total*, *NetVol\_Institutional* or *NetVol\_Retail*. *NetVol\_Total* is the volume of buy-initiated trades minus the volume of sell-initiated trades on the IPO date, scaled by shares outstanding. *NetVol\_Institutional* (*NetVol\_Retail*) measures the trading volume of buy-initiated transactions minus sell-initiated transactions for institutional (retail) investors. Therefore, Equation (3) tests the sensitivity of IPO-day trading to analyst recommendation revisions for peer firms during the registration period. We rely on prior research that uses trade sizes greater than \$50,000 to identify institutional investor trades (Lee and Ready, 1991). We follow Boehmer et al. (2019) and measure retail trades as those (i) reported in the Trade and Quote Database (TAQ) as exchange code “D,” and (ii) that have received a price improvement (a fraction of a cent) over the existing bid or offer.

*Mean\_Revision* is the average recommendation revision of all peer firms associated with the IPO firm, aggregated across all analysts covering these peer firms during the registration period. We include the same control variables as those included in Equation 2. We also include industry returns (*Industry\_Returns*) to control for industry-wide news correlated with both analyst recommendation revisions and investor trading behavior. Similar to our prior analyses, we include time and industry fixed effects and cluster standard errors by time and industry. If investors sell (buy) shares of the IPO firm when analysts have downgraded (upgraded) stock recommendations during the registration period of peer firms, we expect the coefficient on *Mean\_Revision* to be positive.

Column 1 of Table 5 reports the results of this analysis when *NetVol\_Total* is the dependent variable. We find a positive and statistically significant coefficient on *Mean\_Revision* (t-stat = 2.62), suggesting that analysts’ recommendation revisions during the registration period impact IPO-day trading decisions. Next, we partition the sample based on trading activity by investor type. Column 2 (Column 3) reports the results for institutional (retail) investors. We observe a positive and statistically significant coefficient on *Mean\_Revision* in Column 2 (t-stat = 2.79), but not in Column 3 (t-stat =

0.85). These findings suggest institutional investors trade on analysts' recommendation revisions during the registration period of peer firms, but that retail investors fail to incorporate this information in their trading decisions, on average.

#### 4.4. Retail Investor Trading and Limited Attention

Our evidence is consistent with retail investors' trading behavior on the IPO date not reflecting the information in analysts' recommendation changes for peer firms during the IPO registration period. In this section, we further explore why retail investors are not trading on this information, especially given that institutional investors appear to incorporate this information into their own trading on the IPO date.

The prior research documents retail investors are more likely to trade in stocks of highly visible firms they are more familiar with (Barber and Odean, 2008; Bushee et al., 2020). This literature suggests that gaining and maintaining awareness of firms is costly, particularly for retail investors who often lack automated tools to monitor all available stocks. Given these findings, we examine whether retail investors' failure to incorporate information from peer firm analysts into their IPO-day trading can be partially explained by limited attention. We test this limited attention explanation by examining the subset of large, highly visible peer firms that are more likely to be familiar to retail investors (Barber and Odean, 2008; Bushee et al., 2020). If limited attention helps explain why retail investors fail to incorporate peer firm recommendation changes in their IPO trading decisions, this effect should be attenuated when peer firms are highly visible, because awareness costs associated with the stock recommendations revisions analysts issue should be lower for these firms.

To examine this issue, we estimate Equation (3), partitioning the sample based on whether the average peer of the IPO firm is highly visible, where visibility is determined based on the size of the peer firm. We create an indicator variable, *Big\_Peers*, that is equal to one for a given IPO if the peer firms' average total assets are above the sample mean, and zero otherwise. Specifically, for each IPO

firm, we calculate the average size for its peers, and then categorize each IPO firm based on size of its peers. *Big\_Peers* is a binary variable set equal to one (zero) for IPO firms above (below) the sample average. We then interact *Big\_Peers* with *Mean\_Revision*. The limited attention explanation would predict a positive association between *NetVol\_Retail* and this interaction term, suggesting that retail investors are more likely to be attentive to recommendation changes for peer firms (and their implication for the IPO firm) when they are familiar with the firm and awareness costs are low.

Table 6 reports the results of this analysis. In Column 1 we examine all investors, and fail to find a statistically significant effect on the interaction term (t-stat = 1.28), suggesting that, on average, the association between investors' trading decisions and stock recommendation revisions for peer firms is not affected by the size of the IPO firms' peers. We next partition the sample for institutional and retail investors, and Column 2 (Column 3) reports results when examining *NetVol\_Institutional* (*NetVol\_Retail*). The coefficient on the interaction term in Column 2 is insignificant (t-stat = 1.31), suggesting that institutional investors are not affected by the visibility of peer firms when incorporating peer firm analyst recommendations into IPO trading. In Column 3, however, we find a positive and statistically significant coefficient on this interaction term (t-stat = 3.48), suggesting that retail investors' trading on the IPO issue date is informed by the stock recommendations analysts issue for peer firms, but only when the IPO firms' peers are highly visible. This finding is consistent with limited attention providing at least a partial explanation for our on-average finding that retail investors' trading is not significantly associated with analyst recommendation changes for peer firms.

## 5. Potential Confounding Effects

The results thus far suggest analyst recommendation revisions of peer firms contain relevant information about IPO firms, which impacts IPO-day trading patterns by institutional, and in some situations, retail investors. In this section, we consider the possibility that confounding events impact the association between analysts' stock recommendation revisions for peer firms and IPO-day trading

and the potential role of the IPO road show. We note that our primary tests include a robust set of control variables, including various aspects of the IPO firm's performance, industry-wide stock returns, and IPO characteristics, which help mitigate concerns about confounding events. However, we perform additional tests to mitigate these concerns.

#### 5.1. Recommendation Revisions and Post-IPO Trading

One limitation of our tests associating peer firm recommendation changes during the registration period with investor trading on the IPO date is that the registration period extends for several months before the IPO (120 days, on average), which raises the possible confounding effect of other news events during that period. We take several steps to mitigate this concern. First, in our main analysis, we control for average industry returns for the 90 days prior to the registration period in order to capture variability in industry-wide news. We acknowledge that industry returns may not fully capture other news sources in a timely manner. Therefore, we perform an additional test to rule out alternative sources of information during the registration period.

In our primary test examining IPO-day trading (Table 5), we examine analyst recommendation changes for peer firms issued at any point during the registration period, and associate these revisions—some of which precede the IPO date by a few weeks— with a single day of trading on the IPO issue date. In this section, we perform a similar test where we examine investor trading in response to analyst recommendation revisions of peer firms issued in the 25-day window *after* the IPO issue date but *before* the expiration of the quiet period. Restricting this analysis to recommendation revisions in the 25 days after the IPO issue date significantly reduces the number of recommendations considered in this analysis. However, the benefit of this test is that it allows us to observe trading reactions in the three days immediately surrounding the recommendation changes, minimizing concerns of confounding effects. Specifically, we estimate the following regression:

$$NetVol_{i,t} = \beta_0 + \beta_1 Revision_i + Controls_{i,t} + \varepsilon_{i,t} \quad (4)$$

*NetVol* is the volume of buy-initiated trades minus the volume of sell-initiated trades measured over the three days centered on the date of the recommendation revision. All other variables are as defined previously. Note that we estimate this regression at the analyst recommendation level, while our main analysis aggregates recommendation revisions at the IPO level.

