What Happens When Management Earnings Forecasts Are Mandated? The Information Content of Management Forecasts in Japan*

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Abstract

This study provides evidence on the properties of management forecasts in Japan, where managers are effectively required to provide sales and earnings forecasts to investors at the beginning of each fiscal year and to update those forecasts regularly, but where the threat of disclosure-related litigation is minimal. Compared to many other countries, including the US, UK, and Australia, where forecasting is voluntary and litigation is an important consideration for management, the Japanese institutional setting is unusual, and provides us with an opportunity to investigate several hypotheses related to managers' forecasting incentives. We find that managers' initial forecasts in each year are overly optimistic, especially for firms with poor past earnings performance, suggesting that managers use forecasts to try and convince corporate constituents that their firms' performance will improve and/or that forecasts are also used as an internal motivational tool for firm employees. We also find that managers issue downward forecast revisions during the year that largely correct this optimism. The data display some evidence that managers in Japan attempt to avoid negative earnings surprises, but overall this tendency is not as pronounced as in the US which suggest that litigation has important effects on disclosure.

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1. Introduction

Beginning with early papers by Patell (1976) and Penman (1980), there is a large literature on the voluntary release of management earnings forecasts. This literature typically uses data for US firms, and analyzes, among other things, managers' incentives to provide earnings forecasts and various properties of these forecasts.[1] One general finding in this literature is that managers tend to provide these forecasts when their firms are doing well in general (e.g., Lev and Penman, 1980; Lang and Lundholm, 1993; Miller, 2002) or when they have adverse information about their firms' short-run earnings prospects (e.g., Skinner, 1994). In other words, managers tend to provide forecasts when their firms are doing unusually well or unusually badly.

Another regularity that emerges from the management forecast literature is that forecasts are relatively infrequent. Pownall, Wasley and Waymire (1993) sample eight weeks chosen at random from each year from 1980 to 1987 and find a total of only 444 management earnings forecasts.[2] Even in more recent years, with an increase in the prevalence of 'earnings guidance,' it is still the case that less than a quarter of all listed firms in the US provide management earnings forecasts, and that those firms that provide guidance do not necessarily provide guidance every quarter (e.g., Anilowski, Feng, and Skinner, 2006). There is some evidence of a trend for US firms to reduce the extent to which they provide earnings guidance given concerns that quarterly guidance encourages managers to focus too much attention on short-term earnings targets to the detriment of their firms' long run goals, and that guidance can increases potential litigation costs,

[1] There is also evidence on management earnings forecasts in countries other than the US (in the UK, Canada, and Australia, for example) but the main features of the institutional environment in these countries are similar to that in the US, in that management earnings forecasts are made voluntarily.
[2] This is for US firms based on a search for point, range, minimum or maximum forecasts that uses the Wall Street Journal and the Dow Jones News Retrieval Service.

especially in the wake of Regulation FD (e.g., see Graham, Harvey, and Rajgopal, 2005; Chen, Matsumoto, and Rajgopal, 2005; Houston, Lev and Tucker, 2005).[3] Proprietary costs have also been offered as a reason that more firms do not provide earnings guidance.

Empirical evidence from the US also shows clear evidence of asymmetries in management forecasts and how the market responds to those forecasts. A recent study by Anilowski, Feng and Skinner (2006) that uses a relatively large, comprehensive sample shows that the majority of management earnings forecasts convey negative earnings news, and that the market responds more strongly to negative guidance than to neutral or positive guidance. Given the voluntary nature of these forecasts, these asymmetries are usually interpreted as being due to the strategic nature of management forecasting behavior.[4] With regard to credibility, some argue that forecasts that convey bad news tend to be inherently more credible than forecasts that convey good news (e.g., Jennings, 1987; Baginski, Hassell, and Hillison, 2000; Hutton, Miller, and Skinner, 2003).

This study provides evidence on management forecasting in Japan. The principal motivation is that management forecasting is effectively mandated in Japan, which allows us to provide evidence on the properties of forecasting in an institutional environment where forecast disclosure is not a management choice.[5] In the US and other countries where forecasting is voluntary, our interpretation of the forecasts that we observe – their

[3] Some well-known firms have recently indicated that they will no longer provide earnings guidance, of which Coca Cola is perhaps the most prominent example. Google has made it clear from the time of its IPO that it will not provide earnings guidance.

[4] Soffer, Thiarajan, and Walther (2000) provide evidence suggesting that management strategically releases earnings guidance that enables them to generate non-negative surprises on earnings announcement dates, while Kothari, Shu and Wysocki (2005) argue that management tends to leak good earnings news ahead of bad earnings news, which helps explain the larger reaction to management earnings forecasts that convey bad news.

[5] As far as we are aware, there is little previous research analyzing management forecasts in Japan, apart from an early paper by Darrough and Harris (1991). Conroy, Eades, and Harris (2000) confirm our characterization that management earnings forecasts are essentially mandated in Japan.

properties and informativeness – is fundamentally affected by our knowledge that managers are choosing to disclose this information, and that some other managers are choosing to withhold similar information (e.g., Dye, 1985; Jung and Kwon, 1988; Verrecchia, 1983). In Japan, however, all managers are effectively required to provide forecasts, which is likely to change the nature of the information they disclose and how external market participants interpret that information. By comparing the nature of forecasts in Japan to those released in economies where forecasting is voluntary, we can thus provide evidence on how the properties of forecasting change when managers no longer have a choice about releasing the information. This is potentially of interest in the US, where the SEC has, with limited success, encouraged companies to provide more forward looking information to investors. If mandated forecasting provides useful information to investors in Japan, it would strengthen arguments that the US should follow suit.[6] On the other hand, if forecast information in Japan is not informative, it would weaken arguments that forecasting should be mandated.

Researchers in the US argue that litigation has first-order effects on managers' forecast and disclosure decisions (e.g., Skinner, 1994, 1997; Johnson, Kasznik, and Nelson, 2001; Brown, Hillegeist, and Lo, 2005; Field, Lowry and Shu, 2005). While this evidence makes it clear that litigation affects managers' disclosure decisions to some extent, it is unclear exactly how important a role litigation plays.[7] There are other reasons managers are likely to face an asymmetric loss function in making forecast decisions which may be equally or even more important in driving managers' forecast

[6] The SEC has, from time to time, considered mandating forecasting in the US.
[7] Consider the fact that there are a total of only 200-300 securities class action lawsuits filed against listed companies in the US each year, many of which are unrelated to disclosure. Given that there are well over 10,000 listed companies in the US, the likelihood of being sued seems relatively low.

disclosure choices. For example, managers' credibility/reputation with the analysts and money managers who follow their firms is also likely to affect their disclosure choice and encourage the timely disclosure of adverse earnings news (e.g., see Tucker, 2005). By analyzing the properties of management forecasts in Japan, an environment where the threat of stockholder litigation, and especially stockholder litigation related to disclosure, is much lower than that in the US (and probably also lower than in most other countries in the world), we can provide evidence on the extent to which litigation effects explain observed patterns in managers' disclosure practices.

Our evidence shows that the properties of forecasts in Japan are different to what we observe in the US and other countries. In particular, managers' initial forecasts in each fiscal year are optimistic, in that they generally exceed prior year realizations and that forecast errors tend to be large and negative. One explanation for this phenomenon is that managers in Japan use their firms' external forecasts as part of their firms' internal budgeting and goal-setting system, and that optimistic forecasts help motivate employees.[8] Another possibility is that managers strategically issue optimistic forecasts as a way of convincing external constituents that corporate performance will improve. Consistent with these explanations, we find that managers of firms that perform worse in a given year set the most optimistic forecasts for the next year. These tendencies hold consistently in all years during our sample period, in spite of a good deal of variation in economic conditions. Our tests also exploit that fact that managers in Japan forecast three numbers – sales, earnings before earnings and taxes (EBET), and net income (NI).

[8] It could also be that forecasts developed internally for budgeting and performance evaluation purposes are also used for external reporting purposes.

We also analyze how managers in Japan update their forecasts during the fiscal year. In Japan, forecast revisions are legally mandated when management expectations change by preset percentages (10% for sales and 30% for EBET and NI). Thus, we expect managers to revise their forecasts as the year progresses to avoid earnings surprises. Moreover, these revisions are naturally more likely to be downward revisions because of the initial optimism. We find that managers do revise their initial forecasts downward during the year in such a way as to largely avoid earnings surprises at year-end but that this tendency is not as strong as in US data, a difference that may be explained by the fact that litigation is likely to be play a much more significant role in affecting disclosure in the US than in Japan.

The next section of the paper lays out the institutional setting in Japan in more detail. Section 3 describes our sample and provides initial descriptive statistics. Section 4 reports our main empirical analyses and Section 5 concludes.

2. Institutional Background and Hypothesis Development

The Stock Exchange Act (the Act) in Japan governs disclosure and financial reporting practices for Japanese public companies and requires that annual financial statements be filed within three months of year end. In addition, the so-called Timely Disclosure Rules (*Kessan-Tannsin* or 'summary of financial statements' in Japanese) enforced by Japanese stock exchanges impose more stringent requirements on disclosure practices and require, for example, that annual financial statements be released as soon as companies obtain consent from their auditors. These rules evolved over time and originated in 1965 in the "Kabuto-club," a club of newspapermen at the Tokyo Stock

Exchange (TSE), and were eventually incorporated into TSE rules.[9] These rules strongly encourage managers of listed firms in Japan to provide regular forecasts of sales and earnings. Our evidence indicates that the large majority of companies comply with this request and so we argue that disclosure in Japan is effectively mandated.[10] These rules are similar on all of the major Japanese stock exchanges, including the TSE, Osaka Stock Exchange, and the JASDAQ, which are the major exchanges in Japan. The specific requirements for management forecast disclosures are as follows:

1. Listed companies are expected to release point forecasts of annual earnings at each annual earnings announcement date, as well as revisions of these forecasts at interim earnings announcement dates. Thus, forecasts for year t are provided when year t-1 earnings are announced, and revisions (which include confirmations of the previous forecast) are provided when first half earnings are announced. There is no requirement that firms release quarterly forecasts (quarterly reporting has only been required in Japan since March 2003).
2. Point forecasts of three income statement numbers – sales, earnings before extraordinary items and taxes (EBET), and net income (NI) – are expected.
3. Forecasts must be updated if there are "significant" revisions in management estimates, defined as changes in estimated sales of 10% or more and/or changes in either earnings number of 30% or more (hereafter, the "Significance Rule"). In contrast to the original forecasts, which are encouraged by stock exchange listing rules, revisions due to significant changes in expectations are required under the Act, and were put in place in May 1988 in response to insider trading scandals.

[9] In their original form, these rules required forecasts of sales, net income, and dividends, along with a summary of financial statement information.
[10] Securities firms are exempted from this requirement.

Although these rules have been in place for some time our data, described below, begins with 1998. (In Japan, most companies have a March 31 year-end, so that the year we refer to as 1998 is actually the year-ending March 31, 1998.).

