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PEER INFORMATION AND MANAGERIAL MYOPIA

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ABSTRACT

This paper examines the effect of peer information on managerial myopia. If greater peer information is beneficial, investors will face less uncertainty about the firm's own prospects and thus fixate less on current earnings. As a result, managers can face less pressure to focus on boosting short-term performance to signal high firm type. Using the percentage of public firms in the industry (i.e. "public firm presence") as a measure of peer information, I find that managers in industries with greater public firm presence are less myopic. This effect of peer information reducing myopia is less pronounced in instances in which the manager is more pressured to meet short-term benchmarks, as measured by analyst coverage and transient ownership. Finally, I find that, for firms with greater public firm presence, investors face less information asymmetry and react less negatively when those firms miss an earnings benchmark, consistent with greater levels of peer information reducing myopia by facilitating investors to assess the firm more effectively.

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Chapter 1

Introduction

Various capital market constituencies have emphasized the potential detrimental effects of managers focusing on short-term performance at the expense of long-term value creation (i.e. managerial myopia).[1,2] Stein (1988) argues that, when faced with information asymmetry, investors fixate on current earnings to value the firm, which pressures managers to also shift their focus on boosting short-term earnings. Managers may reduce this fixation by disclosing additional information beyond current earnings (e.g. strategy, products, technologies) for a more complete evaluation of the firm's prospects (Alhusaini et al, 2019). However, one reason managers may choose not to expand disclosures is to protect proprietary information from competitors (e.g. Verrecchia, 1983; Ellis et al, 2012). While incomplete disclosure by the firm can lead to uncertainty about future prospects, it is unclear whether investors are able to gather information from other sources to reduce this uncertainty. I argue that a potential source that can help reduce uncertainty about the firm is peer information (e.g. Foster, 1981; Baginski, 1987; Bushee and Leuz, 2005; Badertscher et al, 2013; Shroff et al, 2017). Therefore, in this paper, I examine whether peer information can lead to positive spillover effects that may be beneficial in mitigating managerial myopia.

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[1] Graham et al (2005) provide survey evidence that approximately 80% of executives would reduce discretionary spending to meet a benchmark, while 55% would delay a project even if the delay would sacrifice value. See also Asker et al (2014), Fang et al (2014), and Bernstein (2015) for empirical evidence on this issue. For anecdotal evidence of the negative effects of myopia on firms, see "Going Private is Paying Off for Dell": http://www.wsj.com/articles/michael-dell-going-private-is-paying-off-for-dell-1416872851

[2] The short-term focus by managers is arguably driven by the current widespread emphasis on quarterly earnings. See, for example, Cheng et al (2007), Houston et al (2010), Call et al (2014), Brochet et al (2015), Chen et al (2015), Gigler et al (2015), Chy (2017), Kim et al (2017), and Kraft et al (2017). These papers examine the effect of short-term earnings guidance and quarterly financial reporting on myopia.

However, it is not obvious ex ante why peer information would affect myopia. Specifically, Shroff et al (2017) find that although peer information reduces a newly public firm's cost of capital, this effect gradually diminishes as the firm becomes more transparent through the passage of time. Given that I focus on firms that are already public, the importance of peer information to investors may be less significant.

To examine whether greater levels of peer information reduce myopia of other firms in the industry, I use the percentage of public firms in the industry (i.e. "public firm presence") to measure the peer information environment (e.g. Badertscher et al, 2013; Shroff et al, 2017). Public firms disclose large amounts of information about their current performance as well as their prospects while private firms are not required to do so. Therefore, as the percentage of public firms in an industry increases, more is known about the industry's competitive landscape, performance, and economic conditions, which reduces investors' uncertainty about the firm itself. The advantage of this setting is that, unlike other measures of peer information, it does not focus on just one type of information (e.g. earnings announcements) in isolation but captures all publicly available information about peers. Further, it considers the information related to private firms that is inaccessible but would otherwise be helpful in assessing the firm.

I use three different measures of managerial myopia. First, I examine the likelihood of meeting or just beating an earnings benchmark. Prior research shows that short-term oriented managers tend to manage earnings to meet or just beat short-term earnings expectations despite the potential loss in firm value (Degeorge et al, 1999). Second, I examine the relative emphasis on the short-term in firms' disclosures (i.e. "short horizon disclosure"). Brochet et al (2015) argue that given the natural connection between a firm's strategic decisions and its disclosure behavior, firms focused on the short-term are also likely to disclose more information to their investors about the short-term. Third, I examine investment levels (e.g. Asker et al, 2014). Firms expense heavily in

early years of investment projects, while benefits are not expected to accrue until later years.[3] Therefore, myopic firms may have lower investment levels to boost current performance even if such projects would have generated value in the long-term (Graham et al, 2005).

Consistent with expectations, I find that peer information is negatively related to managerial myopia. Specifically, firms in industries with greater public firm presence are less likely to meet or just beat an earnings benchmark and have greater levels of investment. These results are also economically significant. A one standard deviation increase in public firm presence reduces the likelihood of meeting or just beating an earnings benchmark by 7.7% and increases investment levels by 4.6%, relative to their respective means. Although I find no effect on short horizon disclosure in the main analysis, later tests show that the effect is significant after using two-stage least squares to deal with endogeneity concerns and that it is concentrated in an expected group of firms (i.e. those that are less pressured to meet short-term benchmarks).

Next, I examine cross-sectional variation in the relation between peer information and managerial myopia. Specifically, I examine whether the effect of peer information in reducing myopia is diminished in instances where firms are more pressured to meet short-term benchmarks, as measured by analyst coverage and transient investors. He and Tian (2013) argue that firms with greater analyst coverage face more external pressure to boost short-term performance due to the ubiquity of quarterly (short-term) forecasted earnings that investors expect managers to beat. Further, transient owners are more likely to base their trades on short-term performance and therefore, induce pressure on managers to focus on short-term earnings numbers (Bushee, 1998). As expected, I find that the effect of public firm presence in decreasing myopia is weakened for firms with greater analyst coverage and transient owners.

[3] I examine both research & development (R&D) expense as well as capital expenditures. Investments in R&D will directly reduce current period earnings, while capital expenditures may indirectly affect current earnings through other means such as depreciation, financing, and leasing expenses. At the same time, the benefits received by these investments are not instant and may require several years.

One concern with the results thus far is the presence of an omitted variable bias related to fundamental differences between industries with a greater public firm presence and those with a lower public firm presence that is unrelated to the availability of peer information to investors in that industry. For example, industry growth opportunities are likely correlated with the percentage of public firms in the industry and potentially drive the increase in investment (Pastor and Veronesi, 2005). To deal with these concerns, I estimate a two-stage least squares regression using the location of firms in the industry as an exogenous instrument for public firm presence. Firms located near large metropolitan areas are likely to be closer to potential investors, increasing the likelihood of issuing equity (Loughran, 2008). As a result, the location of firms in the industry is likely to affect the percentage of public firms in that same industry. I find that my results are robust to using the distance of firms to potential investors as an instrument for public firm presence, thus reducing endogeneity concerns.

I then validate the channel through which peer information reduces managerial myopia. My results thus far show that greater public firm presence reduces myopia and I expect that this is due to a reduction in investor's uncertainty about the firm's prospects and thus their fixation on current earnings. Therefore, I first examine whether peer information reduces information asymmetry. Shroff et al (2017) explain that such spillover effects in information asymmetry occur since firms within the same industry are affected by similar economic forces. As expected, I find a negative relation between public firm presence and information asymmetry. Next, I examine investors' reaction to firms missing an earnings benchmark. If a firm operates in an industry with greater public firm presence, investors would be better able to assess the firm and thus, are less likely to react negatively during a bad quarter because they are more informed about the firm's prospects. I expect and find a weaker negative reaction to missing an earnings benchmark when firms operate in industries with greater public firm presence. These results are consistent with investors having more information available to assess the firm and fixating less on current earnings

due to the reduction in uncertainty when the firm operates in an industry with a greater proportion of public firms.

