### Mandatory Management Forecasts and Post-SEO Performance: Evidence from Japan

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#### ABSTRACT

This study examines the determinants and consequences of seasoned equity offering (SEO) issuers' decisions to bias their management earnings forecasts before SEOs in Japan, where management forecasts are mandatory. We identify firm characteristics associated with incentives to inflate management forecasts before SEOs: (i) the use of fund to pay debt, (ii)

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the economic significance of SEO proceeds, and (iii) financial distress. We also find that the effect of those firm characteristics on forecast error can be reduced by strong bank relationships. In addition, we demonstrate that optimism in management forecasts prior to SEOs is associated with post-SEO underperformance.

**Keywords:** Seasoned equity offering; post-SEO performance; Management forecasts; Managerial optimism; Main banks

#### **INTRODUCTION**

In this study, we examine the determinants and consequences of seasoned equity offering (SEO) issuers' disclosure activities before SEOs in Japan. The issuing firm has incentives to inflate the stock price to maximize proceeds via optimistic management forecasts before its SEO. We specifically investigate the incentives of SEO issuers to inflate their management forecasts and examine whether such behavior affects post-SEO performance in Japan. We also examine the effect of main bank relationships on post-SEO performance.

Prior research in the U.S. and European setting suggests that managers voluntarily disclose information in the market to alleviate information asymmetry before important corporate events (Healy and Palepu 2001; Gramlich and Sorensen 2004; Hirst, Koonce, and Venkataraman 2008).<sup>1)</sup> Alternatively, prior research provides evidence that managers use voluntary disclosures strategically to maximize their wealth around important corporate events, such as insider trading, stock options exercises, mergers, and equity offerings (Aboody and Kasznik 2000; Cheng and Lo 2006; Higgins 2013; Kimbrough and Louis 2011; Lang and Lundholm 2000; Noe 1999). However, as Healy and Palepu (2001) noted, potential endogeneity and self-selection is the most important limitation of prior research in the U.S. setting where managers voluntarily release their forecasts. The decision to release disclosure and the decision regarding corporate events could be jointly determined by managers.

<sup>1)</sup> Management forecasts are generally voluntary in the countries of the European Union (EU). Greece had mandatory management forecasts prior to 2001 in case of initial public offerings, but it switched from mandatory to voluntary regime after joining EU.

In addition, firms may self-select into voluntary disclosure around corporate events. For example, SEO issuers are more likely to release voluntary forecasts to reduce information asymmetry.

We choose Japan for two reasons. First, we are able to exploit a unique experimental setting in one of the largest economies, where managers are required to disclose their forecasts to the market (Kato, Skinner, and Kunimura 2009). This mandatory management disclosure allows us to control for the endogenous nature of management forecasts (which confounds empirical evidence from the U.S. firms) and provides a setting free of endogeneity and selfselection to test the effect of managers' strategic use of forecasts (Frankel, McNichols, and Wilson 1995) around corporate financing events. Second, Japan, the largest bank-centered economy, provides a useful setting to examine the effect of firm-bank relationships on management forecasts. Japanese firms have strong relationships with banks. The underlying firm-bank relationship differs markedly across bank-centered financial systems including Japan and Germany and capital market-centered systems including the U.S. For instance, although a typical Japanese firm maintains relationships with several banks, its largest lender, the "main" bank, owns its client firm's stock and thus is particularly knowledgeable about the client firm's prospects. This bank relationship can improve the monitoring activities of banks around equity offerings particularly in Japan (Aoki 1990; Hoshi Kashyap and Scharfstein, 1991; Kang and Shivdasani 1995; Kaplan and Minton 1994).

To examine the effect of managers' forecasts on corporate events, we utilize these unique features of the Japanese financial system. We focus on an important corporate event, SEOs, and test the determinants of managerial optimism. To the extent that SEOs are one of the most information-sensitive financing activities, SEO firms are likely to have incentives to release mandatory forecasts about their future prospects optimistically. We also examine the impact of managerial bias in the forecasts, if any, on the stock market performance of SEOs and the moderating role of firm-bank relationships in the relation between forecast bias and post-SEO performance.

Based on a sample of 1,009 SEOs in Japan in the period of 1995-2005, we document several interesting findings. We expect that managers have strong incentives to maximize SEO proceeds via optimistic forecasts when their firms are financially distressed and are thus close to violating bond covenants. As expected, we find that equity offerings for debt repayment and firms with losses are positively associated with optimism in earnings forecasts. We also find that profitability is negatively related with managers' earnings forecast error. The results also show that firms with low foreign ownership tend to release optimistic forecasts before SEOs. More importantly, we find that optimism in earnings forecasts is negatively related to one-year-ahead stock performance even after the factors that may affect future stock returns are controlled for. Our evidence suggests that investors do not fully undo optimism in management forecasts that precedes post-SEO underperformance.

When we condition the sample on the main bank relationship proxied by the existence of main bank representatives on the board and the magnitude of bank loan, we find evidence that effects of the equity offerings for debt repayment, profitability, and loss on forecast error are mitigated. We further find evidence suggesting that strong main bank relationships reduce the firms' post-SEO underperformance. In other words, the negative association between optimism in management forecasts and the underperformance are reduced in firms where the main bank serves on the board of directors or in firms with high bank loan. This finding is consistent with the view that banks play monitoring roles around the offerings.<sup>2</sup>

To explore analysts' reaction to management forecasts, we also examine analysts' forecast errors conditioned on management forecast errors. We find that analysts tend to repeat management forecasts around SEOs, suggesting that the findings of prior studies on analyst optimism and the underperformance may be in part attributable to managerial optimism.

This study contributes to literature in several ways. Prior research suggests that firms use their voluntary disclosure activities around important corporate events to influence stock performance and evidence generally focuses on the likelihood and frequency of management's voluntary disclosures. The findings of this study extend this line of literature by providing evidence that managerial

<sup>2)</sup> It is plausible that the main bank and its client firm would collude and inflate stock price before the SEO. However, it would be costly for the main bank to suffer a stock price decline after the SEO given its significant stock ownership of the client firm in Japan.

incentives to bias their forecasts are associated with the issuing firm's financial distress and the use of SEO proceeds. We provide new findings on managerial forecast bias and add to literature on the economic consequences of disclosure around corporate events (Jo and Kim 2007; Kimbrough and Louis 2011; Lang and Lundholm 2000; Tan and Koonce 2011).

Moreover, it is well-known that studies using management forecasts released by the U.S. firms are subject to endogeneity and self-selection regarding disclosure (Healy and Palepu 2001). We avoid these issues by employing a setting in which management forecasts are mandatory.

Our study is also related to prior research that examines the longrun underperformance of stock offerings (Loughran and Ritter 1995; Spiess and Affleck-Graves 1995). Firms allegedly manage earnings upward prior to issuing stocks (Teoh, Welch, and Wong 1998a, 1998b), resulting in the post-SEO underperformance. Prior studies suggest that analysts' over-optimism is in part responsible for the underperformance of stock offerings (Dechow, Hutton, and Sloan 2000; Lin and McNichols 1998). Although these studies enhance our understanding of post-equity offering performance, whether analysts' over-optimism is partly attributable to the disclosure policy of equity-offering firms remains unclear. We document that managerial guidance has a significant influence on analysts' optimism around SEOs. Furthermore, we are not aware of any research that examines the effect of bias in management forecasts on the performance of stock offerings. We fill this void in literature by providing evidence that overly optimistic management forecasts lead to post-SEO underperformance.

Finally, we show that strong main bank relationships can reduce management forecast error and post-SEO underperformance, thereby extending prior research on the benefits of bank relationships (Diamond 1984, 1991; Fama 1985; Shleifer and Vishny 1997).