Table 7 reports the results of this analysis. Column 1 reports results when examining *NetVol\_Total*. Similar to our main results, we find a positive and statistically significant coefficient on *Revision* (t-stat = 1.80). In Column 2 (Column 3), we report results when examining the trading activity of institutional (retail) investors. We continue to find a positive and statistically significant coefficient on *Revision* in Column 2 (t-stat = 1.82), but an insignificant coefficient on *Revision* in Column 3 (t-stat = 0.74). These results are similar to our main analysis, suggesting that confounding industry news sources (not already captured by our control variables) are unlikely to explain our findings.

It is important to note that the number of recommendation revisions in the 25 days after the IPO issue date and before the expiration of the quiet period is only 466. In comparison, in our main tests we examine 2,225 recommendation revisions that are issued after the IPO filing date but before the IPO issue date (i.e., the registration period). That is, there are about five times as many revisions during that period, suggesting that most of the information analysts of peer firms communicate during the quiet period takes place before the IPO issue date (rather than after the IPO issue date and before the expiration of the quiet period). Nevertheless, despite the relatively small sample for this test, we continue to find results consistent with the main findings.

## 5.2. Information Acquisition During the IPO Roadshow

Another potential alternative explanation for our findings is that institutional investors gain an information advantage over retail investors through the IPO roadshow, rather than through analyst

recommendation revisions of peer firms. Thus, information conveyed to both institutional investors and analysts during the roadshow could confound our analysis (Blankespoor et al., 2020).

To address this concern, we replicate our main analysis after excluding analyst recommendation revisions issued in the final weeks prior to the IPO issue date. Because IPO roadshows typically take place in the two weeks leading up to the IPO issue date (Blankespoor et al., 2020), our focus on stock recommendations revisions for peer firms that are issued before this window (and before the roadshow) allows us to draw inferences about the association between analyst research of peer firms and IPO trading, without the potentially confounding effect of information conveyed during the roadshow.<sup>12</sup> Table 8 presents the results of this analysis after excluding recommendation revisions during the two weeks prior to the IPO issue date. Column 1 reports the results when the dependent variable is *NetVol\_Total*. We continue to find a positive and significant coefficient on *Mean\_Revision* (t-stat = 2.41). In Column 2 (Column 3), we report results when examining the trading behavior of institutional (retail) investors. Similar to our main findings, we find a positive and statistically significant coefficient on *Mean\_Revision* in Column 2 (t-stat = 2.25), but an insignificant coefficient in Column 3 (t-stat = 1.07). We interpret these findings as evidence that information conveyed during the roadshow is not a credible alternative explanation of our results.

## 6. Analyst Characteristics

In this section, we conduct cross-sectional tests based on characteristics that vary with the issuing analyst to provide additional evidence that our findings are attributable to the information content of peer firm analyst recommendation changes. Specifically, we examine cross-sectional variation in investors' IPO-day trading based on analyst industry specialization and the analyst's

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<sup>12</sup> Approximately 11% of the recommendation revisions in our sample occur during the two-week period immediately prior to the IPO date, suggesting that the majority of revisions precede the IPO roadshow.

affiliation with the institution hired to underwrite the IPO. These tests are important because they speak to our ability to attribute the trading behavior we document to the activity of the analysts covering peer firms rather than to alternative sources of information. In particular, they help rule out the possibility that our results are attributable to an industry-level trends or to the potential effect of trends in the IPO market (i.e., IPO “waves”). These alternative explanations would not explain any variation in IPO trading based on analyst characteristics.

### 6.1. IPO Trading and Analyst Industry Specialization

An analyst’s industry specialization is likely to affect the extent to which investors rely on the analyst’s recommendation changes for inferences about IPO firms. We identify analysts covering fewer (more) than the sample mean number of industries as having high (low) industry expertise.<sup>13</sup> In other words, when an analyst’s coverage portfolio is concentrated in relatively few industries, they are likely to be more knowledgeable about these industries (Clement, 1999; Dunn and Nathan 2005). We then measure the average recommendation revision by all peer firm analysts during the IPO’s registration period, separately for analysts with high and low industry expertise. We expect the association between recommendation revisions for peer firms and investors’ IPO-day trading to be stronger when these recommendations are issued by analysts with high industry expertise because investors are more likely to rely upon information these analysts provide. This empirical identification improves our ability to attribute the trading behavior we document to the activity of the analysts covering peer firms because the expertise of these analysts can plausibly influence investors’ reaction to the recommendation revisions they issue, but analyst expertise is unlikely to be associated with new information about the IPO firm that investors could learn from any other source.

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<sup>13</sup> Based on our sample mean, analysts covering four industries or fewer are designated as having high industry expertise.



Table 9 reports the results of this analysis. Columns 1 and 2 report results when examining *NetVol\_Total*. Our findings suggest the association between peer firm recommendation revisions and IPO-day trading is concentrated in the revisions of analysts with high industry expertise (Column 1), while not present among analysts with low industry expertise (Column 2). The difference in the coefficient estimates on *Mean\_Revision* across Columns 1 and 2 is statistically significant (Chi-squared statistic = 4.52). The results in Columns 3 and 4 also show that association between recommendation revisions on institutional investors' IPO-day trading activity is stronger when analyst covering industry peers are industry experts (Chi-squared statistic = 5.26).

In contrast, we fail to find a significant association between peer firm recommendation revisions and IPO-day trading among retail investors, regardless of the industry expertise exhibited by the analysts in question. This finding is consistent with retail investors failing to incorporate analyst industry expertise (and the corresponding information content of their recommendation revisions) into their trading decisions. These findings are important because they suggest that our primary results are unlikely to be fully driven by other information sources potentially available during the quiet period. As a result, these tests further alleviate concerns about confounding factors impacting the inferences of our tests.

## 6.2. IPO Trading and Analyst Affiliation

We next partition the sample based on whether the analyst revising their stock recommendation of a peer firm works for the brokerage that is underwriting the corresponding IPO (i.e., an affiliated analyst). Prior literature provides contrasting evidence on the potential information advantage of affiliated analysts. Affiliated analysts likely have access to private information about the IPO firm because their firm was hired as the underwriter, which could be reflected in their reports

(e.g., Green et al., 2014).<sup>14</sup> This information advantage may also help affiliated analysts assess the implications of the IPO on peer firms. To the extent this is the case, we expect investors to place more weight on stock recommendation changes of peer firms issued by affiliated analysts. However, Michaely and Womack (1999) and Dambra et al. (2018) provide evidence that affiliated analysts optimistically bias their reports for IPO clients (i.e., providing inferior information). If this bias spills over to their coverage of peer firms, investors may place less weight on the stock recommendations affiliated analysts issue for peer firms.