Lastly, I use an alternative setting to test the effect of peer information on managerial myopia. Firms may choose to redact information related to their material contracts from SEC filings through confidential treatment orders (CTOs). While public firm presence is a more comprehensive measure of the *quantity* of peer information, the advantage of CTOs is that it is a direct measure of a specific source of *valuable* peer information. A CTO request is typically made to withhold proprietary information (Verrecchia and Weber, 2006; Boone et al, 2016), indicating the importance of the underlying information. As such, investors may find such information useful in assessing the firm. I use the number of redactions within an industry to examine the effect of a reduction in important peer disclosures in altering the ability of investors to effectively monitor the firm's prospects and as a result, in increasing myopia. I find that firms in industries with a high redaction percentage are more likely to meet or just beat an earnings benchmark, provide disclosure with a greater short-term focus, and have lower levels of investment.

I contribute to the literature on peer effects of disclosure and accounting information. Early research has provided evidence of intra-industry information transfers (e.g. Foster, 1981; Baginski, 1987; Han et al, 1989). Furthermore, Shroff et al (2017) show that private firms that raise public capital for the first time have a lower cost of capital due to these positive spillover effects when peer information is greater. Such information transfers also have a significant effect on the investment decisions of firms (e.g. Durnev and Mangen, 2009; Badertscher et al, 2013; Beatty et al, 2013). I build on this literature by examining the effect of peer information on managerial myopia, a relevant and widespread phenomenon. Specifically, I show that peer information is beneficial in mitigating managerial myopia.

I also contribute to the literature on managerial myopia. Managers tend to behave myopically due to pressure from external groups such as analysts (He and Tian, 2013) and investors

(Bushee, 1998; Fang et al, 2014). Prior literature finds a reduction in both the quantity and quality of public firms' investments compared to their private counterparts as a result of managerial myopia (Asker et al, 2014; Bernstein, 2015). However, few papers investigate how to relieve those external pressures faced by firms. Alhusaini et al (2019) provide evidence that a regulatory shift towards private disclosure, by allowing firms to provide information without proprietary concerns, leads to more complete disclosure to investors and as a result, less myopic behavior. My findings extend these papers by showing that peer information can reduce a firm's myopic tendencies.

Lastly, my findings inform policymakers on the unintended consequences of IPO activity. Prior papers have shown a significant decline in IPOs (e.g. Gao et al, 2013; Doidge et al, 2017). This has caused concerns about the US IPO markets and its impacts on economic growth (e.g. Weild and Kim, 2009). As a result, the SEC and Congress have taken multiple initiatives to spur IPO growth (e.g. scaled disclosure for smaller reporting companies and emerging growth companies). However, the number of firms going public in recent years remains low (Solomon, 2017). I contribute by showing that as the percentage of public firms decreases, firms become more myopic, which speaks to an unintended consequence of the decline in IPO activity.

Chapter 2

Hypothesis Development

Prior literature finds that investors value the information disclosed by other firms within the industry. For example, prior papers show that management earnings forecasts and earnings announcements of peer firms affect the returns of other firms in the industry (e.g. Foster, 1981; Han et al, 1989; Han and Wild, 1990). Peer information also has spillover effects that reduce information asymmetry for other firms operating in that industry (Shroff et al, 2017).[4] These studies provide considerable evidence of the importance of peer information in learning about the firm's own performance. Investors may choose to examine peer information to monitor the firm itself since information about industry peers is useful in assessing performance and managerial ability. Consequently, increasing the quality or quantity of peer information may enhance investors' knowledge about the firm.

The percentage of public firms in an industry (i.e. "public firm presence") is an important determinant of the overall industry information environment. Once a firm goes public, they are required to provide ample amounts of disclosure through mandatory annual and quarterly reports, as well as 8-K filings during major firm announcements. In addition, a lot of firms also voluntarily disclose information about their future prospects (e.g. earnings and cash flows forecasts; product launches). Such disclosures provide valuable information related to the firm's operating performance, contractual agreements, business strategy, and investment decisions (Badertscher et al, 2013). Furthermore, information intermediaries, such as analysts and the business press, tend to

[4] This is consistent with the analytical models developed by Dye (1990) and Admati and Pfleiderer (2000). In their models, they show that when firm values and cash flows are correlated, investors find disclosures of one firm to be useful in assessing the prospects of other related firms. This results in positive externalities in the form of liquidity.

follow firms once they go public. These intermediaries gather, analyze, and disseminate information about the firm (e.g. Asquith et al, 2005; Bushee et al, 2010). On the other hand, private firms are not required to disclose information publicly and are less likely to be followed by these intermediaries. Therefore, as the percentage of public firms in an industry decreases, it can have negative spillover effects that increases uncertainty about the firm.

During periods of high uncertainty, investors will fixate on short-term earnings to assess the future prospects of the firm, leading to managerial myopia (Stein, 1988; Stein, 1989).[5] Specifically, investors will be less tolerant during a bad quarter and are more likely to attribute negative performance to poor managerial skill. Due to career concerns, managers will fixate on short-term earnings because of the threat of exit by investors and potential disciplinary actions that may be taken against them (e.g. Parrino et al, 2003; Fang et al, 2014). This is consistent with Bernstein (2015) who finds that career concerns due to agency problems between managers and shareholders leads firms to reduce their innovation quality. However, since more is known about the firm and its prospects as the percentage of public firms in an industry increases, uncertainty about the firm is reduced, which should lead to less myopic behavior by that firm.[6,7]

The reduction in myopic behavior will manifest itself in several ways. Prior research provides substantial evidence of managers' facing external pressure to meet analyst forecasts (e.g. Matsumoto, 2002; Kasznik and McNichols, 2002; Brown and Caylor, 2005). Analysts provide earnings forecasts on a quarterly basis and make stock recommendations accordingly (He and Tian,

[5] Another possible driver of myopia is compensation (e.g. Edmans et al, 2017). This should not influence my analyses as compensation structures are not expected to vary with the percentage of public firms in an industry.

[6] Managers do not need to directly observe peer information. They only need to observe changes in investors' patience with the firm, which they can infer through conference calls, private meetings, and other interactions with investors.

[7] I assume that while focal firms withhold proprietary information, investors can still partially learn about that information from peer disclosure. This assumption is consistent with mosaic theory (i.e. financial analysts can collectively obtain valuable information about firms through the collection of seemingly immaterial pieces of information from a firm, its competitors, and other sources.

2013). This sets investors' expectations about near term performance and therefore, missing these expectations can lead to severe negative market reactions (e.g. Brown and Caylor, 2005). As a result, firms manipulate earnings through real decisions as well as accrual-based earnings management to meet or barely beat short-term earnings forecasts (Bhojraj et al, 2009). However, as peer information increases and thus more is known about the firm, managers will be less pressured and as a result, less likely to meet or just beat earnings benchmarks. Based on these arguments, my first hypothesis, stated in the alternative, is as follows:

H1: Public firm presence is negatively associated with the likelihood of meeting or just beating earnings benchmarks.

Furthermore, a firm's strategy to meet short-term expectations is likely to spread into their disclosure behavior. That is because a firm's investment and operational decisions are naturally connected to the type of disclosure they are able to provide to investors. Therefore, as the firm focuses operationally on the short-term, they will also do so in their disclosure (Brochet et al, 2015). Consistent with this, Brochet et al (2015) find that short-term disclosure is associated with capital market pressures (e.g. short-term investors and analyst coverage) and myopic behavior (e.g. earnings management). Consequently, the extent of short horizon disclosure of firms will decrease when peer information is greater. My second hypothesis, stated in the alternative, is as follows:

H2: Public firm presence is negatively associated with short horizon disclosure.

Lastly, a short-term mindset by the firm will ultimately have real effects in terms of investment (e.g. Asker et al, 2014). The idea is that many investments require some risk since they tend to be irreversible and the uncertainty of reaping benefits is high (e.g. Dixit and Pindyck, 1995; Kothari et al, 2002). Further, due to the nature of these investments, any realizations of benefits are likely to unfold in the long-term. As such, reducing investment is a widely used method among firms to meet earnings expectations (e.g. to meet or beat the consensus analyst forecast as discussed in hypothesis 1). This is consistent with both empirical (Bushee, 1998) and survey (Graham et al,

2005) evidence that shows that managers are willing to cut discretionary spending (e.g. R&D) and to forego valuable projects to meet short-term benchmarks. Therefore, firms will invest more if peer information reduces the pressure exerted on managers to focus on the short-term. Accordingly, my last hypothesis, stated in the alternative, is as follows:

H3: Public firm presence is positively associated with investment.