3. Sample and Descriptive Information

We obtain sample data (both realizations and forecasts) from *Nikkei Financial Quest*, a commercial data base provided by the subsidiary of *Nikkei*, publisher of the main business newspaper in Japan. The initial sample of firm/years with forecast data is shown in Panel A of Table 1 and includes data for 1998 through 2005. The sample comprises almost all listed firms in Japan. The gradual increase in sample size reflects an increase in the number of listed firms. In Japan, consolidated financial reporting was required beginning in 2001 (fiscal 2000). We use consolidated financial statements if they are available and, if not, we use parent company financial statements. As Table 1 indicates, around 80% of our firm/year observations are based on consolidated numbers, a tendency that naturally increases around 2001 (before this year many companies provided consolidated information on a supplemental basis). The column labeled "missing" indicates the number of firm/years without forecast data on the database in a given year. Missing observations arise either because the firm does not provide a forecast or because no forecast is available on the database.[11] However, the overall

[11] For the set of firm/years with consolidated financial data available, we have broken down the missing observations into those that represent firms that did not provide forecasts and those that represent firm/years for which the forecast is not available in the database. Only about 62% of these missing observations are firm/years for which the forecast itself is missing (as opposed to the data being missing in the database), reducing the overall fraction of firm/years without forecasts to less than 4%. In addition, a larger fraction of consolidated than parent-only observations are coded as missing (overall, the fractions are 6.4% versus 4.4%), suggesting that firms may be more likely to have provided forecasts at the parent than the consolidated level, which seems plausible given that consolidated reporting was being introduced during this period. Confirming this, we find that of the 1,426 firm/years without consolidated forecasts, 888 made parent-level forecasts. That is, only 38% (538/1426) of them did not forecast at all. Before 2001

number of such missing observations is small – around 6% of all firm/years – and declines to 2-3% in more recent years. This fraction includes securities firms, which are specifically exempt from the Timely Disclosure Rule. The fact that such a high proportion of firm/years have available forecast data supports our earlier contention that forecasting is effectively mandated in Japan.

Panel B of Table 1 reports on the sample we use in the empirical tests that follow. To include a given firm/year t in the sample, we require realized and forecast numbers for year t as well as realized numbers for year t-1 (the numbers being sales, EBET, and NI).[12] We use these data to compute forecast "innovations" which we define as the difference between the earnings (or sales) forecast for year t and the corresponding earnings (or sales) realization for year t-1. Because these numbers are usually released simultaneously, they allow us to measure how management's expectations for the current period compares to their firms' immediate past realized performance, which provides initial evidence on how management sets their firms' earnings forecasts. We lose a total of 2,818 firm/year observations which do not satisfy these requirements, leaving a total of 25,000 firm/years.

Panel B of Table 1 also reports various descriptive statistics for the sample firm/years, presented by fiscal year and overall (we present overall numbers, rather than giving separate consolidated and parent numbers). To give a sense for the size of these firms (essentially all listed firms in Japan), mean (median) total assets is ¥353 billion (¥35 billion) while the mean (median) market capitalization is ¥100 billion (¥12 billion).

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consolidated information was considered to be supplementary in the Japanese disclosure environment and so it is not surprising that many firms did not provide forecasts using consolidated numbers.

[12] A small number of companies did not release the full set of forecast information (Sales, EBET, and NI), which explains why we have a slightly different number of observations for these variables in our tables.

Several of the reported series reflect the relatively weak state of the Japanese economy during much of this period and the improvement in 2004 and 2005. The overall mean (median) debt-to-equity ratio for these firms is 4.47 (1.44) but is noticeably lower in the last two sample years. Similarly, overall mean (median) profitability for the sample (measured as NI-based ROA) is 1.07% (1.26%) but improves noticeably in 2004 [1.99% (1.95%)] and 2005 [2.45% (2.39%)]. These trends are also evident in market-to-book ratios, which are low by US standards: the overall mean (median) is 1.64 (0.92) but increases to 2.47 (1.07) in 2004 and 1.99 (1.25) in 2005.

One set of ROA numbers reported in Panel B are based on NI deflated by lagged total assets. Because managers also forecast EBET, we also computed the ROA numbers using this measure of earnings. Mean (median) ROA based on EBET is 4.13% (3.17%), substantially higher than the NI-based measure. Because extraordinary items in Japan are defined more broadly than in the US, and include gains and losses on the sales of securities and fixed assets (including real estate), the difference between these numbers is often relatively large. In addition, because during this period many Japanese firms were divesting themselves of their relatively large securities portfolios (as part of a gradual unwinding of the *keiretsu* system) at a time when Japanese equity prices were relatively low, these firms often reported relatively large extraordinary losses during this period, which explains why the ROA numbers based on NI are relatively lower than those based on EBET.

For informational purposes, Panel C of Table 1 presents information on the industry distribution of sample firms in 1998 (the industry groups are defined by *Nikkei*). Because our sample covers essentially all listed firms in Japan, this distribution largely

reflects the industry distribution of Japanese listed firms in general. Our sample covers more than 90% of listed firms in most industries.

The forecast data to this point describe firm/years for which we have at least the initial annual forecast, meaning the annual forecast that is usually released near the beginning of the fiscal year at the annual earnings announcement date. Beginning at the end of March 2003, Nikkei also collects subsequent forecast revisions released by management during (and sometimes just after) the fiscal year, which we use to provide evidence on how management forecasting evolves during the fiscal period. We summarize these data in Panel D of Table 1 and again separate the observations into those for parent and consolidated numbers. Except for 2003, the numbers reported in the first column (labeled "initial") correspond to those in Panel B, which is expected since both columns report the number of firm/years with initial forecasts.[13] The other columns report the number of subsequent forecasts. The numbers in the "2nd" column are very close to those in the initial forecast column, indicating that firms almost always provide at least two forecasts. This is consistent with the Timely Disclosure Rules under which firms are expected to provide forecasts at both annual and interim earnings announcement dates.

The numbers in the subsequent columns indicate that managers of many of these firms follow up these forecasts with revisions, and that in some firm/years these revisions are numerous. We find that a third annual forecast is provided in around 86% of all firm/years, a fourth forecast in 65% of cases, a fifth forecast in 29% of cases, and a sixth

[13] The discrepancy arises for 2003 because we do not have a full set of revisions for all of the initial forecasts (n = 3,298) in that year.

forecast in 9% of cases, with a few firms making more forecasts than this.[14] We provide evidence below on factors that are associated with forecast revisions. Based on both the requirements of the Significance Rule and the expectations adjustment hypothesis (Ajinkya and Gift, 1984), we expect that forecast revisions are more likely to occur when expectations change.

Table 2 provides information on when management provides earnings forecasts. Once again, we only have these data for 2003 through 2005, since these are the only years for which we have the forecasts beyond the initial forecast. As expected, the large majority (99.1%) of initial forecasts are released at the annual earnings announcement date. When we consider subsequent forecasts, most are also made at earnings announcement dates, especially in 2004 and 2005 when quarterly reporting was fully established. In 2003, 40.5% of these (2nd) forecasts were made on a stand-alone basis while 55.6% were released at the time interim earnings were announced. In 2004, however, only 12.2% of these forecasts were released as stand-alone disclosures while 62.6% are released at the time first quarter earnings are announced and 24.9% at the time interim earnings are announced. This trend becomes even more pronounced in 2005, where the fractions are 9.4%, 74.1%, and 16.3%, respectively. One interpretation of this evidence is that, whenever possible, managers prefer to release forecasts in conjunction with other mandatory announcements, rather than making separate announcements.

The same trends are evident for the 3rd forecasts in each year. In 2003, 41.2% of these forecasts are issued on a stand-alone basis while most of the rest (54.9%) are issued

[14] The number of forecast revisions in Japan is more numerous than in the US. For example, Anilowski et al. (2006) find that for the set of firm/years when annual earnings forecasts are released, managers release a single forecast about half the time (51% of observations), two forecasts 18% of the time, three forecasts 11% of the time, four forecasts 8% of the time, and five or more forecasts in the remaining 12% of cases. Ajinkya, Bhoraj and Sengupta (2005) also provide evidence on the use of multiple forecasts in US data.

at the interim earnings announcement date. In 2004 (2005) the fraction issued on a stand-alone basis decreases to 31.9% (28.3%) while most of the rest are issued at interim earnings announcement dates. This means that many firms issue forecasts at all of their quarterly earnings announcement dates and that stand-alone forecasts are comparatively rare in Japan.[15] We report below that a large fraction of the stand-alone forecasts (72%) are attributable to the Significance Rule.

4. Analysis of Forecast Data

When forecasts are voluntary, as in the US, it seems clear that management forecasts are only released when (1) managers have some, reasonably precise, expectation about what realized earnings will be, and (2) they have an economic motivation for releasing the forecast. In contrast, when managers are required to provide earnings forecasts early in the fiscal year, it is not clear how managers formulate their forecasts. To provide evidence on this issue, we first provide evidence on how managers' initial forecasts compare to their firms' most recent earnings realizations. Thus, we compute forecast "innovations" as forecast earnings for year t minus realized earnings for year t-1, and deflate by lagged total assets (we compute these innovations for sales, EBET, and NI).

Table 3 reports on the forecast innovations for the overall sample. In addition, to investigate whether managers' forecasts are associated with their firms' profitability, we partition the data into quintiles based on the firms' realized profitability (measured as NI-based ROA) for year t-1.[16] To the extent levels of profitability are persistent, we expect that managers of firms with higher profitability expect larger earnings increases than

[15] This trend is also apparent in US data: Anilowski et al. (2006) find that there is an increasing trend for US firms to issue earnings forecasts on quarterly earnings announcement dates.
[16] We have computed ROA using both EBET and NI in the numerator, with similar results.

managers of firms with lower profitability. On the other hand, we also know that extreme levels of profitability are mean-reverting, especially when profitability is negative (losses), so we might also expect some tendency for there to be a negative relation between year t-1 profitability and the earnings change expected in year t (e.g., see Freeman, Ohlson and Penman, 1982; Fama and French, 2000). Notice that this mean reversion should be less evident in the sales numbers (and to a lesser extent, in EBET) than it is for NI, and so we examine how the relation differs across these three variables.

The innovations that we report in Table 3 suggest that managers' initial sales and earnings forecasts tend to be optimistic, in the sense that they tend to be positive and relatively large. For the sample overall, sales are forecast to increase by a mean (median) of 5.6% (2.8%) of assets, while EBET is forecast to increase by 1.2% (.5%) and net income (NI) by 1.6% (.5%).[17] Just over three-quarters of the sales innovations (75.4%) are positive, while 78.3% of the EBET innovations and 79.8% of the NI innovations are positive. It is notable that the forecast increases in NI are at least as large as those for EBET when the levels of the latter variable are generally larger. If it is the case that the bottom-line NI number is more important (to investors, employees, or others), managers may have stronger incentives to be optimistic about NI than about EBET. Alternatively, it could simply be that extraordinary items are not as easily forecast as other income statement line items (perhaps because decisions about selling securities, taking write-offs, etc., are not taken until relatively late in the fiscal period) and that these items are initially forecast to be zero but often turn out to be negative and relatively large.

[17] All of the means and medians in this table are statistically significantly different from zero except the mean of quintile five.

When we look at how sales innovations vary across the past ROA quintiles, we see that, as expected, there is an almost monotonic increase in the mean (median) sales innovation as we move from the worst to best ROA quintiles. The only exception to this pattern is that mean and median sales innovations in the lowest ROA quintile are not the lowest and fall between those of quintiles 2 and 3, perhaps reflecting the fact that managers of the worst performing firms (some of which report losses) expect sales to increase more than their past earnings performance would suggest, consistent with mean reversion (67.4% of the innovations in quintile 1 are positive, compared to 65.6% in quintile 2 and 75.3% in quintile 3). This pattern is consistent with the idea that managers of poorly performing firms are trying to motivate their firms' employees to do better and/or convince investors that things are turning around.