We identify affiliated analysts by manually matching the name of the lead underwriter for the IPO firm (in the SDC database) with the last name and brokerage affiliation of the corresponding analyst in the I/B/E/S recommendations file. We use data on conference call transcripts to improve the accuracy of the match because I/B/E/S provides a masked identification field for the name of the brokerage that, in some cases, is insufficient to definitively identify the brokerage. The conference call data provides full names for both the analyst and brokerage (and the firm covered by the analyst), which we use to link participating analysts to the last names and brokerage affiliation of analysts in I/B/E/S. For each IPO firm, we then calculate the average recommendation revision by peer firm analysts during the registration period, separately for affiliated and unaffiliated analysts. If investors perceive that affiliated analysts covering peer firms are better able to convey information relevant to the IPO firm, we expect the association between recommendation revisions for peer firms and investors' IPO-day trading to be stronger for recommendations issued by affiliated analysts.

Columns 1 and 2 of Table 10 report the results of this analysis when *NetVol\_Total* is the dependent variable. While we only detect an association between peer firm recommendation revisions and IPO-day trading for affiliated analysts (Column 1), and not for unaffiliated analysts (Column 2),

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<sup>14</sup> Anecdotal evidence also supports this claim (e.g., Jarzemsky and Demos (2013)).

the difference in the coefficient estimates on *Mean\_Revision* across Columns 1 and 2 is not statistically significant (Chi-squared statistic = 2.14). Therefore, when we examine all investors in aggregate, we do not find conclusive evidence of a difference between investors' reliance on affiliated and unaffiliated analysts.

We next examine institutional investors' reliance on affiliated (Column 3) and unaffiliated (Column 4) analysts. Our findings suggest that institutional investors' trading on the IPO date is more strongly associated with the recommendation revisions issued by affiliated analysts (Chi-squared statistic = 2.73), which suggests that institutional investors believe affiliated analysts have an information advantage, perhaps due to increased access to management and other information about the IPO firm.

We also examine retail investors' use of information provided by affiliated (Column 5) and unaffiliated (Column 6) analysts. The results suggest that retail investors' IPO-day trading is also more strongly associated with the revisions of peer firms provided by affiliated analysts (Chi-squared statistic = 4.99). This finding is consistent with our prior findings and suggests that, while retail investors do not trade based on research analysts provide for peer firms (on average), they do trade based on this information when the peer firm (Table 6) or issuing analyst (Table 10) is highly visible.

In summary, we interpret the findings in Table 9 and Table 10 as further evidence that the extent to which IPO investors trade based on information analysts provide for industry peers during the registration period varies based on characteristics of the issuing analyst. These findings are important because they speak to a unique role for sell-side analysts in informing IPO investors that would be difficult to reconcile with other potential sources of information to which investors might have access.

## 7. Additional Analysis and Discussion

### 7.1. Placebo Test

One question that emerges is whether our findings are unique to the quiet period or if they simply reflect a broader phenomenon where analyst research of peer firms is informative about and incorporated into the trading decisions of other firms in the industry. To address this question, we test whether peer firm analyst outputs remain informative to investors during a placebo period one year after the IPO. Specifically, we assign a placebo event date of one year following the IPO and collect peer firm recommendation revisions during the 25 days after this placebo date. We then test for an association between peer firm recommendation revisions and investor trading in the three-day window surrounding each revision.

As reported in Table 11, we fail to find evidence that peer firm recommendations influence investor trading (for either institutional or retail investors) during this placebo window. This evidence suggests peer firm recommendation revisions are uniquely informative during the IPO quiet period and do not influence investor trading outside of the IPO window. This insignificant result is consistent with Shroff et al. (2017), who find that investors are less reliant on information about peer firms when more information is available about the focal firm. In our setting, when more firm-specific information is available following the IPO, investors are less reliant on peer firm information to make inferences about the IPO firm.<sup>15</sup>

### 7.2. Discussion

While regulators have a keen interest in the information environment that exists during the IPO quiet period and what information investors use to assess IPO firms, the issue of whether analysts

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<sup>15</sup> We note, however, that this placebo test does not indicate that analyst spillovers do not occur in some settings. Indeed, the prior literature identifies other spillovers (e.g., comovement of stock returns) among industry peers based on analyst research (e.g., Chan and Hameed, 2006; Muslu et al., 2014; Hameed et al., 2015).

intentionally convey information about IPO firms through their research of other firms is an interesting follow-up question. In particular, it is possible that analysts use peer firm research to deliberately signal information about the IPO firm. This motivation for our findings seems unlikely, *ex ante*, given that analysts have other (arguably less costly) ways to provide insights on IPO firms, especially considering that unaffiliated analysts are not technically prohibited from providing coverage of IPO firms during the quiet period. In contrast, analysts may simply incorporate information about IPO firms (including news of the IPO itself) into their research of peer firms as part of their standard coverage of peer firms, without any deliberate effort to provide information useful to IPO investors.

This is an issue that we mostly leave for future research, given the difficulty of empirically distinguishing between these motivations. With that said, in untabulated analysis, we compare the profitability of analysts' recommendation revisions for peer firms issued during the quiet period relative to the profitability of their recommendation revisions issued in the 120-day window before the IPO filing date. The intuition for this test is that if analysts are intentionally using their research of peer firms to signal information about the IPO firm, their recommendation revisions for the peer firm will be less profitable (i.e., less informative about the future prospects of the peer firm itself) because of their efforts to convey information about the IPO firm. We find that peer firm recommendation revisions during the quiet period are more profitable than are their stock recommendation revisions issued prior to the quiet period, which is consistent with analysts intentionally signaling information about the IPO firm through their research of peer firms. We acknowledge that this test is preliminary and that alternative explanations for this result remain, including the possibility that this finding reflects analysts' difficulty in anticipating the future prospects of peer firms when an industry peer is pursuing an IPO.

## 8. Conclusion

We study the indirect information role of sell-side analysts for IPO firms during the IPO quiet period. Although analysts are generally prohibited from providing information directly about the IPO firm during the quiet period, investors continue to have strong incentives to gain insights about the IPO firm and its future prospects at this time. We find that analysts increase the frequency of their recommendation changes for peer firms when there is an upcoming IPO in the same industry, and that these recommendation revisions for peer firms are predictive of the IPO firm's future performance. We also find that only institutional investors trade on this information on the eventual IPO issue date, while retail investors incorporate information in analyst research of peer firms into their trades only when this information is salient to them. Collectively, our findings suggest analysts provide informative signals about IPO firms during the quiet period through their recommendation changes for peer firms.

Our results contribute to several streams of literature. First, we contribute to the literature on the IPO quiet period by showing that analysts provide an indirect source of information during the IPO process, and that institutional investors disproportionately benefit from this information. Second, we contribute to the literature on the role of analysts during the quiet period. To date, the literature has mainly focused on analyst research issued *after* the expiration of the quiet period, whereas we contribute by showing that analysts also provide informative signals about the IPO firm *during* the quiet period. Lastly, we contribute to the literature that documents various ways in which retail investors are inattentive to different sources of information. Our study suggests that while retail investors generally fail to incorporate information in peer firm analyst recommendation revisions in their IPO trading decisions, salient cues (such as a highly visible peer or an affiliated analyst) facilitate retail investor trading on this information.