Chapter 3

Research Design

Peer information and the likelihood of meeting or beating an earnings benchmark

To address my research question, I investigate whether greater public firm presence leads to less myopic behavior by firms in the industry. I first examine whether this leads to a lower likelihood of meeting or just beating an earnings benchmark. I estimate the following OLS regression:

$$MOB_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

%Public is the number of public firms divided by the total number of firms (public + private) within each industry-year, where industry is captured at the three-digit NAICS level. [8,9,10] *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the median analyst forecast is between 0 and 1 cent, and 0 otherwise. I further control for size (*Size*), leverage (*Leverage*), return on assets (*ROA*), cash flows (*Cash Flows*), sales (Sales), book-to-market ratio (*BTM*), analyst following (*Analysts*), and forecast dispersion (*Dispersion*), following prior studies (e.g. Davis et al, 2009; Doyle et al, 2013). I expect β_1 to be negative, indicating that firms in industries with more peer information are less likely to be pressured to meet or beat an earnings benchmark, consistent with lower myopic tendencies.

[8] Ideally, I would use a value-weighted measure of public firm presence as many private firms are typically small and would have little effect on public firms. However, I do not use this data for two primary reasons. First, data is first available in 2002, which would considerably limit my sample. Second, data on aggregate industry sales is only available every five years, which lead to considerable noise in the measure.

[9] Due to the structure of the Census data on number of firms within industry, the definition of a peer is limited to NAICS industry classifications.

[10] I measure peer information using the percentage rather than the number of public firms in an industry as differences in the number of firms across industries would confound the use of the number of firms.

Peer information and disclosure horizon

Next, I examine whether the firm changes their disclosure horizon to a more long-term emphasis. I estimate the following OLS regression:

$$Short\ Horizon_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

Short Horizon is the ratio of short-term to long-term words in 10-K filings.[11] I further include several control variables that may affect the disclosure horizon of the firm (Brochet et al, 2015). Specifically, I include size (*Size*), leverage (*Leverage*), return on equity (*ROE*), book-to-market ratio (*BTM*), liquidity (*Liquidity*), cash flows (*Cash Flows*), and analyst following (*Analysts*). I expect β_1 to be negative, indicating that firms in industries with greater levels of peer information are less likely to focus on the short-term in their disclosures, consistent with lower myopic tendencies.

Peer information and investment

Lastly, I examine whether this longer-term mindset ultimately has real effects by examining investment. I estimate the following OLS regression:

$$Investment_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (3)$$

The dependent variable, *Investment*, is measured as the sum of research and development expense and capital expenditures scaled by total assets. I include several control variables known to affect investment levels consistent with prior literature (e.g. Bhagat and Welch, 1995; Bushee, 1998; Brown and Petersen, 2011). I control for size (*Size*), leverage (*Leverage*), return on assets

[11] The dictionary of words is borrowed from Brochet et al (2015). Some examples of short-term words include "short-run", "short-term", and "quarterly". Examples of long-term words include "looking ahead", "outlook", and "long-term".

(*ROA*), cash (*Cash*), and book-to-market ratio (*BTM*). I expect β_1 to be positive, indicating that firms in industries with greater peer information have greater investment levels, consistent with a reduction in myopia.

Cross-sectional tests

While my tests thus far would show that firms tend to be less myopic when public firm presence is greater, the results could be driven by several alternative explanations. First, an increase in peer information could reduce uncertainty for *managers* (e.g. Grenadier, 2002; Badertscher et al, 2013), which can increase investment levels as a result (e.g. Guiso and Parigi, 1999).[12] Therefore, the driving mechanism would not be through a decrease in information asymmetry, but due to a reduction in managers' information uncertainty about economic conditions. Second, an increase in peer firm information can have spillover effects that reduce the cost of capital of other firms in the industry (Shroff et al, 2017). This could ultimately lead to greater investment (e.g. Biddle and Hilary, 2006). Lastly, a greater public firm presence could be indicative of an industry with high growth opportunities, thus also leading to greater investment (Pastor and Veronesi, 2005). It is important to note that these competing explanations can only explain results in my investment analysis. It is unclear how these alternative explanations would, for example, drive the likelihood of meeting or just beating an earnings forecast. Therefore, these explanations cannot completely rule out myopia.

Nevertheless, to deal with these concerns, I estimate two cross-sectional tests where firms are more likely to be pressured to meet short-term benchmarks. I proxy for these capital market

[12] Note that the effect on investment based on this alternative explanation is unclear. The predictions in Badertscher et al (2013) relate to the responsiveness of investment to investment opportunities rather than investment levels. As noted in their paper, the effect on investment levels is more ambiguous. The effect of uncertainty on investment could be positive under some conditions (e.g. Hartman, 1972; Abel, 1983; Caballero, 1991; Bloom et al, 2007).

pressures using analyst coverage and transient ownership. These cross-sectional tests provide evidence of the underlying channel and are consistent with external pressure increasing myopic behavior.

Peer information and analyst coverage

I first examine whether the effect of peer information on myopia is mitigated for firms with greater analyst coverage. He and Tian (2013) show that greater analyst coverage leads to more managerial myopia due to analysts providing information publicly to investors relating to what the firm's forecasted earnings is on a quarterly basis. This sets investors' expectations on what firms' performance should be in the short-term. Further, when expecting a near-term drop in earnings, analysts revise their stock recommendations downwards accordingly. This can lead to severe negative market reactions as well as disciplinary actions taken against managers (e.g. Francis and Soffer, 1997; Farrell and Whidbee, 2003). Therefore, since managers tend to be pressured to meet these benchmarks to avoid negative attention, I expect results to be mitigated for firms with high analyst coverage. I estimate the following OLS regression:

$$Myopia_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + \beta_2 Analysts_{i,t} + \beta_3 \%Public * Analysts_{i,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (4)$$

Myopia is one of three proxies of managerial myopia as defined previously: the likelihood of meeting or just beating an earnings benchmark (*MOB*), short horizon disclosure (*Short Horizon*), and investment levels (*Investment*). *Analysts* is the total number of analysts following the firm during the year. I then interact this variable with *%Public*. Control variables are defined above. I expect to find a positive effect on the interaction term (*%Public*Analysts*) in the meet or beat analysis as well as the short horizon analysis and a negative effect in the investment analysis. This

indicates that while peer information helps reduce managerial myopia, the effect starts to diminish as capital market pressures (i.e. analyst coverage) increase.

Peer information and transient investors

Next, I examine whether the effect of peer information on myopia is weakened for firms with a greater percentage of transient ownership. Bushee (1998) finds that such firms are more likely to engage in myopic behavior by cutting R&D to meet short-term benchmarks. This is because transient institutional investors mainly base their trades off short-term proxies for value such as quarterly earnings numbers. As a result, they are the most likely shareholder group to sell their shares in the event of a bad quarter, incentivizing managers to focus on boosting these numbers in the short-term to avoid severe stock price drops. Consequently, I expect the main results to be attenuated for firms with greater ownership by transient institutions. I estimate the following OLS regression:

$$Myopia_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + \beta_2 Transient_{i,t} + \beta_3 \%Public * Transient_{i,t} + Controls_{i,t} + \varepsilon_{i,t}$$

(5)

Transient is the percentage of shares owned by these institutions following the classification in Bushee and Noe (2000).[13] I interact this variable with *%Public*. All other variables are as defined previously. I expect to find a positive effect on the interaction term (*%Public*Transient*) in the meet or beat analysis as well as the short horizon analysis and a negative effect in the investment analysis. This indicates that the effect of peer information in reducing

[13] The institutional investor classification data can be found on Brian Bushee's website: http://acct.wharton.upenn.edu/faculty/bushee/IIclass.html

managerial myopia is mitigated as the firm faces capital market pressures through transient institutional ownership.

Chapter 4

Data

I use data on the number of firms in each three-digit NAICS industry for the industry-level public firm presence variable.[14] My sample period starts in 1992 and ends in 2014. I merge Compustat to the public firm presence dataset by industry and year. I exclude firms in the financial and utilities industries. I then merge this dataset with CRSP and IBES to obtain variables needed to measure certain dependent variables and control variables. After deleting observations with missing control variables for the separate models, I am left with a final sample of 58,204 observations for the meet or beat sample, 59,878 observations for the short horizon sample, and 122,891 observations for the investment sample.

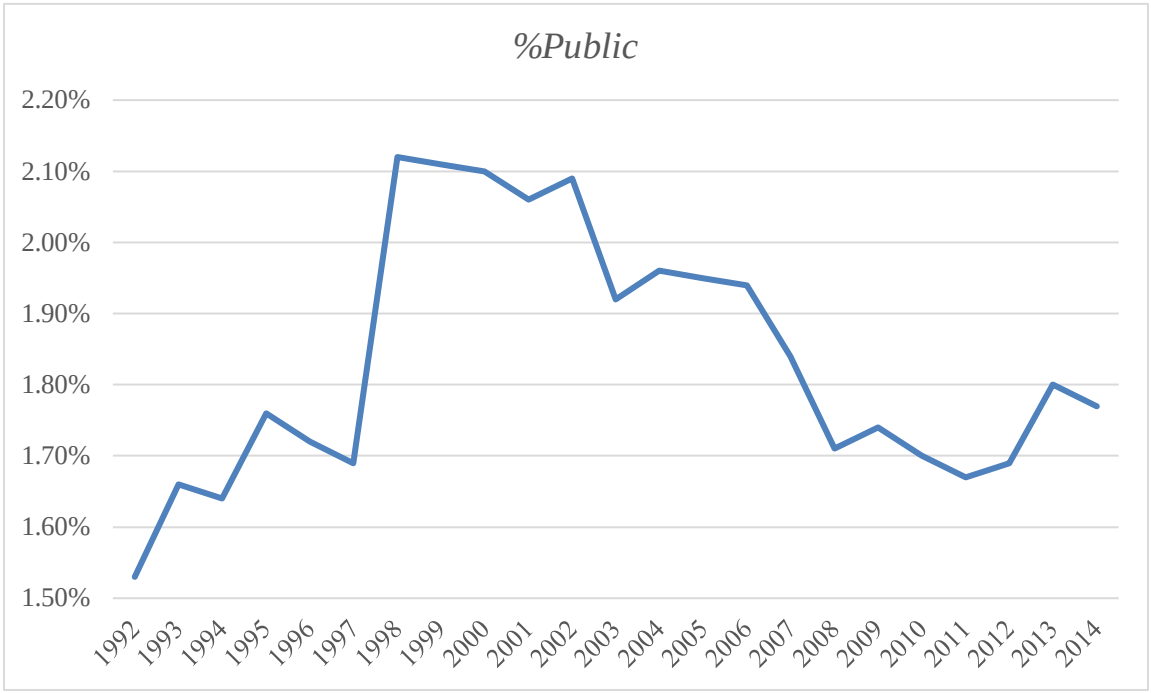

Figure 4-1 shows the trend in public firm presence over the entire sample period (1992-2014).

[14] Public firm presence data can be found on Rodrigo Verdi's website: http://mitmgmtfaculty.mit.edu/rverdi/publications/

Figure 4-1 provides a trend of the average public firm presence in the United States in my sample period. The percentage increases dramatically during the dot com bubble, followed by a sudden drop after the passage of the Sarbanes-Oxley Act of 2002. There is a further decrease during the 2008 financial crisis, followed by a slight increase after the enactment of the Jumpstart Our Business Startups Act in 2012. Overall, the trend is consistent with expectations based on the prior literature (e.g. Ritter and Welch, 2002; Engel et al, 2007; Dambra et al, 2015). Furthermore, there is considerable variation in the public firm presence variable across industries. Table 4-1 Column 1 shows the average public firm presence by each two-digit NAICS code. The percentage ranges from 0.04% to 2.86%. Column 2 shows the variation of public firm presence for all three-digit NAICS code (which is the industry classification used in all analyses) within each two-digit NAICS industry. The range varies both within and across industries. For example, the range for the Agriculture, Forestry, Fishing, and Hunting industries is 0.01 – 0.05%, while the range for Manufacturing industries is 0.03 – 10.15%. Overall, these descriptive statistics show that the percentage of public firms varies both across industries and through time.

Table 4-1. *%Public* by industry

NAICS	Industry Name	(1) Mean	(2) Range
11	Agriculture, Forestry, Fishing, and Hunting	0.04%	0.01 – 0.05%
61	Educational Services	0.04%	0.03 – 0.06%
23	Construction	0.04%	0.00 – 0.21%
81	Other Services	0.06%	0.00 – 0.20%
54	Professional, Scientific, and Technical Services	0.06%	0.02 – 0.09%
72	Accommodation and Food Services	0.06%	0.01 – 0.18%
56	Administrative and Support and Waste Management and Remediation Services	0.07%	0.02 – 3.39%
42	Wholesale Trade	0.07%	0.00 – 0.12%
71	Arts, Entertainment, and Recreation	0.08%	0.02 – 0.18%
44-45	Retail Trade	0.11%	0.01 – 0.59%
53	Real Estate and Rental and Leasing	0.17%	0.10 – 3.33%
62	Health Care and Social Assistance	0.18%	0.01 – 3.97%
48-49	Transportation and Warehousing	1.04%	0.01 – 17.59%
51	Information	1.32%	0.08 – 2.19%

22	Utilities	1.60%	0.40 – 3.06%
21	Mining, Quarrying, and Oil and Gas Extraction	1.69%	0.28 – 4.76%
52	Finance and Insurance	2.11%	0.09 – 22.41%
31-33	Manufacturing	2.86%	0.03 – 10.15%

Table 4-1 Column 1 provides the average *%Public* by each two-digit NAICS industry. Column 2 provides the range of *%Public* for the three-digit NAICS industries (which is the industry classification used in all analyses) within each two-digit NAICS code.

Table 4-2 provides descriptive statistics for all variables used in the analyses. The percentage of public firms within a given industry-year is approximately 1.8%, on average. As for the myopia proxies, total investment is 14% of assets, on average, while firms meet or just beat earnings benchmarks approximately 16% of the time. The ratio of short-term to long-term words in firms' 10-K filings is 0.575, indicating that firms are almost twice as likely to mention long-term prospects as they are to focus on the short-term. Logged size is on average, 4.77, which is equivalent to $2.5 billion in assets. Debt levels are relatively low with a 0.239 leverage ratio. Average BTM is 0.407, indicating that firms in the sample have significant growth opportunities. Cash levels have a mean of 22% of total assets. Lastly, on average, firms have approximately 4 analysts.

Table 4-2. Descriptive statistics

Variable	**STD**	**P25**	**Mean**	**Median**	**P75**
Analysts	7.114	0	4.477	1	6
BTM	1.477	0.182	0.407	0.413	0.765
CAR	0.093	-0.045	0.001	-0.001	0.044
Cash	0.245	0.030	0.215	0.113	0.317
Cash Flows	0.687	-0.067	-0.119	0.051	0.117
Dispersion	0.041	0.001	0.017	0.004	0.013
Investment	0.193	0.033	0.137	0.077	0.161
Leverage	0.260	0.011	0.239	0.171	0.361
Liquidity	4.225	1.145	3.13	1.906	3.307
Miss	0.491	0	0.404	0	1
MOB	0.368	0	0.161	0	0
Price	1.231	1.456	2.261	2.417	3.195
ROA	1.670	-0.161	-0.386	0.013	0.066
ROE	1.618	-0.144	-0.044	0.064	0.168
Sales	2.692	2.635	4.553	4.636	6.480
Short Horizon	0.298	0.370	0.575	0.500	0.689

Size	2.653	3.059	4.770	4.784	6.568
Spread	0.030	0.002	0.021	0.010	0.028
%Public	0.019	0.001	0.018	0.010	0.035

Table 4-2 provides descriptive statistics for the variables used in the main analyses. *Analysts* is the number of analysts following the firm. *BTM* is the book value of equity divided by the market value of equity. *CAR* is the three-day cumulative abnormal returns surrounding the earnings announcement. *Cash* is total cash holdings, scaled by total assets. *Cash Flows* is operating cash flows, scaled by total assets. *Dispersion* is the standard deviation of analysts' earnings forecasts, scaled by stock price. *Investment* is the sum of research and development expense and capital expenditures, scaled by total assets. *Leverage* is the sum of long-term and current debt divided by total assets. *Liquidity* is current assets divided by current liabilities. *Miss* is an indicator variable equal to 1 if actual earnings is lower than the median analyst forecast, or 0 otherwise. *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. *Price* is the log of the average daily price during the year. *ROA* is earnings before extraordinary items divided by total assets. *ROE* is earnings before extraordinary items divided by the book value of equity. *Sales* is the log of sales revenues. *Short Horizon* is the ratio of short-term to long-term words in 10-K filings. *Size* is the log of total assets. *Spread* is the average bid-ask spread [(ask-bid)/(ask+bid)/2] during the year. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year.

Chapter 5

Main Results

Peer information and the likelihood of meeting or just beating an earnings benchmark

In this section, I examine whether firms in industries with greater public firm presence are less likely to meet or just beat earnings benchmarks. Table 5-1 presents results from estimating equation (1) using *MOB* to proxy for managerial myopia, which may capture both real as well as accrual-based manipulations. The results are negative and significant (coefficient: -0.647; t-stat: -1.737).[15] In economic terms, a one standard deviation increase in *%Public* decreases the likelihood of meeting or just beating an earnings benchmark by 7.7%, relative to the unconditional mean. This result shows that managers are less pressured to meet quarterly earnings benchmarks when peer information is greater, consistent with less myopic behavior.[16]

Table 5-1. Peer information and the likelihood of meeting or beating an earnings benchmark

Dependent Variable:	(1) *MOB*
%Public	-0.647** (-1.737)
Size	-0.017*** (-3.446)

[15] One concern with this analysis is that analyst forecast properties can change with public firm presence. For example, the accuracy of their forecasts can differ when more information about the industry is publicly available. To rule out the possibility that changes in analyst behavior is driving results, I run three separate analyses. First, I limit the sample to firms right around the benchmark. Specifically, I keep observations that are no less than one cent below the benchmark and no more than one cent above. This test ensures that analyst forecast accuracy are at similar levels across firms. Results still hold in this subsample. Second, I control for the absolute value of the forecast error. I find that results are robust to this inclusion. Lastly, I run a falsification test where I assign *MOB* to equal to 1 if the difference between actual earnings and the median analyst forecast is -1 and 0 cents, or 0 otherwise. I do not find an effect on *MOB*, ensuring that the result is unlikely to be driven by a change in analyst accuracy.

[16] A possible alternative story is that competition is positively related to public firm presence, driving the effect on myopia. In untabulated analyses, I control for competition using the Herfindahl-Hirschman Index and find similar results.

Leverage	-0.035**
	(-2.351)
ROA	0.023**
	(2.007)
Cash Flows	-0.002
	(-0.097)
Sales	0.003
	(0.634)
BTM	-0.011***
	(-4.171)
Analysts	0.004***
	(8.297)
Dispersion	-0.683***
	(-19.144)
Observations	58,204
Adjusted R-squared	0.078
Firm FEs	Yes
Year FEs	Yes
Firm Clusters	Yes

Table 5-1 reports the results of estimating equation 1. The dependent variable, *MOB*, is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. The variable of interest is *%Public*, which is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Peer information and disclosure horizon

In the previous analysis, I provide evidence that firms are less likely to manipulate earnings to meet short-term goals when public firm presence is greater. In this section, I examine whether this behavior flows through to their disclosure decisions. Specifically, I examine the disclosure horizon (i.e. the ratio of short-term to long-term words) of managers in their 10-K filings. Table 5-2 presents results from estimating equation (2) using *Short Horizon* to proxy for managerial myopia. The coefficient (coefficient: 0.256, t-stat: 0.638) is statistically insignificant. Although I find no evidence of an effect on disclosure behavior in the main analysis, I find that the effect exists after dealing with endogeneity concerns through a two-stage least squares regression in Section 6.1. Further, cross-sectional results in an upcoming section suggest that the effect is concentrated

in an expected group of firms (i.e. those that experience less short-term pressures to meet quarterly earnings benchmarks – see Section 5.4 for details).

Table 5-2. Peer information and short horizon disclosure

Dependent Variable:	(1) *Short Horizon*
%Public	0.256
	(0.638)
Size	0.005*
	(1.745)
Leverage	0.048***
	(5.135)
ROE	-0.001
	(-1.566)
BTM	0.002
	(1.487)
Liquidity	-0.002***
	(-3.059)
Cash Flows	-0.010***
	(-2.677)
Analysts	-0.001***
	(-2.803)
Observations	59,878
Adjusted R-squared	0.401
Firm FEs	Yes
Year FEs	Yes
Firm Clusters	Yes

Table 5-2 reports the results of estimating equation 2. The dependent variable, *Short Horizon*, is the ratio of short-term to long-term words in 10-K filings. The variable of interest is *%Public*, which is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Peer information and investment

I have previously shown that managers are less likely to meet or just beat short-term benchmarks when peer information is greater. Both prior research and anecdotal evidence show that meeting earnings targets is regularly achieved by cutting investment and therefore has severe implications when it comes to real decisions. This section examines whether peer information can help alleviate the pressure exerted by investors that causes less investing. Table 5-3 presents results

from estimating equation (3), which uses *Investment* to proxy for managerial myopia. The coefficient (coefficient: 0.342; t-stat: 3.000) is positive and statistically significant. The results are also economically significant. Specifically, a one standard deviation increase in *%Public* increases *Investment* by 4.6%, relative to the unconditional mean. This shows that firms invest more when the peer information environment is greater indicating that peer information can have positive spillover effects in terms of real decisions.

Table 5-3. Peer information and investment

Dependent Variable:	(1) *Investment*
%Public	0.342*** (3.000)
Size	-0.024*** (-16.085)
Leverage	-0.001 (-0.112)
ROA	-0.028*** (-18.998)
Cash	-0.098*** (-15.830)
BTM	0.001** (2.346)
Observations	122,891
Adjusted R-squared	0.609
Firm FEs	Yes
Year FEs	Yes
Firm Clusters	Yes

Table 5-3 reports the results of estimating equation 3. The dependent variable, *Investment*, is the sum of research and development expense and capital expenditures, scaled by total assets. The variable of interest is *%Public*, which is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Cross-sectional results

In the previous sections, I find that peer information, as measured by public firm presence, reduces myopic behavior. However, as discussed above, this could be driven by several alternative explanations. In the next two sections, I conduct two cross-sectional tests examining instances

where firms are more pressured to meet short-term benchmarks to identify the channel in which peer information reduces myopia.

Peer information and analyst coverage

For the first cross-sectional test, I examine whether analyst coverage mitigates the effect found in the main analysis. Greater analyst coverage increases pressure on management due to the availability of short-term benchmarks that firms are expected to meet on a quarterly basis (He and Tian, 2013). Table 5-4 provides results from estimating equation (4). Column 1 (2) [3] examines the meet or beat (short horizon) [investment] sample. In Columns 1 and 2, the interaction term is positive and significant while in Column 3, the interaction term is negative and significant. Overall, the results indicate that when managers are more pressured to meet short-term benchmarks, as measured by analyst coverage, the effect of public firm presence in reducing managerial myopia is mitigated.[17]

Table 5-4. Cross-sectional analysis: analyst coverage

Dependent Variable:	(1) *MOB*	(2) *Short Horizon*	(3) *Investment*
%Public	-0.952**	0.010	0.464***
	(-2.309)	(0.025)	(3.750)
Analysts	0.004***	-0.002***	0.002***
	(5.515)	(-3.583)	(12.532)
*%Public*Analysts*	0.029*	0.042**	-0.031***
	(1.393)	(2.152)	(-4.531)
Observations	58,204	59,878	122,891
Adjusted R-squared	0.078	0.401	0.656
Control Variables	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes

[17] These results directly contradict both the cost of capital and growth opportunities alternative explanations. Analyst coverage provides greater information to investors, reducing information asymmetry (e.g. Frankel and Li, 2004). As a result, this should reduce the cost of capital, rather than increase it. Further, prior studies provide evidence that analysts are more likely to follow growth stocks (e.g. Barth et al, 2001). Therefore, to the extent that analyst following is positively correlated with growth opportunities, it would further increase investment levels, rather than reduce it.

Year FEs	Yes	Yes	Yes
Firm Clusters	Yes	Yes	Yes

Table 5-4 reports the results of estimating equation 4. *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. *Short Horizon* is the ratio of short-term to long-term words in 10-K filings. *Investment* is the sum of research and development expense and capital expenditures, scaled by total assets. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. *Analysts* is the number of analysts following the firm. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Peer information and transient investors

Next, I examine whether transient investors diminish the effect of peer information in reducing myopia. The idea is that transient shareholders are more likely to base their trades off short-term signals and thus relative to other shareholders, are much more likely to exit their holdings in the event of a bad quarter, inducing managers to focus on boosting earnings in the short-term (Bushee, 1998). Table 5-5 provides the results from estimating equation (5). Column 1 (2) [3] examines the meet or beat (short horizon) [investment] sample. In Column 1, the interaction term is insignificant, while positive and significant in Column 2. In the last column, the interaction term is negative and significant. Overall, the results indicate that when firms are owned by more transient institutions and thus, more pressured to meet short-term earnings benchmarks, the effect of public firm presence in reducing myopia is mitigated. This is consistent with results in the main analysis being driven, at least partially, by a reduction in myopic pressures.

Table 5-5. Cross-sectional analysis: transient owners

	(1)	(2)	(3)
Dependent variable:	*MOB*	*Short Horizon*	*Investment*
%Public	-0.653*	0.485	0.144*
	(-1.430)	(0.896)	(1.363)
Transient	0.029	-0.077	0.101***
	(0.284)	(-1.121)	(6.234)
*%Public*Transient*	0.245	4.447**	-1.692**
	(0.071)	(2.067)	(-2.208)
Observations	41,434	36,472	63,582

Adjusted R-squared	0.076	0.405	0.721
Control Variables	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Firm Clusters	Yes	Yes	Yes

Table 5-5 reports the results of estimating equation 5. *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. *Short Horizon* is the ratio of short-term to long-term words in 10-K filings. *Investment* is the sum of research and development expense and capital expenditures, scaled by total assets. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. *Transient* is the percentage of shares owned by transient investors. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Chapter 6

Additional tests

Instrumental variable approach

In the main analyses, I find that greater public firm presence is associated with less myopic behavior by firms. However, it is possible that greater public firm presence is correlated with industry characteristics unrelated to the quantity of peer information that are not controlled for and that such characteristics are driving results. For example, as discussed earlier, a greater public firm presence could be indicative of an industry with high growth opportunities, thus leading to greater investment (Pastor and Veronesi, 2005). Although this explanation cannot, for example, rule out the analysis examining the likelihood of meeting or beating a forecast, I estimate a two-stage least squares regression to deal with potential endogeneity concerns.

I use the location of firms in the industry as an instrument for public firm presence. Prior studies show that investors are more likely to invest in firms in a nearby location, increasing the ability of those firms to issue equity (Loughran, 2008). This is because greater distance puts investors at a disadvantage in obtaining information (Coval and Moskowitz, 1999). For example, the cost of traveling a long distance to visit a single firm in a rural area may exceed the benefits.[18] However, such direct observation of the company and its operations can convey soft information that may be beneficial in reducing information asymmetry between the firm and its potential investors prior to going public. As a result, the percentage of firms in the industry located near

[18] This is also evident in the literature that examines the effect of geographic proximity on analyst accuracy (e.g. Malloy, 2005; Bae et al, 2008). These papers find that local analysts have an information advantage increasing their forecast accuracy.

potential investors should increase the percentage of public firms in that same industry. Based on Loughran (2008), I argue that firms located near major metropolitan areas are likely to be closer to potential investors. Therefore, I collect data on the total number of firms (both public and private) in each 3-digit NAICS code within each state from the Census Bureau's Statistics of U.S. Businesses dataset.[19,20] Following Badertscher et al (2013), I then measure the instrument (*%NearMetro*) as the percentage of firms in the industry located in a state with a large metropolitan area (defined as an area with a population greater than 1 million). While theory suggests that *%NearMetro* is likely positively associated with *%Public*, it is unlikely to be directly related with my dependent variables of interest (i.e. *MOB*, *Short Horizon*, *Investment*), which is the underlying assumption needed for the instrumental variable identification strategy.[21]

Table 6-1 presents the results from estimating the two-stage least squares regression. Panel A reports results from the first stage where the dependent variable is *%Public*. Columns 1, 2, and 3 report the results from the meet or beat, short horizon, and investment samples, respectively.

Table 6-1. Instrumental variable approach: first stage regression

	(1)	(2)	(3)
Dependent Variable	*%Public*	*%Public*	*%Public*
%NearMetro	0.121***	0.141***	0.106***
	(7.398)	(9.431)	(9.040)
Observations	32,482	45,899	67,852
Adjusted R-squared	0.218	0.214	0.177
Control Variables	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Firm Clusters	Yes	Yes	Yes
Partial *F*-statistic	54.73	88.95	81.71

[19] This data is only available since 1997. However, my analysis starts in 2002 due to the possible effects of the dot com bubble on the effectiveness of the instrument. Specifically, there was a run up in IPOs during that period that was concentrated in a certain geographical area.

[20] This data is publicly available on the Census Bureau's website: https://www.census.gov/programs-surveys/susb/data/datasets.html

[21] It is possible that the instrument is positively related with investment opportunities since firms in metropolitan areas may also be more likely to be located in areas that are closer to potential customers. As a result, the exclusion restriction would be violated for the investment analysis. To deal with this concern, I regress measures of investment opportunities (i.e. sales growth and market-to-book ratio) on the instrument and find that the coefficient is insignificant, reducing concerns that the exclusion restriction is not met.

p-value of partial *F*-statistic	0.000	0.000	0.000

Table 6-1 Column 1 (2) [3] reports the results from estimating the first stage regression of a two-stage least squares regression of equation 1 (2) [3]. *%NearMetro* is used to instrument for *%Public*. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. *%NearMetro* is the percentage of firms in the industry located near potential investors (i.e. a large metropolitan area). Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Consistent with the theory stated above, I find that *%NearMetro* is strongly and positively related to *%Public* in all three columns (t-stat: 7.398 in Column 1, 9.431 in Column 2, and 9.040 in Column 3). To test the strength of the instrument in the first stage, I perform an *F*-test. The results strongly reject the null that the instrument's coefficient is not statistically different from zero (partial *F*-statistic: 54.73 in Column 1, 88.95 in Column 2, and 81.71 in Column 3).[22] Table 6-2 reports results

Table 6-2. Instrumental variable approach: second stage regression

	(1)	(2)	(3)
Dependent Variable	*MOB*	*Short Horizon*	*Investment*
%Public	-6.233*	-4.310**	5.773***
	(-1.392)	(-1.808)	(3.601)
Observations	32,482	45,899	67,852
Adjusted R-squared	0.106	0.440	0.642
Control Variables	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Firm Clusters	Yes	Yes	Yes
p-value of Hausman test	0.188	0.053	0.000

Table 6-2 Column 1 (2) [3] reports the results from estimating the second stage of a two-stage least squares regression of equation 1 (2) [3]. *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. *Short Horizon* is the ratio of short-term to long-term words in 10-K filings. *Investment* is the sum of research and development expense and capital expenditures, scaled by total assets. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

from the second stage. Consistent with the results in the main analysis for *MOB* and *Investment*, the coefficient is negative and significant in Column 1, while positive and significant in Column 3. Interestingly, when examining the effect on *Short Horizon*, the coefficient in Column 2 becomes

[22] Staiger and Stock (1997) suggest that the minimum value of the *F*-statistic to be greater than 10 to reduce concerns that the instrument is weak.

negative and significant after dealing with endogeneity, consistent with expectations.[23] Overall, these results are consistent with peer information decreasing myopic behavior, reducing concerns related to omitted variable biases.

Peer information and information asymmetry

In previous tests, I have shown that peer information decreases the myopic behavior of firms in the same industry. The reason I expect these results is due to investors' ability to assess the firm more effectively as a result of a reduction in uncertainty when peer firm information is greater. To test this assumption, I examine the effect of public firm presence on information asymmetry.

Prior literature shows that information disclosed about the firm reduces information asymmetry both among the firm and market participants and among informed and uninformed investors (e.g. Glosten and Milgrom, 1985; Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994; Welker, 1995; Healy et al, 1999; Leuz and Verrecchia, 2000; Easley and O'hara, 2004). However, since firms within the same industry are affected by similar economic forces, information about peers may have spillover effects that reduce information asymmetry of other firms in the industry (Shroff et al, 2017). Specifically, I expect investors to learn about the firm as more information is publicized about its peers as a result of greater public firm presence. As investors learn more about industry conditions, this should lead to a convergence of information known to the firm and their investors. As a result, I expect information asymmetry to decrease when public firm presence is greater, which then leads to less myopia. I estimate the following OLS regression:

[23] Note that when performing the Hausman test of endogeneity (see Panel B), the null hypothesis is only rejected in the short horizon and investment analyses (*p*-value: 0.053 in Column 2 and 0.000 in Column 3, respectively). On the other hand, the null hypothesis cannot be rejected in the meet or beat analysis (*p*-value: 0.188). Based on the arguments made by Hausman (1978), this indicates that while both OLS and 2SLS are consistent in the meet or beat analysis, OLS is likely more efficient.

$$Spread_{i,t} = \alpha_t + \gamma_i + \beta_1 \%Public_{j,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (6)$$

Spread is a well-established proxy used extensively in the literature to measure information asymmetry (e.g. Jaffe and Winkler, 1976; Stoll, 1978; Admati and Pfleiderer, 1988; Lang and Lundholm, 1993; Wang, 1993; Bartov and Bodnar, 1996; Easley et al, 1996; Leuz and Verrecchia, 2000; Verrecchia and Weber, 2006).[24] It is calculated as the difference between the quoted closing ask and the quoted closing bid, scaled by stock price. I control for size (*Size*), book-to-market ratio (*BTM*), price (*Price*), return on assets (*ROA*), leverage (*Leverage*), and analyst following (*Analysts*). I expect a negative coefficient on β_1, indicating that information asymmetry decreases when peer information is greater.

Table 6-3 presents the results of estimating equation (6). As expected, the coefficient is negative and significant (coefficient: -0.068, t-stat: -3.896). This result shows that peer information has a negative effect on information asymmetry suggesting that investors are less uncertain about the firms' prospects. This provides evidence of the underlying mechanism that is driving the reduction in myopia found in the main analyses.

Table 6-3. Peer information and information asymmetry

Dependent Variable:	(1) *Spread*
%Public	-0.068*** (-3.896)
Size	-0.003*** (-14.316)
BTM	0.001*** (6.034)
Price	-0.006*** (-28.086)
ROA	-0.001*** (-4.286)
Leverage	0.007*** (9.969)

[24] My hypothesis relies on the assumption that when information asymmetry between *managers* and investors decreases, myopia decreases as a result. Bid-ask spreads proxy for information asymmetry between informed and uninformed investors. I assume managers (and other insiders) invest in their own firms and are therefore, informed investors.

Analysts	-0.000**
	(-2.118)
Observations	88,233
Adjusted R-squared	0.705
Firm FEs	Yes
Year FEs	Yes
Firm Clusters	Yes

Table 6-3 reports the results of estimating equation 6. *Spread* is the average bid-ask spread [(ask-bid)/(ask+bid)/2] during the year. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Peer information and investor reaction to missing an earnings benchmark

Next, I examine whether due to this reduction in uncertainty, investors are less likely to react negatively during negative unexpected earnings due to their improved understanding of the firms' prospects. To test this assumption, I examine investors' reaction to firms missing an earnings benchmark. Prior literature finds a severe negative reaction to an earnings miss (e.g. Brown and Caylor, 2005). I expect these results to be mitigated when investors learn more about the firm through peer information. This would suggest that due to their improved understanding of the firm and its prospects, investors are fixating less on one bad quarter. I estimate the following OLS regression:

$$CAR_{i,t} = \alpha_t + \gamma_i + \beta_1 Miss_{i,t} + \beta_2 \%Public_{j,t} + \beta_3 \%Public * Miss_{i,t} + Controls_{i,t} + \varepsilon_{i,t} \quad (7)$$

CAR is the three-day abnormal return surrounding the earnings announcement. *Miss* is an indicator variable equal to 1 when the firm misses the median analyst forecast. I expect the coefficient on *Miss* to be negative, consistent with prior studies. My variable of interest is the interaction term, *%Public*Miss*. I control for size (*Size*), book-to-market ratio (*BTM*), price (*Price*), return on assets (*ROA*), leverage (*Leverage*), and analyst following (*Analysts*). If investors are better able to assess the firm and learn about its prospects through peer information and hence, be

more tolerant during an earnings miss, then the effect on the interaction term should be positive, diminishing the results on the main effect.

Table 6-4 presents results from estimating equation (7). Consistent with the prior literature, the coefficient on *Miss* is negative and statistically significant. The coefficient on the variable of interest, *%Public*Miss*, is positive and significant (coefficient: 0.109, t-stat: 2.485), weakening the negative reaction by investors when firms miss an earnings benchmark. The results are consistent with peer firm information reducing investor fixation on current earnings by allowing investors to learn more about the firm and its prospects.[25]

Table 6-4. Peer information and investor reaction to missing an earnings benchmark

Dependent Variable:	(1) *CAR*
Miss	-0.029*** (-34.733)
%Public	0.059 (0.774)
*%Public*Miss*	0.109*** (2.485)
Size	-0.003*** (-2.881)
BTM	0.003*** (2.817)
Price	-0.007*** (-7.027)
ROA	0.008*** (3.881)
Leverage	0.001 (0.218)
Analysts	-0.000*** (-3.284)
Observations	64,584
Adjusted R-squared	0.072
Firm FEs	Yes
Year FEs	Yes
Firm Clusters	Yes

[25] Greater limited attention or distraction when public firm presence increases could alternatively explain the decrease in investors' stock market reaction. I investigate the possibility by adding a variable for the total number of public firms to control for investors' time constraints and ability to follow firms. I find similar results.

Table 6-4 reports the results of estimating equation 7. *CAR* is the three day cumulative abnormal return surrounding the earnings announcement. *Miss* is an indicator variable equal to 1 if actual earnings is lower than the median analyst forecast, or 0 otherwise. *%Public* is the number of public firms divided by the total number of firms (public + private) within each industry-year. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted value, two-tailed otherwise).

Alternative setting

In this section, I use an alternative setting to test my research question. The advantage of using the percentage of public firms in the industry as a measure of the industry's information environment is due to its comprehensiveness in including all publicly available information about firms in the industry. However, one limitation is that the proxy is a measure of the *quantity* of information about peers and therefore, does not consider the importance of the underlying information. To further corroborate my results, I examine a measure of *valuable* peer disclosures related to firms' prospects.

I use a setting where firms choose to redact information from their SEC filings through confidential treatment orders (CTOs). The advantage of this setting is due to the importance of the underlying information that is being redacted. A CTO request is typically made to withhold proprietary information. It can only be granted if the firm can demonstrate that such disclosure could adversely affect its business and financial condition or cause competitive harm. The CTO allows confidential treatment of information that would have been included in the material contracts found in the exhibits of SEC filings.[26] These material contracts include, but are not limited to,

[26] For an example of a confidential treatment order, see the Securities and Exchange Commission's granting of Snap Inc.'s request to redact two exhibits in its Form 10-Q filed on November 8, 2017: https://www.sec.gov/Archives/edgar/data/1564408/999999999717009933/filename1.pdf. The CTO provides information on which exhibits contain redacted information as well as the date in which the information will be released for public view. The actual 10-Q exhibits contain [***] in place of the information that has been redacted. In the case of Snap Inc., the public is able to tell that the information is related to a licensing agreement with Google. However, specifics about, for example, the services provided as well as the pricing terms are redacted. The redacted material contract can be found here: https://www.sec.gov/Archives/edgar/data/1564408/000156459017022434/snap-ex104_779.htm.

royalty agreements, joint ventures, research and development, patents, and employee contracts (Verrecchia and Weber, 2006; Boone et al, 2016). Examples of items that may be redacted include pricing terms, technical specifications, and milestone payments (SEC 1997). Verrecchia and Weber (2006) and Boone et al (2016) find that firms in competitive industries are more likely to redact information, indicating that such redactions include proprietary information. Since the withheld disclosure is proprietary in nature, not only is it valuable to managers but also to investors who may find such information useful in assessing their own firm's prospects.

Another advantage of using this setting is that investors are able to identify that the peer firm is withholding valuable information, given that the information is otherwise required to be publicly disclosed. Unlike other types of disclosure which are voluntary in nature, an investor may not be aware that they are lacking valuable information. As a result, CTOs should cause greater uncertainty to an investor. Overall, using the level of CTOs within an industry is a powerful way to examine the effect of a reduction in important peer disclosures in altering the ability of investors to effectively monitor the firm's prospects and as a result, in increasing myopia.[27,28]

To empirically test the effect of peer firm information on myopia using this alternative setting, I examine whether firms in industries with higher percentages of redacted disclosure are more likely to be myopic. I measure peer firm redactions as the number of firms in the industry with at least one confidential treatment order divided by the number of firms in that industry

[27] I assume that these CTOs are viewed by investors. This is a reasonable assumption since Verrecchia and Weber (2006) and Boone et al (2016) find that these redactions can explain adverse selection and underpricing, respectively. This is also consistent with anecdotal evidence. For example, see: https://www.forbes.com/sites/greatspeculations/2016/05/10/where-is-teslas-10-q/. The article states that Tesla will continue to keep redacted information private until the end of 2017. They further question this decision: "What information are they hiding? I don't know."

[28] Another reason I use CTOs as opposed to other types of disclosures is because the redacted information is unrelated to current earnings numbers. Examining disclosures related to current earnings news can exacerbate the issue, rather than mitigate it. On the other hand, redacted information through CTOs, if otherwise disclosed, may provide vital information that allows investors to learn more about the industry's economic conditions and future prospects. While other disclosures may fit this specific criteria, CTOs also provide other advantages that are discussed above.

(*Redactions*). I then regress *MOB*, *Short Horizon*, and *Investment* on *Redactions*. I expect to find a positive effect when examining both the likelihood of meeting or just beating an earnings benchmark and the degree of short-term focus in the firm's disclosure and a negative effect on investment levels.

Table 6-5 presents the results. I find that firms in industries with a high redaction percentage are more likely to meet or just beat an earnings benchmark and provide disclosure with a short-term focus. They also have lower levels of investment. These results reaffirm the findings from the main analysis using public firm presence as a setting.

Table 6-5. Alternative setting: confidential treatment orders

Dependent Variable:	(1) *MOB*	(2) *Short Horizon*	(3) *Investment*
Redactions	0.077** (1.825)	0.756*** (11.556)	-0.012*** (-4.128)
Observations	39,602	103,699	101,794
Adjusted R-squared	0.108	0.309	0.563
Control Variables	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
Firm Clusters	Yes	Yes	Yes

Table 6-5 examines an alternative setting to proxy for peer information: confidential treatment orders. *MOB* is an indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise. *Short Horizon* is the ratio of short-term to long-term words in 10-K filings. *Investment* is the sum of research and development expense and capital expenditures, scaled by total assets. *Redactions* is the number of firms with at least one CTO in a given industry-quarter divided by the number of firms in that industry quarter. Control variables are defined in Appendix A. *, **, *** indicate significance at the 0.10, 0.05, 0.01 levels, respectively (one-tailed for predicted variables, two-tailed otherwise).

Chapter 7

Conclusion

This study investigates the effect of peer information on managerial myopia. I expect investors to be better able to monitor the firm effectively when information about peers is greater since they provide a more complete picture of industry conditions. Therefore, investors will fixate less on current numbers and therefore, be more tolerant during bad quarters and less likely to exit their holdings since they are better able to assess the firm's prospects. As a result of this reduction in pressure, managers are more likely to focus on long-term value, rather than boosting current earnings numbers.

I use the percentage of public firms in the industry to examine peer information. I argue that as more firms in the industry are public, more information is available about peers through various sources such as mandated disclosure, which reduces uncertainty about industry economic conditions. In my main analyses, I find that firms in industries with a greater percentage of public firms are less likely to meet or just beat an earnings benchmark and have more investments, consistent with the enhanced information environment of the industry decreasing managerial myopia. I conduct two cross-sectional tests that examine instances where firms are more pressured to focus on the short-term to further provide evidence of the underlying mechanism. I find that the main effect is mitigated for firms with high analyst coverage and with a greater percentage of transient owners. The inferences in my main analyses hold after implementing a two-stage least squares identification strategy to deal with endogeneity issues related to industry characteristics that are uncontrolled for and therefore, could potentially be driving results.

I then examine the channel in which peer information affects managerial myopia. I find that information asymmetry is lower when peer information is greater, consistent with investors facing less uncertainty about the firm. I also find that investors react less negatively during a negative earnings surprise. This is consistent with investors fixating less on current earnings and being more patient due to their better ability to assess the firm and its prospects.

Lastly, I use an alternative setting to test my research question. Specifically, I use the choice to redact information in SEC filings through confidential treatment orders to examine valuable peer information. CTOs allow firms to redact information about material contracts that are deemed proprietary and can cause competitive harm if they were to be disclosed publicly. Therefore, by definition, the redacted filings exclude important information that would be useful to outsiders. The results are consistent with the findings in the main analysis.

I contribute to the peer effects literature by showing that peer information has an effect on other firms' myopic tendencies within the industry. I also contribute to the literature on managerial myopia by showing that greater information about peers can reduce a firm's myopic tendencies by mitigating investor uncertainty and thus decreasing pressure exerted on managers to perform in the short-term.

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Appendix

Variable Definitions

Variable	Definitions
Analysts	The number of analysts following the firm
BTM	Book value of equity divided by market value of equity
CAR	The three-day cumulative abnormal return surrounding the earnings announcement
Cash	Total cash holdings, scaled by total assets
Cash Flows	Operating cash flows, scaled by total assets
Dispersion	The standard deviation of analysts' earnings forecasts, scaled by stock price
Investment	The sum of research and development expense and capital expenditures, scaled by total assets
Leverage	The sum of long-term and current debt, scaled by total assets
Liquidity	Current assets divided by current liabilities
Miss	Indicator variable equal to 1 if actual earnings is lower than the median analyst forecast, or 0 otherwise
MOB	Indicator variable equal to 1 if the difference between actual earnings and the consensus analyst forecast is between 0 and 1 cent, or 0 otherwise
Price	Log of the average daily price during the year
Redactions	The number of firms with at least one CTO in a given industry-quarter, divided by the number of firms in that industry-quarter
ROA	Earnings before extraordinary items divided by total assets
ROE	Earnings before extraordinary items divided by the book value of equity
Sales	Log of sales revenues
Short Horizon	The ratio of short-term to long-term words in 10-K filings using key words developed by Brochet et al (2015)
Size	Log of total assets
Spread	The average bid-ask spread [(ask-bid)/(ask+bid)/2] during the year
Transient	The percentage of shares owned by transient investors following Bushee and Noe (2000)

%NearMetro	The percentage of firms in the industry located near potential investors (i.e. a large metropolitan area)
%Public	The number of public firms divided by the total number of firms (public + private) within each industry-year following Badertscher et al (2013) and Shroff et al (2017)

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