The remainder of this study is organized as follows. Section 2 reviews institutional backgrounds and related literature and lays out our research questions. Section 3 discusses our sample and research design. Section 4 provides our empirical results. Finally, Section 5 presents our conclusion.

#### INSTITUTIONAL BACKGROUNDS, LITERATURE REVIEW AND RESEARCH QUESTIONS

#### Mandatory nature of management forecasts in Japan

In Japan, management forecasts are mandated, which stands in stark contrast to voluntary forecasts in the U.S. and EU countries. According to Securities and Exchange Act of Japan, firms are required to submit their annual reports within three months after the end of the fiscal year. The annual report provides useful information regarding the corporation, but a three-month gap exists between the end of the fiscal year and disclosure.

To redeem this time gap, Japanese stock exchanges request all corporations to disclose condensed financial statements including sales, operating income, net income, and dividends, when the audit presumes no significant problem in the fiscal year. These reports are referred to as "the summary of the most recent financial statements following the end of the fiscal year (Kessan Tanshin)" and are announced around 25 to 40 days after the end of the fiscal year, significantly earlier than the announcement of the annual report. As a part of this summary announcement, Japanese managers are required to disclose management forecasts of sales, operating income, net income, and dividends for the forthcoming year. This unique disclosure practice originates from "Listed Company Compliance of Tokyo Stock Exchange Regulation Volume 1007 of 1974 (the request for the enforcement of the revision of Commercial Law)" and "The Timely Disclosure Rule of 1999 (the rule for the timely information disclosure of company information)". The Stock Exchange of Japan requests an official reason when the company provides no management forecast in "the summary of the most recent financial statement (Kessan Tanshin)". Approximately 10% of companies (mainly financial institutions) did not provide management forecasts in the 1970s (i.e., the early days of the introduction of the rule), but virtually all firms provide management forecasts nowadays.<sup>3)</sup>

<sup>3)</sup> Each firm in our sample continues to provide management forecasts on *NIKKEI Financial Quest* during the sample period, confirming the mandatory nature of forecasts in Japan.

#### Management disclosures, equity offerings, and stock performance

Prior research suggests that managers use voluntary disclosures strategically to maximize their wealth around important events. For example, Noe (1999) examines the association between management earnings forecasts and insider transactions, showing that managers trade their own firms' shares more often after management earnings forecasts than at other times. Cheng and Lo (2006) also examine managers' voluntary disclosures in relation to insider trading. They find evidence consistent with the strategic use of management forecasts to increase managers' trading profits especially when litigation risk is sufficiently low. Aboody and Kasznik (2000) investigate whether CEOs strategically use voluntary disclosures around stock option awards, suggesting that CEOs make opportunistic management forecasts to maximize their stock option compensation. Kimbrough and Louis (2011) find that bidders are more likely to hold conference calls at announcements of mergers financed with stocks.

Equity offerings are one of the most important corporate financing activities. Several studies specifically examine whether managers actively use voluntary disclosure to hype their stock prices around equity offerings. Lang and Lundholm (2000) examine corporate disclosure activity around SEOs and find an increase in disclosure prior to SEOs. However, they find no evidence that management provides more forward-looking information prior to SEOs, possibly due to litigation concerns. They further investigate the association between corporate disclosure activity and stock performance, showing that firms with increased disclosure activity suffer significant price decline at the announcement of equity offerings and continue to experience stock underperformance. Jo and Kim (2007) also find that firms with an unsustained increase in disclosure tend to manage earnings aggressively prior to SEOs and are more likely to have negative performance in the future.

The long-run stock underperformance after equity offerings has been well-documented since Loughran and Ritter (1995) (IPOs and SEOs) and Spiess and Affleck-Graves (1995) (SEOs). One possible explanation about the post-SEO underperformance is that when issuing stocks are overvalued, managers take advantage by issuing new equity, and the market does not revalue the stocks appropriately leading to over-valued prices at issuance. Overvalued stocks subsequently underperform after SEOs as the market corrects such mispricing. Teoh et al. (1998a) add earnings management as an additional explanation for the mispricing and post-SEO underperformance. They show that issuing firms with higher levels of earnings management in the issuing year experience more post-SEO long-run stock underperformance. Dechow et al. (2000) evaluate the role of sell-side analysts' long-term earnings growth forecasts in the pricing of common equity offerings. They find that sell-side analysts' long-term growth forecasts are overly optimistic around equity offerings, suggesting that investors' reliance on analysts' overly optimistic forecasts provides one potential explanation for the post-SEO underperformance.

Taken together, these studies indicate that managers strategically use disclosures around equity offerings and that the offering firms experience post-SEO underperformance. However, the most significant limitation of prior research regarding managers' voluntary disclosure is the endogenous nature of the disclosure activity. That is, disclosure changes are unlikely to be random events but are likely to coincide with other corporate decisions (Healy and Palepu 2001). Prior research regarding management forecasts focuses on the U.S., where management forecasts are voluntary. In this voluntary disclosure regime, managers' incentives to disclose are of great concern to prior research. However, firms with certain characteristics are likely to issue management forecasts under the voluntary environment, making it difficult to examine the effect of the management forecast itself. Consequently, the association between capital market variables, such as bid-ask spread and stock returns, and management forecasts could be driven by certain firm characteristics rather than management forecasts per se (Healy and Palepu 2001). Prior studies attempt to address this endogeneity concern by including firm characteristics as additional controls, but as Healy and Palepu (2001) indicated, the control variable approach is imperfect because of correlated omitted variables and the absence of a reliable model.

To address this limitation and examine the capital market consequences of managerial disclosure, we focus on Japanese firms in which management forecasts are mandatory. As discussed earlier, unlike the U.S. firms, Japanese firms are required to issue management forecasts of earnings at the beginning of the fiscal year. Because all firms are required to disclose management forecasts in Japan, managers do not have to decide whether to provide management forecasts, and thus firm characteristics for the likelihood of forecasts do not affect the decision to provide management forecasts. In this regard, the mandatory nature of management forecasts allows us to examine the consequences of management forecast in a cleaner setting. Focusing on this mandatory nature of management forecasts, Kato et al. (2009) find that, on average, Japanese managers' initial forecasts are overly optimistic and they subsequently revise optimistic forecasts downward to avoid negative earnings surprises. Kato et al. (2009) state that there is no information in the forecast decision itself in Japanese firms because forecasts in Japan are mandated.

To the extent that SEOs are considered one of the most information-sensitive transactions that firms can engage in and that mandatory management forecasts prior to SEOs would be an important venue to alleviate information asymmetry around SEOs in Japan, we expect to identify the effect of management forecasts on the capital market in a cleaner experimental setting. In this study, we examine the determinants of bias in management forecasts and the economic consequences of such bias around SEOs. Specifically, we investigate the following research questions:

- (1) Are management forecasts biased around equity offerings?
- (2) What are the determinants of bias in management forecasts?
- (3) How does ex-ante bias in management forecasts affect post-SEO performance?

To our best knowledge, we are unaware of any research that examines the capital market consequence of bias in management forecasts before SEOs.<sup>4)</sup>

#### Main bank relationships and post-SEO stock performance

In addition to the research questions discussed in the previous section, we also examine whether the firm-bank relationship affects the determinants and consequences of management

<sup>4)</sup> Prior studies generally examine the related issue from analysts' perspectives (Lin & McNichols 1998; Dechow et al. 2000).

earnings forecasts around SEOs. An important characteristic of a Japanese firm is the strong relationship with its main bank. A typical Japanese firm maintains relationships with several banks. The largest lender of a firm, the "main" bank, is particularly knowledgeable about the firm's prospects, and the advantages of relationship banking are much greater in bank-centered financial systems than in capital market-centered financial systems (Aoki 1990; Hoshi et al. 1991; Kaplan and Minton 1994; Kang and Shivdasani 1995). Prior research suggests that banks are effective in monitoring borrowing firms and help reduce information asymmetry between firms and external parties because of their informational advantages and superior information processing abilities (Diamond 1984, 1991; Fama 1985; Shleifer and Vishny 1997; Ahn and Choi 2009). As for Japanese firms, Kaplan (1994), Kaplan and Minton (1994), and Kang and Shivdasani (1995) examine the relationship between a firm's bank dependence and various corporate governance mechanisms, showing that Japanese banks are generally effective monitors. Kutsuna, Smith, and Smith (2007) find that main bank relationships with investment banks are valuable to issuers and seem unrelated to conflicts of interest in Japan. Higgins (2013) suggests that merger acquirers' extent of earnings management decreases as bank monitoring increases. Collectively, prior evidence suggests that Japanese firms are subject to intensive bank monitoring with respect to their business activities including disclosures.

However, there is also a negative view on the firm-bank relationship. As Sharpe (1990), Rajan (1992), and Gorton and Winton (2003) note, close firm-bank relationships empower banks to exert considerable influence over client firms, consequently enabling them to extract rents from these clients. In this case, firms are likely to be held up by banks. Consistent with this view, Preece and Mullineaux (1996) suggest that an agency problem exists between lead banks and participants. Weinstein and Yafeh (1998) document that firms with close relationships with banks do not have higher profitability or faster growth rates than their industry peers and that these firms pay relatively high interest rates on their bank loans. Kang and Liu (2007) find that as Japanese banks enter the securities business, they significantly lower the price of the corporate bonds they underwrite in an effort to attract investors, which leads to conflicts of interest that are harmful to issuers. Consequently, it is an empirical question whether bank relationships reduce management forecast bias and in turn alleviate post-SEO stock performance. For example, if banks effectively perform their monitoring roles and thus reduce the mispricing of issuing stocks, the relation between managerial forecast errors and post-SEO underperformance is expected to be less pronounced for firms with strong bank relationships than for those with weak bank relationships. By contrast, the rent extraction view suggests that banks have incentives to allow managers of their client firms to forecast earnings optimistically to maximize SEO proceeds, particularly when the intended use of these proceeds is to pay off the debt. If this is the case, the relation will be more pronounced for firms with strong bank relationships.

#### SAMPLE AND RESEARCH DESIGN

#### Data and sample description

Our initial sample includes 2,373 SEOs by Japanese firms from the Global Security Data Corporation (SDC) database for the period of 1995-2005. We start the sample period from 1995 because the coverage of our data is significantly increased from 1995 and end the sample period in 2005 to avoid the possible effect of global financial crisis.<sup>5)</sup> We then match these SEOs with management forecasts on NIKKEI Financial Quest, a database for the financial disclosure of Japanese firms. Consistent with prior literature, we winsorize the top and bottom 1% of earnings forecast errors to mitigate outlier effects. Our final sample consists of 1,009 SEOs.<sup>6)</sup> We obtain stock returns and financial data from the Pacific-Basin Capital Market (PACAP) Research Center database, which stops its coverage in 2006. We also extract information on analysts' earnings forecasts from IBES International. Our ownership data are obtained from the Development Bank of Japan dataset. Ownership data include the

<sup>5)</sup> Another reason to end the sample period in 2005 is that one of our major data sources (the Pacific-Basin Capital Market Research Center database) stops its coverage in 2006.

<sup>6)</sup> We also perform analyses after excluding 43 firm-years in the financial and utilities industries from the sample to avoid the confounding effects of regulation. The results are qualitatively similar.

stake of foreign, financial, and individual shareholders. For analyses that utilize information on boards, we extract information from the Tokyo Keizai board database. Similar to prior studies, we define the main bank as the firm's largest bank lender.

Panel A of table 1 describes the distribution of the sample by year. It shows that the number of SEOs generally increases in Japan, ranging from 19 in 1997 to 239 in 2005. A majority of the firms in our sample raise capital through the Tokyo Stock Exchange.

Panel B of table 1 provides the descriptive statistics of the variables used in empirical analyses. Our main variable of interest is management forecast error. We define earnings forecast error as the difference between management's net income forecasts and actual net income, divided by total assets.<sup>7</sup>) The mean earnings forecast error suggests that the average firm's consolidated earnings forecast error is 1.4% of total assets, implying that firms generally report optimistic management forecasts around SEOs. The standard deviation of the forecast error indicates that the forecast error varies substantially in the sample. The average firm's optimistic management forecasts for the *overall* Japanese firms because of the low regulatory and legal costs of biasing forecasts.<sup>8</sup>

The table also shows that 8.2 percent of our sample firms are involved in equity offerings to raise capital for debt payment (*Fund to pay debt*) and that 7.0 percent are for future investment (*Fund for investment*).<sup>9</sup> The mean (median) value of firm size as measured by total assets is 168.3 (39.1) billion yen, indicating that the raw value of the size variable is highly right-skewed (untabulated). About 12.6% of our sample firms suffer from losses. The mean foreign and

<sup>7)</sup> We also use forecast errors deflated by the absolute value of earnings rather than deflated by total assets because deflation by total assets may mix in leverage effects. Also, we use sales forecast errors instead of earnings forecast errors. The results are qualitatively the same when we use the alternative definition of forecast errors.

<sup>8)</sup> We also find the overall optimism in management forecasts when all Japanese firms (rather than SEO firms) are used during our sample period, consistent with Kato et al. (2009).

<sup>9)</sup> Fund to pay debt dummy and Fund for investment dummy are obtained from the SDC database based on parent companies' financial statements. Other than these two purposes, SDC classifies the remaining observations as "general purpose secondary" which means that the purpose for using the fund is unclear.

Year	Frequency	%
1995	28	2.78%
1996	24	2.38%
1997	19	1.88%
1998	41	4.06%
1999	46	4.56%
2000	113	11.20%
2001	92	9.12%
2002	89	8.82%
2003	121	11.99%
2004	197	19.52%
2005	239	23.69%
Total	1,009	100.00%

Table 1. Sample distribution of SEOs and descriptive statisticsPanel A: Sample distribution of SEOs

#### Panel B: Descriptive statistics

Variables	obs.	Mean	Std.	q1	Median	q3
Earnings forecast error	1,009	0.014	0.045	-0.008	0.000	0.013
Fund to pay debt	1,009	0.082	0.275	0.000	0.000	0.000
Fund for investment	1,009	0.070	0.256	0.000	0.000	0.000
Log_proceed	1,009	3.365	1.407	2.398	3.199	4.138
Lag_ROA	1,009	0.058	0.080	0.021	0.053	0.093
Loss	1,009	0.126	0.332	0.000	0.000	0.000
Log_assets	1,009	10.691	1.505	9.700	10.575	11.446
Book-to-market	1,009	0.614	0.493	0.271	0.507	0.831
Foreign ownership	1,009	0.109	0.122	0.017	0.069	0.155
Institutional ownership	1,009	0.154	0.174	0.000	0.100	0.278
Individual ownership	1.009	0.062	0.113	0.000	0.000	0.075

This table reports sample distribution of SEO and descriptive statistics. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, return, and management forecasts on NIKKEI Financial Quest. *Earnings Forecast error* is the difference between management's earnings forecasts and actual, divided by total assets. Top and bottom 1% of earnings forecast errors are winsorized. *Fund to pay debt* takes the value of one if SEO proceeds is used to pay debt, 0 otherwise. *Fund for investment* takes the value of one if SEO proceeds is used for investment, 0 otherwise. *Log\_proceed* is the natural logarithm of cash inflows from SEO. *Lag\_ROA* is net income divided by total assets at year t-1. *Log\_assets* is the natural logarithm of total assets. *Book-to-market* is the ratio of book

#### Table 1. (continued)

value of equity to market cap. *Foreign ownership* is the number of shares held by foreign institutional investors divided by the total number of shares outstanding. *Institutional ownership* is the number of shares held by financial institutions divided by the total number of shares outstanding. *Individual ownership* is the number of shares held by all individuals and others divided by the total number of shares outstanding.

financial institutional ownership is 10.9% and 15.4%, respectively, suggesting that institutional investors are important investors in Japan. In our sample, we use the initial management forecast for each fiscal year. On average, firms provide management forecasts 240 days (196 days in median) before the SEO issuance date (untabulated). This statistic suggests that the management forecast is announced long before the SEO announcement date in Japan.