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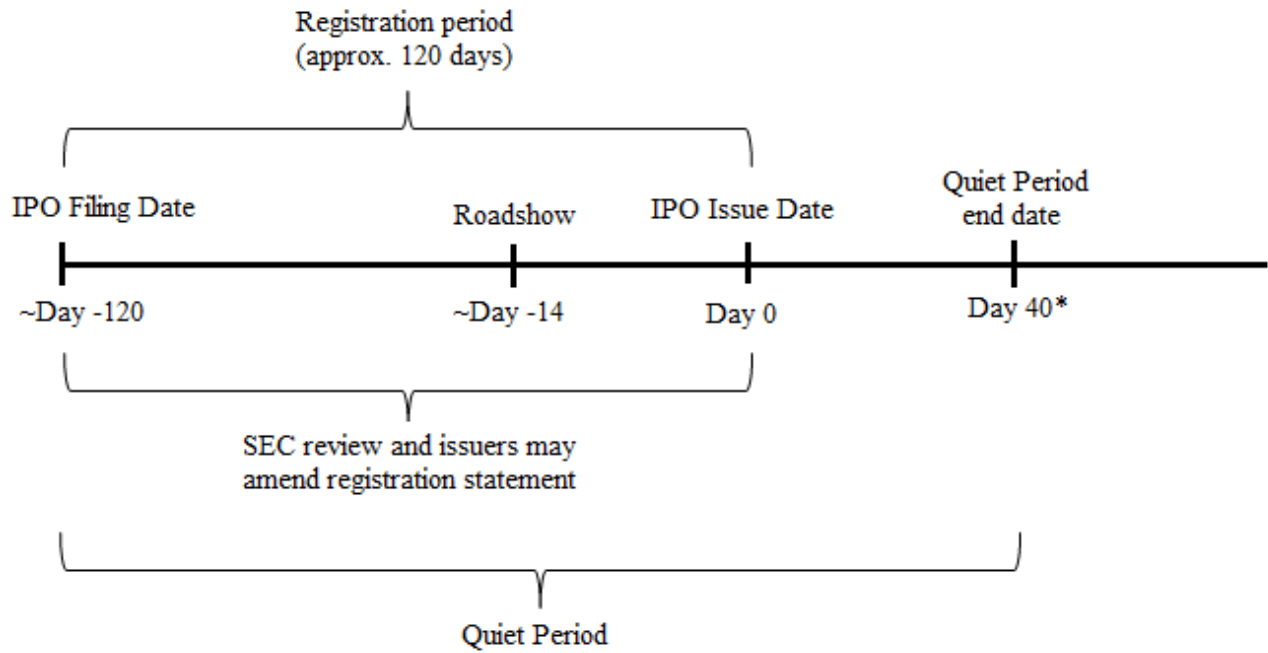
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## Appendix – Variable Definitions

<b>Variable</b>	<b>Definition</b>
<i>Age</i>	Log of firm age at IPO date.
<i>Analysts_Peer</i>	Number of analysts following the peer firm in the quarter prior to the IPO issue date.
<i>Assets</i>	Log of total assets in the fiscal year prior to the IPO issue date.
<i>Avg(N_Rev)</i>	Number of stock recommendation revisions analysts issue for each IPO firm's peer, scaled by the number of days in the IPO firm's registration period.
<i>Big4</i>	Indicator variable equal to one if the IPO firm is audited by a Big-4 auditor, and zero otherwise.
<i>Big_Peers</i>	Indicator variable equal to one for a given IPO if the peer firms' average total assets is above the sample mean, and zero otherwise.
<i>BTM</i>	Book value of equity in the fiscal year prior to the IPO issue date divided by market value of equity based on the IPO offering price.
<i>Industry_Returns</i>	Average 90-day returns of peer firms ending on the IPO firm's issue date.
<i>IPO_News</i>	Indicator variable equal to one if the recommendation revision falls within the IPO registration period, and equal to zero if it falls in the 120-day period immediately prior to the IPO filing date.
<i>Log(N_Rev)</i>	Log of the number of stock recommendation revisions analysts issue for each IPO firm's peer.
<i>Mean_Orig_Rec</i>	Average of analysts' last recommendation prior to the revision.
<i>Mean_Revision</i>	Average recommendation revision analysts issue for the IPO firm's peers during the registration period.
<i>MOB_Peer</i>	Indicator variable equal to one if the peer firm beat the prior quarter's consensus analyst forecast, and zero otherwise.
<i>Nasdaq</i>	Indicator variable equal to one if the IPO firm is listed on the Nasdaq exchange, and zero otherwise.
<i>NetVol_Institutional</i>	Institutional investors' trading volume of purchase transactions minus trading volume of sale transactions on the IPO issue date, scaled by shares outstanding.
<i>NetVol_Retail</i>	Retail investors' trading volume of purchase transactions minus trading volume of sale transactions on the IPO issue date, scaled by shares outstanding.
<i>NetVol_Total</i>	Total trading volume of purchase transactions minus total trading volume of sale transactions on the IPO issue date, scaled by shares outstanding.
<i>Pct_Retained</i>	Percentage of shares retained after the IPO by pre-IPO shareholders.
<i>Returns_1yr</i>	Cumulative abnormal returns over the one-year window starting the day after the IPO date.
<i>Returns_90days</i>	Cumulative abnormal returns over the 90-day window starting the day after the IPO date.
<i>Returns_Peer</i>	90-day returns of the peer firm ending on the IPO firm's filing date.
<i>Revenue</i>	Log of sales revenue in the fiscal year prior to the IPO issue date.

<i>ROA</i>	Net income of the IPO firm in the fiscal year prior to the IPO issue date scaled by total assets.
<i>ROA_Peer</i>	Net income of the peer firm in the quarter prior to the IPO issue date, scaled by total assets.
<i>R&amp;D</i>	Research and development expense in the fiscal year prior to the IPO issue date scaled by total assets.
<i>Tech</i>	Indicator variable equal to one if the firm is in an industry defined as Tech, following Loughran and Ritter (2004), and zero otherwise
<i>Underwriter</i>	Average reputation ranking of the IPO firm's lead underwriters.
<i>VC</i>	Indicator variable equal to one if the firm is venture capital-backed, and zero otherwise.

Figure 1 – IPO Timeline



\*After the JOBS Act, the quiet period effectively ends 25 days after the IPO issue date for EGCs.

**Table 1 – IPO Sample Selection**

<b>Sample Selection</b>	<b>Obs.</b>
All US IPOs from January 1, 2010 to December 31, 2017	1,628
Exclude: IPOs in non-major stock exchanges	(337)
Exclude: Financial firms	(427)
Exclude: Unit issues, blank check companies, rights issues	(1)
Exclude: IPOs with missing historical financial and market information	(195)
Exclude: IPOs with no matches to Hoberg-Phillips peer data	(100)
Exclude: IPOs with no analyst reports of peer firms during the registration period	(199)
<b>Final IPO Sample</b>	<b>369</b>
Number of analyst recommendation revisions of peer firms during the IPO registration period and the equivalent number days prior to the IPO filing date	<b>4,301</b>
Number of analyst recommendation revisions of peer firms during the IPO registration period	<b>2,225</b>

Table 1 describes how the IPO-level sample and analyst recommendation-level sample are constructed.

