



The Strategic Disclosure of Management Earnings Forecasts

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Abstract

This research examines whether managers strategically delay or accelerate the disclosure of the management earnings forecasts. Managers have several incentives to disclose bad or good news. These incentives influence their choice of disclosing a timely management earnings forecast. Managers have the incentive to accelerate the disclosure of bad news management earnings forecasts when the news content is the difference between the management earnings forecast and the most recent analyst' consensus forecast. If managers accelerate bad news, it is expected that the average time between the disclosure of the management earnings forecast, and the earnings announcement will increase. However, managers want to show their ability by providing more good news forecasts and have the incentive to delay bad news as much as they can. Consequently, the news content of the difference between the management earnings forecast and the actualization of the results, shows that managers have the incentive to delay bad news. if managers withhold bad news, it is expected that the average time between the disclosure of management earnings forecasts and the earnings announcement is decreasing. This research provides evidence of the earlier predictions. Therefore, this research suggests that managers, on average, disclose strategically timed management earnings forecasts.

Keywords: Management earnings forecasts, Voluntary disclosures, Timeliness, Good / Bad News

The Strategic Disclosure of Management Earnings Forecasts

Table of contents

1. Introduction.....	1
2. Literature review and hypotheses development.....	3
2.1. Voluntary Disclosure	3
2.2. Management Earnings forecasts	4
2.3. Forecasting characteristics.....	5
2.4. Incentives for voluntary disclosures	7
2.5. The credibility and arguments for cessation	9
2.6. Timeliness and News.....	9
3. Research design	13
3.2. Regression model	14
3.3. Dependent variable	15
3.4. Independent variable.....	15
3.5. Control variables.....	16
4. Empirical results	18
4.1. Descriptive statistics and correlations	18
4.2. The effect of good/bad news on timeliness	22
5. Conclusions.....	32
Bibliography.....	34
Appendix	37

The Strategic Disclosure of Management Earnings Forecasts

Foreword

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1. Introduction

This research examines whether managers delay or accelerate management earnings forecasts based on the news content (good or bad news). Accounting conservatism, as explained by Basu (1997), causes the manager to use asymmetric verification for acknowledging good and bad news. Therefore, good news will be disclosed later, and bad news will be disclosed earlier. Litigation risk is an important factor that influences this asymmetric verification and therefore the disclosure decision to issue timely management earnings forecasts (Healy & Palepu, 2001). If the news content of the difference between the management earnings forecast and the most recent analyst consensus forecast is negative, managers will have the incentive to disclose bad news timelier. A timelier disclosure of bad news means that it will be disclosed earlier in the fiscal year. Managers have these incentives because if they do not provide timely news via management earnings forecasts (compared to the analyst consensus forecast), they could be punished by the investors. Skinner (1994) confirms this by providing evidence that litigation risk is indeed an important factor and Donelson et al (2012) show that reputational loss due to litigation risk affects the disclosure decision of providing timely management earnings forecasts. Consequently, it is predicted that bad news, resulting from the difference between management earnings forecasts and the most recent analysts' consensus forecast, provides the incentive to accelerate the disclosure of management earnings forecasts.

Healy and Palepu (2001) mention that career concerns are an important aspect to managers. Therefore, providing opportunistic forecasts promptly could provide them a good reputation in the short term. Bad news would reflect badly on the manager and is therefore disclosed later. If the news content of the difference between the management earnings forecasts and the realization (actual results) at the earnings announcement is negative, managers have the incentive to disclose less timely. Nagar et al (2003), finds evidence for the effect of career concerns on disclosure decisions, and Kothari et al (2009) find that good news is disclosed earlier, while managers withhold bad news and hoping that the results will (later on) turn in their favor. Therefore, it is predicted that bad news, resulting from the difference between management earnings forecasts and the actual results (forecast error), will provide the incentive to managers to delay the disclosure of bad news management earnings forecasts.

These strategic reasonings cause academics to question the credibility of the management earnings forecasts. Managers with myopic behavior that provide self-serving management earnings forecasts are seen as the main problem of the decreasing credibility (Dean Krehmeyer; Matthew Orsagh; Kurt N. Schnagt, 2006; Fuller & Jensen, 2002). These management earnings forecasts with a lower credibility influence the analyst's consensus forecasts and the investor's perception. Therefore, some argue that a cessation of management earnings forecasts is necessary (Fuller & Jensen, 2002). Nevertheless, a cessation could potentially increase information asymmetry and agency costs. Therefore, finding evidence on the factors which influence the manager's decision-making is important, because of its effects on the credibility of management earnings forecasts.

The Strategic Disclosure of Management Earnings Forecasts

Considering the influence of timeliness on the credibility of management earnings forecasts (Hirst, Koonce, & Venkataraman, 2008; Mercer, 2004) and the effect of the type of news (good or bad) on the timeliness, it is interesting to further investigate this topic. Consequently, this research expects managers to strategically time the disclosure of management earnings forecasts. The following research question is constructed:

Do executives strategically time the disclosure of the management earnings forecasts?

This research question is particularly interesting to investors and analysts. Investors are influenced by new relevant information about the current performance and prospects of the company. Additionally, Waymire (1986) finds evidence that analysts update their earnings forecasts based on management earnings forecasts.

To answer this question, this research investigates timeliness as the difference between the management earnings forecast date/quarter and the earnings announcement date/quarter. Additionally, the effect of news via the differences between (1) management earnings forecasts and the most recent analyst consensus forecasts and (2) the management earnings forecasts and the actual results, on the timeliness of management earnings forecasts is investigated. In this research, a distinction is made between two groups. This is to assess which group is more likely to provide strategically timed disclosures. Firms that do not provide every quarter a management earnings forecasts are seen as strategic forecasters and are denoted as “Unstable”. Unstable firms provide incidental forecasts, and these forecasts are potentially influenced by the strategic motives/incentives of managers. Firms that provide management earnings forecasts in every quarter are not seen as strategic forecasters and are denoted as “Stable”.

This research finds evidence that managers strategically time their disclosures of management earnings forecasts. Bad news management earnings forecasts tend to be timelier when news is the difference between the management earnings forecast and analyst forecast. This effect decreases with firms that are seen as strategic forecasters (Unstable firms). Additionally, bad news management earnings forecasts tend to be less timely, when news is the difference between management earnings forecasts and actual results. This effect increases with firms that are seen as strategic forecasters. These findings provide evidence that managers strategically time the disclosure of management earnings forecasts.

This research contributes to the recent debate of cessation of management earnings forecasts, by providing evidence that firms that are (especially) strategic forecasters and non-strategic forecasters are performing strategic management of their disclosure decisions. This could indicate that the credibility of the earnings forecasts could be questionable, or investors do not get timely information. This research also contributes by providing new evidence concerning forecasting characteristics. Especially the evidence concerning the timeliness is interesting due to the relatively little research done for this aspect of management earnings forecast.

First, the literature and hypotheses development are discussed. Second, the research design is described. Third, the results are given. Lastly, the conclusions are discussed.

2. Literature review and hypotheses development

In this literature review, the foundation is provided for the development of the three hypotheses of this research. Firstly, voluntary disclosures are discussed. Secondly, management earnings forecasts are described. Following this up, the forecasting characteristics are provided. Fourthly, the incentives for voluntary disclosures are given. Fifthly, the credibility of management earnings forecasts is discussed. Lastly, hypotheses one and two concerning the impact of news on timeliness are provided.

2.1. Voluntary Disclosure

Information of and communication from the firm about the firm performance to external parties is very important to investors. Financial reporting of accounting measures/figures (e.g., realization of earnings) is one of the informational resources that need to be communicated due to its value relevance to investors (Ball & Brown, 1968). These communications take place in the form of disclosures. The need for financial reporting and disclosures arises from two main problems, namely agency conflicts between the outside investors and managers, and information asymmetry. Investors depend on the executives of the firm to work and perform in their interests. However, executives (agents) do not always align with the interests of the investors (principals). These moral hazard problems are strengthened by the information asymmetry that is present between executives and investors. Executives have superior (inside) knowledge, which at one point could be used for their benefit. This is called the agency problem. Following the agency problem, agency costs will increase. Agency costs consist out of bonding costs, residual loss, and monitoring expenses. Firstly, bonding costs are incurred to bind/align the principal to the interest of the agent. Secondly, the residual loss is the result of the differential choices made by the agent and principal in the same situation. Lastly, monitoring costs result from checking the agent on its choices and the alignment of these choices with the interest of the principal (Jensen & Meckling, 1976).

Akerlof (1970) argued that there is a direct consequence resulting from the agency problem, which is that the capital market resource allocation will be heavily disturbed. Malinvestments are the direct cause of these informational differences and conflicting incentives. Good investments opportunities will be undervalued, and bad investment opportunities are overvalued. For example, entrepreneurs have more and better information than potential investors. Therefore, they can (potentially) overstate the value. This would mean it is a bad investment from the investor' side because they invest too much of their capital resources. This is the problem concerning the informational differences. Additionally, the conflicting interests arise because of the incentive of the entrepreneur (manager) to expropriate the investment for their benefit (e.g., in the form of excessive compensation). Together this is called the "Lemons Problem", which leads to an eventual breakdown of the efficient capital market (Akerlof, 1970).

The use of regulations, optimal contracting, and information intermediaries are seen as relevant solutions to mitigate the Lemons problem. These three solutions have all a mitigating effect on the information asymmetry between investors and executives. Firstly, regulations demand mandatory disclosures concerning private information on company performance. These

regulated disclosures are mainly financial reports. However, the superior inside information that is not regulated is not disclosed and will still cause information asymmetry. Therefore, solution two suggests that optimal contracting between the agent and the principal gives the incentive to managers to disclose more private information. This could lead to managers voluntarily disclosing more private information. Lastly, the third solution explains a bigger demand for information intermediaries to uncover private information that managers are withholding. A manager does not want to incur reputational damage by having the image of withholding information from the investors with potential litigations as a result. Therefore, the last solution could create an incentive for the manager to use voluntary disclosures to counter this potential risk. Solutions two and three provide a clear incentive for the manager to provide more voluntary disclosures. These voluntary disclosures are the main interest of this research and can take the form of management forecasts, analysts' presentations, conference calls, internet sites, press releases, and other forms of corporate reports (Healy & Palepu, 2001). Mainly management earnings forecasts will be discussed later as they provide influential information to the investor and are heavily debated (Fuller & Jensen, 2002).

While the earlier mentioned solutions have a mitigating effect on the information asymmetry, the agency conflict remains. Healy and Palepu (2001) suggest three possible solutions to counter the agency conflict. Those solutions are the board of directors, optimal contracting, and information intermediaries. Firstly, corporate governance is an important aspect to check and control executives. Therefore, to increase monitoring via the board of directors and optimize the board of directors to perform their disciplinary role is essential. The second and third solutions are in line with the second and third solutions to solve information asymmetry problems (which are earlier discussed). The second solution considers optimal contracting between the entrepreneur and external investors to mitigate the agency conflict. Including requirements in compensation contracts like frequent disclosures, based on the distribution of important inside information, could increase the incentive of managers to disclose more voluntary disclosures. Managers need to explain their decisions of managing the firm's (capital) resources in a particular manner and provide additional information on prospects. If investors think that the manager is violating that requirement, potential litigation, disciplinary measures, or reputational damage can take place. Lastly, as investors require information intermediaries to uncover private information of the firm, they can also uncover potential misuse of resources by the manager. Consequently, managers have the incentive to provide more voluntary disclosures to rectify their decisions or to prevent investors to change the perceptions of the manager (Healy & Palepu, 2001).