The patterns are more pronounced for the earnings innovations. While there is modest evidence for the EBET innovations that managers of firms in the best performing quintiles expect better EBET growth than those in quintiles 2-4, the most optimistic managers are those of the worst performing firms, in quintile 1. These managers expect an EBET increase of 3.5% (1.9%) of assets, which is substantially larger than that for managers of the best performing firms, who expect an increase of 1.1% (0.7%) [90.8% of the innovations for quintile 1 are positive, compared to 76.1% in quintile 5].[18] Managers of firms in the intermediate portfolios expect increases in between these extremes and none are as optimistic as those of the low ROA quintile. This pattern is even more pronounced for NI: managers of the quintile 1 firms expect NI to increase by 7.0% (4.0%) [96.5% of these observations are positive] compared to -0.1% (0.4%) [70.2% positive] for managers of the quintile 5 firms. Numbers for the other quintiles are similar

[18] Differences in both the means and medians of these quintiles are statistically significant.

to those of the best performing quintile (especially looking at the medians) although the proportion of positive observations declines monotonically across the quintiles suggesting that managerial optimism is inversely related to past ROA. The optimism for managers in quintile 1 could reflect either more pronounced mean reversion for the worst performers (which include loss firm/years), so that managers' good faith forecasts are most optimistic for these firms. This would be more likely if past NI is driven down by relatively transitory extraordinary items. On the other hand, it may be that managers of these firms are systematically overly optimistic to try and convince investors, the board, and others that their firms' performance is improving (thus preserving their jobs) and/or to help motivate their employees to do better.

To determine whether these managers' generally optimistic forecasts are subsequently realized, we next report forecast errors, defined as the difference between the initial forecasts and subsequent realizations. These numbers are reported in Table 3 below the corresponding innovations, and show that managers' forecasts are also systematically optimistic relative to subsequent realizations: all of the means and medians are negative and statistically significant. Looking at the sales numbers first, the overall mean (median) forecast error is -3.1% (-2.0%), which says that managers' forecasts of sales increases were too high by a substantial margin (64.1% of the forecast errors are negative).[19] Moreover, the largest (most negative) forecast errors are evident for the firms with the worst past performance, suggesting that managers of these firms were the most optimistic. For these firms the mean (median) sales forecast error is -5.0% (-3.2%) and 69.6% of the forecast errors are negative. There is no clear pattern across the rest of

[19] The forecast error means and medians reported in this table are all statistically significantly different from zero.

the quintiles – all of the mean/median forecast errors are relatively large and negative, with means ranging from -2.1% (quintile 1) to -3.0% (quintile 4) and medians of -1.6% and -1.7%.

Similar but stronger patterns are evident for the earnings forecasts, supporting the earlier evidence that managers' earnings forecasts are too optimistic, especially those issued by managers of the poorest performing firms. Firms in the poorest performance quintile (quintile 1) display both the most positive innovations and the most negative forecast errors. For the EBET earnings measure, the mean (median) forecast error for the quintile 1 firms is -1.8% (-0.6%) [67.0% are negative] while that for the NI measure is -3.3% (-0.9%) [72.8% are negative] compared to means (medians) for the overall sample of -0.9% (-0.3%) [59.0% negative] and -1.4% (-0.4%) [66.1% negative], respectively. For both EBET and NI, the proportion of negative forecast errors declines monotonically across the quintiles. These results are again more pronounced for the NI than the EBET forecasts; i.e., the innovations are generally more positive and the forecast errors are generally more negative for NI. To the extent that managers believe that investors focus more attention on the bottom-line NI numbers than on the EBET numbers, this supports the idea that managers are deliberately overstating the results. Overall, the results for the forecast innovations suggest that managers' forecasts are, at least for the initial forecasts, systematically positive while the results for the forecast errors suggest in addition that the forecasts are overly optimistic.

It is possible that these results, rather than reflecting systematic managerial optimism, are simply due to unpredictable changes in economic conditions; i.e., that the forecasts were made in good faith but that the negative forecast errors are attributable to

one or two years when the Japanese economy unexpectedly changed for the worst after the initial forecasts were issued. To address this possibility, Table 4 reports mean and median forecast innovations and forecast errors for the sample partitioned by fiscal year, from 1998 through 2005. Although there is some year-to-year variation in the magnitude of the forecast errors, the results are largely consistent in all years: mean and median forecast innovations are positive in each of these years while mean and median forecast errors are negative.[20] As was the case with the results in Table 3, the forecast innovations tend to be more positive for NI than for EBET while the forecast errors are more negative. This tendency holds in most sample years (in 5/8 years for the innovations and 7/8 years for the forecast errors). Interestingly, the forecast errors are least negative (the medians are all zero for the earnings forecast errors) in 2004 and 2005, when economic conditions in Japan improved after a long slump. One possible interpretation is that managers in Japan expected an economic rebound in every year (which explains their optimistic forecasts) but that this only occurred in 2004 and 2005 (which explains the negative forecast errors in other years).

We next provide evidence on how managers revise their forecasts during the fiscal year. To conduct these tests, we first divide the forecasts into six groups/time periods (T) according to when they are released during the fiscal year: (i) T1 denotes the initial forecast for the year, released at the annual earnings announcement, (ii) T2 denotes forecast revisions released within 90 days of the beginning of the fiscal year (in the first quarter), (iii) T3 denotes forecast revisions released from 90 to 180 days of the beginning

[20] The mean and median innovations are significantly positive at 1% level in all years. All mean forecast errors are significantly negative except that for sales forecasts in F2005. All median forecast errors for F1998 – F2003 are significantly negative, but the medians for EBET in F2004 and F005 and the median for sales in F2005 is not. The median forecast errors for NI in F2004 and F2005 are significantly positive at 1% level.

of the fiscal year (in the second quarter), (iii) T4 denotes forecast revisions released from 180 to 270 days of the beginning of the fiscal year (in the third quarter), (iv) T5 denotes forecast revisions released in the remaining part of the fiscal year, (vi) T6 denotes forecast revisions released after the end of the fiscal year but before the earnings announcement date. We report statistics on the forecast errors and forecast revisions for these forecasts in Table 5 (because the information in forecast errors and revisions is somewhat redundant, we do not discuss the results of each measure in detail).

The forecast error/revision statistics in Table 5 indicate that managers generally revise their forecasts downward during the fiscal year, as we would expect if managers act to correct their initial forecast optimism. First, we see that the forecast errors are largest and most negative for initial forecasts (T1) and other forecasts released in the first quarter (T2, note that there are very few of these), consistent with our earlier results that these initial forecasts are generally optimistic. For the sales forecasts, the mean (median) forecast error is -0.8% (-0.5%) and 54.8% are negative while for NI the numbers are -1.2% (-0.1%) and 55.8% are negative. This is consistent with the evidence presented in Table 3, although the sample is now restricted to the 2003-2005 period for which we also have forecast revisions, and these are the years in which the forecast errors are least negative.

As we move into the second, third, and especially the fourth quarters, however, the forecast errors become less negative. For EBET (NI), the means and medians move to small positive or zero values and the proportion of negative forecast errors falls to 46.7% (48.5%), 46.1% (52.6%), and 34.0% (and 38.7%) in T3, T4, and T5, respectively. Consistent with this, we also see that the fraction of negative forecast *revisions* increases

from T3 to T4 (for NI forecasts, the increase is from 11% to 29%) and that there are also substantially more negative than positive revisions in T5. Note that the majority of forecast revisions are "confirming" – indicating that an updated forecast was issued that agreed with the previous forecast.

In T6, after the end of the fiscal period, the fraction of negative forecast errors falls further, to 18.6% (23.0%) for EBET (NI) and there are a also a significant number of zero forecast errors: 27.1% (26.7%), so that the majority of forecast errors are positive in this period. All of this suggests that managers revise their forecasts during the year in such a fashion as to reduce the magnitude of earnings surprises. Given the systematic optimism evident at the beginning of the year, this implies that forecast revisions are generally negative during the year. We report directly on earnings surprises below.

Figures 1 through 3 plot trends in the forecast errors through the fiscal year. To do these plots, we sort the firm/year observations into two groups based on whether the forecast errors (based on the initial forecasts) are positive or negative. Figures 1-3 plot the mean and median forecast errors for each sub-period, for sales, EBET, and NI, respectively. As expected given the numbers reported in the tables, the forecast errors move steadily towards zero through the fiscal year (recall that there are very few T2 observations, so the increase from T1 to T2 is not very meaningful). Figure 1, for the sales forecasts, is relatively symmetric – the trends for the positive and negative forecast error groups tend mirror one another, with the optimistic and pessimistic forecasts being adjusted in a similar manner during the year. Figures 2 and 3, for the EBET and NI forecasts, display a different pattern. Here there is a clear asymmetry, with larger negative than positive forecast errors at the beginning of the year, so that the movement

toward zero is much steeper for the negative forecast error group than for the positive forecast error group.

Table 6 reports evidence on earnings surprises, which we calculate as realized earnings for each firm/year minus the most recently available management forecast (they are thus a particular type of forecast error). Based on the evidence above, we expect that these earnings surprises will be less negative than forecast errors based on managers' initial forecasts for the year. But it is of some interest to see whether the revisions completely adjust for managers' initial optimism, and so ultimately result in nonnegative earnings surprises. Recent evidence indicates that US managers have strong incentives to deliver non-negative earnings surprises (i.e., to "meet or beat" expectations) and it is of some interest to see whether this is also true in Japan. Because we are interested in the extent to which managers' initial optimism is offset by their subsequent forecast revisions, we also present results for quintiles based on the magnitude of the initial forecast innovation, sorted from lowest (quintile 1) to highest (quintile 5).

The evidence in Table 6 indicates that, overall, most managers are able to avoid negative earnings surprises. For both sales and EBET, the overall mean surprise is 0.0% (and statistically insignificant) while the median surprise is small (0.1%) but reliably positive at the 1% level (54.5% of the sales surprises and 61.8% of the EBET surprises are non-negative). Somewhat surprisingly, the results for the NI surprises show that the mean of this variable is reliably negative (at the 1% level) although the median is not significantly different from zero (54.9% of these observations are positive). Overall though, the magnitude of these surprises is a good deal smaller than the forecast errors

reported above (Table 3) for the initial forecasts, indicating that much of the initial optimism is subsequently corrected.

When we look across the quintiles, we see that the earnings surprises do vary systematically with the magnitude of the initial forecast innovations. For both sales and NI, there is evidence that the earnings surprises are more likely to be negative as we move from the least to the most optimistic forecast quintiles. For the NI forecasts, for example, the proportion of non-negative surprises falls almost monotonically from close to 60% in the first two quintiles to 46% in quintile 5. In addition, the mean and median surprises are both reliably negative for this quintile, indicating that managers' initial forecast optimism is not completely offset by subsequent revisions. The pattern is similar across the sales forecast quintiles. For the EBET quintiles, however, the results are quite different, with the proportion of non-negative surprises fairly constant at around 61%-62% across the quintiles and the median surprises all reliably positive and of approximately similar magnitude. This suggests that managers may care more about avoiding negative surprises for EBET than for sales and NI, which in turn suggests that this may be a more important performance measure in Japan.

The results to this point demonstrate that managers' initial forecasts are systematically optimistic relative to subsequent realizations, and that managers subsequently revise their forecasts during the fiscal year so that on, average, the ultimate forecast errors are close to zero. One question that arises given these results, however, is whether managers' initial optimistic forecasts are at all informative about subsequent earnings changes. To investigate this idea, we sort the firm/year observations into deciles based on the initial forecast innovations, so that decile 1 contains the lowest forecast

innovations and decile 10 the highest. We then plot the mean and median change in NI (deflated by total assets) for each of the 10 deciles and report the results as Figure 4. As a benchmark, we also perform this exercise using the past ROA numbers; the results are shown in Table 5. We also performed this analysis using the change of EBET in place of the change in NI, and plot these results in Figures 6 and 7.

Figure 4 indicates that there is information in the initial forecast innovations about future earnings changes; the figure shows a positive relation between the forecast innovations in NI and changes in NI. The relation is monotonic but non-linear, with a stronger relation for the extreme deciles. In contrast, with the exception of the first two deciles (for which NI changes are positive and, for the first decile, quite large) there is little evidence in Figure 5 of a relation between the level of past ROA and future earnings changes. The results are stronger if we use EBET as the earnings measure. Figure 6 replicates Figure 4 using EBET in place of NI, and displays a relatively strong positive relation between the earnings forecast innovations and subsequent changes in earnings. Figure 7 replicates Figure 5 using EBET, and again shows a much different relation when deciles are formed using past ROA.

The data above indicate that many of these managers revise their forecasts, typically in such a way that the management forecast errors end up being close to zero. One point of interest is the extent to which managers make these forecasts because of the Significance Rule or whether they are made 'voluntarily,' to mitigate subsequent surprises. Table 7 reports evidence on the extent to which the Significance Rule (SR) causes managers to revise their forecasts. We categorize a forecast revision as being attributable to the Significance Rule if the earnings revision exceeds 30% or the sales

revision exceeds 10%, which are the thresholds specified in the rule. Table 7 reports the number of forecast revisions that are thus attributable to the SR, both overall and divided by the number of the revision (first revision, second revision, etc.) as well as by whether the revision is positive or negative.

The results in Table 7 indicate that, overall, sales forecast revisions attributable to SR are relatively rare (5.1% of all sales revisions are due to SR) but that earnings forecast revisions are more likely to be due to SR; 19.1% of EBET revisions and 26.0% of NI revisions are due to SR. It is not surprising that fewer sales forecast revisions are due to SR given the fact that the threshold (10%) is large relative to the variability of the level of sales. Conversely, because earnings levels are likely to be more variable, it is also not very surprising that earnings forecast revisions are more likely to be attributable to SR, even though the threshold for earnings is higher (30%). The fact that NI forecast revisions are more often attributable to SR than EBET forecast revisions could reflect a greater optimistic bias in these forecasts and/or that NI is more volatile, which is possible given the transitory nature of extraordinary items.

The proportion of forecast revisions attributable to SR increases with the number of forecast revisions for all forecast types. For sales, the proportion increases from 5.0% for the first revision to around 10% for the fifth and sixth revisions. For EBET and NI, the increases are from 17.3% (22.1%) for the first revision to 24.2% (34.7%) for the fourth revision and 39.9% (54.9%) for the fifth revision. The steeper increase for the NI revisions is consistent with the notion that decisions about extraordinary items are determined later in the fiscal year, as well as a (non mutually exclusive) argument that

earnings management drives accounting decisions that affect reported NI numbers, and that these changes are more likely to occur later in the year.

The fraction of SR-driven revisions that are negative is very similar across different forecast types, at 60-61%. Interestingly, while the fraction of SR-driven forecasts that is negative tends to increase slightly with the number of revisions for the sales forecast revisions, there is a tendency for the proportion of SR-driven revisions that are negative to *decline* for both types of earnings forecasts – from around 67% at the first revision to around 52% at the fourth revision and 45%-49% for the fifth revision. This suggests an increasing tendency for larger adjustments in forecasts to be positive, which also could be due to upward accounting adjustments, perhaps attributable to earnings management (the fact that the adjustments are not increasingly negative seems inconsistent with the notion that they are due to extraordinary items, which are more likely to be negative).

To summarize, while it is clear that the Significance Rule is more likely to explain forecast revisions later in the year, it is also clear that the majority (75% or more, depending on forecast type) of management forecast revisions are voluntary, in the sense that they are not attributable to the Rule. On the other hand, we also see (looking back to Table 2) that most forecast revisions occur at earnings announcement dates, when there is an expectation that management will update their forecasts, even if they simply confirm their previous forecasts. This is confirmed by the fact that most "stand alone" forecasts (those not issued at earnings announcement dates) are attributable to SR: we find that 72% of stand-alone forecasts are attributable to the SR (not shown in tables), a much higher fraction than is true overall. This implies that many of these "voluntary" forecasts

are in fact driven by "significant" changes in management expectations. Thus, while a number of earnings forecast revisions are attributable to the SR and are often disclosed as stand-alone announcements, the majority are disclosures made at earnings announcement dates that simply confirm previous management forecasts.

5. Summary and Conclusions

This study provides evidence on the properties of management forecasts in Japan, where securities laws and stock exchange listing requirements effectively require that managers provide earnings forecasts to investors. This makes management forecasting in Japan quite different to that in other countries such as the US, where management forecasts are a voluntary disclosure. We also make use of the fact that in Japan managers are required to forecast three income statement line items: sales, earnings before extraordinary items and taxes (EBET), and net income (NI). In most other countries, managers typically only forecast one number, which is usually bottom-line earnings (e.g., Hutton et al., 2003).

Using a comprehensive sample of Japanese firms, we find consistent evidence that managers' initial annual earnings forecasts are systematically optimistic, in the sense that they are larger, on average, than immediate past earnings realizations, and that forecast errors (defined relative to subsequent realizations) are, on average, systematically negative. We find that this phenomenon is more pronounced for managers of firms whose past earnings performance (measured using ROA) is poor. While part of this is likely attributable to mean reversion in earnings performance, we argue that there are other reasons managers in Japan have incentives to provide systematically optimistic forecasts. First, if investors and other corporate stakeholders use earnings to evaluate

management performance, managers will have incentives (such as job preservation) to predict improvements in earnings performance, especially when past performance has been poor. During most of this period (1998–2005), Japan was mired in an economic slump and a related banking crisis. Economists argue that many corporate borrowers in Japan during this period were "zombie firms" – firms with severe economic problems that the banks continued to support for various reasons, including their strong traditional (*keiretsu*) ties to firms in their groups and to avoid having to recognize related bad loans (e.g., Peek and Rosengren, 2005; Caballero, Hoshi, and Kashyap, 2006). The need to help the banks rationalize these firms' continued financial support would also provide managers with incentives to make overly optimistic forecasts, and would predict that this over-optimism would be most pronounced for the weakest firms, as we find.

Managers in Japan can afford to be optimistic in their initial forecasts because the costs of subsequently revising those forecasts downwards are relatively low. Unlike the case in the US, where evidence suggests that the threat of litigation has important effects on managers' forecasting behavior,[21] there are few costs to Japanese managers of being overly optimistic. Our evidence shows managers in Japan revise their annual earnings forecasts relatively often, and in such a way as to undo their initial optimism, so that by the end of the year investors' expectations are, on average, in-line with subsequent realizations. This suggests that managers do incur costs if their firms report earnings surprises.

Finally, we show that in spite of their systematic optimism, managers' initial forecasts are informative about future earnings: we find a systematic relation between

[21] Making them reluctant to release forecasts and making any forecasts that they do release conservative (pessimistic).

managers' initial forecast innovations (the initial forecast minus the previous realization) and subsequent earnings changes.

Overall, our evidence sheds additional light on the economics of managers' forecasting decisions, using a regime that is different to that analyzed in most existing theoretical and empirical research. For example, we know very little about how managers respond when their reporting choices are almost completely unconstrained (as is true for managers' initial earnings forecasts in Japan), and our evidence shows that in this environment managers take advantage of this flexibility to make earnings forecasts that serve their own interests, for example by using them to motivate their employees and/or to try and persuade external constituents, such as investors and lenders, that their firms' performance will improve. In future drafts, we hope to provide clearer evidence on the relative importance of these explanations.

Table1: Annual sample distribution

Panel A: Annual number of firm-years

	Overall sample			Consolidated base			Parent only		
Year	Total	Missing	MF	Total	Missing	MF	Total	Missing	MF
1998	3,114	233	2,881	2,209	206	2,003	905	27	878
1999	3,198	297	2,901	2,394	272	2,122	804	25	779
2000	3,356	455	2,901	2,741	412	2,329	615	43	572
2001	3,506	199	3,307	2,865	146	2,719	641	53	588
2002	3,567	181	3,386	2,925	128	2,797	642	53	589
2003	3,616	114	3,502	2,985	96	2,889	631	18	613
2004	3,674	108	3,566	3,030	92	2,938	644	16	628
2005	3,787	86	3,701	3,137	74	3,063	650	12	638
Sum	27,818	1,673	26,145	22,286	1,426	20,860	5,532	247	5,285

Panel B: Annual forecasting firms

		Overall	1998	1999	2000	2001	2002	2003	2004	2005
Number of firm-years		25,000	2,824	2,843	2,831	3,158	3,252	3,298	3,353	3,441
Book equity (million yen)										
	Mean	61,067	55,795	54,310	60,574	61,633	58,634	58,248	66,251	70,815
	Median	13,272	14,402	13,147	14,340	13,586	12,654	12,253	12,867	13,176
Total assets (million yen)										
	Mean	352,776	357,731	258,273	339,550	332,700	308,492	348,578	423,682	432,877
	Median	34,683	38,791	34,814	38,580	38,004	34,189	31,546	31,009	31,860
Debt to equity ratio										
	Mean	4.47	6.14	4.03	5.80	4.89	4.09	4.59	3.74	2.93
	Median	1.44	1.53	1.46	1.50	1.59	1.46	1.44	1.35	1.29
ROA (based on NI)										
	Mean	1.07%	0.95%	0.37%	0.86%	0.89%	0.03%	0.81%	1.99%	2.45%
	Median	1.26%	0.99%	0.77%	1.12%	1.04%	0.70%	1.17%	1.95%	2.39%
ROA (based on EBET)										
	Mean	4.13%	3.25%	3.07%	3.98%	4.37%	3.15%	3.91%	5.13%	5.82%
	Median	3.17%	2.61%	2.31%	2.97%	3.34%	2.35%	3.06%	3.97%	4.65%
Market value of equity (million yen)										
	Mean	99,798	93,305	95,634	141,375	102,959	86,248	68,564	104,551	109,916
	Median	11,954	13,076	11,820	12,551	10,819	9,309	8,599	14,419	17,786
Market to book ratio										
	Mean	1.64	1.57	1.52	1.65	1.48	1.16	1.21	2.47	1.99
	Median	0.92	0.94	0.92	0.87	0.82	0.76	0.74	1.07	1.25

Panel C: Distribution of sample firms across industry groups

Industry	Overall Firm/years	Sample	Coverage Ratio
Air Transportation	6	6	100.0%
Automobile	84	70	83.3%
Bank	118	103	87.3%
Ceramics	72	70	97.2%
Chemical	194	184	94.8%
Communication Services	15	14	93.3%
Construction	228	204	89.5%
Electronics	274	246	89.8%
Fish & Marine Products	11	10	90.9%
Food	143	136	95.1%
Insurance	15	2	13.3%
Lubber	27	27	100.0%
Machinery	240	227	94.6%
Medicine	49	46	93.9%
Metal	140	132	94.3%
Mining	11	10	90.9%
Oil	10	10	100.0%
Other financial service	45	42	93.3%
Other manufacturer	110	99	90.0%
Precision machinery	45	43	95.6%
Pulp and Paper	31	31	100.0%
Railroad & Bus	34	33	97.1%
Real property	51	46	90.2%
Retail	207	182	87.9%
Security firm	23	3	13.0%
Service	286	246	86.0%
Shipbuilding	8	5	62.5%
Shipping	22	20	90.9%
Steel	62	58	93.5%
Textile	82	80	97.6%
Transportation Equipment	22	22	100.0%
Trucking	34	32	94.1%
Utilities - Electric	10	10	100.0%
Utilities - Gas	11	10	90.9%
Warehousing	39	39	100.0%
Wholesale	355	326	91.8%
All Industries	3,114	2,824	90.7%

Panel D: Number of initial forecasts and those revisions (Mar. 2003 -)

Year	Total	Initial	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Consolidated base											
2003	8,216	2,587	2,583	1886	940	186	29	5			
2004	11,507	2,808	2,801	2511	2034	1000	314	36	3		
2005	12,434	2,893	2,885	2703	2353	1163	381	46	6	3	1
Sum	32,157	8,288	8,269	7,100	5,327	2,349	724	87	9	3	1
Parent only											
2003	1,557	489	486	368	171	33	7	3			
2004	2,360	545	540	500	416	252	87	18	2		
2005	2,470	548	548	522	473	269	96	13	1		
Sum	6,387	1,582	1,574	1,390	1,060	554	190	34	3	0	0
Total	38,544	9,870	9,843	8,490	6,387	2,903	914	121	12	3	1

Table 2: Timing of management forecasts

Year	Type of Associated News	Total	Initial forecast	Revision 2nd	3rd	4th	5th	6th	7th	8th	9th	10th
2003	Stand alone	3,301	13	1,242	929	894	186	29	8			
	Annual	3,051	3,049	1				1				
	Semi-annual	3,058	8	1,706	1,237	102	4	1				
	1st quarterly	126	3	115	8							
	3rd quarterly	237	3	5	80	115	29	5				
	Sub total	9,773	3,076	3,069	2,254	1,111	219	36	8	0	0	0
2004	Stand alone	2,759	19	407	962	382	587	347	50	5		
	Annual	3,325	3,321	4								
	Semi-annual	3,338	6	833	1,785	670	41	3				
	1st quarterly	2,140	3	2,092	42	3						
	3rd quarterly	2,305	4	5	222	1,395	624	51	4			
	Sub total	13,867	3,353	3,341	3,011	2,450	1,252	401	54	5	0	0
2005	Stand alone	2,670	18	321	912	290	653	417	51	5	2	1
	Annual	3,414	3,410	4								
	Semi-annual	3,424	4	561	2,058	752	44	4		1		
	1st quarterly	2,608	5	2,543	57	3						
	3rd quarterly	2,788	4	4	198	1,781	735	56	8	1	1	
	Sub total	14,904	3,441	3,433	3,225	2,826	1,432	477	59	7	3	1
Grand total		38,544	9,870	9,843	8,490	6,387	2,903	914	121	12	3	1

Table 3: Conditional distributios of innovations and forecast errors

Panel A: Sales

	Overall		Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
Innovation of initial management forecasts												
Mean	0.056	*	0.038	*	0.029	*	0.039	*	0.063	*	0.111	*
Median	0.028	*	0.020	*	0.013	*	0.023	*	0.032	*	0.057	*
Obs.	24,985		4,994		4,997		4,995		4,997		5,002	
Positive	18,829		3,366		3,277		3,762		4,090		4,334	
Forecast errors from the initial management forecasts												
Mean	-0.031	*	-0.050	*	-0.030	*	-0.026	*	-0.029	*	-0.021	*
Median	-0.020	*	-0.032	*	-0.016	*	-0.017	*	-0.017	*	-0.017	*
Obs.	24,985		4,994		4,997		4,995		4,997		5,002	
Positive	8,961		1,517		1,782		1,802		1,851		2,009	

Panel B: EBET

	Overall		Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
Innovation of initial management forecasts												
Mean	0.012	*	0.035	*	0.007	*	0.004	*	0.005	*	0.011	*
Median	0.005	*	0.019	*	0.004	*	0.003	*	0.003	*	0.007	*
Obs.	24,933		4,985		4,986		4,986		4,986		4,990	
Positive	19,511		4,527		3,902		3,611		3,676		3,795	
Forecast errors from the initial management forecasts												
Mean	-0.009	*	-0.018	*	-0.006	*	-0.005	*	-0.006	*	-0.009	*
Median	-0.003	*	-0.006	*	-0.002	*	-0.001	*	-0.002	*	-0.003	*
Obs.	24,933		4,985		4,986		4,986		4,986		4,990	
Positive	10,197		1,638		1,872		2,280		2,159		2,248	

Panel C: NI

	Overall		Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
Innovation of initial management forecasts												
Mean	0.016	*	0.070	*	0.007	*	0.004	*	0.003	*	-0.001	
Median	0.005	*	0.040	*	0.004	*	0.003	*	0.003	*	0.004	*
Obs.	24,955		4,988		4,991		4,991		4,991		4,994	
Positive	19,925		4,815		4,273		3,781		3,550		3,506	
Forecast errors from the initial management forecasts												
Mean	-0.014	*	-0.033	*	-0.013	*	-0.009	*	-0.007	*	-0.009	*
Median	-0.004	*	-0.009	*	-0.003	*	-0.003	*	-0.003	*	-0.003	*
Obs.	24,955		4,988		4,991		4,991		4,991		4,994	
Positive	8,416		1,350		1,404		1,724		1,871		2,067	

Table 4: Annual distribution of innovation and forecast error

		Innovation			Forecast error		
		Sales	EBET	NI	Sales	EBET	NI
Mean	Overall	0.056*	0.012*	0.016*	-0.031*	-0.009*	-0.014*
	1998	0.047*	0.008*	0.008*	-0.048*	-0.012*	-0.013*
	1999	0.027*	0.008*	0.011*	-0.073*	-0.011*	-0.017*
	2000	0.052*	0.013*	0.019*	-0.019*	-0.003*	-0.012*
	2001	0.077*	0.011*	0.012*	-0.020*	-0.005*	-0.012*
	2002	0.051*	0.009*	0.016*	-0.070*	-0.019*	-0.025*
	2003	0.054*	0.017*	0.025*	-0.023*	-0.010*	-0.018*
	2004	0.058*	0.015*	0.021*	-0.004*	-0.004*	-0.010*
	2005	0.077*	0.015*	0.018*	0.001	-0.004*	-0.009*
Median	Overall	0.028*	0.005*	0.005*	-0.020*	-0.003*	-0.004*
	1998	0.029*	0.003*	0.003*	-0.035*	-0.007*	-0.006*
	1999	0.016*	0.004*	0.003*	-0.061*	-0.007*	-0.007*
	2000	0.027*	0.007*	0.007*	-0.016*	0.000*	-0.002*
	2001	0.035*	0.006*	0.004*	-0.006*	-0.001*	-0.003*
	2002	0.023*	0.003*	0.006*	-0.045*	-0.010*	-0.011*
	2003	0.026*	0.007*	0.009*	-0.016*	-0.003*	-0.005*
	2004	0.028*	0.006*	0.007*	-0.002*	0.000	0.000*
	2005	0.038*	0.006*	0.004*	0.000	0.000	0.000*

		Innovation						Forecast error					
		Sales		EBET		NI		Sales		EBET		NI	
Observatins	Overall	24,985	*	24,933	*	24,955	*	25,000	*	24,948	*	24,970	*
	1998	2,824	*	2,817	*	2,820	*	2,824	*	2,817	*	2,820	*
	1999	2,843	*	2,835	*	2,842	*	2,843	*	2,835	*	2,842	*
	2000	2,831	*	2,821	*	2,813	*	2,831	*	2,821	*	2,813	*
	2001	3,156	*	3,151	*	3,156	*	3,158	*	3,153	*	3,158	*
	2002	3,251	*	3,246	*	3,250	*	3,252	*	3,247	*	3,251	*
	2003	3,296	*	3,290	*	3,294	*	3,298	*	3,292	*	3,296	*
	2004	3,348	*	3,343	*	3,346	*	3,353	*	3,348	*	3,351	*
	2005	3,436	*	3,430	*	3,434	*	3,441	*	3,435	*	3,439	*
Negative	Overall	6,144	*	5,375	*	4,977	*	16,020	*	14,711	*	16,495	*
	1998	539	*	586	*	618	*	2,084	*	2,078	*	2,246	*
	1999	938	*	773	*	698	*	2,368	*	1,931	*	2,230	*
	2000	716	*	549	*	391	*	1,770	*	1,442	*	1,729	*
	2001	590	*	652	*	850	*	1,743	*	1,711	*	2,021	*
	2002	935	*	965	*	649	*	2,515	*	2,371	*	2,633	*
	2003	907	*	623	*	485	*	2,063	*	1,960	*	2,323	*
	2004	841	*	614	*	574	*	1,758	*	1,572	*	1,635	*
	2005	678	*	613	*	712	*	1,719	*	1,646	*	1,678	*

Table 5: Timing of forecast revisions
Panel A: Sales

	T1		T2		T3		T4		T5		T6	
Innovations and revisions of sales												
Mean	0.065	***	0.186		0.004	***	-0.006	***	-0.007	***	-0.004	***
Median	0.031	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Pisitive	7,494		29		609		2,817		775		1,745	
Negative	2,362		6		454		3,643		1,264		1,803	
Confirmatory	9		51		4,437		6,324		4,438		284	
Observations	9,865		86		5,500		12,784		6,477		3,832	
Forecast errors of Sales												
Mean:	-0.008	***	-0.010		-0.003		-0.005	***	0.003	***	0.001	***
Median:	-0.005	***	-0.013		-0.002	***	-0.001	***	0.002	***	0.000	***
Positive	4,457		32		2,628		6,204		3,704		2,125	
Negative	5,403		54		2,868		6,567		2,760		618	
Confirmatory	5		4		0		13		13		1,089	
Observations	9,865		90		5,496		12,784		6,477		3,832	

Panel B: EBET

	T1	T2	T3	T4	T5	T6
Innovations and revisions of EBET						
Mean	0.016***	0.007	0.000*	-0.002***	-0.004***	-0.004***
Median	0.007***	0.000*	0.000	0.000***	0.000***	0.000
Positive	8,020	31	667	3,159	845	1,886
Negative	1,827	12	569	3,475	1,423	1,755
Confirmatory	18	43	4,264	6,150	4,209	191
Observations	9,865	86	5,500	12,784	6,477	3,832
Forecast errors of EBET						
Mean	-0.006***	-0.017	-0.004***	-0.003***	0.000	0.000**
Median	0.000***	-0.002	0.001	0.001	0.002***	0.000***
Positive	4,800	39	2,924	6,873	4,259	2,083
Negative	5,050	47	2,571	5,891	2,202	712
Confirmatory	15	0	5	20	16	1,037
Observations	9,865	86	5,500	12,784	6,477	3,832

Panel C: NI

	T1	T2	T3	T4	T5	T6
Innovations and revisions of NI						
Mean	0.021***	0.005	-0.001***	-0.003***	-0.006***	-0.010***
Median	0.006***	0.000	0.000	0.000***	0.000***	-0.001***
Positive	8,104	39	692	3,070	822	1,614
Negative	1,748	21	624	3,675	1,618	2,084
Confirmatory	13	26	4,184	6,039	4,037	134
Observations	9,865	86	5,500	12,784	6,477	3,832
Forecast errors of NI						
Mean	-0.012***	-0.020**	-0.010***	-0.008***	-0.003***	0.000
Median	-0.001***	-0.004***	0.000***	0.000***	0.001***	0.000***
Positive	4,336	31	2,814	6,014	3,937	1,928
Negative	5,505	55	2,668	6,720	2,508	882
Confirmatory	24	0	18	50	32	1,022
Observations	9,865	86	5,500	12,784	6,477	3,832

'*' significant at 5% level, '**' significant at 2.5% level, '***' significant 1% level, respectively.

Table 6 Surprises from latest (within the fiscal year) revisions

	Overall		1st Quin		2nd Quin		3rd Quin		4th Quin		5th Quin	
Sales												
Mean	0.000		0.005	***	0.001	*	0.001		-0.003	**	-0.004	
Median	0.001	***	0.003	***	0.001		0.001	**	0.000		-0.001	***
Obs.	9,865		1,972		1,973		1,973		1,973		1,974	
Positive	5,361		1,210		1,155		1,061		981		954	
Negative	4,490		759		816		907		989		1,019	
Confirmatory	14		3		2		5		3		1	
EBET												
Mean	0.000		0.000		0.000		0.000		0.001	***	-0.003	***
Median	0.001	***	0.002	***	0.001	***	0.001	***	0.001	***	0.002	***
Obs.	9,865		1,972		1,973		1,973		1,973		1,974	
Positive	6,070		1,233		1,214		1,200		1,223		1,200	
Negative	3,769		733		757		770		741		768	
Confirmatory	26		6		2		3		9		6	
NI												
Mean	-0.004	***	-0.001	**	0.000		-0.001	***	-0.002		-0.015	***
Median	0.000		0.001	***	0.000	***	0.000		0.000	***	-0.001	***
Obs.	9,865		1,972		1,973		1,973		1,973		1,974	
Positive	5,368		1,166		1,176		1,088		1,039		899	
Negative	4,452		799		786		878		926		1,063	
Confirmatory	45		7		11		7		8		12	

Table 7 : Information contents of interim revisions

Year	Sum	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Sales										
Positive	355	91	139	33	56	31	3	0	2	0
Negative	622	181	206	92	84	50	9	0	0	0
No significance	7,703	1,698	2,458	1,441	1,286	712	97	10	0	1
EBET										
Positive	2,700	515	835	487	511	303	43	4	1	1
Negative	3,500	909	1,149	671	454	275	38	4	0	0
No significance	2,336	537	778	396	401	196	25	2	1	0
NI										
Positive	2,717	551	808	459	527	325	41	4	1	1
Negative	4,304	1,034	1,412	886	591	331	44	6	0	0
No significance	1,468	367	521	194	250	117	18	0	1	0

"Positive" indicates the number of positive revisions driven by the significance rule and "Negative" does its counterpart. "No significance" indicates the number of revisions within the range set by the rule.

Figure 1: Forecast errors of sales

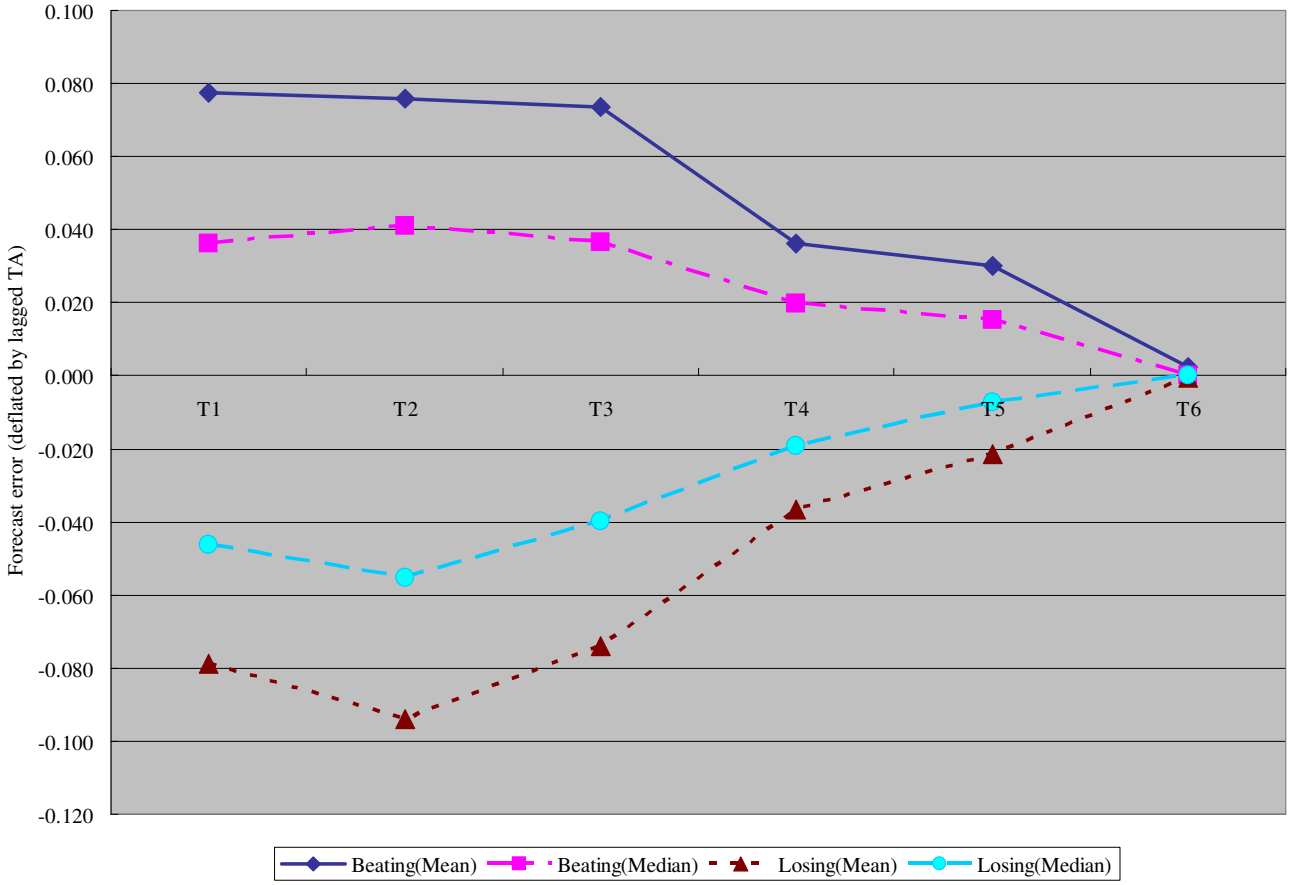
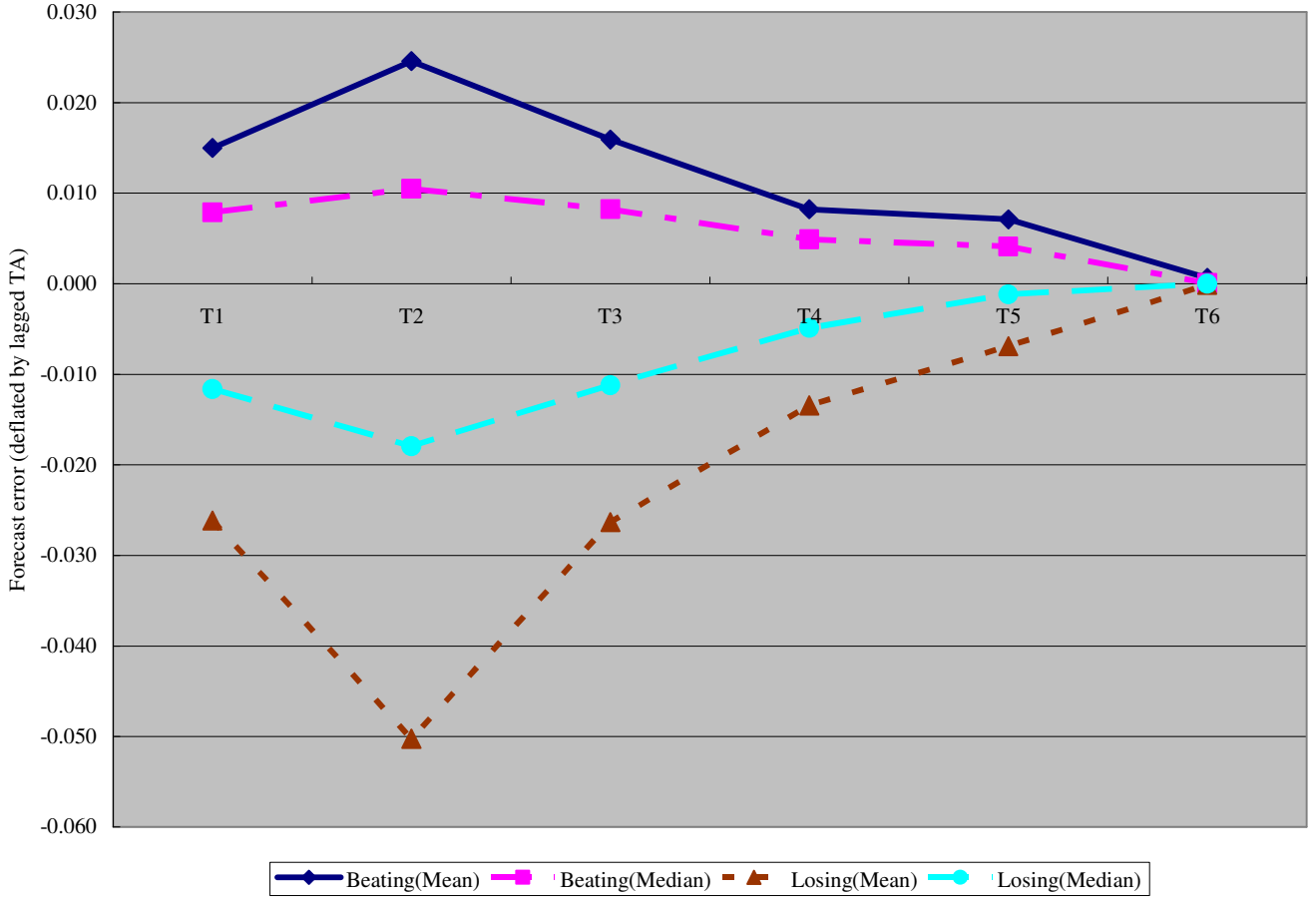


Figure 2: Forecast errors of EBET



Forecast errors of NI

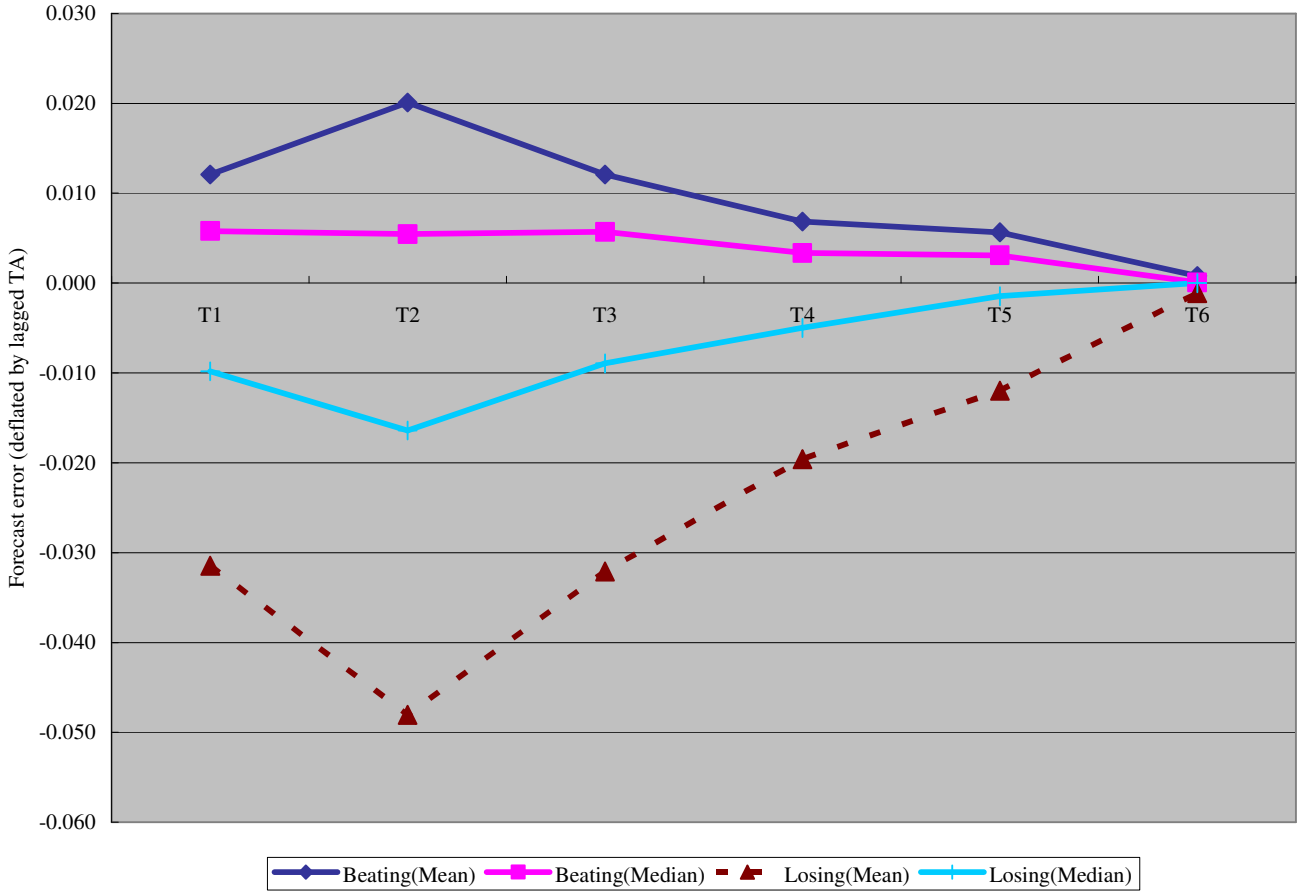


Figure 4: Changes in NI from prior realizations partitioned by innovations of NI

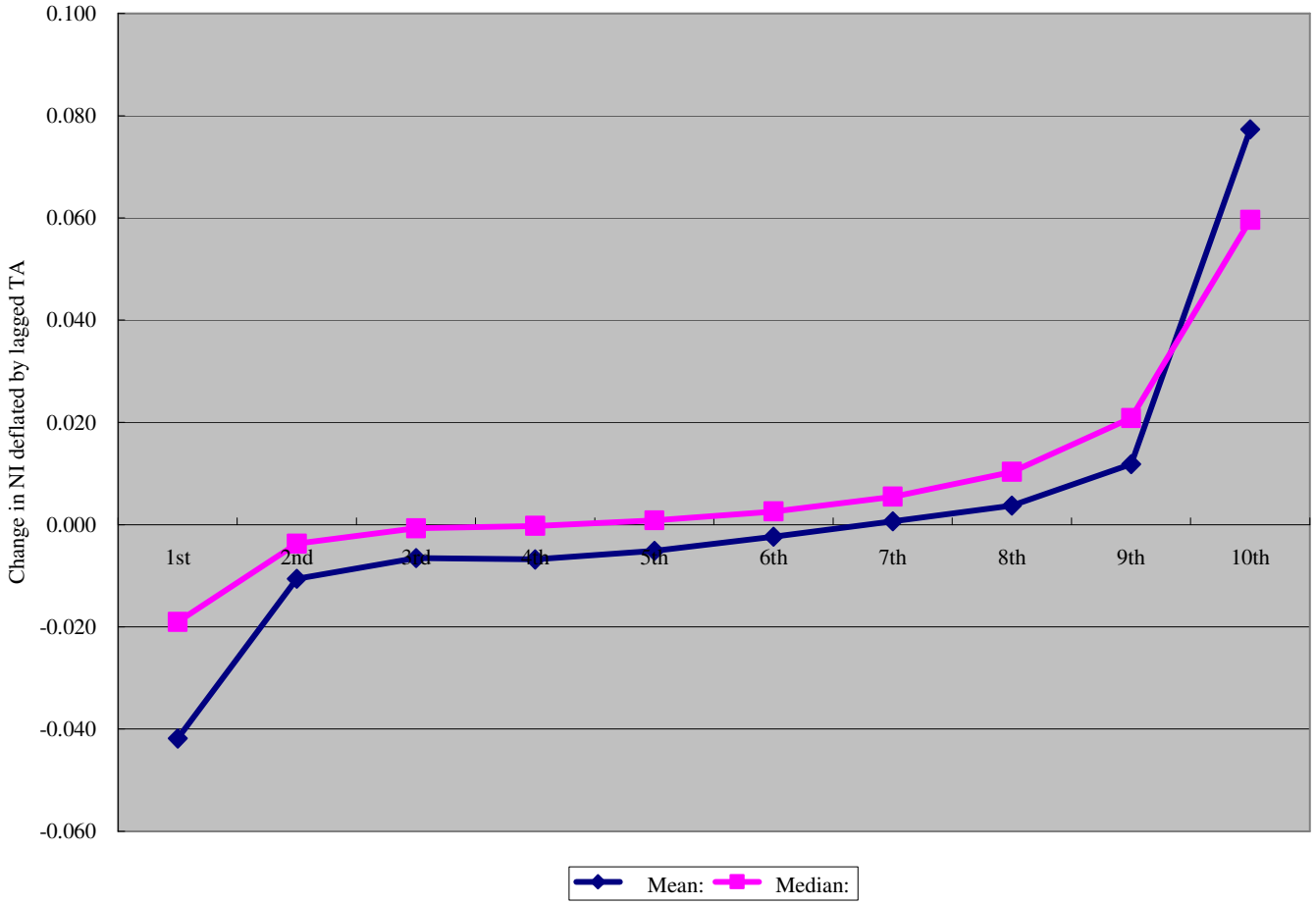


Figure 5: Changes in NI from prior realizations partitioned by lagged ROA

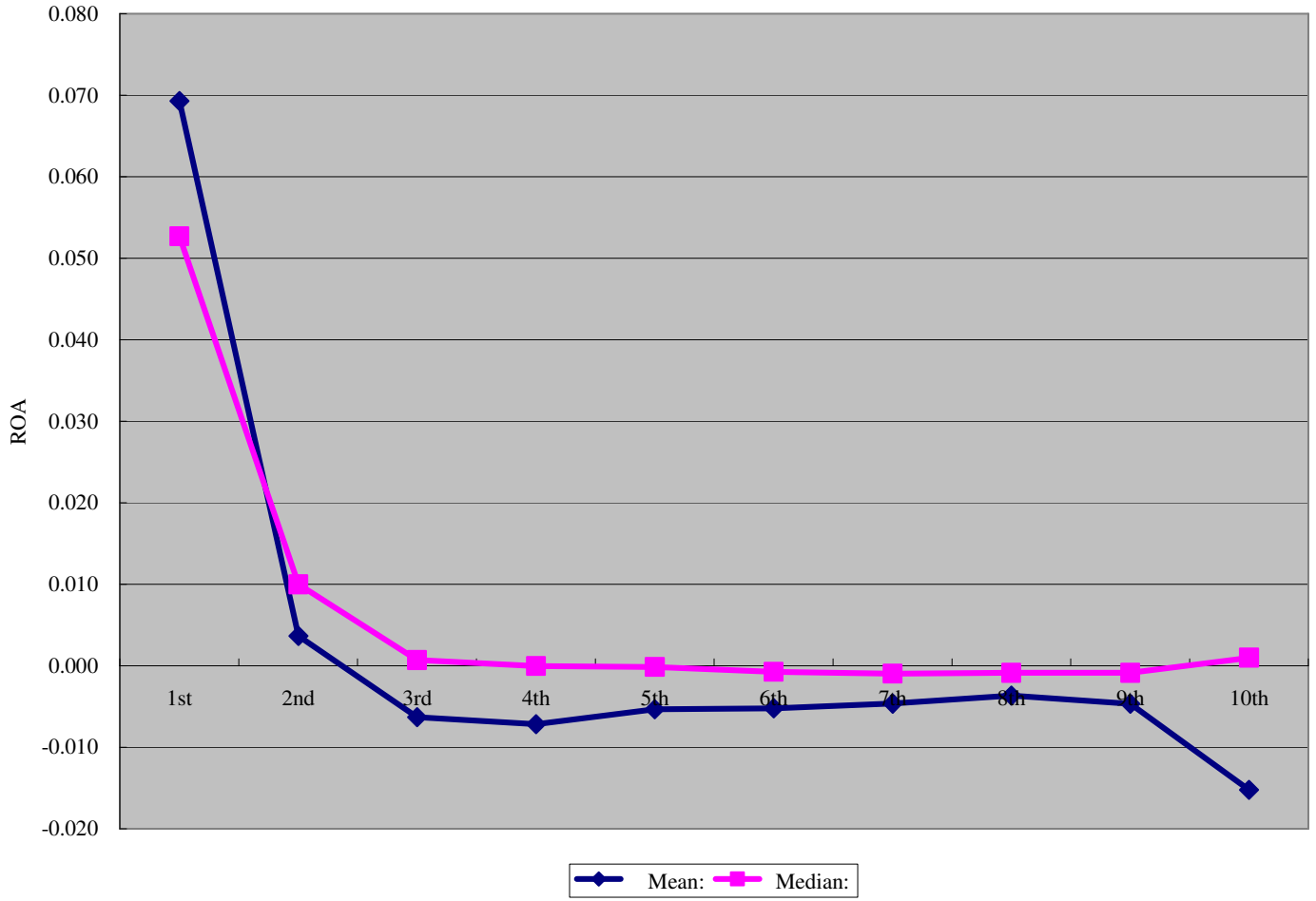


Figure 6: Changes in EBET from prior realizations partitioned by innovations of NI