**Table 2 – Descriptive Statistics**

<b>Variable</b>	<b>STD</b>	<b>P25</b>	<b>Mean</b>	<b>Median</b>	<b>P75</b>
<i><u>IPO Level</u></i>					
<i>Age</i>	0.976	2.079	2.581	2.485	3.178
<i>Assets</i>	1.989	3.961	5.284	5.089	6.787
<i>Big4</i>	0.372	1.000	0.835	1.000	1.000
<i>Big_Peers</i>	0.431	0.000	0.246	0.000	0.000
<i>BTM</i>	0.303	0.004	0.131	0.075	0.221
<i>Industry_Returns</i>	0.165	-0.084	0.012	0.008	0.088
<i>Mean_Orig_Rec</i>	0.600	2.000	2.369	2.375	2.833
<i>Mean_Revision</i>	0.856	-0.500	-0.017	0.000	0.500
<i>Nasdaq</i>	0.499	0.000	0.543	1.000	1.000
<i>NetVol_Large</i>	0.066	-0.066	-0.058	-0.039	-0.023
<i>NetVol_Retail</i>	0.067	-0.050	-0.048	-0.029	-0.018
<i>Pct_Retained</i>	0.145	0.681	0.735	0.767	0.830
<i>Returns_1yr</i>	0.557	-0.353	0.013	-0.057	0.245
<i>Returns_90days</i>	0.290	-0.156	0.042	0.030	0.176
<i>Revenue</i>	2.406	3.616	4.674	4.775	6.356
<i>ROA</i>	0.566	-0.293	-0.237	-0.018	0.037
<i>Re&amp;D</i>	0.294	0.000	0.181	0.048	0.264
<i>Tech</i>	0.386	0.000	0.181	0.000	0.000
<i>Underwriter</i>	1.503	6.750	7.154	7.333	8.250
<i>VC</i>	0.500	0.000	0.476	0.000	1.000
<i><u>IPO Peer Level</u></i>					
<i>Analysts_Peer</i>	7.954	6.000	11.678	10.000	16.000
<i>Avg(N_Rev)</i>	0.023	0.005	0.022	0.016	0.030
<i>IPO_News</i>	0.500	0.000	0.500	0.500	1.000
<i>Log(N_Rev)</i>	0.748	0.693	1.012	0.693	1.386
<i>MOB_Peer</i>	0.474	0.000	0.658	1.000	1.000
<i>Returns_Peer</i>	0.223	-0.089	0.046	0.021	0.153
<i>ROA_Peer</i>	0.054	-0.011	-0.009	0.006	0.017

Table 2 provides descriptive statistics for all variables used in our analyses. All variables are defined in the Appendix.

**Table 3 – Peer Firm Recommendation Revisions and IPO News**

	(1)	(2)	(3)	(4)
	$Log(N\_Rev)$	$Log(N\_Rev)$	$Log(N\_Rev)$	$Ang(N\_Rev)$
<i>IPO_News</i>	0.121*** (3.30)	0.121*** (3.61)	0.173*** (2.98)	0.003** (2.61)
<i>ROA_Peer</i>	0.349 (0.62)	0.247 (0.45)	0.201 (0.72)	0.006 (0.76)
<i>Returns_Peer</i>	-0.198 (-1.56)	-0.228 (-1.20)	-0.085 (-1.13)	-0.002 (-0.38)
<i>MOB_Peer</i>	-0.065 (-1.24)	-0.021 (-0.67)	-0.058 (-0.98)	-0.000 (-0.11)
<i>Analysts_Peer</i>	0.036*** (13.64)	0.049*** (11.19)	0.021*** (12.85)	0.001*** (20.33)
<i>Assets</i>	0.011 (0.59)		0.018 (1.01)	-0.001 (-0.97)
<i>Revenue</i>	0.024 (1.13)		-0.009 (-0.36)	-0.001 (-1.00)
<i>Age</i>	0.049 (0.98)		0.040 (1.07)	0.001*** (3.10)
<i>ROA</i>	-0.043 (-0.69)		-0.098* (-1.80)	0.000 (0.28)
<i>Re&amp;D</i>	-0.043 (-0.49)		-0.095 (-1.10)	-0.000 (-0.09)
<i>Big4</i>	-0.025 (-0.40)		0.103 (1.35)	0.003* (1.85)
<i>BTM</i>	0.044 (0.45)		0.139** (2.33)	0.002 (0.76)
<i>Tech</i>	-0.032 (-0.49)		0.012 (0.21)	-0.000 (-0.40)
<i>Pct_Retained</i>	-0.243 (-1.09)		-0.063 (-0.45)	-0.000 (-0.07)
<i>VC</i>	0.043 (0.81)		-0.010 (-0.21)	0.001 (1.20)
<i>Nasdaq</i>	0.071 (0.96)		0.007 (0.14)	-0.000 (-0.23)
<i>Underwriter</i>	-0.011 (-0.56)		-0.022 (-0.84)	0.001 (0.95)
Observations	1,434	1,434	572	1,434
R-squared	0.259	0.617	0.180	0.279
Industry FEs	Yes	No	Yes	Yes
Firm FEs	No	Yes	No	No
Industry & Time Clustering	Yes	Yes	Yes	Yes

Table 3 reports the results of estimating Equation 1. Column 1 (2) reports the results with industry (firm) fixed effects. Column 3 reports the results after limiting the sample to IPO firms with registration periods less than 90 days.  $Log(N\_Rev)$  is the log of the number of stock recommendation revisions analysts issue for each IPO firm's peer.  $Ang(N\_Rev)$  is the number of stock recommendation revisions analysts issue for each IPO firm's peer, scaled by the number of days in the



IPO firm's registration period. Our variable of interest, *IPO\_News*, is an indicator variable equal to one if the recommendation revision falls within the IPO registration period, and zero if it falls in the equivalent number of days prior to the IPO filing date. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 4 – Peer Firm Recommendation Revisions and Future IPO Performance**

	(1)	(2)
	<i>Returns_90days</i>	<i>Returns_1yr</i>
<i>Mean_Revision</i>	0.060** (2.29)	0.071** (2.30)
<i>Assets</i>	0.003 (0.16)	-0.017 (-0.61)
<i>Revenue</i>	-0.008 (-0.46)	-0.012 (-0.39)
<i>Age</i>	-0.002 (-0.09)	0.027 (0.91)
<i>ROA</i>	0.148* (1.77)	0.314** (2.71)
<i>R&amp;D</i>	0.187* (2.01)	0.286 (1.39)
<i>Big4</i>	0.088* (1.89)	-0.001 (-0.00)
<i>BTM</i>	-0.018 (-0.35)	0.029 (0.31)
<i>Tech</i>	0.053 (0.90)	0.113 (1.24)
<i>Pct_Retained</i>	-0.108 (-1.20)	0.081 (0.39)
<i>VC</i>	-0.050 (-1.27)	-0.173** (-2.20)
<i>Nasdaq</i>	0.003 (0.12)	0.025 (0.35)
<i>Underwriter</i>	-0.002 (-0.15)	0.037 (1.46)
<i>Mean_Orig_Rec</i>	-0.008 (-0.19)	-0.033 (-0.67)
Observations	369	369
R-squared	0.154	0.177
Industry & Time FEs	Yes	Yes
Industry & Time Clustering	Yes	Yes