Table 2 presents the Pearson correlations between the variables in our estimation models. We find that a fund dummy to pay debt is positively related to earnings forecasts (0.24) and negatively related to the investment dummy (-0.08). We also find that firm performance and foreign institutional ownership are negatively associated with forecast optimism. Loss dummy is positively correlated with the use of fund to pay debt dummy, suggesting that financially distressed firms are more likely to use proceeds from SEO to repay debt. The Spearman correlation matrix provides similar inferences (untabulated). None of the correlations appears large enough to cause multicollinearity concerns. Nevertheless, we formally test for multicollinearity in our regression analyses. We examine variance inflation factors (VIFs) for the regressions and find that the largest VIF value is less than 4, indicating that multicollinearity problems are unlikely to affect our results.

	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)
(1) Earnings forecast error	1.00	0.24	0.03	-0.10	-0.40	0.46	-0.18	-0.07	-0.12	0.00	-0.10
(2) Fund to pay debt		1.00	-0.08	0.02	-0.21	0.21	-0.01	-0.03	-0.08	0.06	-0.13
(3) Fund for investment			1.00	0.01	-0.16	0.15	0.02	0.03	-0.03	0.13	-0.08
(4) Log_proceed				1.00	0.07	-0.15	0.71	-0.18	0.37	0.35	-0.10
(5) Lag_ROA					1.00	-0.60	-0.05	-0.11	0.04	-0.19	0.23
(6) Loss						1.00	-0.26	-0.09	-0.06	-0.05	-0.09
(7) Log_assets							1.00	0.14	0.27	0.56	-0.17
(8) Book-to-market								1.00	-0.17	0.11	-0.01
(9) Foreign ownership									1.00	0.12	-0.09
(10) Institutional ownership										1.00	-0.23
(11) Individual ownership											1.00
The sample comprises 1,009	SEOs be	etween	1995 an	d 2005.	We initi	ally seled	ct the sa	umple fir	ms from	Global	Security
Data Corporation (SDC) da	tabase.	We requ	uire tha	t the sa	umple fii	rms hav	e accou	nting in	lormati	on, retu	rn, and
management forecasts on N	IKKEI Fi	nancial	Quest.	Earnings	s Foreca.	st error	is the di	ifference	betwee	n manag	ement's
earnings forecasts and actua	ıl, divide	d by tot	al asset:	s. Top aı	nd botto:	m 1% of	earning	gs foreca	st errors	are win	sorized.
Fund to pay debt takes the vi	alue of or	ne if SE(	O procee	ds is us(	ed to pay	/ debt, 0	otherwi	se. Fund	l for inve	stment ta	akes the
value of one if SEO proceeds	is used	for inve	stment,	0 otherw	vise. Log	_proceec	l is the r	natural l	ogarithm	of cash	inflows
from SEO. Lag_ROA is net ir	ncome di	vided by	r total a:	ssets at	year t-1.	. Loss ta	ukes the	value of	one if ti	ne firm i	eported
loss at year t-1. Log_assets i	s the nai	tural log	garithm	of total e	assets. E	300k-to-m	uarket is	the ratio	o of bool	t value c	f equity
to market cap. Foreign owne	rship is	the nun	ther of s	shares h	eld by fc	oreign in	stitution	ial inves	tors divi	ded by t	he total
number of shares outstandin	.g. Institu	utional oi	wnershit	o is the r	number (	of shares	s held by	r financi	al institu	tions div	rided by
the total number of shares or	utstandin	ig. Indivi	idual ou	nership i	is the nu	umber of	shares ł	neld by a	all indivic	luals an	d others
divided by the total number o	f shares	outstand	ding. Thu	e highligi	hted coei	fficients	are signi	ificant at	: least at	the 10%	level.

(Pearson)
correlation
Bivariate
сi
Table

#### The determinants of management forecast error

This study examines the determinants and economic consequences of management forecast error before SEOs. To examine the determinants of optimism in management earnings forecasts, we estimate the following regression model:

*Earnings forecast error* =  $\beta_0 + \beta_1$ *Fund to pay debt* 

$$+ \beta_{2}Fund for investment + \beta_{3}Log_proceed + \beta_{4}Lag_ROA + \beta_{5}Loss + \beta_{6}Lag_forecast error + \beta_{7}Log_assets + \beta_{8}Book-to-market + \beta_{9}Foreign ownership$$
(1)

+  $\beta_{10}$ Institutional ownership +  $\beta_{11}$ Individual ownership +  $\varepsilon$ 

where Earnings forecast errors is the difference between management's earnings forecasts and actual, divided by total assets, Fund to pay debt takes the value of one if SEO proceeds is used to pay debt, 0 otherwise, Fund for investment takes the value of one if SEO proceeds is used for investment, 0 otherwise, Log\_proceed is the natural logarithm of cash inflows from SEOs, Lag\_ROA is net income (earnings) divided by total assets at year t-1, Loss takes the value of one if ROA at year t-1 is negative, 0 otherwise, Lag\_forecast error is the difference between management's earnings forecasts and actual, divided by total assets at year t-1, Log\_assets is the natural logarithm of total assets, Book-to-market is the ratio of book value of equity to market cap. Foreign ownership is the number of shares held by foreign institutional investors divided by the total number of shares outstanding, Institutional ownership is the number of shares held by financial institutions divided by the total number of shares outstanding, Individual ownership is the number of shares held by all individuals and others divided by the total number of shares outstanding.

To examine the cross-sectional determinants of forecast optimism, we augment the regression model suggested by Kato et al. (2009). We include a dummy variable for debt-paying offerings because firms issuing stocks to pay debt are expected to be optimistic to obtain more proceeds from SEOs. We also include a dummy variable for the use of proceeds for investment. Firms with good investment opportunities may have incentives to bias their forecasts upward to obtain more funds to invest. Proceeds are included because the size of proceeds may reflect managerial incentives to bias their forecasts.

Firms' earnings performance is negatively associated with forecast optimism. Thus, we control for return on assets and a dummy for loss. We include a lagged management forecast error as a possible determinant of optimism in management forecast because management forecast optimism is likely to be persistent (Kato et al., 2009). Firm size is also controlled since prior research suggests that firm size is negatively related to forecast optimism. Growth firms are more likely to be optimistic forecasters. We use book-to-market as a proxy for growth. Ownership structure may affect managerial optimism since managers subject to external discipline are less likely to release optimistic forecasts. We include ownership structure variables, such as foreign institutional ownership, financial institutional ownership, and individual ownership, in the regression.