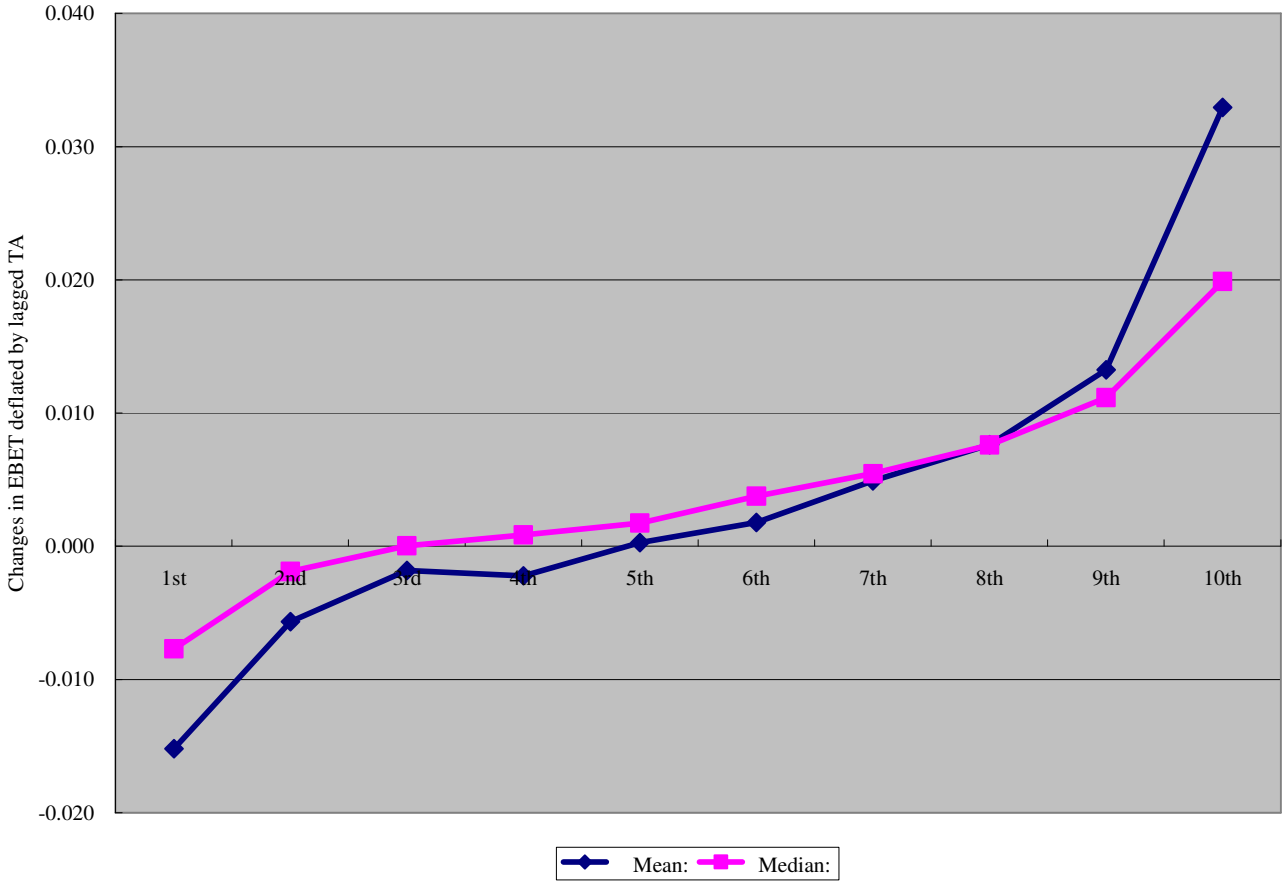
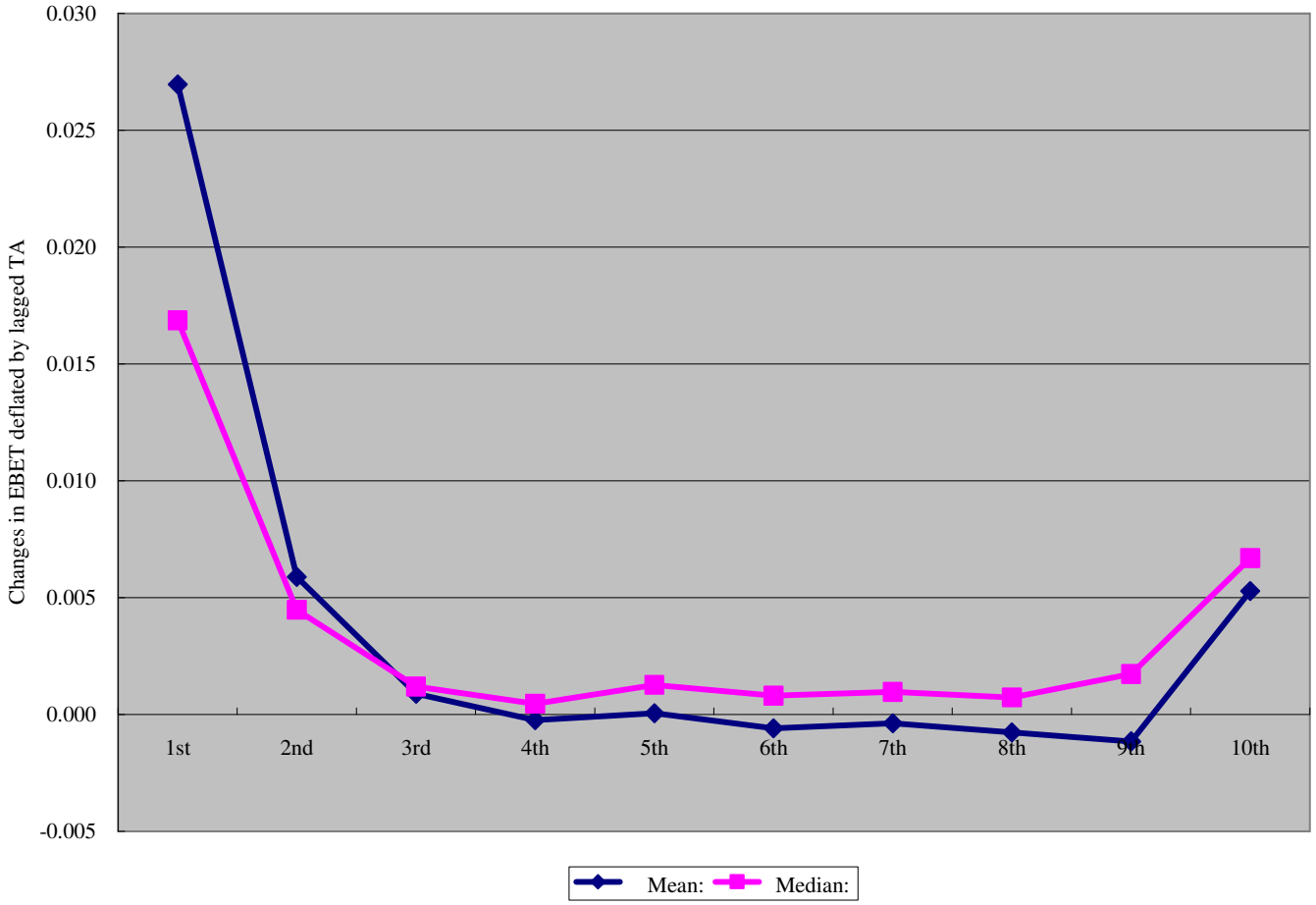


Figure 7: Changes in EBET from prior realizations partitioned by lagged ROA



References

Ajinkya, B.B. and M.J. Gift. 1984. Corporate managers' earnings forecasts and symmetrical adjustments of market expectations. *Journal of Accounting Research* 22: 425-444.

Ajinkya, B., S. Bhoraj, and P. Sengupta. 2005. The association between outside directors, institutional investors and the properties of management earnings forecasts. *Journal of Accounting Research* 43, 3: 343-376.

Anilowski, C., M. Feng, and D. J. Skinner. 2006. Does Earnings Guidance Affect Market Returns? The Nature and Information Content of Aggregate Earnings Guidance. Working paper, University of Michigan, University of Pittsburgh, and University of Chicago.

Baginski, S. P., J. M. Hassell, and W. A. Hillison. 2000. Voluntary causal disclosures: Tendencies and capital market reaction. *Review of Quantitative Finance and Accounting* 15: 371-389.

Brown, S., S. A. Hillegeist, and K. Lo. 2005. Management Forecasts and Litigation Risk. Working paper, Emory University, INSEAD, and University of British Columbia.

Cabellero, R. J., T. Hoshi, and A. Kashyap. 2006. Zombie Lending and Depressed Restructuring in Japan. Unpublished paper, MIT, University of California at San Diego and University of Chicago

Chen, S., Matsumoto, D., and S. Rajgopal. 2005. Is Silence Golden? An Empirical Analysis of Firms that Stop Giving Quarterly Earnings Guidance. Working paper, University of Washington.

Conroy, R., Eades, K., and R. S. Harris. 2000. A Test of the Relative Pricing Effects of Dividends and Earnings: Evidence from Simultaneous Announcements in Japan. *Journal of Finance* (June) 40, 3: 1199-1227.

Darrough, M. N., and T. S. Harris. 1991. Do Management Forecasts of Earnings Affect Stock Prices in Japan?, in William T. Ziemba, Warren Bailey, and Yasushi Hamao, eds.: *Japanese Financial Market Research* (North Holland, Amsterdam).

Dye, R. A. 1985. Disclosure of nonproprietary information. *Journal of Accounting Research* 23 (Spring): 123-145.

Fama, Eugene F., and Kenneth R. French, 2000. Forecasting Profitability and Earnings. *Journal of Business*, 2000, 73, 2, 161-175.

Field, L., Lowry, M., and S. Shu. 2005. Does Disclosure Deter or Trigger Litigation? *Journal of Accounting and Economics* 39, 3: 487-507.

Freeman, Robert N., James A. Ohlson, and Stephen H. Penman, 1982. Book Rate-of-Return and Prediction of Earnings Changes: An Empirical Investigation *Journal of Accounting Research*, 20, 2, 639-653.

Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics* 40, 1-3: 3-73.

Houston, J. F., Lev, B., and J. Tucker. 2005. To Guide or Not to Guide? Causes and Consequences of Stopping and Subsequently Resuming Earnings Guidance. Working paper, University of Florida and New York University.

Hutton, A. P., G. S. Miller, and D. J. Skinner, 2003. The Role of Supplementary Statements with Management Earnings Forecasts. *Journal of Accounting Research* 41: 867-890.

Jennings, R. 1987. Unsystematic security price movements, management earnings forecasts, and revisions in consensus analyst earnings forecasts. *Journal of Accounting Research* 25 (Spring): 90-110.

Johnson, M.F., R. Kasznik and K.K. Nelson. 2001. The impact of securities litigation reform on the disclosure of forward-looking information by high technology firms. Journal of Accounting Research 39: 297-327.

Jung, W., and Kwon, Y. 1988. Disclosure When the Market is Unsure of the Information Endowment of Managers. *Journal of Accounting Research* 26: 146-153.

Kothari, S. P., S. Shu, and P. Wysocki, 2005, Do managers withhold bad news? Unpublished paper, MIT Sloan School.

Lang, M., and R. Lundholm. 1993. Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research* 31: 246-271.

Lev, B. and S. H. Penman, 1990. Voluntary Forecast Disclosure, Nondisclosure, and Stock Prices. *Journal of Accounting Research* 28: 49-76.

Miller, G. S., 2002. Earnings performance and discretionary disclosure. *Journal of Accounting Research* 40: 173-204.

Patell, J. M., 1976. Corporate Forecasts of Earnings per Share and Stock Price Behavior: Empirical Tests. *Journal of Accounting Research* 14: 246-276.

Peek, J., and E. S. Rosengren. 2005. Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan. *American Economic Review* 94, 4: 1144-1166.

Penman, S. H. 1980. An empirical investigation of the voluntary disclosure of corporate earnings forecasts. *Journal of Accounting Research* 18: 132-160.

Pownall, G., C. Wasley, and G. Waymire. 1993. The stock price effects of alternative types of management earnings forecasts. *The Accounting Review* 68 (October): 896-912.

Skinner, D. J. 1994. Why Firms Voluntarily Disclose Bad News. *Journal of Accounting Research* 32: 38-60.

Skinner, D. J. 1997. Earnings Disclosures and Stockholder Lawsuits. *Journal of Accounting and Economics* 23: 249-282.

Soffer, L. C., S. R. Thiagarajan, and B. R. Walther, 2000. Earnings Preannouncement Strategies. *Review of Accounting Studies* 5: 5-26.

Tucker, J. 2005. Is Silence Golden? Earnings Warnings and Change in Subsequent Analyst Following. Working paper. University of Florida.

Verrecchia, R. E. 1983. Discretionary disclosure. *Journal of Accounting and Economics* 5 (December): 179-194.