Table 4 reports the results of estimating Equation 2. The dependent variable, *Returns\_90days* (*Returns\_1yr*), is the IPO firm's cumulative abnormal returns over a 90-day (one year) window starting the day after the IPO date. Our variable of interest, *Mean\_Revision*, is the average recommendation revision issued for the IPO firm's peers during the registration period. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 5 – Peer Firm Recommendation Revisions and IPO-Day Trading**

	(1) <i>NetVol_Total</i>	(2) <i>NetVol_Institutional</i>	(3) <i>NetVol_Retail</i>
<i>Mean_Revision</i>	0.010** (2.62)	0.009*** (2.79)	0.003 (0.85)
<i>Assets</i>	0.006 (1.12)	0.004 (1.07)	0.008*** (3.12)
<i>Revenue</i>	-0.009*** (-3.53)	-0.007*** (-2.92)	-0.008** (-2.28)
<i>Age</i>	0.011 (1.67)	0.009 (1.58)	0.009 (1.34)
<i>ROA</i>	-0.018 (-1.29)	-0.018 (-1.42)	-0.002 (-0.39)
<i>R&amp;D</i>	-0.005 (-0.25)	-0.007 (-0.36)	0.011 (0.66)
<i>Big4</i>	-0.028*** (-4.22)	-0.025*** (-3.85)	-0.022*** (-4.64)
<i>BTM</i>	-0.007 (-0.45)	-0.003 (-0.25)	-0.014 (-1.51)
<i>Tech</i>	0.004 (0.68)	0.002 (0.39)	0.019*** (2.85)
<i>Pct_Retained</i>	0.085* (1.76)	0.070* (1.72)	0.014 (0.35)
<i>VC</i>	-0.011 (-1.19)	-0.009 (-1.06)	-0.013 (-1.27)
<i>Nasdaq</i>	-0.023** (-2.31)	-0.022** (-2.71)	0.017** (2.45)
<i>Underwriter</i>	0.002 (0.42)	0.001 (0.32)	0.000 (0.04)
<i>Mean_Orig_Rec</i>	-0.011 (-1.43)	-0.010 (-1.50)	-0.004 (-1.49)
<i>Industry_Returns</i>	-0.012 (-0.81)	-0.015 (-1.16)	-0.030* (-1.78)
Observations	367	367	367
R-squared	0.206	0.212	0.158
Industry & Time FEs	Yes	Yes	Yes
Industry & Time Clustering	Yes	Yes	Yes

Table 5 reports the results of estimating Equation 3. Column 1, 2, and 3 report the results when the dependent variable is *NetVol\_Total*, *NetVol\_Institutional*, and *NetVol\_Retail*, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. Our variable of interest, *Mean\_Revision*, is the average recommendation revision issued for the IPO firm's peers during the registration period. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 6 – Retail Investor Trading and Limited Attention**

	(1)	(2)	(3)
	<i>NetVol_Total</i>	<i>NetVol_Institutional</i>	<i>NetVol_Retail</i>
<i>Mean_Revision</i>	0.009* (2.04)	0.008** (2.12)	0.000 (0.02)
<i>Big_Peers</i>	-0.014 (-1.32)	-0.015 (-1.47)	-0.016 (-1.62)
<i>Mean_Revision*Big_Peers</i>	0.011 (1.28)	0.011 (1.31)	0.020*** (3.48)
<i>Assets</i>	0.006 (1.16)	0.004 (1.12)	0.008*** (3.51)
<i>Revenue</i>	-0.008*** (-3.56)	-0.006*** (-2.88)	-0.008** (-2.46)
<i>Age</i>	0.011* (1.71)	0.009 (1.64)	0.009 (1.42)
<i>ROA</i>	-0.019 (-1.32)	-0.019 (-1.45)	-0.003 (-0.53)
<i>R&amp;D</i>	-0.007 (-0.30)	-0.008 (-0.41)	0.010 (0.54)
<i>Big4</i>	-0.029*** (-3.97)	-0.026*** (-3.58)	-0.023*** (-4.23)
<i>BTM</i>	-0.007 (-0.43)	-0.003 (-0.22)	-0.013 (-1.32)
<i>Tech</i>	0.004 (0.63)	0.002 (0.35)	0.019** (2.72)
<i>Pct_Retained</i>	0.083 (1.64)	0.068 (1.61)	0.014 (0.35)
<i>VC</i>	-0.011 (-1.30)	-0.009 (-1.19)	-0.014 (-1.42)
<i>Nasdaq</i>	-0.023** (-2.35)	-0.022*** (-2.76)	0.016** (2.66)
<i>Underwriter</i>	0.002 (0.48)	0.001 (0.39)	0.000 (0.25)
<i>Mean_Orig_Rec</i>	-0.011 (-1.43)	-0.010 (-1.51)	-0.004 (-1.65)
<i>Industry_Returns</i>	-0.012 (-0.77)	-0.014 (-1.09)	-0.028 (-1.42)
Observations	367	367	367
R-squared	0.212	0.220	0.172
Industry & Time FEs	Yes	Yes	Yes
Industry & Time Clustering	Yes	Yes	Yes

Table 6 replicates the results in Equation 3 after including an interaction term between *Mean\_Revision* and *Big\_Peers*. Column 1, 2, and 3 report the results when the dependent variable is *NetVol\_Total*, *NetVol\_Institutional*, and *NetVol\_Retail*, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by

shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *Mean\_Revision*, is the average recommendation revision issued for the IPO firm's peers during the registration period. *Big\_Peers* is an indicator variable equal to one for a given IPO if the peer firms' average total assets is above the sample mean, and zero otherwise. Our variable of interest is the interaction term, *Mean\_Revision\*Big\_Peers*. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 7 – Peer Firm Recommendation Revisions and Trading After the IPO Issue Date**

	(1) <i>NetVol_Total</i> (3-day window)	(2) <i>NetVol_Institutional</i> (3-day window)	(3) <i>NetVol_Retail</i> (3-day window)
<i>Revision</i>	0.002* (1.80)	0.001* (1.82)	0.000 (0.74)
<i>Assets</i>	-0.000 (-0.36)	0.000 (0.03)	-0.000 (-0.47)
<i>Revenue</i>	-0.000 (-0.51)	-0.001 (-0.74)	-0.000 (-0.46)
<i>Age</i>	0.000 (0.26)	0.000 (0.31)	0.001 (1.06)
<i>ROA</i>	0.002 (0.81)	0.002 (0.98)	0.001 (0.49)
<i>RecD</i>	-0.006 (-1.54)	-0.004 (-1.18)	-0.004 (-1.23)
<i>Big4</i>	-0.003 (-1.32)	-0.003 (-1.38)	-0.002 (-1.32)
<i>BTM</i>	-0.002 (-0.61)	-0.002 (-0.56)	-0.001 (-0.25)
<i>Tech</i>	-0.003 (-0.87)	-0.003 (-0.91)	-0.000 (-0.20)
<i>Pct_Retained</i>	-0.003 (-0.44)	-0.003 (-0.59)	0.007 (1.60)
<i>VC</i>	0.003* (1.96)	0.003* (2.00)	0.001 (0.49)
<i>Nasdaq</i>	-0.005 (-1.58)	-0.004 (-1.52)	-0.000 (-0.20)
<i>Underwriter</i>	-0.000 (-0.79)	-0.001 (-1.08)	-0.001 (-1.17)
<i>Mean_Orig_Rec</i>	-0.001 (-0.51)	-0.001 (-0.50)	-0.000 (-0.16)
<i>Industry_Returns</i>	-0.004 (-0.58)	-0.003 (-0.54)	-0.007 (-1.47)
Observations	466	466	466
R-squared	0.070	0.067	0.080
Industry & Time FEs	Yes	Yes	Yes
Industry & Time Clustering	Yes	Yes	Yes