2.2. Management Earnings forecasts

As earlier described, voluntary disclosures are a good solution to mitigate agency problems in the form of information asymmetry and agency conflicts between investors and managers. Investors prefer to acquire good or bad news about the companies performance as soon as possible. They expect managers not to withhold any information. Therefore, timely and adequate information is necessary for the investors (Healy & Palepu, 2001). One very important accounting measure for investors that provide relevant information is earnings (Ball & Brown, 1968). Therefore, this research will focus on management earnings forecasts. Management

The Strategic Disclosure of Management Earnings Forecasts

earnings forecasts are voluntary disclosures used by management to provide private information concerning future earnings prospects. Normally, a company provides every quarter a management earnings forecast, which adds up to four forecasts per fiscal year. The first one is provided in the first quarter and the last one in quarter four. Often the management earnings forecasts are bundled with the annual earnings announcements (Hirst, Koonce, & Venkataraman, 2008). While annual earnings announcement is a valuable source of information, management forecasts can even be seen as a more important tool of conveying information (Ball & Shivakumar, 2008). Other research confirms that management earnings forecasts convey important information via findings of a stock price reaction (Pownall, Wasley, & Wysocki, 1993) and an influence on the bid-ask spread (Coller & Yohn, 1997). Therefore, these forecasts are particularly interesting as they affect the resource allocation of the efficient capital market (Healy & Palepu, 2001).

Management earnings forecast consist out of three components. The first component is the disclosure environment (antecedents), the second component the disclosure attributes (characteristics), and the disclosure impact (consequences) are the last components (Wiedman, 2000). The antecedents are current influences on the managers' voluntary forecasting decision and consist out of the forecasting environment and the firm-specific characteristics. The forecasting characteristics are the executive choices involving the management earnings forecast elements. Lastly, the consequences are related to the events and reactions that occur after and due to the earnings forecasts (Hirst, Koonce, & Venkataraman, 2008).

Most research concerning management earnings forecasts is done for the antecedent and consequences (E.Verrecchia, 2001). This means that most research focuses on why managers disclose a forecast and what the consequences are of these disclosures. Antecedents are the incentives of managers to voluntarily disclose management earnings forecasts. Managers have less influence on the antecedents than on the forecasting characteristics (Hirst, Koonce, & Venkataraman, 2008). Surprisingly, not a lot of research is done for the interaction between antecedent and forecasting characteristics. This interaction is a very important aspect of research, because of the potential influence of the manager on the forecasting characteristics. For example, managers with incentives (antecedents) and the opportunity to act on them could provide self-serving management earnings forecasts via influencing forecasting characteristics, such as e.g., accuracy or timeliness.

Therefore, it is interesting to further investigate forecasting characteristics. Research concerning the forecast characteristics is mainly done for the accuracy of forecasts (Healy & Palepu, 2001). As earlier mentioned, voluntary disclosures and management earnings forecasts have several (other) disclosure characteristics such as earnings forecast news, accuracy/bias, forecast form, attributions accompanying forecasts, stand-alone/bundled forecasts, forecast disaggregation, forecast timeliness/horizon (Hirst, Koonce, & Venkataraman, 2008).

2.3. Forecasting characteristics

Voluntary disclosures in the form of management earnings forecasts have several disclosure characteristics. Managers could use these characteristics to bias the perceptions of the market

The Strategic Disclosure of Management Earnings Forecasts

in a strategic way. Good and bad news are strategically handled, and investors receive less timely or adequate good and/or bad news. The earlier mentioned characteristics are therefore of great importance, because of their potential to influence the investor. This research mainly focuses on timeliness as an important forecasting characteristic. However, the other characteristics are also of great importance.

For example, a lot of research is done for the accuracy of management earnings forecasts. Executives have the incentive to provide accurate forecasts to achieve a credible reputation or to strategically forecast to achieve a desired result/reaction from the market (Hirst, Koonce, & Venkataraman, 2008). Forecasting errors are an important indicator of the accuracy of forecasts. A forecast error is a difference between the earnings forecast and the earnings realization. Several studies find evidence that multiple variables influence forecasting accuracy. Lower accounting flexibility (Kasznik, 1999) and less forecasting experience of the manager increase the forecast error (Chen, 2004; Baik, Farber, & Lee, 2011). This implies that the ability and opportunity of managers are important aspects. Additionally, past research finds evidence that the forecast horizon influences the accuracy of the forecast. Long horizons (annual earnings forecasts) are opportunistically biased and short horizons (quarterly earnings forecasts) are pessimistically biased. This indicates that executives disclose inaccurate or misleading forecasts when the chance of detection is low (Rogers & Stocken, 2005; Choi & Ziebart, 2004). Moreover, these findings show the importance of timeliness in the form of the length of the forecast horizon on forecasting accuracy.

The other characteristics are less researched than the accuracy. Firstly, the forecast form is a forecasting characteristic, which indicates if the forecasting is done qualitatively or quantitatively. This translates into a point, range, or qualitative forecast. Past research indicates that precision is defined by the forecast form (King, Pownall, & Waymire, 1990). Additionally, the length of the forecast horizon has a negative influence on the precision (Baginski & Hassell, 1997), which again shows the importance of the timeliness aspect on other forecasting characteristics. Secondly, Attributions accompanying forecasts is a characteristic that is heavily debated. Fuller and Jensen (2002) argue that management earnings forecasts contain myopic information because of these attributions. The attributions are explanations and additionally notes of the executives on the management earnings forecasts (Hirst, Koonce, & Venkataraman, 2008). Baginski et al (2004) find that bad and shorter horizon forecasts are accompanied by more explaining attributions. This finding supports the arguments of Fuller and Jensen (2002) and shows the importance of the timeliness of management earnings forecasts. Thirdly, Forecasts can be bundled or stand-alone. This characteristic describes if earnings forecasts are accompanied by earnings announcements and revenue forecasts (Hirst, Koonce, & Venkataraman, 2008). Bundled forecasts are forecasts, which are accompanied by earnings announcements. Stand-alone forecasts are not accompanied by earnings announcements. This is an important aspect because it can influence the perception of the earnings guidance or earnings announcement in a positive way (Atiase, Li, Supattarakul, & Tse, 2005). Fourthly, Earnings forecast news can be good, bad, or confirming. Good news exceeds the expectations of the market. Bad news fails to meet the expectations of the market and confirming news meets the expectations of the market (Hirst, Koonce, & Venkataraman, 2008). McNichols (1989) finds

an equal distribution of good and bad news forecasts, which indicates that good and bad news forecasts have a similar frequency. Lastly, companies use forecasts segregation to enhance the credibility of good news earnings forecasts (Tucker, 2005). Forecasts segregation describes the levels of disaggregation. Managers can issue key line items which are associated with the earnings forecasts. This is a higher level of disaggregation. However, they can also only issue the bottom-line earnings number (Hirst, Koonce, & Venkataraman, 2008).

- **Timeliness**

The timeliness of earnings forecasts is the difference between the actual earnings announcement/realization and the earnings forecasts. The other characteristics show the relative importance of timeliness as an influential factor. Additionally, it is influencing the investor, because of its effect on information asymmetry (Healy & Palepu, 2001). Nevertheless, not a lot of research has been done on this aspect. This is rather interesting because the relative ease of influencing this characteristic creates an easy playing field for the myopic and self-serving manager. One big advantage of management earnings forecasts is the flexibility of managers to disclose more relevant information in a timelier manner (Shivakumar, Urcan, Vasvari, & Zhang, 2011). However, this big advantage is at the same time its biggest disadvantage. For example, Managers could also provide less timely information for bad news or uncertain circumstances. Waymire (1986) finds evidence that companies with volatile earnings will forecast less timely. The conservative manager does not provide myopic or uncertain forecasts to prevent misinforming the investors. Baginski et al (2002) state that timelier and shorter-term earnings forecasts are issued when there is a higher risk of litigation. This indicates that managers prefer to avoid the risk of long-term (incorrect) forecasts to avoid litigation risk. Hence, it indicates that litigation risk (the antecedent) is influencing the timeliness (the forecasting characteristic). Considering the importance to further investigate the interaction between the antecedents and the forecasting characteristics, a further understanding of the incentives behind management earnings forecasts is necessary. Therefore, these incentives are discussed in the following paragraph.

2.4. Incentives for voluntary disclosures

Management earnings forecasts are a form of voluntary information distribution. The informational role of these disclosures is needed to mitigate the information asymmetry and agency conflicts and thereby mitigating the lemons problem (Beyer, Cohen, Lys, & Walther, 2010). Manager's decision-making for disclosing is, therefore, a critical part in the mitigation of these two aspects. Assuming that accounting regulations and auditing are imperfect, managers develop several differential incentives that influence the choice for disclosing management earnings forecasts (Healy & Palepu, 2001). These incentives can be seen as the earlier mentioned antecedents. These incentives influence the strategic motivations for disclosing management earnings forecasts and therefore it is important to understand them. Healy and Palepu (2001) describe these (six) incentives, which influence the decision-making of executives.

Firstly, information asymmetry between executives and investors influences the cost of external financing. Investors are risk-averse, and the cost of external financing increases when there is

The Strategic Disclosure of Management Earnings Forecasts

more informational risk. Therefore, executives with superior information about the company prospects have the incentive to voluntarily disclose this information to lower the information asymmetry and consequently the cost of external financing (Healy & Palepu, 2001). Lang and Lundholm (1997) find that there is a significant increase in management earnings forecasts six months before a firm's equity offering. This indicates that managers provide timelier management earnings forecasts to influence the shares before an equity offering.

Secondly, manager accountability is an important factor in the decision-making for management earnings forecasts. Managers have the incentive to protect their job by providing more management earnings forecasts when the firm performs poorly. Additionally, when the stock performance of the firm is low, potential hostile takeovers could take place (Healy & Palepu, 2001). Brennan (1999) finds evidence that executives provide more management earnings forecasts when there are potential hostile takeover bids. Nevertheless, managers could potentially withhold information, if possible, while hoping that the results will be better before the actual earnings announcement. Therefore, managers will provide less timely forecasts. If the manager must come clean, they must justify their actions. Without justification or reducing the undervaluation of the stock, the board of directors could fire them.

Thirdly, executives are incentivized to disclose more voluntary management earnings forecasts because of stock-based compensation plans. Healy and Palepu (2001) describe that managers want to conform to insider trading rules and increase stock liquidity to sell their stock. Additionally, executives want to reduce contracting costs that are associated with stock compensation plans for new employees. Considering that managers act as rational agents who want to maximize their benefits, managers will time management earnings forecasts to obtain the maximum wealth from the stock-based compensation. Aboody and Kasznik (2000) confirm these strategic considerations of executives by providing evidence that managers delay (accelerate) good (bad) news before stock award periods.

Fourthly, litigation risk is an important incentive for managers. Investors expect timely and adequate disclosure of relevant (private) information. If managers do not comply with these expectations the litigation risk increases. Consequently, the manager is incentivized to disclose bad news timelier to reduce the litigation costs. Nevertheless, a risk of litigation of inaccurate management earnings forecasts could demotivate managers to provide more timely and frequent management earnings forecasts. A manager could be penalized for an inaccurate forecast, which could be a discouragement to provide more management earnings forecasts (Healy & Palepu, 2001). Therefore, managers are incentivized by litigation risk to strategically disclose management earnings forecasts. Consequently, litigation risk has an increasing and decreasing effect on the timeliness and frequency of management earnings forecasts.

Fifthly, executives want to show their ability to gain and anticipate relevant private information about the firm. Additionally, they want to show that they are performing well by showing good results. CEOs will improve their reputation, job security, and job opportunities by showing their ability to gain good results (Healy & Palepu, 2001). Consequently, managers will strategically decide to disclose the news. Considering, the first argument executives provide good and bad

news in a similarly timely manner, because they want to show their ability to accumulate news (no matter which direction). Nevertheless, the incentive to show good news, to enhance the reputation, bias the CEO into providing timelier good news forecasts.

Lastly, an executive is concerned that management earnings forecasts increase the risk of proprietary costs. These costs are caused by disclosing private information that can damage the competitive position of the firm (Healy & Palepu, 2001). Therefore, executives would decrease the frequency and timeliness of voluntary disclosures. This means that for good and bad news the management earnings forecasts are less timely. Managers strategically disclose news less timely to prevent a loss of competitiveness. Ellis et al (2012) find evidence for this and state that managers are facing a trade-off when disclosing private information about customers to reduce information asymmetry and the costs of aiding the competitors.