#### The economic consequences of management forecast error

Next, to empirically investigate the economic consequences of management forecast error, we examine the incremental effect of management forecast error on the predictability of future returns. Specifically, we run the following cross-sectional regression controlling for risk factors:

*One-year ahead return* =  $\beta_0 + \beta_1 Earnings$  *forecast error* 

+  $\beta_2 Log_assets + \beta_3 Book-to-market + \beta_4 Earning-to-price$  (2)

+  $\beta_5$ *Dividend-to-price* +  $\beta_6$ *Price-momentum* +  $\varepsilon$ 

where One-year ahead return is one-year ahead buy-and-hold return<sup>10</sup> measured starting one month after the SEO issuance date, *Earnings forecast error* is the management earnings forecast error defined as the difference between forecast and actual, divided by total assets, where the forecast is annual forecast available prior to the SEO issuance date, *Log\_assets* is the natural logarithm of total assets, *Book-to-market* is book-to-market ratio, *Earning-toprice* is earnings-to-price ratio, *Dividend-to-price* is dividends yield,

<sup>10)</sup> Instead of three-to-five-year returns, we use one-year ahead returns because the Pacific-Basic Capital Market (PACAP) Research Center database limits the sample period ending 2005. In addition, we are unable to control for earnings management incentives (abnormal accruals) like Teoh et al. (1998a) because of the data limitation.

measured as the ratio of dividends to price, and *Price-momentum* is price momentum measured as the preceding-year buy-and-hold return. <sup>11</sup> Except for the one-year ahead return, we measure the variables prior to the SEO issuance date. The coefficient on earnings forecast error ( $\beta_1$ ) represents the association between management forecast bias and post-SEO stock performance. If managers' optimism in forecasts leads to overvaluation around SEOs, we expect a negative coefficient on  $\beta_1$ .

#### The effect of bank relationships

We extend literature on managerial opportunism around SEOs (Teoh et al. 1998a, 1998b; Lang and Lundholm 2000; Jo and Kim 2007) by investigating banks' monitoring role prior to SEOs. To examine the effect of bank monitoring on management forecast bias and its relation with future returns, we include bank relationship measures, namely, the existence of bankers on the corporate board and the high bank loan dummy, in Equations (1) and (2) and reestimate the models. To the extent that banks play monitoring roles, we expect that the effects of cross-sectional determinants on forecast optimism will be reduced and in turn the negative association between forecast error and future returns will be mitigated by strong firm-bank relationships.

#### **EMPIRICAL RESULTS**

#### Determinants of management forecast bias before seasoned equity offerings

We first examine the determinants of optimistic management forecasts around the equity offerings. Table 3 reports the regression

<sup>11)</sup> It is plausible that SEO underperformance is due to the change of leverage or firm-risk. For example, SEO proceeds used to pay debt may potentially affect firm risk and thus influence the required rate of return. To address this concern, we control the ex-post change in the beta measured as the change of beta. The beta is a measure of systematic risk estimated from a market model over the past one year. We also include the ex-post change in the capital structure calculated as the change of leverage (debt to equity) from t to t+1 to control the effect of financing cost on stock performance. The results are similar with our main findings.

## Table 3. Determinants of management forecast errors before seasoned equity offerings

Variables	Earnings forecast error
Fund to pay debt	0.017***
	(3.68)
Fund for investment	-0.005
	(-1.12)
Log_proceed	0.003**
	(2.39)
Lag_ROA	-0.103***
	(-4.93)
Loss	0.021***
	(3.82)
Lag_forecast error	0.240***
	(6.46)
Log_assets	-0.005***
	(-3.53)
Book-to-market	-0.002
	(-0.90)
Foreign ownership	-0.024**
	(-2.22)
Institutional ownership	0.009
	(0.95)
Individual ownership	-0.011
	(-0.86)
Constant	0.042**
	(2.03)
FE	Year, Industry
Observations	1,009
F-value	110.64***
Adj. R <sup>2</sup>	0.317

Panel A: Managemer	t forecast error	prior to	SEOs
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**Panel B:** Management forecast error prior to SEOs by the existence of bankers on the board of directors

Variables	Earnings forecast error	
Bankers on the board: a	-0.035	
	(-0.92)	
Fund to pay debt	0.030***	
	(4.38)	
Fund to pay debt * a	-0.026**	
	(-2.42)	
Fund for investment	-0.000	
	(-0.06)	

Table 3.	(continued)
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Variables	Earnings forecast error
Fund for investment * a	-0.008
	(-0.66)
Log_proceed	0.004*
	(1.87)
Log_proceed * a	-0.002
	(-0.41)
Lag_ROA	-0.147***
	(-3.03)
Lag_ROA * a	-0.035
	(-0.38)
Loss	0.030***
	(3.59)
Loss * a	-0.032**
	(-2.24)
Constant	0.075
	(1.63)
Control variables	Lag_forecast error, Log_assets, Book-to-market,
	Foreign ownership, Institutional ownership,
	Individual ownership
FE	Year, Industry
Observations	584
F-value	46.97***
Adj. R <sup>2</sup>	0.380

 $\ensuremath{\textbf{Panel}}$  C: Management forecast error prior to SEOs by the high bank loan

	F
Variables	Earnings forecast error
High bankloan: a	0.025
	(0.73)
Fund to pay debt	0.013
	(0.92)
Fund to pay debt * a	0.003
	(0.22)
Fund for investment	0.015*
	(1.71)
Fund for investment * a	-0.028**
	(-2.39)
Log_proceed	0.003
	(1.27)
Log_proceed * a	0.000
	(0.05)
Lag_ROA	0.019
	(0.37)

Variables	Earnings forecast error
Lag_ROA * a	-0.173**
	(-2.14)
Loss	0.036***
	(2.83)
Loss * a	-0.025*
	(-1.68)
Constant	0.029
	(0.60)
Control variables	Lag_forecast error, Log_assets, Book-to-market,
	Foreign ownership, Institutional ownership,
	Individual ownership
FE	Year, Industry
Observations	646
F-value	75.32***

0.279

Tab	le 3.	(continued)	
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Adj.  $R^2$ 

This table presents results from regressions of management forecast errors in their forecasts prior to SEOs. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, return, and management forecasts on NIKKEI Financial Quest. Earnings forecast error is the difference between management's earnings forecasts and actual, divided by total assets. Top and bottom 1% of earnings forecast errors are winsorized. Fund to pay debt takes the value of one if SEO proceeds is used to pay debt, 0 otherwise. Fund for investment takes the value of one if SEO proceeds is used for investment, 0 otherwise. Log\_proceed is the natural logarithm of cash inflows from SEO. Lag\_ROA is net income divided by total assets at year t-1. Loss takes the value of one if the firm reported loss at year t-1. Lag\_forecast error is the difference between management's earnings forecast and actual, divided by total asset at year t-1. Log\_assets is the natural logarithm of total assets. Book-to-market is the ratio of book value of equity to market cap. Foreign ownership is the number of shares held by foreign institutional investors divided by the total number of shares outstanding. Institutional ownership is the number of shares held by financial institutions divided by the total number of shares outstanding. Individual ownership is the number of shares held by all individuals and others divided by the total number of shares outstanding. Bankers on the board takes the value of one if a banker is on the board at year t. High bankloan takes the value of one if the firm's loan from bank divided by total debt is above median at year t. Industry and Year controls are included, but the results are not reported for brevity. The numbers in parenthesis denote t-values for two-tailed tests. \*\*\*, \*\*, \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

results from Equation (1). In Panel A of table 3, we find that the coefficient on the use of fund to pay debt dummy (0.017) is statistically significant (p-value < 0.01) for earnings forecasts. This evidence implies that optimism in management earnings forecasts is pronounced when SEO proceeds are designated to repay debt. This finding is consistent with the notion that managers have incentives to maximize proceeds when they pay off debt. However, the coefficient on the use of fund for investment is insignificant, implying that the use of fund for investment is not a main reason for management to bias their forecasts in Japan.

Log\_proceed is positively associated with earnings forecast error, suggesting that SEO size is significantly related to management forecast errors in Japan. The significantly negative coefficient on Lag\_ROA implies that managers' tendency to bias their forecasts upward decreases as the firm's profitability increases. The coefficient of Loss is significantly positive, suggesting that loss firms tend to bias their earnings forecasts upward. We also find that lagged forecast error is positively associated with optimism, suggesting that optimistic forecasters continue to be optimistic from the previous year's forecasts, consistent with Kato et al. (2009). On the other hand, when foreign institutional ownership increases, optimism in management earnings forecasts decreases, implying that this type of institutional investors constrain managers from overstating earnings forecasts.

Since Japan is a major bank-centered economy and the bank loan is the main financing source of firms, we also examine the role of bank relationships in determining the forecast error prior to SEOs. As discussed earlier, we utilize two proxies for firm-bank relationships: the existence of bankers on the board of directors and the magnitude of bank loan. When a bank executive is on the corporate board, he/she may play a monitoring and information gathering role through the corporate governance system (Kroszner and Strahan 2001). Thus, we construct a dummy variable, Bankers on the board, which takes the value of one if a banker is on the board. Since greater bank loan represents stronger bank relations (Kang, Shivdasani, and Yamada 2000), we create a dummy variable, High bankloan, which takes the value of one if a firm's loan amount from banks divided by total debt is above median at year t. Because we require our sample firms to have information on banks, we use a reduced sample for the analysis.

Panel B of table 3 shows the result for management forecast error by the existence of bankers on the board. The interaction term between *Fund to pay debt* and *Bankers on the board* is negatively associated with earnings forecast error, suggesting that the positive relation between *Fund to pay debt* and *Earnings forecast error* is mitigated when bankers are on the board. The coefficient on the interaction term between *Loss* and *Bankers on the board* is significantly negative, indicating that loss firms have more incentives to provide optimistic management forecasts, but this incentive is reduced when bankers are on the board.

The regression results in Panel C of table 3 also show that bank relationships measured by the importance of bank loan are more likely to alleviate firm's incentives to provide optimistic management forecasts. We find that the interaction of *Fund for investment* with *High bankloan* is significantly negative. This finding suggests that managers have less incentive to maximize proceeds by inflating management forecasts when the magnitude of bank loan is greater. Moreover, the coefficients on the interaction terms between *Lag\_ROA or Loss* and *High bankloan* are significantly negative, indicating that strong bank relationships constrain poorly performing firms or loss firms from managing their management forecasts upward.

In summary, the results in Panel B and C of table 3 suggest that, in Japan, strong bank relationships reduce management forecast error prior to SEO, implying that banks play an important monitoring role around SEOs.

#### Economic consequences of managerial optimism in forecasts

To examine the economic consequences of managerial optimism<sup>12</sup> in forecasts before SEOs, we compute post-SEO stock performance according to the forecast errors. In other words, we form decile portfolios by year according to the earnings forecast errors available prior to SEOs and compute the buy-and-hold raw return over 12 months from one month after the SEO issuance date for each group. We also estimate stock market performance by measuring one-year ahead buy-and-hold return beginning from the actual

<sup>12)</sup> In practice, managers might not know the exact date of SEO when they issue management forecasts. Therefore, some part of managerial optimism used in this study may not be directly relate to SEO.

	(1)	(2)
Earnings forecast error	One-year ahead buy-and- hold return after the SEO issuance	One-year ahead buy- and-hold return after the realization of actual earnings
1 (Most pessimistic)	0.088	0.110
2	0.033	0.050
3	0.014	0.022
4	0.065	0.091
5	0.055	0.039
6	-0.018	0.042
7	-0.075	-0.034
8	-0.128	-0.074
9	-0.193	-0.137
10 (Most optimistic)	-0.220	-0.169
1-10	0.308***	0.279***
2-9	0.226***	0.188***

Table 4. Post SEO long-term return by management forecast errors

This table reports median post SEO long-term return by management forecast errors. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, stock returns, and management forecasts on NIKKEI Financial Quest. *Earnings forecast error* is net income forecast minus actual net income, divided by total assets. *One-year ahead return* is buy-and-hold return over the 12 months beginning one month after the SEO issuance (Column 1) or after the realization of actual earning (Column 2). \*\*\* Significance level lower than 1%.

earnings announcement date to ensure that management's forecast bias is publicly known to investors in order to rule out that SEO underperformance is driven by gradual disappointing news.

Table 4 reports the relation between management forecast errors and one-year ahead buy-and hold raw returns.<sup>13)</sup> We observe that firms with a higher level of optimism in management earnings forecasts generally have a lower level of long-term returns, suggesting that the market does not see through managerial optimism in forecasts. For example, one-year ahead buy-and-hold return after the SEO issuance (or after the realization of actual

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<sup>13)</sup> The results are similar when we form quintile portfolios.

	(1)	(2)
Variables	One-year ahead buy- and-hold return after the SEO issuance	One-year ahead buy- and-hold return after the realization of actual earnings
Earnings forecast error	-1.368**	-1.506***
	(-2.45)	(-2.86)
Log_assets	-0.037**	-0.033**
	(-2.33)	(-2.20)
Book-to-market	0.087*	0.126***
	(1.78)	(2.76)
Earning- to-price	0.080	0.166
	(0.32)	(0.70)
Dividend-to-price	-0.229	0.206
	(-0.40)	(0.39)
Price-momentum	-0.036	-0.024
	(-1.53)	(-1.10)
Constant	0.353	0.275
	(0.85)	(0.71)
FE	Year, Industry	Year, Industry
Observations	950	950
F-value	$7.48^{***}$	7.90***
Adj. $R^2$	0.0798	0.0902

Table 5. Regression analysis of post SEO long-term
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This table presents results from ordinary least square regressions of longterm returns on management forecast errors. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, return, and management forecasts on NIKKEI Financial Quest. Earnings forecast error is management's operating income forecast minus actual operating income, divided by total assets. One-year ahead return is buy-and-hold return over the 12 months beginning one month after the SEO issuance (Column 1) or after the realization of actual earning (Column 2). Log\_assets is the natural logarithm of total assets. Book-to-market is the ratio of book value of equity to market cap. Earnings-to-price is the ratio of net income to market cap. Dividend-to-price is dividend yield, measured as the ratio of dividend per share to price. Price momentum is buy-and-hold return for the preceding 12 months. Industry and Year controls are included, but the results are not reported for brevity. The numbers in parenthesis denote t-values for two-tailed tests. \*\*\*, \*\*, \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

earnings) for the most pessimistic group is 8.8% (11.0%), whereas that for the most optimistic group is -22.0% (-16.9%). The difference between the most pessimistic and the most optimistic group is statistically significant at the one percent significance level. The median return to a hedge portfolio that takes a long position in the bottom decile and a short position in the top decile is approximately 30% per year.

Overall, we find a systematic negative relation between management forecast errors and post-SEO performance. The findings suggest that investors overvalue firms with ex-ante optimistic management forecasts and that the market slowly corrects the mispricing after SEOs.

However, it is possible that the predictable return we document above reflects risk factors. To address this issue, we include the risk factors as reported in Equation (2) and regress one-year-ahead returns on forecast errors and the controls that may affect returns. We report the results to examine the capital market consequence of management forecast bias in table 5. Column (1) reports the results with buy-and-hold return measuring one year after the SEO issuance date. As expected, the coefficient on *Earnings forecast error* (-1.368) is negatively associated with one-year buy-and-hold return. The negative and significant coefficients indicate that optimism in management forecasts is negatively associated with the firm's post-SEO stock performance, suggesting that the more optimistic the management forecasts, the lower the long-term stock returns.<sup>14</sup>

In Column (2) of table 5, we also examine the effect of management forecast error on stock market performance by measuring one-year ahead buy-and-hold return beginning from the actual earnings announcement date to ensure that management's forecast bias is publicly known to investors. We obtain consistent inferences with those in Column (1) of table 5, suggesting that SEO underperformance is not driven by gradual disappointing news.

<sup>14)</sup> We also perform the analysis of table 5 by decomposing earnings forecast errors into the expected and unexpected portion (not tabulated). The expected portion is mainly affected by determinants (underlying factors) shown in Table 3 and the unexpected portion is not driven by these underlying factors. Both expected and unexpected variables are negative, but the unexpected variable is marginally insignificant whereas the expected variable is statistically significant. This result suggests that it is possible that the result reported in Table 5 is attributable to underlying factors instead of management forecast biases.

## Table 6. Optimistic forecasts and post SEO performance by bank relationships

**Panel A:** Management forecast error and post-SEO performance by the existence of bankers on the board of directors

	(1)	
Variables	One-year ahead buy-and-hold return after the	
	SEO issuance	
Bankers on the board: a	-0.029	
	(-0.52)	
Earnings forecast error: b	-2.331***	
	(-3.80)	
a*b	2.357**	
	(2.29)	
Log_assets	-0.019	
	(-1.10)	
Book-to-market	0.026	
	(0.56)	
Earning- to-price	0.351	
	(1.58)	
Dividend-to-price	-0.763	
	(-0.33)	
Price-momentum	-0.070***	
	(-2.68)	
Constant	0.344	
	(0.77)	
FF	Vear Industry	
Observations	560	
F-value	16 96***	
Adi $\mathbb{R}^2$	0.168	
nuj.n	0.100	

**Panel B:** Management forecast error and post-SEO performance by the high bank loan

	(1)	
Variables	One-year ahead buy-and-hold return after the	
	SEO issuance	
High bankloan: a	-0.007	
	(-0.13)	
Earnings forecast error: b	-3.120***	
	(-2.83)	
a*b	2.457**	
	(2.03)	
Log_assets	-0.049***	
	(-2.74)	

	(1)	
Variables	One-year ahead buy-and-hold return after the	
	SEO issuance	
Book-to-market	0.024	
	(0.46)	
Earning- to-price	-0.116	
	(-0.46)	
Dividend-to-price	-9.686	
	(-0.66)	
Price-momentum	-0.019	
	(-0.69)	
Constant	0.517	
	(1.29)	
FE	Year, Industry	
Observations	631	
F-value	22.95***	
$Adj.R^2$	0.125	

Table 6.	(continued)
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This table presents results from ordinary least square regressions of longterm returns on management forecast errors and information on board of directors and bank loan. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, return, and management forecasts on NIKKEI Financial Quest. Earnings forecast error is management's operating income forecast minus actual operating income, divided by total assets. One-year ahead return is buy-and-hold return over the 12 months beginning one month after the SEO issuance. Log\_assets is the natural logarithm of total assets. Book-to-market is the ratio of book value of equity to market cap. Earnings-to-price is the ratio of net income to market cap. Dividend-to-price is dividend yield, measured as the ratio of dividend per share to price. Price momentum is buy-and-hold return for the preceding 12 months. Bankers on the board takes the value of one if a banker is on the board at year t. High Bankloan takes the value of one if the firm's loan from bank divided by total debt is above median at year t. Industry and Year controls are included, but the results are not reported for brevity. The numbers in parenthesis denote t-values for two-tailed tests. \*\*\*, \*\* denote statistical significance at the 1%, and 5% levels, respectively.

Taken together, the evidence in table 4 and table 5 shows that optimism bias in managers' forecasts prior to SEOs is associated with the underperformance of SEOs, suggesting that firms that substantially inflate their forecasts prior to the equity offering suffer

# Table 7. Optimistic forecasts and post SEO performance by bank relationships (PSM)

**Panel A:** Management forecast error and post-SEO performance by the existence of bankers on the board of directors

	(1)	(2)
Variables	Bankers on the	One-year ahead buy-and-hold
	board	return after the SEO issuance
Bankers on the board: a		0.036
		(0.39)
Earnings forecast error: b		-2.880**
		(-2.16)
a*b		3.726**
		(2.08)
High mainbankownership	1.460***	
	(4.76)	
Fixed asset ratio	-0.629	
	(-0.88)	
Keiretsu dummy	0.426	
	(1.61)	
Foreign ownership	-1.004	
	(-0.95)	
Institutional ownership	-0.020	
	(-0.02)	
Individual ownership	1.667	
	(0.94)	
Log_at	0.062	-0.035
	(0.60)	(-1.07)
Book-to-market	-0.133	-0.003
	(-0.55)	(-0.03)
Earning- to-price	-1.302	-0.032
	(-1.32)	(-0.07)
Dividend-to-price	88.990	69.515
	(1.06)	(0.71)
Price-momentum	-0.286*	-0.077
	(-1.93)	(-1.35)
Constant	-0.231	0.298
	(-0.11)	(0.42)
FE	Year, Industry	Year, Industry
Observations	439	194
F-value	90.68***	450.71***
Pseudo R <sup>2</sup> / Adj.R <sup>2</sup>	0.162	0.105

#### Table 7. (continued)

Panel B: Management forecast error and post-SEO performance by the high bank loan

	(1)	(2)
Variables	High bankloan	One-year ahead buy-and-hold
		return after the SEO issuance
High bankloan: a		-0.037
6		(-0.38)
Earnings forecast error: b		-2.977
-		(-1.58)
a*b		4.899**
		(2.30)
High mainbankownership	2.598***	
	(10.11)	
Fixed asset ratio	1.786***	
	(2.81)	
Keiretsu dummy	0.682***	
	(2.81)	
Foreign ownership	-1.830**	
	(-2.20)	
Institutional ownership	-4.167***	
	(-4.67)	
Individual ownership	-2.642*	
	(-1.89)	
Log_assets	-0.129	-0.052
	(-1.50)	(-1.63)
Book-to-market	-0.520**	0.055
	(-2.46)	(0.64)
Earning- to-price	1.194	-0.580
	(1.24)	(-1.22)
Dividend-to-price	56.163	19.843
	(0.75)	(0.62)
Price-momentum	-0.111	-0.015
	(-1.09)	(-0.35)
Constant	0.804	0.249
	(0.47)	(0.39)
FE	Year, Industry	Year, Industry
Observations	593	258
F-value	208.76***	51.28***
Pseudo $R^2$ / Adj. $R^2$	0.254	0.175

This table presents results from two stage least square regressions of long-term returns on management forecast errors and information on board of directors and bank loan. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC)

#### Table 7. (continued)

database. We require that the sample firms have accounting information, return, and management forecasts on NIKKEI Financial Quest. Earnings forecast error is management's operating income forecast minus actual operating income, divided by total assets. One-year ahead return is buy-andhold return over the 12 months beginning one month after the SEO issuance. Log\_assets is the natural logarithm of total assets. Book-to-market is the ratio of book value of equity to market cap. Earnings-to-price is the ratio of net income to market cap. Dividend-to-price is dividend yield, measured as the ratio of dividend per share to price. Price momentum is buy-and-hold return for the preceding 12 months. Bankers on the board takes the value of one if a banker is on the board. High bankloan takes the value of one if the firm's loan from bank divided by total debt is above median at year t. High mainbankownership takes the value of one if the ownership of mainbank is above median at year t. Fixed asset ratio is the ratio of fixed asset to total asset at year t. Keiretsu dummy takes the value of one if the firm belongs to any of the eight bankcentered Keiretsus. Foreign ownership is the number of shares held by foreign institutional investors divided by the total number of shares outstanding. Institutional ownership is the number of shares held by financial institutions divided by the total number of shares outstanding. Individual ownership is the number of shares held by all individuals and others divided by the total number of shares outstanding. Industry and Year controls are included, but the results are not reported for brevity. The numbers in parenthesis denote t-values for two-tailed tests. \*\*\*, \*\* denote statistical significance at the 1%, and 5% levels, respectively.

a large price decline after equity issuance. This result implies that equity investors do not fully recognize the implications of overoptimism embedded in management forecasts. Whereas Lang and Lundholdm (2000) suggest that their sample issuing firms substantially increase their disclosure activity around SEOs, in our sample, we control this discretionary disclosure behavior and identify the effect of management forecast errors on stock performance. Our results indicate that even among consistent disclosers, the market reaction differs and is associated with management forecast errors.

#### Main bank relationships and post-SEO underperformance

Thus far, we examine the determinants and economic consequences of management forecast optimism. In this section, we test the effect of the bank relationship on the association between managerial optimism and post-SEO underperformance. As discussed earlier, a close firm-bank relationship is a distinctive characteristic of the Japanese economy. Hence, we predict that the relation between managerial optimism and post-SEO underperformance is likely to be less significant for firms with strong bank relationships than for those with weak bank relationships if banks perform effective monitoring roles and vice versa. To test our prediction, we add an interaction term between strong bank relationship variables (*Bankers on the board* and *High bankloan*) and managerial optimism (*Earnings forecast error*). We expect that the negative relation between management forecast error and future returns will be reduced in firms with strong firm-bank relationships to the extent that banks exert efforts to monitor managerial opportunism.

Panel A of table 6 confirms this expectation. We find that the coefficient on the interaction term between *Earnings forecast error* and *Bankers on the board* is positive and significant, suggesting that bank relations mitigate SEO underperformance.

The results based on the second proxy for firm-bank relationships, High bank loan dummy, reported in Panel B of table 6 also provide similar inferences. We find that the coefficient on the interaction term between *Earnings forecast error* and *High bankloan* is positively significant. To the extent that high bank loan reflects banks' monitoring activities, we interpret this evidence to mean that banks play an effective monitoring role and reduce post-SEO underperformance.

A potential problem related to the test for the effect of bank relationships on post-SEO performance is that bank relationships may be endogenous. The characteristics of sample firms with bankers on the board or large bank loan may be significantly different from those of sample firms without. To address this endogeneity concern, we identify a control sample using a propensity-score matching procedure. We use our propensity score using a logit regression in Column (1) of table 7, where the dependent variable is a dummy variable indicating bank relationships. We include firm characteristics that may affect bank relationships, such as Fixed assets ratio, Keiretsu dummy, Foreign ownership, Institutional ownership and individual ownership, based on prior research (Hoshi et al. 1991; Kaplan and Minton 1994; Kang and Shivdasani 1995; Weinstein and Yafeh, 1998). We find that high main bank ownership is positively associated with the dummy for

Earnings forecast error	Mean	Median
1 (Most pessimistic)	-0.250	-0.274
2	-0.244	-0.232
3	-0.085	-0.097
4	-0.040	-0.067
5	0.036	-0.049
6	0.178	0.042
7	0.401	0.141
8	0.579	0.312
9	1.121	0.992
10 (Most optimistic)	1.025	1.051
1-10	-1.275***	-1.325***
2-9	-1.366***	-1.224***

 Table 8. Analyst forecast error following management forecasts

This table reports analyst forecast error following management forecasts. The sample comprises 1,009 SEOs between 1995 and 2005. We initially select the sample firms from Global Security Data Corporation (SDC) database. We require that the sample firms have accounting information, stock returns, and management forecasts on NIKKEI Financial Quest. Information on analyst forecasts is obtained from I/B/E/S. *Earnings forecast error* is management's operating income forecast minus actual operating income, divided by total assets. *Analyst earnings forecast error* is defined as analyst's earnings forecast minus actual earnings, divided by total assets. The numbers in the test-of-difference denote t-values for two-tailed tests. \*\*\* Significance level lower than 1%.

bankers on the board and high bank loan. Also, firms with the high fixed asset ratio appear to have high bank loan<sup>15)</sup>. After controlling for potential firm characteristics that may affect bank relationships, our main results are reported in Column (2) of table 7. We find that the coefficients on the interaction between *Earnings forecast error* and *Bankers on the board* or *High bankloan* are positive and significant, consistent with the view that bank relations mitigate SEO underperformance.

Overall, our findings suggest that, if a firm has a strong firm-

<sup>15)</sup> We also perform 2SLS regressions and find similar inferences. Our instrumental variables in the first stage regression report a higher partial F-score than the critical value and Sargan statistic does not reject the null that instruments are valid, suggesting that our instruments are valid and not weak (Larcker & Rusticus, 2010)

bank relationship, the effect of bias in management forecasts on post-SEO stock performance is mitigated. These results are consistent with the view that the monitoring roles of banks help reduce bias in management forecasts, thereby reducing post-SEO underperformance.

#### Analyst forecast error following management forecasts

To gain further insight into the effect of management forecasts on post-SEO underperformance, we examine analyst reaction to management's earnings forecasts. Specifically, we examine whether analysts' forecasts are affected by management forecasts.<sup>16</sup> Prior research suggests that analysts follow managerial guidance (Baik and Jiang 2006; Brown and Higgins 2005; Feng and McVay 2010; Tang, Zarowin, and Zhang 2015). Our results confirm prior research. As shown in table 8, analysts' earnings forecasts for firms with the most optimistic management forecasts are significantly more optimistic than those for firms with the most pessimistic management forecasts. For example, table 8 shows that the mean (median) analyst earnings forecast error for firms with the most pessimistic management earnings forecasts is -0.250 (-0.274), whereas that for firms with the most optimistic management earnings forecasts is 1.025 (1.051). The difference is statistically significant (p-value < 0.01).

In summary, analysts appear to be influenced by management disclosures, repeating managements' forecasts around SEOs. The results shed light on our understanding of the relation between analyst optimism and post-SEO underperformance reported by Lin and McNichols (1998) and Dechow et al. (2000), suggesting that the previously documented association between analyst optimism and post-SEO underperformance may be in part attributable to managerial optimism.

<sup>16)</sup> We use analyst forecast errors instead of forecast revisions because forecast errors can help us better identify potential systematic biases in analyst forecasts, such as optimistic or pessimistic biases.

#### CONCLUSION

In this paper, we examine the determinants of optimistic management forecasts and the effect of managers' forecast bias on post-SEO performance focusing on Japan, where management forecasts are mandatory and the firm-bank relationship is significant. We present several new findings supporting the view that the manager's forecast is an important factor in determining post-SEO performance.

We identify firm characteristics associated with incentives to inflate management forecasts prior to SEOs: (i) the use of fund to pay debt, (ii) the economic significance of SEO proceeds, and (iii) financial distress. This finding is consistent with the view that financially distressed firms and firms that intend to pay off debt have strong incentives to inflate stock prices to maximize proceeds. We also find that the effect of firm characteristics on forecast error can be reduced by strong bank relationships. Next, we find that optimism bias in managers' forecasts prior to SEOs is associated with post-SEO stock underperformance. This finding suggests that the stock market does not fully recognize over-optimism embedded in management forecasts.

We examine the role of banks in the relation between forecast bias and SEO performance. We find that the negative association between managerial optimism and post-SEO performance is mitigated when the main bank serves on the board of directors or the firm has high bank loan, supporting the view that banks play an important monitoring role around SEOs.<sup>17)</sup> We further examine whether analysts undo bias in managerial forecasts and find that analysts tend to repeat managerial forecasts, suggesting that prior research regarding the effect of analyst optimism on the underperformance of post-stock offerings is partly attributable to managerial bias.

Several caveats are in order. First, we acknowledge that while convertible bonds are widely used as a major part of financing in

<sup>17)</sup> This result can be also applicable to the countries with the main bank system such as Korea and Germany but may not be applicable to the countries without the main bank system such as the United States and United Kingdom. Banks in the U.S. and U.K. have a relatively limited role in corporate governance, and the bank-firm relationship is generally less close and enduring compared to those in countries with the main bank system.

Japan, our sample does not cover the issuance of convertible bonds. Therefore, our inferences may not be applied to convertible bonds. Second, we cannot directly observe banks' monitoring activities. Therefore, our interpretation on the role of banks in the relation between forecast bias and post-SEO performance depends on how well our proxies identify their monitoring behavior. We hope that future research will shed light on these issues.

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