Table 7 reports the results of estimating Equation 4. Column 1, 2, and 3 report the results when the dependent variable is *NetVol\_Total*, *NetVol\_Institutional*, and *NetVol\_Retail*, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. Our variable of interest, *Revision*, is the recommendation revision of the IPO firm's peer

analyst, issued after the IPO issue date but before the end of the quiet period. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 8 – Ruling Out the Potential Impact of Information Acquisition During the Roadshow**

	(1) <i>NetVol_Total</i>	(2) <i>NetVol_Institutional</i>	(3) <i>NetVol_Retail</i>
<i>Mean_Revision</i>	0.012** (2.41)	0.009** (2.25)	0.004 (1.07)
<i>Assets</i>	0.007 (1.24)	0.005 (1.17)	0.009*** (3.51)
<i>Revenue</i>	-0.009** (-2.71)	-0.007** (-2.31)	-0.008** (-2.18)
<i>Age</i>	0.010 (1.37)	0.009 (1.35)	0.008 (1.27)
<i>ROA</i>	-0.020 (-1.30)	-0.020 (-1.48)	-0.007 (-1.53)
<i>R&amp;D</i>	-0.003 (-0.09)	-0.006 (-0.21)	0.004 (0.20)
<i>Big4</i>	-0.031*** (-4.06)	-0.026*** (-3.64)	-0.022*** (-3.97)
<i>BTM</i>	-0.009 (-0.52)	-0.005 (-0.39)	-0.014 (-1.49)
<i>Tech</i>	0.004 (0.62)	0.002 (0.33)	0.023*** (3.63)
<i>Pct_Retained</i>	0.081 (1.49)	0.069 (1.49)	0.022 (0.60)
<i>VC</i>	-0.010 (-1.10)	-0.009 (-1.05)	-0.009 (-0.80)
<i>Nasdaq</i>	-0.023** (-2.15)	-0.022** (-2.58)	0.016*** (2.79)
<i>Underwriter</i>	0.002 (0.42)	0.001 (0.37)	0.000 (0.07)
<i>Mean_Orig_Rec</i>	-0.010 (-1.12)	-0.008 (-1.04)	-0.006 (-1.69)
<i>Industry_Returns</i>	-0.013 (-0.67)	-0.016 (-1.03)	-0.032** (-2.05)
Observations	324	324	324
R-squared	0.205	0.211	0.166
Industry & Time FEs	Yes	Yes	Yes
Industry & Time Clustering	Yes	Yes	Yes

Table 8 replicates the results in Equation 3 after excluding recommendation revisions in the two week period prior to the IPO date. Column 1, 2, and 3 report the results when the dependent variable is *NetVol\_Total*, *NetVol\_Institutional*, and *NetVol\_Retail*, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. Our variable of interest, *Mean\_Revision*, is the average recommendation revision issued for the IPO firm's peers during the registration period. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.



**Table 9 – IPO-Day Trading and Analyst Industry Expertise**

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>NetVol_Total</i>		<i>NetVol_Institutional</i>		<i>NetVol_Retail</i>	
<i>Mean_Revision</i>	0.011**	-0.005	0.011**	-0.006	0.006	-0.009
	(2.34)	(-0.95)	(2.46)	(-1.19)	(1.08)	(-1.41)
<i>Assets</i>	0.008	-0.003	0.006	-0.004	0.010***	0.004
	(1.48)	(-0.56)	(1.27)	(-0.84)	(3.39)	(1.52)
<i>Revenue</i>	-0.010***	-0.001	-0.008***	-0.000	-0.010**	-0.003
	(-3.43)	(-0.22)	(-2.99)	(-0.01)	(-2.42)	(-0.89)
<i>Age</i>	0.011	0.018**	0.009	0.015**	0.011	0.004
	(1.47)	(2.46)	(1.28)	(2.15)	(1.52)	(0.78)
<i>ROA</i>	-0.008	-0.030***	-0.010	-0.026***	-0.002	0.010
	(-0.72)	(-3.30)	(-0.95)	(-3.22)	(-0.38)	(0.66)
<i>Re&amp;D</i>	0.008	0.003	0.004	0.006	0.011	0.035
	(0.39)	(0.12)	(0.22)	(0.23)	(0.69)	(1.51)
<i>Big4</i>	-0.028***	-0.034***	-0.024***	-0.031***	-0.025***	-0.030***
	(-3.75)	(-3.36)	(-3.80)	(-3.29)	(-4.70)	(-3.27)
<i>BTM</i>	-0.007	0.002	-0.004	0.004	-0.012	-0.016*
	(-0.50)	(0.14)	(-0.33)	(0.32)	(-1.51)	(-1.95)
<i>Tech</i>	-0.001	0.019***	-0.003	0.013**	0.014**	0.034***
	(-0.21)	(3.21)	(-0.43)	(2.55)	(2.23)	(6.29)
<i>Pct_Retained</i>	0.057	0.099**	0.048	0.077*	0.008	0.002
	(1.12)	(2.20)	(1.06)	(1.95)	(0.20)	(0.04)
<i>VC</i>	-0.012**	-0.008	-0.010**	-0.008	-0.013**	-0.005
	(-2.06)	(-0.49)	(-2.08)	(-0.51)	(-2.14)	(-0.47)
<i>Nasdaq</i>	-0.024***	-0.029***	-0.025***	-0.029***	0.016***	0.013***
	(-2.69)	(-2.87)	(-3.25)	(-3.29)	(2.81)	(2.81)
<i>Underwriter</i>	-0.001	0.000	-0.001	0.000	-0.001	-0.002
	(-0.66)	(0.05)	(-0.73)	(0.04)	(-0.99)	(-0.87)
<i>Mean_Orig_Rec</i>	-0.018**	0.016	-0.017**	0.013	-0.010**	0.018*
	(-2.47)	(1.41)	(-2.46)	(1.24)	(-2.00)	(1.66)
<i>Industry_Returns</i>	-0.014	0.011	-0.014	-0.000	-0.032*	-0.042
	(-0.89)	(0.31)	(-1.04)	(-0.01)	(-1.92)	(-1.61)
Industry Expertise	High	Low	High	Low	High	Low
Difference in coefficients	0.016**		0.017**		0.015	
Chi-squared	4.52		5.26		1.91	
Observations	306	209	306	209	306	209
R-squared	0.218	0.217	0.224	0.211	0.175	0.180
Industry & Time FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry Clustering	Yes	Yes	Yes	Yes	Yes	Yes