2.5. The credibility and arguments for cessation

Disclosures are used to mitigate the informational gap between agents and principals and mitigate agency conflicts. Therefore, it is important to keep the incentives (antecedents) into consideration. Especially because the six incentives for voluntary disclosures influence the decision-making concerning the disclosure characteristics and therefore the credibility of the management earnings forecast. Mercer (2004) describes that timeliness is a very important aspect of the credibility of management earnings forecasts. Due to these incentives, strategic choices are made and consequently, the credibility of these management earnings forecasts is questionable. Fuller and Jensen (2002) argue that managers engage in myopic behavior, because of the “expectations game”. The expectations game includes the idea that executives want to meet or beat the expectations of the analysts. Consequently, they provide myopic and opportunistic management earnings forecasts (i.e., earnings guidance). Additionally, this practice is damaging the companies economically and reputationally. Therefore, they argue that a cessation of the earnings guidance practice is preferable and necessary.

Nevertheless, disregarding earnings guidance as an informational tool could potentially increase information asymmetry. Choi et al (2011) find evidence that earnings guidance can assist investors with relevant information, which can be helpful to construct better expectations of future earnings. However, that still does not mitigate the concern of decreasing credibility. As earlier mentioned, Mercer (2004) describes that a focus on disclosure characteristics is necessary to increase credibility. Additionally, Healy and Palepu (2001) argue that credibility can increase via two mechanisms. Firstly, the assurance of third-party intermediaries provides a quality check on the management earnings forecasts. Secondly, using prior management earnings forecasts is a useful tool to validate and check credibility. By comparing the forecasts with the realization, several aspects of management earnings forecasts can be checked, such as accuracy.

2.6. Timeliness and News

To enhance the credibility of disclosures, it is important to investigate if managers strategically disclose bad or good news management earnings forecasts. Agency theory describes that managers have the incentive to strategically disclosure management earnings forecasts. Moral

hazard problems and information asymmetry are the underlying causes of these incentives. As earlier described one way of strategic disclosing is via the timing of the management earnings forecast (Hirst, Koonce, & Venkataraman, 2008). Executives have several incentives to delay or accelerate the management earnings forecasts.

- **Timeliness and News (based on Management earnings forecast – Analyst forecast)**

Good news should be disclosed later than bad news. At least that is what accounting conservatism states. The Good news is the excess of returns generated by exceeding the expectations of the investors and analysts (Hirst, Koonce, & Venkataraman, 2008). In contrast to this, Bad news (Earnings warnings) are management earnings forecasts, which have a negative deviation from the expected earnings (Kasznik & Lev, 1995). Later recognition through a need for higher verification of good news and earlier recognition of bad news through a lower need for verification is the core principle of conservatism (Basu, 1997). The contracting incentive of accounting conservatism explains that a contract with accounting measures could mitigate moral hazard problems. This is only possible when these measures are asymmetrically timely and verifiable. The contracting incentive is caused by optimal contracting which provides the incentive to disclose more timely voluntary management earnings forecasts. This is consistent with the view of Healy and Palepu (2001), suggesting that the contracting incentive enhances the timeliness and frequency of voluntary management earnings forecasts. Consequently, good news should be disclosed later, and bad news should be disclosed earlier (Watts, 2003).

As stated by Healy and Palepu (2001) managers disclose earlier due to possible reprisals by the investors. If a manager withholds bad news from the investors, the investors will deem the manager as incompetent or not trustworthy, due to not providing timely and adequate management earnings forecasts. Consequently, the litigation risk increases. To mitigate this risk, the manager applies conservatism and provides bad news forecasts earlier than good news forecasts. This is consistent with the view that litigation risk increases more with withholding bad news than withholding good news (Basu, 1997).

Interestingly, this is confirmed by Graham et al (2005) in their survey research. They find that managers have the incentive to disclose bad news earlier. Executives indicate that litigation risk and enhancing the credibility of the company are two of the most important factors to disclose bad news earlier. Several empirical research supports these findings. Skinner (1994) finds evidence through a small sample of empirical research that executives are more likely to issue bad news earlier to prevent litigation costs. Unfortunately, he also finds that these forecasts are more inaccurate. The research of Skinner (1994) uses a small sample with young and small firms because it is more likely that they experience an earnings shock that has potential litigation. Baginski et al (2002) support this argument by comparing the litigation environments of Canada and the United States and find that bad news is disclosed earlier due to the litigation environment. An additional side effect of litigation risk is reputational loss. Managers want to avoid reputational loss due to litigation risk by disclosing bad news earlier (Donelson, McInnis, Mergenthaler, & Yu, 2012).

The Strategic Disclosure of Management Earnings Forecasts

Considering the above, it is expected that managers accelerate bad news when news is management earnings forecasts minus analyst forecasts. Therefore, the following hypothesis is constructed:

H1: Bad news (compared to analyst forecasts) is disclosed earlier

- **Timeliness and News (based on Management earnings forecast – Actual results)**

Nevertheless, while bad news is expected to be disclosed earlier when news is the difference between management earnings forecast and analyst forecast, the opposite effect is expected when news is the difference between management earnings forecasts and actual results.

Managers could decide on the amount of bad news that they disclose. The magnitude of the bad news is, therefore, a considerable factor. If managers want to stall to disclose the full magnitude of the bad news, they can consider disclosing a smaller portion of it. There are several reasons why the managers would do this. Firstly, it will create a gradual stock market effect for bad news, and it will increase the stock price when it is priced too low (if good news is disclosed earlier). Graham et al (2005) find that executives think that a reputation for irrelevant information and a lack of clarity can cause a firm's stock prices to be priced too low. Secondly, investors could deem the manager as an incompetent leader by providing very bad results. Consequently, the manager could be fired and/or lose reputation. These career concerns can be an incentive to withhold the full disclosure of bad news. Consistent with the view of Healy and Palepu (2001), managers will wait (due to career concerns) with the management earnings forecasts till it is inevitable to disclose this bad news. Managers hope that when the time passes by (and the earnings announcement date gets closer) the prospected results will turn in their favor. This would mean that the disclosure of bad news is timed closer to the annual earnings announcement and therefore less timely.

Interestingly, Nagar et al (2003) find evidence for this and state that the concern of managers of the effect of disclosure on their careers and employment opportunities is an important factor to delay bad news. This concern is especially present for firms in financial distress (DeAngelo, 1998). Additionally, Kothari et al (2009), finds that good news is leaked earlier to the market by investigating dividend changes and management earnings forecasts. The sign and magnitude of the dividend changes cause an asymmetric market reaction, where bad news has a bigger impact than good news. Consequently, they state that due to a bigger market reaction to bad news the timeliness of bad news is worse. The argumentation for this finding is that the market reaction is increasing when bad news is delayed. Additionally, the good news is gradually released and therefore the market reaction is smaller. This indicates that good news is disclosed earlier.

Considering the above, it is expected that managers withhold (at least a proportion) of bad news when news is management earnings forecasts minus actual results (the realization on the earnings announcement date. Therefore, the following hypothesis is constructed:

H2: Bad news (compared to actual results) is disclosed later

3. Research design

In this chapter, the research design is discussed. First, the data sampling is discussed. Second, the regression model is described. Third, the dependent variable is discussed. Fourth, the independent variable is presented. Lastly, the control variables are described. A short overview of the research design can be found in the Libby Boxes in the appendix.

3.1. Data sampling

In this research, the focus is on the timeliness of management earnings forecasts. American companies between 2002 and 2019 are chosen for this research. This period is chosen because it starts in 2002 right after the dot.com crisis and it ends in 2019 right before the Covid-19 crisis.

All the data is obtained from Wharton Research Data Service (WRDS). Several databases from WRDS are used to obtain the data for several variables. Information about the annual and quarterly management earnings forecasts, regarding de management earnings forecasts dates, management earnings predictions, and analyst earnings predictions, is extracted from Institutional Brokers Estimate System (I/B/E/S) Guidance. The annual earnings announcements dates, actual results, and the number of analysts are retrieved from I/B/E/S Summary. These predictions and actual results are necessary to calculate the independent variable good/bad news. Next, the I/B/E/S Guidance and Summary datasets are merged into one dataset.

Furthermore, Compustat North America - Daily is used to retrieve information about the total assets, total liabilities, audit firm, and industry related to the firms in the corresponding years. This information is used to calculate the following control variables: Firm size (Size), Leverage, Litigation risk (Lit) Industry, and Big four firms (Bigfour). Additionally, Thomson/Refinitiv and specifically, WRDS TR Tools is used to retrieve information regarding institutional ownership. This information is used as a control variable (InstOwn).

3.1.1 Eliminating observation

Firstly, all observations that include management earnings forecasts which forecast the earnings on an annual basis (i.e., a forecast that predicts the earnings at the end of the fiscal year) are retained, and other forecasts are dropped. Secondly, all management earnings forecasts that do not use Earnings Per Share (EPS) as a forecasting measure are eliminated. Thirdly, all point forecasts and range forecasts are retained, but other forecasts (e.g., qualitative forecasts) are dropped. Fourthly, all observations that are duplicates are removed and lastly, all missing values are eliminated from the dataset. After these actions, the original dataset of 1,268,922 observations is limited down to a final dataset of 38.791 observations. These observations are divided into two groups. The first group is the “Unstable forecasters” (14,366 observations), and the second group is the “Stable forecasters” (24,425 observations). A summary of the data sampling and elimination can be found in the appendix.

3.1.2. Outlier handling and skewness

All variables, excluding the dependent variables (days till earnings announcements and quarter), institutional ownership, and dummy variables, are winsorized. These variables are winsorized on 1% to reduce the possibility of outliers. Additionally, for the regression, the

variables Size and the number of analysts (NumAnalyst) use the natural log to adjust for the heavily skewed distribution.

3.2. Regression model

This research focuses on two important groups, namely the “Unstable forecasters” and the “Stable forecasters”. Stable forecasters are regarded as firms that provide every quarter a management earnings forecast. In contrast to Stable forecasters, “Unstable forecasters” do not provide a management earnings forecast in every quarter and are firms that strategically decide to disclose in specific quarters or days. Waymire (1985) uses a similar approach, where he divided two groups into a group with one-time forecasters and frequent forecasters. This research has a small deviation on this approach in which infrequent (unstable) forecasters are seen as the forecasters who do not provide structurally every quarter a forecast. If firms do not regularly forecast earnings, it could indicate that they choose preferred timings. Therefore, they do not provide regularly timed forecasts every quarter. By comparing the differences between these groups, the effect of the news on the choice to disclose earlier/later is investigated. It is expected that Unstable forecasters make more strategically based voluntary disclosure decisions. To research the effect of the news on the timeliness of management earnings forecasts, the following regression equation is constructed:

$$\text{Timeliness} = \beta_0 + \beta_1 * \text{News} + \beta_2 * \text{Sign} + \beta_3 * \text{News} * \text{Sign} + \beta_4 * \text{Control Variables} + \varepsilon$$

The dependent variable (timeliness) is captured via two proxies, namely days and quarters. These two proxies are regressed separately. Days are used by Baik et al (2011) to capture the timeliness of management earnings forecasts. Quarters is also used as a proxy because managers choose a(n) earlier/later quarter for strategic reasons. Unstable forecasters could therefore provide forecasts in specific quarters. Skinner et al (1994) find that bad news is more often disclosed in the fourth (last) quarter. Therefore, it is interesting to perform this regression with quarters as a proxy for timeliness.

The independent variable (news) is captured via two proxies, namely the difference between management earnings forecast and actual results (forecasts error) and the difference between management earnings forecast and the analyst consensus forecast. Prior research indicates that the forecasts are typically too optimistic in comparison with the realization (Waymire, 1986). Considering the incentives to disclose optimistic (good) news, it is interesting to investigate this. On the other hand, prior research describes the difference between management earnings forecasts and the analyst consensus forecast as a good measure to capture news. Therefore, it is interesting to separately investigate this proxy.

Considering that there are two groups with two proxies for the dependent and independent variable, eight regressions are provided to investigate the first hypothesis. This is to provide separate regressions per group, dependent variable, and independent variable. Additionally, a pooled regression is performed to investigate the differences between the groups for both proxies of the dependent and independent variables. This will provide an additional four

regressions. Lastly, every regression contains the below described control variables, robust standard errors, industry, and year fixed effects, to account for potential endogeneity concerns.

3.3. Dependent variable

Timeliness is the dependent variable of this research. Timeliness is indicated as the manager's decision to provide an earlier (timelier) or later (less timely) forecast. An earlier forecast is given when the news is disclosed with a bigger forecast horizon. News that is disclosed later has a shorter forecast horizon.

Timeliness is measured by calculating the number of days between the management earnings forecast (MEF) date and the earnings announcement (EA) date (Baik, Farber, & Lee, 2011).

$$\text{Timeliness} = \text{MEF}_{\text{Date}} - \text{EA}_{\text{Date}}$$

Additionally, Skinner (1994) finds that firms disclose bad news more often in the fourth quarter. Therefore, he describes timely forecasting in quarters. Therefore, we also use a dependent variable that measures the forecast horizon in quarters. Quarter Four (the last quarter) is less timely than quarter one (the first quarter).

$$\text{Timeliness} = \text{MEF}_{\text{quarter}} - \text{EA}_{\text{quarter}}$$

In this research, only annual earnings forecasts are used to prevent any bias and distortion of quarterly forecasts on the timeliness factor. All the forecasts after the fiscal year-end are excluded to prevent any bias from pre-earnings announcements, which are not forecasts but informal releases of the actual results (Rogers & Stocken, 2005).

3.4. Independent variable

The difference between the EPS of the management earnings forecast (MEF) and the actual results on the earnings announcement (A) in percentages is described as earnings news (Waymire, 1986). The management earnings forecast is here a forecast error. Waymire (1986) indicated that realized earnings typically fall short compared to management earnings forecast. Additionally, the magnitude of these forecast errors influences other forecasting characteristics, such as timeliness (Bamber & Cheon, 1998). Therefore, this equation is used to measure the earnings news component for the independent variable. This variable is indicated in the regression as "NewsActual".

$$\text{NewsActual} = \frac{\text{MEF} - \text{A}}{\text{A}}$$

Additionally, Kothari et al (2009; Shivakumar, Urcan, Vasvari, & Zhang, 2011) defines news as the difference between the management earnings forecast (MEF) and the analyst forecasts (AF) in percentages. Therefore, this definition of news is used as a second independent variable. The analyst consensus forecast is the most recent consensus forecast. This is calculated in the following manner and indicated in the regression as "NewsAnalyst":

$$\text{NewsAnalyst} = \frac{\text{MEF} - \text{AF}}{\text{AF}}$$

The “Sign” of the news is an important aspect of the regression to isolate the magnitude of the bad news. This variable acts as a dummy variable. When the management earnings forecast does not meet or beat the actual results and/or the analyst forecasts, the sign of the news is negative (bad news) and is indicated as 1. This variable is indicated as “SignActual” for the regression containing the NewsActual variable and “SignAnalyst” for the regression containing the NewsAnalyst variable. The following rules apply:

$$\begin{aligned}\text{SignActual: NewsActual} < 0 &= 1 \\ \text{SignAnalyst: NewsAnalyst} < 0 &= 1\end{aligned}$$

To measure the variable of interest (News and in particular the magnitude of it), these two variables are put into an interaction term. The following equations are used for the interaction term:

$$\begin{aligned}\text{Independent variable} &= \text{NewsAnalyst} * \text{SignAnalyst} \\ \text{Independent variable} &= \text{NewsActual} * \text{SignActual}\end{aligned}$$

3.5. Control variables

The account for possible endogeneity concerns, several control variables are included in the regressions of this research. This is necessary due to the many endogeneity concerns with voluntary disclosures (Healy & Palepu, 2001).

- **Firm size (Size)**

Large firms in comparison with small firms are more likely to have more outside disclosure demands. Prior research finds a positive relation between management earnings forecasts and firms size. Firms that are larger in size are more likely to issue a timelier management earnings forecast, to prevent the disappointment of investors due to large earnings surprises (Kasznik & Lev, 1995). Following Ajinkya et al (2005), the natural log of total assets is used.

- **Market to book ratio (MTB)**

The market-to-book ratio is used as a proxy for proprietary costs. The market to book ratio indicates the growth opportunities of the firm and therefore their competitive edge. Prior research finds evidence that firms with lower proprietary costs (via growth opportunities) are more likely to issue management earnings forecasts (Bamber & Cheon, 1998; Ajinkya, Bhojraj, & Sengupta, 2005). Following Bamber and Cheon (1998), the market-to-book value of the firm’s common equity is used.

- **Negative current earnings (Loss)**

Past research indicates that earnings are less value-relevant for loss-making firms. These loss-making firms deem meeting or beating the analyst expectations as less important (Hayn, 1005).

This will lead to fewer disclosures. Additionally, substantial differences are documented between the analyst forecast errors of loss and profit firms (Brown, 2001). Consequently, the manager's ability may be also influenced by this aspect (Ajinkya, Bhojraj, & Sengupta, 2005). Therefore, the accuracy and timeliness could be influenced. To account for this factor a dummy variable is included that equals 1 if the firm has reported negative current earnings (Loss) (Ajinkya, Bhojraj, & Sengupta, 2005; Baik, Farber, & Lee, 2011).

- **Big four firms (Bigfour)**

Lang and Lundholm (1993) find evidence that the reputation of the auditor could influence the disclosure decision of the manager. Following Ajinkya et al (2005), this control variable is included and will indicate 1 when one of the big four is the auditor for the firm in the corresponding year.

- **Leverage**

Bad news can increase the leverage and increases the required rate of return (Kothari, shu, & Wysocki, 2009). This could influence the manager's characteristics for decisions to disclose the management earnings forecasts. This is calculated by dividing total liabilities by total assets.

- **Number of Analysts (NumAnalyst)**

Past research finds evidence that there is a relation between analyst following and management disclosures. The quality of disclosures is reliant on the number of analysts (Lang & Lundholm, 1993). This could indicate that the characteristics of the manager's choice for disclosure are influenced. Therefore, the log of the number of analysts is used as a control variable (Ajinkya, Bhojraj, & Sengupta, 2005; Baik, Farber, & Lee, 2011)

- **Litigation Risk per industry (Lit)**

Some industries face a higher litigation risk than other industries. Litigation risk could prevent or increase disclosures. Francis et al (1994), find evidence that there is a relationship between industry and corporate disclosures. They indicate that industries with SIC codes 2833-2836, 3570-3577, 3600-3674, and 7370-7374 have a higher litigation risk. Therefore, this is a dummy variable with 1 indicating a higher litigation risk and 0 otherwise.

- **Institutional Ownership (InstOwn)**

Institutional ownership is the amount of equity that is owned by large entities that manage funds on the behalf of others. Prior research finds a significant relationship between institutional ownership and management earnings forecasts accuracy and frequency (Ajinkya, Bhojraj, & Sengupta, 2005; Karamanou & Vafeas, 2005). This is consistent with the idea that institutional owners demand more disclosures. This could indicate that managers provide more timely and frequent disclosures when there is a higher percentage of institutional ownership. Following Ajinkya et al (2005), the percentage of the company's aggregated common stock held by institutions is used.

4. Empirical results

In this chapter, the empirical results are discussed of this research. Paragraph one provides the descriptive tables and correlation matrixes. The second paragraph discusses the regression results of the first hypothesis and the last paragraph discusses the regression results of the second hypothesis.

4.1. Descriptive statistics and correlations

The descriptive tables of the Unstable and Stable groups provide some interesting indications. In table 1 the descriptive statistics are shown for the Unstable forecaster group. The mean and median for the days till the earnings announcement (Days) are respectively 209.925 and 203 days. This means that on average the data is slightly skewed towards a timelier disclosure of management earnings forecasts. Additionally, the mean and median of the quarters till the earnings announcement (Quarter), which are respectively 2.28 and 2, show a similar result. On average it seems that managers try to be earlier with their forecasts, which makes sense considering the pressure of investors to provide timely forecasts (Healy & Palepu, 2001; Skinner, 1994).

The independent variable NewsAnalyst shows a mean and median of respectively -0.005 and 0. On average the data is slightly skewed towards a bad news forecast. Nevertheless, the mean and the median are close to each other. This is logical considering that managers do not want to be considered too opportunistic or too pessimistic. Therefore, they want to stay close to the analyst consensus forecasts. The independent variable NewsActual provides a mean and median of respectively 0.028 and -0.015. This indicates that the data is skewed towards good news management earnings forecasts. Considering that managers could provide myopic and opportunistic forecasts this would be a logical result (Hirst, Koonce, & Venkataraman, 2008). Managers tend to be pessimistic compared to analysts if they are compared based on these statistics. Interestingly, when NewsAnalyst and NewsActual are compared, analysts tend to be more opportunistic than managers, while looking at the actual results.

The Strategic Disclosure of Management Earnings Forecasts

Table 1: Descriptive statistics - Unstable forecasters all variables

Variable	N	Mean	SD	Min	P. 25	P. 50	P. 75	Max
Days	14366	209.925	92.10	1.000	119.000	203.000	287.000	365.000
Quarter	14366	2.280	1.022	1.000	1.000	2.000	3.000	4.000
NewsAnalyst	14366	-0.005	0.773	-29.000	-0.024	0.000	0.021	49.000
NewsActual	14366	0.028	1.972	-126.000	-0.062	-0.015	0.031	57.000
Size	14366	7.664	1.685	4.426	6.461	7.619	8.758	11.753
Leverage	14366	0.548	0.198	0.209	0.398	0.554	0.691	0.908
NumAnalyst	14366	10.752	7.404	1.000	5.000	9.000	15.000	47.000
Bigfour	14366	0.921	0.269	0.000	1.000	1.000	1.000	1.000
Lit	14366	0.220	0.414	0.000	0.000	0.000	0.000	1.000
Loss	14366	0.055	0.227	0.000	0.000	0.000	0.000	1.000
MTB	14366	3.438	5.844	-19.784	1.584	2.477	4.016	42.769
InstOwn	14366	0.789	0.205	0.000	0.682	0.827	0.922	1.688
Year	14366	2011.007	4.696	2002.000	2007.000	2011.000	2015.000	2019.000

The sample in the descriptive table (Table 1) consists out of 14,366 management earnings forecasts between 2002 and 2019 of the Stable forecaster group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual [(MEF - A) / A] is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

Table 2 provides descriptive statistics for the Stable forecaster group. These statistics differ from the other group. The mean and median for the dependent variable days are respectively 227.357 and 216. This indicates that on average the data is skewed towards a timelier disclosure of management earnings forecasts and that it is more skewed than the Unstable forecaster group. Nevertheless, the dependent variable quarter has a mean and median of respectively 2.518 and 3, which indicates the opposite effect. Based on quarter the disclosure of management earnings forecasts seems to be (on average) less timely.

The independent variable NewsAnalyst provides a mean and median of -0.01 and -0.002. This (on average) small negative earnings news makes sense because managers do not want to be far of with their prediction when they are compared to the analyst forecasts and additionally, they do not want to be considered as too optimistic or pessimistic. Otherwise, investors will question their ability to gather information and make a prediction about future earnings. NewsActual shows a mean and median of respectively 0.02 and -0.018. This indicates that on average managers are too optimistic when comparing their forecasts to the actual results. As previously mentioned, this makes sense because managers can engage in myopic and opportunistic forecasting (Hirst, Koonce, & Venkataraman, 2008).

The Strategic Disclosure of Management Earnings Forecasts

Table 2: Descriptive statistics - Stable forecasters all variables

Variable	N	Mean	SD	Min	P. 25	P. 50	P. 75	Max
Days	24425	227.357	100.072	1.000	123.000	216.000	302.000	365.000
Quarter	24425	2.518	1.113	1.000	2.000	3.000	4.000	4.000
NewsAnalyst	24425	-0.010	0.789	-53.273	-0.018	-0.002	0.014	69.492
NewsActual	24425	0.020	1.113	-30.500	-0.060	-0.018	0.012	57.000
Size	24425	8.059	1.602	4.426	6.907	8.045	9.106	11.753
Leverage	24425	0.564	0.188	0.209	0.429	0.57	0.696	0.908
NumAnalyst	24425	12.388	7.180	1.000	7.000	11.000	17.000	48.000
Bigfour	24425	0.941	0.236	0.000	1.000	1.000	1.000	1.000
Lit	24425	0.188	0.391	0.000	0.000	0.000	0.000	1.000
Loss	24425	0.019	0.138	0.000	0.000	0.000	0.000	1.000
MTB	24425	4.045	6.452	-19.784	1.758	2.797	4.467	42.769
InstOwn	24425	0.820	0.178	0.000	0.72	0.846	0.929	1.799
Year	24425	2012.018	3.963	2002.000	2009.000	2012.000	2015.000	2019.000

The sample in the descriptive table (Table 2) consists out of 24,425 management earnings forecasts between 2002 and 2019 of the Unstable forecaster group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual [(MEF - A) / A] is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

The first indication of a difference between the Unstable and Stable forecasters groups is found in Table 3. This table provides a two-sample T-test and compares to means of each variable of the descriptive statistics for both groups. Within the brackets, the standard deviation is shown. All variables show a statistical significance at 1%, apart from the variable NewsAnalyst, which shows a statistical significance at 2%. These results provide evidence of an early indication that these groups differ in their disclosure timing of management earnings forecasts through the variables Days and Quarters. Additionally, it provides an early indication that these groups differ in the magnitude of the news they disclose through the variables NewsAnalyst and NewsActual. Shortly, the results tell that these two groups significantly differ in their descriptive statistics.

Table 3: Two sample T test (un)stable forecasters group

Variable	Stable forecaster (N=24425)	Unstable forecaster (N=14366)	p value
Days	227.357 (100.072)	209.925 (92.101)	< 0.001
Quarter	2.518 (1.113)	2.280 (1.022)	< 0.001
NewsAnalyst	-0.010 (0.789)	-0.005 (0.773)	0.002
NewsActual	0.020 (1.113)	0.028 (1.972)	< 0.001
Size	8.059 (1.602)	7.664 (1.685)	< 0.001
Leverage	0.564 (0.188)	0.548 (0.198)	< 0.001
NumAnalyst	12.388 (7.180)	10.752 (7.404)	< 0.001
Bigfour	0.941 (0.236)	0.921 (0.269)	< 0.001
Lit	0.188 (0.391)	0.220 (0.414)	< 0.001
Loss	0.019 (0.138)	0.055 (0.227)	< 0.001
MTB	4.045 (6.452)	3.438 (5.844)	< 0.001
InstOwn	0.820 (0.178)	0.789 (0.205)	< 0.001
Year	2012.018 (3.963)	2011.007 (4.696)	< 0.001

Table 3 provides the Two-sample T-test between the Unstable and Stable groups. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. The sample in the descriptive table consists out of 38,791 management earnings forecasts between 2002 and 2019, which are divided over the Unstable (14,366) and Stable (24,425) groups. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual [(MEF - A) / A] is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

Additionally, some descriptive statistics are shown for the populations of the dependent variable and independent variables in Table 4. Only quarters are provided for the dependent variable in the descriptive table due to practicality. Providing a test for every day in a year for the dependent variable takes up a lot of space and is unnecessary. As expected, there is an even distribution of forecasts across the year for Stable forecasters (24.3%-25.1%), but an uneven distribution for Unstable forecasters (14.1%-30.0%). The test for two proportions indicates a significant difference between these groups. This is significant at 1%. This gives an early indication that Unstable forecasters perform strategic management of disclosing management earnings forecasts. Interestingly, both groups provide more Bad news forecasts (66.2% and 61.2%) during the year, when the forecasts are compared to the actual results, which could indicate a pessimistic approach of the managers. This is in line with the arguments of Skinner (1994) that managers tend to disclose more bad news via management earnings forecasts. Nevertheless, the Unstable forecaster group provides more good news (38.4%) than the Stable group (33.8%). This difference is statistically significant at 1%, which indicates that the Unstable group tends to be more opportunistic. Interestingly, this is also shown in the variable NewsAnalyst. Both

The Strategic Disclosure of Management Earnings Forecasts

groups are providing almost an equal amount of bad news (52.8% and 49.2%) and good news (47.2% and 50.8%) when the management earnings forecasts are compared to the analyst forecasts. Nevertheless, the Unstable forecaster group tends to be more opportunistic. The difference between these groups is statistically significant at 1%.

Table 4: Descriptive statistics - observations (un)stable forecasters

	Stable forecaster (N=24425)	Unstable forecaster (N=14366)	p value
Quarter			< 0.001
1	5944 (24.3%)	4029 (28.0%)	
2	6010 (24.6%)	4313 (30.0%)	
3	6335 (25.9%)	3999 (27.8%)	
4	6136 (25.1%)	2025 (14.1%)	
NewsActual			< 0.001
Bad news	16175 (66.2%)	8848 (61.6%)	
Good news	8250 (33.8%)	5518 (38.4%)	
NewsAnalyst			< 0.001
Bad news	12898 (52.8%)	7066 (49.2%)	
Good news	11527 (47.2%)	7300 (50.8%)	

Table 4 provides a comparison between to populations of the Unstable and Stable groups. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. The sample in the descriptive table consists out of 38,791 management earnings forecasts between 2002 and 2019, which are divided over the Unstable (14,366) and Stable (24,425) groups. Quarter $[=MEF_{quarter} - EA_{quarter}]$ is the number of quarters till the earnings announcement. NewsAnalyst $[(MEF - AF) / AF]$, is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual $[(MEF - A) / A]$ is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results).

Lastly, for the Unstable and the Stable groups some correlation tables are provided. These correlation tables (Table 9 and Table 10) can be found in the appendix. Both groups have no independent variables which are highly correlated with each other, apart from the variable Size in combination with Leverage, NumAnalyst, and Bigfour. This makes sense as bigger firms tend to have more leverage, analyst following (Bhushan, 1989), and a big four company as the auditor. Shortly, these results show no significant multicollinearity problems.

4.2. The effect of good/bad news on timeliness

In this paragraph, the results are discussed for the first hypothesis. These results concern the effect of the news on the timeliness of management earnings forecasts. In this paragraph news is the difference between the management earnings forecasts and the analyst forecasts.

4.2.1. Regressions hypothesis – comparing to analyst forecasts

To test the first hypothesis, a regression with the variables Days and Quarters on NewsAnalyst is performed. Table 5 provides the results of this Regression. Days (1) and Quarters (2) are separate regressions for the Unstable forecaster group and Days (3) and Quarters (4) are separate regressions for the Stable forecaster group.

The Unstable group provides some interesting results. The magnitude of the bad news is shown via the variable of interest (NewsAnalyst*SignAnalyst) and is considered as important. The interaction variable isolates the effect of the magnitude of bad news. The regression that is based on the days, shows a significant positive coefficient of 7.776. This indicates that with every unit of bad news the firms in the Unstable forecaster group disclose the management earnings forecasts 7.776 days earlier. This result is statistically significant at 1%. Nevertheless, there is not such a result for the regression based on Quarters. This could be due to scaling differences. Interestingly, no significant results are found for the interaction variable for the regressions with the dependent variables Days and Quarters of the Stable forecaster group. Which provides evidence that the Unstable forecaster group tends to provide more strategically timed forecasts.

Further evidence is provided via the variable SignAnalyst. This variable provides a positive significant result of 8.111, which indicates that firms in the Unstable group tend to disclose management earnings forecasts timelier when it consists out of bad news. It means that firms disclose bad news 8.111 days earlier. This result is statistically significant at 1%. For the regression based on Quarters, there are some similar results, and firms in the Unstable group tend to disclose 0.112 quarters faster, when they disclose bad news. This result is also statistically significant at 1%. The Stable group provides some similar results. The variable SignAnalyst provides a significant positive result of 15.596. This indicates that firms in the Stable group tend to disclose management earnings forecasts timelier when it consists out of bad news. If a firm has bad news, it discloses this news 15.596 days earlier than good news. This result is statistically significant at 1%. For the regression based on quarters, there is a similar result. A firm discloses bad news 0.205 quarters earlier than good news. This result is significant at the 1% level. Additionally, the coefficients of the Stable forecaster group are higher than that of the Unstable forecaster group. This means that the Stable forecaster group tends to disclose bad news earlier than the Unstable forecaster group. Which provides additional evidence of the Unstable group delaying the bad news management earnings forecasts compared to the Stable forecaster group. Nevertheless, both groups tend to accelerate the bad news management earnings forecasts.

These findings provide significant evidence that bad news disclosures are accelerated. Nevertheless, evidence of significant differences between the strategic forecaster and non-strategic forecaster groups is provided in the next regression.

Table 5: Regression News (forecast - analyst) on days

	<i>Dependent variable:</i>			
	Days (1)	Quarter (2)	Days (3)	Quarter (4)
Constant	194.276*** (10.482)	2.044*** (0.117)	187.586*** (19.654)	2.087*** (0.228)
NewsAnalyst	-1.536 (1.179)	-0.018 (0.013)	0.389 (4.803)	0.009 (0.042)
SignAnalyst	8.111*** (1.559)	0.112*** (0.018)	15.596*** (1.321)	0.205*** (0.015)
Size	-1.177 (0.809)	0.003 (0.009)	-1.206* (0.701)	0.012 (0.008)
MTB	-0.188 (0.135)	-0.001 (0.002)	0.049 (0.107)	0.001 (0.001)
Loss	20.686*** (3.849)	0.178*** (0.043)	2.976 (5.089)	0.020 (0.057)
Lit	0.895 (3.130)	-0.003 (0.035)	1.623 (2.792)	0.015 (0.031)
Bigfour	-7.688** (3.183)	-0.061* (0.035)	0.678 (2.962)	0.023 (0.033)
Leverage	-5.262 (5.028)	0.011 (0.056)	-4.467 (4.437)	-0.012 (0.050)
NumAnalyst	3.844*** (1.488)	0.031* (0.017)	-1.512 (1.374)	-0.005 (0.015)
InstOwn	12.005*** (4.300)	0.087* (0.048)	6.647 (4.054)	0.049 (0.045)
NewsAnalyst:SignAnalyst	7.776*** (1.739)	0.036 (0.034)	-1.827 (4.900)	-0.025 (0.044)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	14,366	14,366	24,425	24,425
R ²	0.025	0.021	0.011	0.010
Adjusted R ²	0.018	0.014	0.008	0.006
Residual Std. Error	91.270	1.015	99.695	1.109
F Statistic	3.684***	3.113***	2.945***	2.644***

Significance levels:

p<0.1; *p*<0.05; *p*<0.01

Notes: Table 5 provides the regression results for the regression Days and Quarters on NewsAnalyst. Days (1) and Quarter (2) are the regression for the Unstable group and Days (3) and Quarter (4) are the regressions for the Stable group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. The other variables are described in the appendix.

Previously, the results per group are given. Now some pooled results are provided to show if there are any significant differences between the Unstable forecasters and Stable forecasters groups. This provides some evidence on strategic management of management earnings forecasts. Table 6 provides the pooled regression with the variables Days and Quarters on NewsAnalyst. Days (1) and Quarters (2) are regressions done for the entire sample and the variable Forecaster will indicate 1 for the Unstable forecaster group. This is to determine if there are significant differences between these groups.

The Strategic Disclosure of Management Earnings Forecasts

The variable of interest (the interaction variable $\text{Forecaster} * \text{NewsAnalyst} * \text{SignAnalyst}$) indicates the isolation of the magnitude of bad news. The resulting coefficient of 9.138 means that with every unit of bad news the Unstable firm will disclose 9.138 days earlier than the Stable group. These results have a statistical significance of 10%. This is interesting as it indicates that Unstable forecasters are aware of the potential risk of disclosing larger bad news later. This makes sense as stable forecasters make a forecast every quarter and could therefore disclose the bad news more evenly. Consequently, the magnitude of news has less of an impact on the Stable forecasters because they can gradually disclose the bad news of an even market reaction (Healy & Palepu, 2001). No significant result is found for the regression based on Quarters, which could be due to scaling differences.

Further evidence shows support for this finding. For the variable SignAnalyst there are significant positive coefficients of 15.345 and 0.203. This indicates that generally bad news is disclosed 15.345 days earlier and 0.203 quarters earlier than good news. These results are statistically significant at 1%. Interestingly, the interaction results of the variable $\text{Forecaster} * \text{SignAnalyst}$ indicate that bad news is disclosed less timely for the Unstable forecaster group when it is compared to the Stable forecaster group. Unstable forecasters tend to disclose bad news 7.251 days and 0.090 quarters later than Stable forecasters. These results are significant at 1%. Which provides further evidence on the strategic disclosure decisions of the Unstable forecaster group. Compared to the Stable forecaster group, they seem to delay the management earnings forecasts. This is confirmed via the next finding. The variable Forecaster provides a negative coefficient for Days (-12.451) and quarters (-0.180), with both a significance level at 1%. If the variable Forecaster is 1 it is an Unstable forecaster. These results indicate that generally Unstable forecasters tend to disclose 12.451 days and 0.180 quarters later than forecasters from the Stable group.

The Strategic Disclosure of Management Earnings Forecasts

Table 6: Pooled Regression News (forecast - analyst) on days

	<i>Dependent variable:</i>	
	Days (1)	Quarter (2)
Constant	196.725*** (8.190)	2.060*** (0.092)
Forecaster	-12.451*** (1.454)	-0.180*** (0.016)
NewsAnalyst	0.368 (4.581)	0.008 (0.038)
SignAnalyst	15.345*** (1.312)	0.203*** (0.015)
Size	-1.308** (0.537)	0.007 (0.006)
MTB	-0.023 (0.084)	0.001 (0.001)
Loss	13.176*** (3.049)	0.117*** (0.034)
Lit	1.724 (2.075)	0.008 (0.023)
Bigfour	-2.596 (2.157)	-0.012 (0.024)
Leverage	-5.178 (3.314)	-0.006 (0.037)
NumAnalyst	0.129 (0.103)	0.002 (0.001)
InstOwn	9.679*** (2.888)	0.067** (0.032)
Forecaster:NewsAnalyst	-1.990 (4.766)	-0.024 (0.040)
Forecaster:SignAnalyst	-7.251*** (2.022)	-0.090*** (0.023)
NewsAnalyst:SignAnalyst	-1.671 (4.656)	-0.021 (0.040)
Forecaster:NewsAnalyst:SignAnalyst	9.138* (4.959)	0.050 (0.052)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	38,791	38,791
R ²	0.020	0.022
Adjusted R ²	0.017	0.019
Residual Std. Error	96.709	1.076
F Statistic	7.711***	8.539***

Significance levels:

p<0.1; ***p***<0.05; *p*<0.01

Notes: Table 6 provides the pooled regression results for the regression Days and Quarters on NewsAnalyst. The Forecaster variable is a dummy variable, and it is 1 if it is an Unstable forecaster. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. The other variables are described in the appendix.

Overall, these results provide compelling evidence that firms that provide (in)frequent/(un)stable forecasts tend to disclose bad news earlier than good news when the forecasted news is compared to the analyst forecasts. Especially, Stable firms provide disclosures that are timelier than that of Unstable firms. This indicates that firms that are strategic forecasters provide less timely forecasts and could, therefore, forsake their responsibility to provide timely forecasts to investors. Nevertheless, both groups provide bad news management earnings forecasts timelier than good news management earnings forecasts, which could be due to a fear of potential litigation risk or reputational damage to the manager. Consequently, hypothesis 1 is not rejected. This is in line with the prediction of Skinner (1994) and Healy and Palepu (2001), that managers fear reprisals and reputational loss. Therefore, managers disclose bad news forecasts timelier and tend to meet the analyst forecasts.

4.2.2. Regression hypothesis – comparing to actual results

The following hypothesis tests the timeliness of management earnings forecasts when news is the difference between the management earnings forecast and the actual results (NewsActual). The same dependent variables (Days and quarters) as in the last regression are used. Table 7 describes the results of the regression of Days or Quarters on NewsActual. Days (1) and Quarters (2) are the regressions for the Unstable forecaster group and Days (3) and Quarters (4) for the Stable forecaster group. Good news forecasts are essentially too optimistically forecasted management earnings forecasts because the difference between a forecast and the actual results is the forecast error. Visa versa, bad news forecasts are pessimistic management earnings forecasts.

For the Unstable forecaster group, the variable of interest (the interaction variable NewsActual*SignActual) provides two negative coefficients of -7.097 and -0.062 for respectively Days and Quarters. These results are significant at 5%. Every unit of bad news causes the timeliness to decrease by -7.097 days and -0.062 quarters. Therefore, managers disclose management earnings forecasts less timely when the magnitude of the bad news is bigger. The interaction variable for the Stable group indicates that the magnitude of bad news influences the timeliness of the management earnings forecasts. With every unit of bad news, the management earnings forecast is disclosed 14.877 days and 0.146 quarters later. These results are significant at 1%. Interestingly, Stable firms tend to be more influenced by the magnitude of this news. If the results of both groups are compared, the Stable forecaster group discloses (with every unit increase of bad news) later than the Unstable forecaster group.

Following these results, the dummy variable SignActual supports this evidence. This variable indicates a 1 when it is bad news. For the Unstable forecaster group, the coefficients for the regression of Days and Quarters show negative results of respectively -15.533 and -0.160. These results are both significant at 1%. This indicates that firms, that are regarded as unstable, will disclose management earnings forecasts 15.533 days and 0.160 quarters later if it is bad news. Additionally, The Stable forecaster group shows some similar results. Bad news management earnings forecasts are less timely than good news forecasts as indicated with the SignActual variable. Bad news tends to be disclosed 9.187 days and 0.081 quarters later than

The Strategic Disclosure of Management Earnings Forecasts

good news. Nevertheless, bad news has a bigger impact on delaying the management earnings forecasts for the Unstable group than for the Stable group.

Further evidence supporting the earlier findings is provided via the variable NewsActual. For the Unstable forecaster group, the NewsActual variable provides a positive coefficient of 4.072 and 0.032 for respectively Days and Quarters. These coefficients are significant at 1%. These significant positive coefficients indicate that firms, that are regarded as unstable, will provide more timely management earnings forecasts. These firms disclose management earnings forecasts 4.072 days and 0.032 earlier (timelier) with every positive unit of good news. In contrast to this, the bad news is disclosed later for Unstable forecasters. Similar results are found for the Stable forecaster group. The NewsActual variable shows results of 3.959 and 0.037 for respectively Days and Quarters. Both coefficients are significant at 1%. This indicates that Stable firms are disclosing good news management earnings forecasts timelier. Nevertheless, when comparing the results to the Unstable forecaster group, the effect on the timeliness of the management earnings forecasts is lower. This indicates that Unstable forecasters tend to provide optimistic forecasts earlier than Stable forecasters.

These findings already provide significant evidence that bad news disclosures are delayed. Nevertheless, evidence of significant differences between the strategic forecaster and non-strategic forecaster groups is provided in the next regression.

The Strategic Disclosure of Management Earnings Forecasts

Table 7: Regression News (forecast - actual) on days

	<i>Dependent variable:</i>			
	Days (1)	Quarter (2)	Days (3)	Quarter (4)
Constant	197.271*** (10.361)	2.098*** (0.116)	198.794*** (19.414)	2.217*** (0.225)
NewsActual	4.072*** (0.926)	0.032*** (0.009)	3.959*** (1.014)	0.037*** (0.010)
SignActual	-15.533*** (1.709)	-0.160*** (0.019)	-9.187*** (1.442)	-0.081*** (0.016)
Size	-0.527 (0.810)	0.008 (0.009)	-0.958 (0.702)	0.013* (0.008)
MTB	-0.101 (0.136)	-0.0003 (0.002)	0.068 (0.107)	0.002 (0.001)
Loss	15.048*** (5.255)	0.136** (0.056)	-10.052* (5.402)	-0.113* (0.060)
Lit	2.433 (3.118)	0.014 (0.035)	1.618 (2.785)	0.013 (0.031)
Bigfour	-6.509** (3.176)	-0.050 (0.035)	0.841 (2.948)	0.024 (0.033)
Leverage	-7.230 (5.020)	-0.006 (0.056)	-6.602 (4.447)	-0.031 (0.050)
NumAnalyst	4.067*** (1.482)	0.033** (0.016)	-0.773 (1.371)	0.004 (0.015)
InstOwn	12.439*** (4.275)	0.094** (0.048)	6.868* (4.057)	0.048 (0.045)
NewsActual:SignActual	-7.097** (3.004)	-0.062** (0.030)	-14.877*** (2.912)	-0.146*** (0.029)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	14,366	14,366	24,425	24,425
R ²	0.035	0.027	0.011	0.006
Adjusted R ²	0.028	0.021	0.007	0.002
Residual Std. Error	90.803	1.011	99.701	1.112
F Statistic	5.221***	4.073***	2.914***	1.595***

Significance levels:

p<0.1; *p*<0.05; *p*<0.01

Notes: Notes: Table 7 provides the regression results for the regression Days and Quarters on NewsActual. Days (1) and Quarter (2) are the regression for the Unstable group and Days (3) and Quarter (4) are the regressions for the Stable group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsActual [(MEF - A) / A], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

The pooled regression results are showed in Table 8. The pooled regression for the variables Days and Quarters on NewsActual shows if there are any significant differences between the Unstable forecasters and Stable forecasters groups. The regressions for Days (1) and Quarters (2) are done for the entire sample. The variable Forecaster is a dummy variable which indicates 1 if it is the Unstable forecaster group.

The variable of interest (the interaction variable $\text{Forecaster} * \text{NewsActual} * \text{SignActual}$) shows that with every unit increase of bad news, managers of Unstable firms disclose 6.809 days timelier than managers of Stable firms. This result has significance at 10%. This shows significant differences between the groups regarding the effect of the magnitude of bad news on the timeliness of disclosing management earnings forecasts. Unstable forecasters tend to delay bad news more than Stable forecasters.

Further evidence supports these findings. When comparing the Unstable forecasters and Stable forecasters group, results indicate that Unstable forecasters tend to disclose bad news later than Stable forecasters. The interaction variable ($\text{Forecaster} * \text{SignActual}$), that provides this finding, shows a negative coefficient of -6.628. This indicates that managers of Unstable firms disclose bad news 6.628 days later than managers of Stable firms. This result is significant at 1%. SignActual indicates that generally, managers disclose 8.816 days later if it is bad news. This result is again significant at 1%. Moreover, this effect is enhanced by the magnitude of bad news. Generally, firms disclose 13.974 days later with every unit increase of bad news as indicated by the interaction variable $\text{NewsActual} * \text{SignActual}$. This result is significant at 1%.

Additional evidence is found via the good news component. NewsActual indicates that generally, managers disclose good news management earnings forecasts 3.979 days earlier with every unit increase of good news. This result is significant at the 1% level. This indicates that good news is accelerated, and the opposite effect takes place for the bad news. This is also confirmed via the variable Forecaster . This variable provides interesting supporting evidence on a negative coefficient of -12.536, which has significance at the 1% level. This indicates that Unstable forecasters tend to disclose generally 12.536 days later than Stable forecasters. Unfortunately, these results only count for the regression based on Days. None of the variables in the Quarter regression provides a significant result, which could be due to scaling differences.

Overall, these results provide evidence that managers of Unstable forecaster firms tend to disclose bad news less timely than Stable forecaster firms when news is the difference between forecasts and actual results. As earlier mentioned by Healy and Palepu (2001) and Nagar et al (2003), managers are concerned by their careers, reputation, and job opportunities. Considering that providing bad news will reflect badly on them, managers tend to provide timelier opportunistic forecasts to hide potential bad news in the hope it will turn (in the end) in their favor. Nevertheless, when this is not the case managers will provide bad news disclosures later to still disclose (in the end) the bad news forecasts and counter potential litigation risk (Healy & Palepu, 2001). These results provide compelling evidence that managers indeed disclose good news (opportunistic news) earlier than bad news (pessimistic news). Therefore, the second hypothesis is not rejected.

The Strategic Disclosure of Management Earnings Forecasts

Table 8: Pooled Regression News (forecast - actual) on days

	<i>Dependent variable:</i>	
	Days (1)	Quarter (2)
Constant	204.100*** (8.162)	2.155 (8.162)
Forecaster	-12.536*** (1.719)	-0.177 (1.719)
NewsActual	3.979*** (1.000)	0.036 (1.000)
SignActual	-8.816*** (1.418)	-0.079 (1.418)
Size	-0.872 (0.538)	0.011 (0.538)
MTB	0.019 (0.084)	0.001 (0.084)
Loss	4.935 (3.909)	0.042 (3.909)
Lit	2.341 (2.069)	0.013 (2.069)
Bigfour	-1.957 (2.151)	-0.006 (2.151)
Leverage	-7.463** (3.319)	-0.026 (3.319)
NumAnalyst	0.175* (0.103)	0.002 (0.103)
InstOwn	10.278*** (2.883)	0.073 (2.883)
Forecaster:NewsActual	-0.045 (1.340)	-0.004 (1.340)
Forecaster:SignActual	-6.628*** (2.186)	-0.083 (2.186)
NewsActual:SignActual	-13.974*** (2.719)	-0.134 (2.719)
Forecaster:NewsActual:SignActual	6.809* (4.002)	0.069 (4.002)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Observations	38,791	38,791
R ²	0.023	0.021
Adjusted R ²	0.020	0.019
Residual Std. Error	96.557	1.076
F Statistic	8.932***	8.291***

Significance levels:

p<0.1; ***p***<0.05; *p*<0.01

Notes: Table 8 provides the pooled regression results for the regression Days and Quarters on NewsActual. The Forecaster variable is a dummy variable, and it is 1 if it is an Unstable forecaster. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsActual [(MEF - A) / A], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the actual results (scaled by the absolute value of actual results). SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

5. Conclusions

This research examines whether managers delay or accelerate management earnings forecasts based on the news content (good or bad news). To answer this question, this research investigates timeliness as the difference between the management earnings forecast date/quarter and the earnings announcement date/quarter. Additionally, the effect of news via the differences between (1) management earnings forecasts and the most recent analyst consensus forecasts and (2) the management earnings forecasts and the actual results, on the timeliness of management earnings forecasts is investigated.

Overall, the empirical evidence in this report suggests that managers make strategic choices concerning the timing (i.e., timeliness) of the management earnings forecast disclosures. This means that managers tend to use the timeliness characteristic as a disclosure choice and therefore they contribute to a potentially less useful and credible management earnings forecast.

Firstly, Managers have the incentives to meet or beat the analyst forecast or at least stay around the predictions of the analyst. If managers have bad news, they want to disclose that in a timelier fashion to prevent litigation risk (Skinner, 1994). However, they do not want to be far of to the analyst forecast to prevent any negative view on their abilities to lead the firm (Nagar, Nanda, & Wysocki, 2003). This research finds evidence that managers disclose bad news earlier when news is the difference between management earnings forecasts and analyst forecasts. Therefore, the first hypothesis “*Bad news (compared to analyst forecasts) is disclosed earlier*” is not rejected.

Secondly, managers still have the motivation to provide opportunistic forecasts due to career concerns. If the managers provide bad news, the investors could potentially want to replace them. Considering this, the manager will provide more opportunistic news, and therefore good(bad) news will be disclosed earlier(later) when news is the difference between management earnings forecasts and actual results. The managers hope that by postponing the bad news forecast, the news will turn in their favor. Therefore, the manager hopes that the actual result turns in their favor. This research finds evidence that managers indeed disclose good news earlier. Therefore, the second hypothesis “*Bad news (compared to actual forecasts) is disclosed later*” is not rejected.

This research contributes to the recent debate of cessation of management earnings forecasts (Dean Krehmeyer; Matthew Orsagh; Kurt N. Schnagt, 2006; Fuller & Jensen, 2002), by providing evidence that firms that are strategic forecasters and non-strategic forecasters are performing strategic choices concerning the disclosure of management earnings forecasts. Additionally, it provides new insides into the effect of the news on the timeliness of the management earnings forecasts.

This study has several limitations. As with most research concerning voluntary disclosures (and management earnings forecasts) endogeneity is a great concern. Healy and Palepu (2001) explained several incentives that influence the choices for management earnings forecast disclosures. This indicates that it is possible that the current set of control variables in the used

The Strategic Disclosure of Management Earnings Forecasts

model do not control for all endogeneity concerns. Therefore, a potential improvement of the current model could be a fruitful area for future research. Additionally, external validity concerns exist through the sample which consists only out of American firms between 2002 and 2019. The American regulatory setting could differ from other countries. E.g., Baginski et al (2002) found evidence that the litigation environment influences the incentives of managers to disclose. They use a sample containing the American and Canadian litigation environments. This means that the litigation and regulatory environment differ across countries, which can be of influence on the incentives. Therefore, it is important to mention that the results can not be extrapolated to other countries than the United States. Another external validity concern consists in the forecast forms used in the sample. To include as many observations as possible, the sample consists out of point and range forecasts. Nevertheless, qualitative forecasts are still very much used and therefore these results could differ if they are included. Additionally, only Earnings Per Share (EPS) is used as the measure the determine good or bad news. Other measures could provide other results. Lastly, only management earnings forecasts are used which forecasts the earnings at the end of the fiscal year. Timeliness effects concerning management earnings forecasts which provides forecasts on a quarterly base are not included and could provide different results.

Considering all the above, future research concerning models which can address the earlier mentioned concerns will be interesting. Future research concerning a similar model with a quarterly management earnings forecasts sample could be an interesting area for future research. Especially now, considering that companies are dropping their quarterly forecasts due to critics and concerns about these forecasts (Fuller & Jensen, 2002). Additionally, further research for timeliness and other forecasting characteristics is still necessary to assess the full scope of influences on the credibility of management earnings forecasts.

Bibliography

- Aboody, D., & Kasznik, R. (2000). CEO stock option awards and the timing of corporate voluntary disclosures. *Journal of Accounting and Economics* 29(1), 73-100.
- Ajinkya, B., Bhojraj, S., & Sengupta, P. (2005). The Association between Outside Directors, Institutional Investors and the Properties of Management Earnings Forecasts. *Journal of Accounting Research* 43(3), 343-376.
- Akerlof, G. A. (1970). The market for "lemons": quality uncertainty and the market mechanism. *The Quarterly Journal of Economics* 84(3), 343-376.
- Atiase, R. K., Li, H., Supattarakul, S., & Tse, S. (2005). Market Reaction to Multiple Contemporaneous Earnings Signals: Earnings Announcements and Future Earnings Guidance. *Review of Accounting Studies* 10(4), 497-525.
- Baginski, S. P., & Hassell, J. M. (1997). Determinants of Management Forecast Precision. *The Accounting Review* 72(2), 303-312.
- Baginski, S. P., Hassel, J. P., & Kimbrough, M. D. (2002). The Effect of LEgal Environment on Voluntary Disclosures: Evidence from the Management Earnings Forecasts Issued in U.S. and Canadian Markets. *The Accounting Review* 77(1), 25-50.
- Baginski, S. P., Hassell, J. M., & Kimbrough, M. D. (2004). Why Do Managers Explain Their Earnings Forecasts? *Journal of Accounting Research* 42(1), 1-29.
- Baik, B., Farber, D. B., & Lee, S. (2011). CEO Ability and Management Earnings Forecasts. *Contemporary Accounting Research* 28(5), 1645-1668.
- Ball, R., & Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research* 6(2), 159-178.
- Ball, R., & Shivakumar, L. (2008). How much new information is there in Earnings? *Journal of Accounting Research* 46(5), 975-1016.
- Bamber, L. S., & Cheon, Y. S. (1998). Discretionary Management Earnings Forecast Disclosures: Antecedents and Outcomes Associated with Forecast Venue and Forecast Specificity Choices. *Journal of Accounting Research* 36(2), 167-190.
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24(1), 3-37.
- Beyer, A., Cohen, D. A., Lys, T. Z., & Walther, B. R. (2010). The financial reporting environment: Review of the recent literature. *The Journal of Accounting and Economics* 50(2-3), 296-343.
- Bhushan, R. (1989). Firm characteristics and analyst following. *Journal of Accounting and Economics* 11(2-3), 255-274.
- Brennan, N. (1999). Voluntary disclosure of profit forecasts by target companies in takeover bids. *Journal of Business Finance & Accounting* 26(7-8), 883-918.
- Brown, L. D. (2001). A Temporal Analysis of Earnings Surprises: Profit Versus Losses. *Journal of Accounting Research* 39(2), 221-241.
- Chen, S. (2004). Why Do Managers Fail to Meet Their Own Forecasts. *14th Annual Conference on Financial Economics and Accounting (FEA)*.
- Choi, J. H., & Ziebart, D. A. (2004). Management Earnings Forecasts and the Market's Reaction to Predicted Bias in the Forecasts. *Asia-Pacific Journal of Accounting and Economics* 11(2), 167-192.

- Choi, J.-H., Myers, L. A., Zang, Y., & Ziebart, D. A. (2011). Do management EPS forecasts allow returns to reflect future earnings? Implications for the continuation of management's quarterly earnings guidance. *Review of Accounting Studies* 16(1), 143-182.
- Coller, M., & Yohn, T. L. (1997). Management Forecasts and Information Asymmetry: An Examination of Bid-Ask Spreads. *Journal of Accounting Research* 35(2), 181-191.
- Dean Krehmeyer; Matthew Orsagh; Kurt N. Schnagt. (2006). *Breaking the short-term cycle*. Integrity, Business Roundtable Institute for Corporate Ethics and CFA Institute Centre for Financial Market.
- DeAngelo, L. (1998). Managerial Competition, Information Costs and Corporate Governance: The Use of Accounting Performance Measures in Proxy Contests. *Journal of Accounting & Economics* 10(1), 3-36.
- Donelson, D. C., McInnis, J. M., Mergenthaler, R. D., & Yu, Y. (2012). The Timeliness of Bad Earnings News and Litigation Risk. *The Accounting Review* (2012) 87 (6), 1967-1991.
- E.Verrecchia, R. (2001). Essays on disclosure. *Journal of Accounting and Economics* 32(1-3), 97-180.
- Ellis, J. A., Fee, C. E., & Thomas, S. E. (2012). Proprietary Costs and the Disclosure of Information About Customers. *Journal of Accounting Research* 50(3), 685-727.
- Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder litigation and corporate disclosures. *Journal of Accounting Research* 32(2), 137-164.
- Fuller, J., & Jensen, M. (2002). Just say no to Wall Street: Putting a stop to the earnings game. *Journal of Applied Corporate Finance* 14(4), 41-46.
- Graham, J. R., Harvey, C. R., & Raygopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40(1-3), 3-73.
- Hayn, C. (1005). The Information-Content of Losses. *Journal of Accounting & Economics* 20(2), 125-153.
- Healy, P., & Palepu, K. (2001). Information asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature. *Journal of Accounting and Economics* 31(1-3), 405-440.
- Hirst, E., Koonce, L., & Venkataraman, S. (2008). Management earnings forecasts: A review and framework. *Accounting Horizons* 22(3), 315-338.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3(4), 305-360.
- Karamanou, I., & Vafeas, N. (2005). The Association between Corporate Boards, Audit Committees, and Management Earnings Forecasts: An Empirical Analysis. *Journal of Accounting Research* 43(3), 453-486.
- Kasznik, R. (1999). On the Association between Voluntary Disclosure and Earnings Management. *Journal of Accounting Research* 37(1), 57-81.
- Kasznik, R., & Lev, B. (1995). To Warn or Not to Warn: Management Disclosures in the Face of an Earnings Surprise. *The Accounting Review* 70(1), 113-134.
- King, R., Pownall, g., & Waymire, G. (1990). Expectations Adjustments via Timely Management Forecasts: Review of Synthesis, and Suggestions for Future Research. *Journal of Accounting Literature* 9(1), 113-144.

The Strategic Disclosure of Management Earnings Forecasts

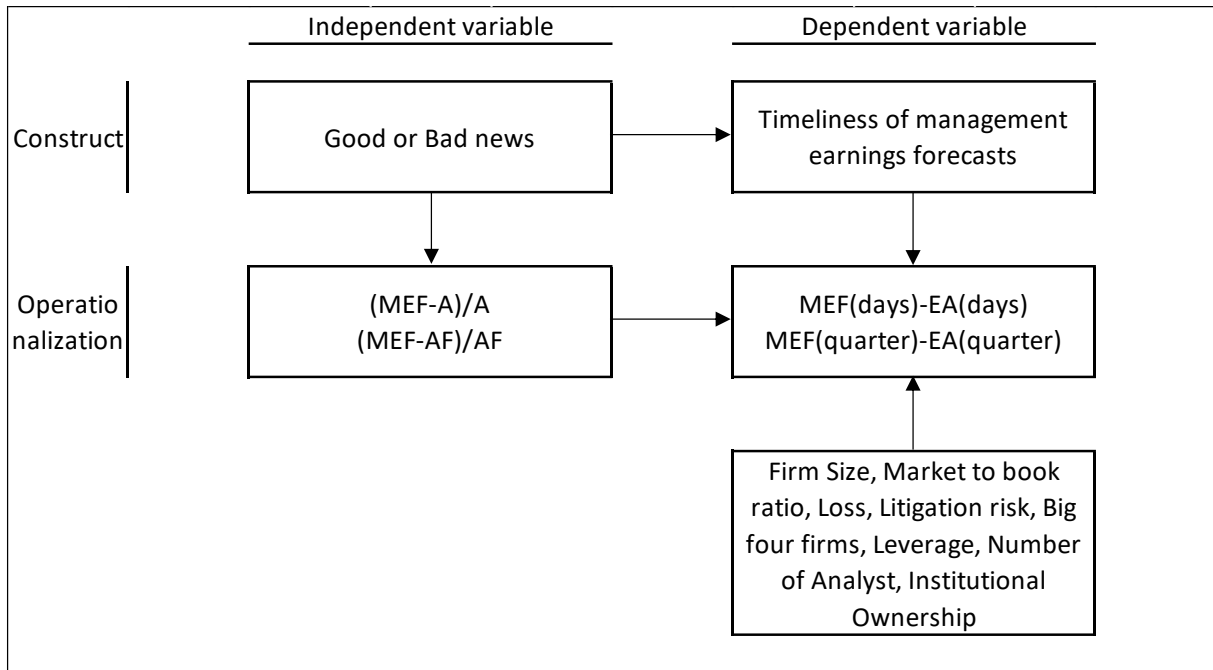
- Kothari, S. P., Shu, S., & Wysocki, P. (2009). Do Managers Withhold Bad News. *Journal of Accounting Research* 47(1), 241-276.
- Lang, M. H., & Lundholm, R. J. (1993). Cross-Sectional Determinants of Analyst Ratings of Corporate Disclosures. *Journal of Accounting Research* 31(2), 246-271.
- Lang, M., & Lundholm, R. (1997). Voluntary disclosure during equity offerings: reducing information asymmetry or hyping stock. *Contemporary Accounting Research* 17(4), 623-662.
- McNichols, M. (1989). Evidence of Informational Asymmetries from Management Earnings Forecasts and Stock Returns. *The Accounting Review* 64(1), 1-27.
- Mercer, M. (2004). How Do Investors Assess the Credibility of Management Disclosures? *Accounting Horizons* 18(3), 185-196.
- Nagar, V., Nanda, D., & Wysocki, P. (2003). Discretionary Disclosure and Stock-Based Incentives. *Journal of Accounting & Economics* 34(1-3), 283-309.
- Pownall, G., Wasley, G., & Wysocki, P. D. (1993). The Stock Price Effects of Alternative Types of Management Earnings Forecasts. *The Accounting Review* 68(4), 896-912.
- Rogers, J. L., & Stocken, P. C. (2005). Credibility of Management Forecasts. *The Accounting Review* 80(4), 1233-1260.
- Shivakumar, L., Urcan, O., Vasvari, F. P., & Zhang, L. (2011). The debt market relevance of management earnings forecasts: evidence from before and during the credit crisis. *Review of Accounting Studies* 16(3), 464-486.
- Skinner, D. J. (1994). Why Firms Voluntarily Disclose Bad News. *Journal of Accounting Research* 32(1), 38-60.
- Tucker, J. X. (2005). Is Openness Penalized? Stock Returns around Earnings Warnings. *The Accounting Review* 82(4), 1055-1087.
- Watts, R. L. (2003). Conservatism in Accounting part 1: Explanations and Implications. *Accounting Horizons* 17(3), 207-221.
- Waymire, G. (1985). Earnings Volatility and Voluntary Management Forecast Disclosure. *Journal of Accounting Research* 23(1), 268-295.
- Waymire, G. (1986). Additional Evidence on the Accuracy of Analyst Forecasts before and after Voluntary Management Earnings Forecasts. *The Accounting Review* 61(1), 129-142.
- Wiedman, C. (2000). Discussion of "Voluntary Disclosure and Equity Offerings: Reducing Information Asymmetry or Hyping the Stock?". *Contemporary Accounting Research* 17(4), 663-669.

Appendix

Appendix 1. Data sampling

Data sampling		
Dataset or/and item	dropped observations	Observations
I/B/E/S Guidance - Guidance data		1,268,922
Unnecessary observations	1,177,484	
Duplicates	9,518	
Missing values	6,999	
Total observations left		74,921
I/B/E/S Summary - Earnings announcement data		
I/B/E/S Summary - Earnings announcement data		962,362
Unnecessary observations	-	
Duplicates	869,767	
Missing values	7,914	
Total observations left		84,681
Compustat North America - Financial items data		
Compustat North America - Financial items data		223,717
Unnecessary observations	-	
Duplicates	39,802	
Missing values	-	
Total observations left		83,915
Thompson Reuters Infinitiv - Governance data		
Thompson Reuters Infinitiv - Governance data		775,558
Unnecessary observations	-	
Duplicates	473,885	
Missing values	107,813	
Total observations left		193,860
Merge the other 3 datasets with the Guidance dataset		
Merge the other 3 datasets with the Guidance dataset		74,921
Observations not matched	28,515	
Unnecessary observations	7,615	
Total observations		38,791
Summary		
Total Stable forecaster observations		24,425
Total unstable forecaster observations		14,366
Total observations		38,791

Appendix 2. Libby Boxes



Appendix 3. Description variables

Description per variable		
Variable	Description	Reference
Forecaster	A dummy variable indicating 1 if it is a forecaster who does not provide a management earnings forecast in every quarter. This is deemed as a strategic forecaster.	(Skinner, 1994)
Size	Size is the log of the total assets of a firm (Firm Size).	(Kasznik & Lev, 1995; Ajinkya, Bhojraj, & Sengupta, 2005)
MTB	The Market to Book ratio, represents the proprietary costs and is calculated by dividing the market value of equity by the book value of equity.	(Ajinkya, Bhojraj, & Sengupta, 2005; Bamber & Cheon, 1998)
Loss	Loss is a dummy variable which equals one if the current year has a negative result.	(Ajinkya, Bhojraj, & Sengupta, 2005; Baik, Farber, & Lee, 2011)
Lit	Lit is a dummy variable, which equals one if a firm belongs to an industry with SIC codes 2833-2836, 3570-3577, 3600-3674, and 7370-7374. This indicates a higher litigation risk environment.	(Francis, Philbrick, & Schipper, 1994)
Bigfour	Bigfour is a dummy variable that equals 1 if the firm is audited by a company of the big four.	(Ajinkya, Bhojraj, & Sengupta, 2005; Lang & Lundholm, 1993)
Leverage	Leverage is calculated by dividing the liabilities by the total assets of a company.	(Kothari, shu, & Wysocki, 2009)
NumAnalyst	NumAnalyst is the log of the number of analysts following a company.	(Ajinkya, Bhojraj, & Sengupta, 2005; Lang & Lundholm, 1993)
InstOwn	InstOwn is the institutional ownership percentage of a firm.	(Karamanou & Vafeas, 2005; Ajinkya, Bhojraj, & Sengupta, 2005)

Appendix 4. Correlation matrix – Unstable forecasters

Table 11: Correlation Matrix - Unstable forecaster

Variable	NewsActual	NewsAnalyst	SignActual	SignAnalyst	Size	Leverage	NumAnalyst	InstOwn	Bigfour	Loss	MTB	Lit
NewsActual	1											
NewsAnalyst	-0.003	1										
SignActual	-0.161	-0.006	1									
SignAnalyst	0	-0.141	-0.027	1								
Size	-0.001	0.003	0.067	0.01	1							
Leverage	0.011	-0.008	0.014	-0.003	0.484	1						
NumAnalyst	-0.002	0.005	0.064	0.029	0.631	0.19	1					
InstOwn	0.012	-0.003	0.008	0.04	0.071	0.034	0.228	1				
Bigfour	0.009	-0.005	0.051	0.001	0.28	0.188	0.233	0.159	1			
Loss	-0.163	-0.02	0.045	-0.032	-0.245	-0.028	-0.117	-0.098	-0.051	1		
MTB	-0.001	0.005	0.063	-0.016	-0.015	0.086	0.096	0.041	0.027	0.011	1	
Lit	-0.001	0.004	0.06	-0.043	-0.157	-0.197	0.009	-0.038	-0.085	0.087	0.101	1

Notes: Table 9 provides the correlation table of the variables of the Unstable forecaster group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual [(MEF - A) / A] is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.

The Strategic Disclosure of Management Earnings Forecasts

Appendix 5. Correlation matrix – Stable forecasters

Table 10: Correlation Matrix - Stable forecaster

Variable	NewsActual	NewsAnalyst	SignActual	SignAnalyst	Size	Leverage	NumAnalyst	InstOwn	Bigfour	Loss	MTB	Lit
NewsActual	1											
NewsAnalyst	0.006	1										
SignActual	-0.16	0.013	1									
SignAnalyst	0.013	-0.085	-0.02	1								
Size	-0.019	0.022	0.053	0.029	1							
Leverage	0.006	0.008	-0.018	0.012	0.467	1						
NumAnalyst	-0.022	0.017	0.046	0.05	0.618	0.181	1					
InstOwn	0.013	0.006	0.017	-0.005	-0.074	-0.036	0.133	1				
Bigfour	-0.003	0.008	0.036	0.013	0.277	0.217	0.206	0.074	1			
Loss	-0.092	-0.044	-0.012	-0.039	-0.196	0.018	-0.1	-0.079	-0.019	1		
MTB	-0.012	0.023	0.051	-0.01	0.016	0.183	0.115	0.017	0.041	0.016	1	
Lit	-0.024	-0.005	0.053	-0.06	-0.169	-0.18	-0.036	0.013	-0.096	0.108	0.066	1

Notes: Table 10 provides the correlation table of the variables of the Stable forecaster group. A firm is regarded as “Unstable” when it does not provide structural management earnings forecasts for each quarter. Days [=MEF_{Date} - EA_{Date}] is the number of days till the earnings announcement. Quarter [=MEF_{quarter} - EA_{quarter}] is the number of quarters till the earnings announcement. NewsAnalyst [(MEF - AF) / AF], is the news content of the management earnings forecast and is the difference between the management earnings forecast and the analysts’ most recent forecast (scaled by the absolute value of the analysts’ consensus forecasts). NewsActual [(MEF - A) / A] is the news content of the management earnings forecast and the difference between the management earnings forecast and the actual results (scaled by the absolute value of the actual results). SignAnalyst indicates 1 (bad news) when the value of NewsAnalyst is negative. SignActual indicates 1 (bad news) when the value of NewsActual is negative. The other variables are described in the appendix.