Table 9 reports results of the effect of recommendation revisions on IPO day trading after partitioning analysts based on their industry expertise. Columns 1 and 2 (Columns 3 and 4) [Columns 5 and 6] report the results when the dependent variable is *NetVol\_Total* (*NetVol\_Institutional*) [*NetVol\_Retail*], for analysts covering peer firms that have high and low levels of industry expertise, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue

date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. Analyst covering fewer than the sample mean number of industries are classified as having high industry expertise. Our variable of interest, *Mean\_Revision*, is the average recommendation revision of all analysts covering peer firms during the registration period with high (or low) industry expertise. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 10 – IPO-Day Trading and Analyst Affiliation**

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>NetVol_Total</i>		<i>NetVol_Institutional</i>		<i>NetVol_Retail</i>	
<i>Mean_Revision</i>	0.026**	0.006	0.023***	0.005	0.018***	0.003
	(2.33)	(1.19)	(2.64)	(1.31)	(3.40)	(0.88)
<i>Assets</i>	-0.012	0.006	-0.011	0.005	-0.004	0.009***
	(-1.05)	(1.26)	(-1.11)	(1.22)	(-0.81)	(3.46)
<i>Revenue</i>	-0.002	-0.009***	-0.000	-0.008***	-0.003	-0.009**
	(-0.18)	(-3.19)	(-0.05)	(-2.77)	(-0.41)	(-2.46)
<i>Age</i>	0.025**	0.009	0.022**	0.007	0.014*	0.008
	(2.17)	(1.25)	(2.14)	(1.10)	(1.96)	(1.30)
<i>ROA</i>	-0.050	-0.017	-0.046	-0.016	0.011	-0.003
	(-1.14)	(-1.21)	(-1.27)	(-1.37)	(0.44)	(-0.58)
<i>RecD</i>	0.085	-0.002	0.084	-0.003	0.105**	0.011
	(1.20)	(-0.08)	(1.50)	(-0.15)	(2.28)	(0.70)
<i>Big4</i>	-0.021	-0.029***	-0.021**	-0.026***	-0.029***	-0.022***
	(-1.57)	(-4.63)	(-2.00)	(-4.58)	(-2.92)	(-4.91)
<i>BTM</i>	0.014	-0.003	0.010	-0.001	-0.019*	-0.014**
	(0.94)	(-0.23)	(0.74)	(-0.12)	(-1.70)	(-2.14)
<i>Tech</i>	-0.019	0.005	-0.018	0.003	0.015	0.021***
	(-0.93)	(0.86)	(-0.89)	(0.62)	(0.73)	(3.91)
<i>Pct_Retained</i>	0.041	0.091*	0.029	0.078*	-0.016	0.015
	(0.80)	(1.75)	(0.61)	(1.78)	(-0.31)	(0.37)
<i>VC</i>	-0.050**	-0.012**	-0.042**	-0.010**	-0.036***	-0.014**
	(-2.06)	(-2.12)	(-1.96)	(-2.05)	(-3.11)	(-2.19)
<i>Nasdaq</i>	-0.022	-0.022***	-0.019	-0.021***	0.012	0.018***
	(-1.33)	(-2.63)	(-1.25)	(-3.10)	(0.86)	(3.70)
<i>Underwriter</i>	0.021*	0.003	0.020**	0.002	0.012**	0.000
	(1.93)	(0.82)	(2.08)	(0.67)	(2.54)	(0.23)
<i>Mean_Orig_Rec</i>	-0.023	-0.007	-0.021	-0.007	-0.030***	-0.003
	(-1.27)	(-1.16)	(-1.38)	(-1.25)	(-5.03)	(-0.86)
<i>Industry_Returns</i>	-0.027	-0.015	-0.025	-0.018	-0.091**	-0.035**
	(-0.84)	(-0.74)	(-0.87)	(-1.11)	(-2.15)	(-2.15)
Affiliated Analyst	Yes	No	Yes	No	Yes	No
Difference in coefficients	0.020		0.018*		0.015**	
Chi-squared	2.14		2.73		4.99	
Observations	116	359	116	359	116	359
R-squared	0.308	0.192	0.317	0.197	0.295	0.159
Industry & Times FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry Clustering	Yes	Yes	Yes	Yes	Yes	Yes

Table 10 reports results of the effect of recommendation revisions on IPO day trading after partitioning analysts based on their affiliation with the lead underwriters. Columns 1 and 2 (Columns 3 and 4) [Columns 5 and 6] report the results when the dependent variable is *NetVol\_Total* (*NetVol\_Institutional*) [*NetVol\_Retail*], for analysts covering peer firms that have high and low levels of industry expertise, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions

on the IPO issue date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions on the IPO issue date, scaled by shares outstanding. Analysts working for the brokerage that is hired to underwrite the corresponding IPO are classified as affiliated analysts. Our variable of interest, *Mean\_Revision*, is the average recommendation revision of all analysts covering peer firms during the registration period with high (or low) industry expertise. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.

**Table 11 – Peer Firm Recommendation Revisions and Trading One Year after the IPO Date**

	(1) <i>NetVol_Total</i> (3-day window)	(2) <i>NetVol_Institutional</i> (3-day window)	(3) <i>NetVol_Retail</i> (3-day window)
<i>Revision</i>	-0.000 (-0.14)	-0.000 (-0.02)	-0.000 (-0.43)
<i>Assets</i>	0.000* (1.84)	0.000 (0.99)	-0.001** (-2.58)
<i>Revenue</i>	-0.000 (-0.52)	0.000 (0.32)	0.001 (1.46)
<i>Age</i>	-0.000 (-0.75)	0.000 (0.15)	0.000 (0.32)
<i>ROA</i>	0.000 (0.34)	-0.001** (-2.44)	0.004 (1.33)
<i>Re&amp;D</i>	0.001 (0.74)	0.001 (1.27)	0.005 (0.82)
<i>Big4</i>	0.000 (0.70)	-0.000* (-1.92)	0.000 (0.46)
<i>BTM</i>	-0.000 (-0.82)	-0.000 (-0.30)	0.000 (0.36)
<i>Tech</i>	0.000 (0.16)	-0.000 (-1.22)	0.001 (0.51)
<i>Nasdaq</i>	-0.000 (-0.81)	-0.000 (-0.62)	0.000 (0.20)
<i>Mean_Orig_Rec</i>	0.000 (0.97)	0.000 (0.41)	0.000 (0.47)
<i>Industry_Returns</i>	0.000 (0.86)	0.001** (2.15)	0.002 (0.81)
Observations	505	505	505
R-squared	0.072	0.072	0.092
Industry & Time FEs	Yes	Yes	Yes
Industry & Time Clustering	Yes	Yes	Yes

Table 11 reports the results of estimating Equation 4 one year after the IPO issue date. Column 1, 2, and 3 report the results when the dependent variable is *NetVol\_Total*, *NetVol\_Institutional*, and *NetVol\_Retail*, respectively. *NetVol\_Total* is total trading volume of buy-initiated transactions minus total trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. *NetVol\_Institutional* is institutional investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. *NetVol\_Retail* is retail investors' trading volume of buy-initiated transactions minus trading volume of sell-initiated transactions over the three days centered on the recommendation change date, scaled by shares outstanding. Our variable of interest, *Revision*, is the recommendation revision of the IPO firm's peer analyst, issued after the IPO issue date but before the end of the quiet period. All other variables are defined in the Appendix. \*, \*\*, \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels.