

DOES INSTITUTIONAL INVESTOR COMPOSITION INFLUENCE MANAGERIAL
MYOPIA? THE CASE OF ACCOUNTING RESTATEMENTS

by

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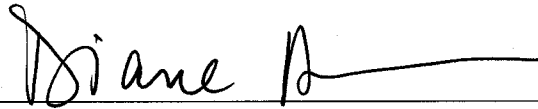
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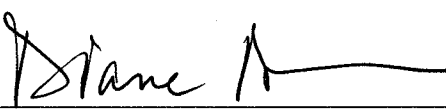
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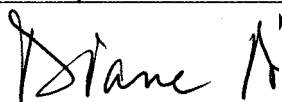
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I examine how different classes of institutional investors influence managerial myopia as manifested by aggressive earnings report that later needs to be restated. Prior literature finds that transient institutional investors, who hold diversified portfolios with high turnover, trade heavily on earnings news. As a result, the stock price of a firm with higher ownership by these investors is expected to drop sharply at the release of bad earnings. If managers care about the current stock price, an assumption supported in the literature, they will have an incentive to avoid releasing bad earnings news. Therefore, I hypothesize that managers of a firm with higher transient institutional investor ownership are more likely to misstate earnings. On the other hand, current studies argue that dedicated institutional investors, who hold concentrated portfolios with low turnover, act more like monitors of a firm and they do not trade actively on earnings news. As a result, I hypothesize that the ownership by dedicated institutional investors is negatively associated with a manager's likelihood to misstate earnings.

I test these predictions on a sample of 245 misstating firm-quarters and 18,221 non-misstating firm-quarters from 1996 to 2002. I find that higher ownership by transient institutional investors is associated with a significantly higher likelihood of a manager misstating earnings. This evidence suggests that transient institutional investors may pressure managers to behave myopically. In contrast, I do not find support that the level of ownership by dedicated institutional investors is associated with the probability of misstatements. Therefore, dedicated institutions do not appear to monitor managers effectively in the case of accounting restatements. These results are robust to alternative institution classification and larger sample size with fewer data restrictions.

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CHAPTER I

INTRODUCTION

According to Stein (1988, 1989), managerial myopia refers to managers' effort to achieve a high stock price by inflating current earnings at the expense of the firm's long term interest, or intrinsic value. Managers can inflate current earnings by underinvesting in long-term intangible assets such as research and development (R&D), advertising, or employee-training (Porter (1992)). Because, by definition, managerial myopia reduces firm value and shareholder wealth, it is of interest to both academics and practitioners to study its cause to reduce its occurrence and better protect shareholders' interests.

Wahal and McConnell (2000) argue that two features of the US equity market induce corporate managers to display myopic behavior. The first is the active market for corporate control, and the second, which is the focus of this study, is the concentration of ownership by institutional investors who have short-term horizons. Existing evidence on whether institutional ownership exacerbates or mitigates managerial myopia is inconclusive. Bushee (1998) finds that companies with higher transient institutional ownership are more likely to reduce expenditures on R&D to avoid an earnings drop.¹ In

¹ Bushee classifies institutions into three categories – transient institutions, who hold diversified portfolios with high turnover, dedicated institutions, who hold concentrated portfolios with low turnover, and quasi-indexers, who hold diversified portfolios with low turnover.

contrast, Wahal and McConnell (2000) find that firms with higher ownership by institutions that actively trade are less likely to reduce expenditures for R&D and PP&E.

Measurement issues may underlie the mixed results. Both of the above studies implicitly equate reducing R&D and PP&E expenditures with underinvestment. There is no direct evidence, however, that firm intrinsic value necessarily decreases as managers cut R&D and PP&E spending. For a managerial decision to be classified as myopic, the decision must decrease firm value. Showing this requires either calculating the optimal level of R&D and PP&E that maximizes firm value or documenting that firm value would have increased if managers had not cut R&D and PP&E expenditures. This is not a minor task and neither of the two studies addresses the issue directly.

Previous studies of managerial myopia focus exclusively on investment decisions. In contrast, I study managerial myopia in the setting of accounting restatements and ask whether the composition of institutional ownership influences the probability of a manager to aggressively manipulate earnings that later need to be restated. My restatements data are obtained from the General Accounting Office (GAO, 2002), which defines restatements as accounting irregularities that result in a material misstatement of financial results.²

I hypothesize that different types of institutional investors play different roles in inducing managers to misstate earnings. Transient institutional investors, as classified by

² According to the GAO's definition, accounting irregularity is defined as "an instance in which a company restates its financial statements because they were not fairly presented in accordance with generally accepted accounting principles (GAAP)."

Bushee (1998), are short-term focused and tend to actively trade on earnings news.³ Therefore, at disappointing earnings news, a firm's stock price drops more if the firm has more transient institutional investors prior to the earnings release, all else equal. Thus, managers who care about the current stock price will have a stronger incentive to aggressively manipulate earnings when the firm has higher ownership by transient institutions. The previous literature provides evidence that managers focus on the current stock price rather than intrinsic firm value due to concerns of becoming a potential takeover target, needs for external financing in the near future, job security, or executive compensation.

On the other hand, dedicated institutional investors, who hold a concentrated portfolio with low turnover, are long-term investors and they do not trade heavily on earnings news. Therefore, the stock price of a firm with higher dedicated institutional ownership is less sensitive to released earnings, and thus its managers have less incentive to misstate earnings. Moreover, dedicated institutional investors focus more on long-term firm value, and hence have an incentive to monitor managers and prevent them from adopting such aggressive accounting policies that eventually destroy firm value.

To test whether a manager's propensity to misstate earnings is systematically related to ownership by either transient or dedicated institutional investors, I estimate logistic regressions using all observations with necessary data from 1996 to 2002. My tests show that higher transient institutional ownership is significantly associated with a higher probability for the firm to misstate quarterly earnings; meanwhile dedicated

³ This is documented by Bushee (1998, 2001), Ke and Ramalingegowda (2004, 2005), and Ke and Petroni (2004).

institutional ownership is not significantly related to a firm's likelihood to misstate quarterly earnings.⁴ Similar results are obtained when using matching sample analysis, where each misstating firm is matched to a non-misstating firm on year, industry and firm size. My results are consistent with Bushee (1998), who finds that managers are more likely to cut R&D expenses to reverse an earnings decline when the firm has higher transient institutional ownership, but such likelihood is not correlated with dedicated institutional ownership.

I conduct additional tests to identify causality between institutional ownership and aggressive earnings manipulation. There are two different interpretations of my finding that transient institutional ownership, measured before quarter-end, is positively associated with managers' propensity to misstate that quarter's earnings. One interpretation consistent with my hypothesis is that transient institutional investors pressure managers to meet expectations, and as a result, managers are more likely to issue misstated earnings. Alternatively, it could be that transient institutions are attracted to firms that are about to announce misstated earnings, perhaps due to high abnormal returns around the earnings release, high liquidity, or low dividend yields.

In order to show that transient institutions are attracted by a firm's abnormal returns, two things have to be true in order for this alternative explanation to hold. First, firms that misstate earnings must have a higher cumulative abnormal return (CAR) around earnings announcement than firms that do not misstate earnings. I show that the CAR for misstating firms and non-misstating firms on average are not significantly

⁴ When predicting whether quarter t 's earnings are misstated, transient and dedicated institutional ownership levels are measured prior to the end of quarter t .

different. Second, transient institutions are sophisticated enough to correctly predict the forthcoming announced earnings and adjust their holdings accordingly before the earnings release. In other words, there should be a positive correlation between change in transient institutional ownership, measured in the quarter prior to the forthcoming earnings release, and the CAR around the announcement of misstated quarterly earnings. However, I find the correlation to be not significantly different from zero. Because neither of these assumptions holds, it is less likely that transient institutional investors are attracted to the misstating firms because of abnormal returns.

Additional tests suggest that though transient institutional investors are more likely to invest in firms with lower dividend yield and higher liquidity, misstating firms do not have lower dividend yield or higher liquidity than non-misstating firms, and thus do not appear to be more attractive to transient institutions. Therefore, I conclude that it is not likely that transient institutions are attracted to misstating firms prior to the release of misstated earnings.

This paper contributes to the managerial myopia literature by studying a much starker and extreme case of myopic behavior. Accounting restatements provide a better laboratory to examine managerial myopia than reduction in R&D and PP&E spending because cutting investment is not always value decreasing, while prior research shows that accounting restatements decrease intrinsic firm value. Dechow, Hutton and Sloan (1996), Wu (2002), and Palmrose, Richardson and Scholz (2004) all document that the three-day CAR around the date of restatement announcement is between -6% to -10%, depending on the sample examined. Hribar and Jenkins (2004) further demonstrate that

such loss in firm value not only results from revisions of expected future cash flows due to the non-existent past earnings, but also results from an increase in firm risk and the cost of capital, with the increase ranging from 6% to 15%. Such a change in firm risk is mainly due to lower earnings quality after restatements. Therefore, after a restatement announcement, even though the firm might have the same expected cash flows as if it had never misstated earnings, the firm encounters a higher cost of capital and thus a lower intrinsic value than had it never misstated. In other words, earnings restatements are unambiguously value decreasing and therefore provide a useful setting to study managerial myopia.

My study also contributes to the accounting restatement literature in that it is the first paper to uncover an association between a firm's ownership composition and its likelihood to misstate earnings. Prior studies by Richardson, Tuna, and Wu (2003) and Efendi, Srivastava and Swanson (2005) identify certain firm characteristics that are related to the probability of misstating earnings, such as firm size, past string of earnings surprise, and executive compensation. Both studies show that managers misstate earnings in order to avoid the negative reaction from the capital market at the earning release. However they do not address the question of which group of investors would be selling heavily at the release of true earnings that fall short of market expectations. Thus, they miss a possible capital market influence on manager's incentives to aggressively manipulate earnings. After controlling for the factors they find to predict misstatements, I show that transient institutional ownership significantly increases the probability of

misstatement. Therefore my paper helps researchers and investors to better understand managerial incentives to misstate earnings.

The next Chapter develops hypotheses by examining arguments for how institutional investors impact managerial incentives to engage in aggressive accounting practices that lead to earnings restatement. Chapter III describes the data and presents descriptive statistics. Chapter IV reports results from empirical tests. Alternative explanations of the results are addressed in Chapter V. Chapter VI concludes.

CHAPTER II

HYPOTHESES AND CONTROL VARIABLES

Hypotheses Development

Cai and Zheng (2004) find that institutional investors have become the dominant investors in the U.S. equity market, holding more than half of publicly traded equities and accounting for more than half of trading. Therefore, institutional trading potentially has a large impact on a firm's current stock price, which in turn influences decision making by managers assuming managers care about current stock price.

Bushee (1998, 2001) classifies institutions into three categories – transient institutions, who hold diversified portfolios with high turnover, dedicated institutions, who hold concentrated portfolios with low turnover, and quasi-indexers, who hold diversified portfolios with low turnover. Among three groups of institutions, transient institutions have the shortest investment horizon and are most short-term focused, and therefore are most likely to sell shares of a firm that has just released worse-than-expected earnings. This is supported by Ke and Ramalingegowda (2004), who demonstrate that the quarterly change in transient institutional ownership is significantly positively associated with the current quarter's earnings surprise. As a result, the stock price of a firm with higher transient institutional ownership experiences a sharper drop around the time that disappointing earnings are released. Using a different classification,

Hotchkiss and Strickland (2003) find that firms with higher levels of ownership by momentum or aggressive growth institutional investors experience more negative stock price response when their quarterly earnings are announced to be below expectations.

As demonstrated by Stein (1988, 1989), one necessary condition to create managerial myopia is that managers must be concerned about current stock price, which is supported by several empirical studies. First, corporate managers care about current stock price out of job security concerns. Warner, Watts and Wruck (1988) support an inverse relation between a firm's stock returns and subsequent top management turnover. Parrino, Sias, and Starks (2003) also find that institutional investors reduce their positions or abandon the stocks altogether prior to forced CEO turnover for stock performance reasons. Second, firms with poor stock returns tend to become targets for acquisition, because there is more potential for improvement in poorly performing firms. Stein (1988) shows that stock undervaluation due to temporarily low earnings increases the likelihood of a takeover. Furthermore, since one prominent motive for takeovers is to replace poorly performing managers, as argued by Brealey and Myers (1991), top managers have the incentive to maintain a good record of stock performance. Third, CEO compensation is partially determined by both the firm's stock performance and accounting performance measured by released earnings. The value of CEOs' stock-options increases with the firm's stock price while they are in the money, and thus provides CEOs with the incentive to boost stock price before exercising their options. Moreover, Matsunaga and Park (2001) find that missing a quarterly earnings benchmarks decreases a CEOs' annual bonus. Therefore managers may focus on meeting earnings expectations to enhance their

personal wealth. Finally, firms that are about to conduct a seasoned equity offering benefit from a higher stock price at the time of equity issuance.

In order to avoid a sharp drop in the firm's stock price, some short-term focused managers may undertake a sub-optimal investment policy by reducing R&D expenses. Alternatively, the manager might manipulate earnings so that the reported earnings will meet or just beat forecasted earnings, even though the cost of capital will increase and firm value will decrease if the aggressive manipulation is revealed to the public. Bushee (1998) examines the situation where managers reduce R&D expenses to reverse an earnings decline. He finds that firms with higher transient institutional ownership are more likely to cut R&D to maintain strong short-term earnings growth.

Misstating earnings that later triggers restatement is an extreme case of earnings management that constitutes evidence of managerial myopia. Therefore in the same spirit as Bushee (1998), I hypothesize the following:

H1: *Ceteris paribus*, firms with higher transient institutional ownership are more likely to issue earnings that later need to be restated.

On the other hand, dedicated institutions, who own a very concentrated portfolio with a relatively long investment horizon, act more like long-term owners of the firm rather than traders who seek short-term trading gains. As argued by Gaspar, Massa and Matos (2005), short-term institutional investors have less incentive to spend resources in monitoring the managers, because they are less likely to remain shareholders of the firm long enough to reap the benefits of the monitoring. Moreover, short-term institutions also

have less time to learn about the firm. I apply the opposite argument to the dedicated investors and hypothesize the following in the setting of accounting restatements:

H2: *Ceteris paribus*, firms with higher dedicated institutional ownership are less likely to issue earnings that later need to be restated.

Whether quasi-indexing institutional ownership predicts misstatements is not clear. As argued by Porter (1992), quasi-indexing institutions are highly diversified and thus possess little incentive to monitor corporate managers, which suggests a positive association between manager's likelihood to misstate earnings and the ownership by quasi-indexing institutions. On the other hand, Monks and Minow (1995) suggest that because indexers are not able to sell, they have a strong incentive to monitor managers and prevent them from destroying firm value. Therefore, the impact of quasi-indexers on managerial myopia remains an empirical question.

I do not have any prediction of how aggregate institutional ownership is associated with the likelihood to misstate earnings. This is because aggregate institutional ownership is comprised of transient, dedicated, and quasi-indexer ownership, with transient and dedicated institutions having opposing predictions regarding the likelihood of a firm to misstating its earnings.

Though accounting restatements and underinvestment in R&D and PP&E are both examples of managerial myopia, there exists a subtle difference between the two in terms of managerial incentives. In the case of underinvestment, managers may do so to avoid possible temporary firm undervaluation, due to excessive selling by impatient investors at the time of earnings release. In the case of earnings restatement, managers adopt

aggressive accounting policies in order to mislead the market into overvaluing the firm's stock. A common element in both cases is that managers must care about the firm's current stock price.

Model Specification and the Control Variables

In order to test the impact of institutional investor composition on a firm's likelihood to misstate quarterly earnings, I estimate a logistic regression as in equation (1), with the dependent variable equal to 1 if the firm misstates earnings in quarter t , and 0 otherwise.

$$\begin{aligned} \text{Prob}(re_{i,t} = 1) = & F(\beta_1 + \beta_2 \text{Transient}_{i,t-1} + \beta_3 \text{Dedicated}_{i,t-1} + \beta_4 \text{Indexer}_{i,t-1} \\ & + \beta_5 \log \text{asset}_{i,t-1} + \beta_6 \text{bm}_{i,t-1} + \beta_7 \text{int cov}_{i,t-1} + \beta_8 \text{EPS}_{i,t-1} + \beta_9 \text{ceochair}_{i,t-1} \\ & + \beta_{10} \text{overpay}_{i,t-1} + \beta_{11} \log \text{salary}_{i,t-1} + \beta_{12} \text{option}_{i,t-1} + \beta_{13} \text{time}_{i,t-1} + \varepsilon_{i,t}) \quad (1) \end{aligned}$$

Besides the ownership measures, which I define in Section 3, I also include a set of control variables that prior studies have found to be significantly correlated with a firm's likelihood to misstate earnings. The first control variable I include is firm size, measured as the log of total assets. Richardson, Tuna and Wu (2003) argue that misstatements by larger firms are more likely to be caught due to closer scrutiny by analysts (Bhushan, 1989). Both Richardson et al. and Efendi et al. (2005) find that the likelihood of misstatement is positively associated with firm size. Yet another reason that I need to control for firm size is that Gompers and Metrick (2001) find that larger firms have higher institutional ownership, and probably also have higher ownership by each class of institutions. Therefore not controlling for firm size may induce a spurious

relation between institutional ownership and probability of misstatements. The expected coefficient for firm size, β_5 , is positive.

The second control variable is the book to market ratio. Skinner and Sloan (2002) show that growth stocks exhibit an asymmetrically large price drop in response to negative earnings surprises. Therefore, managers of high growth firms (with lower book to market ratio) have more incentive to aggressively manage earnings when actual earnings fall short of market expectations. The expected coefficient for book to market ratio, β_6 , is negative.

The third control variable is interest coverage. Richardson et al. (2003) argue that firms are required to maintain a pre-specified interest coverage ratio, and that violations of debt covenants are costly to the firm. Therefore when a firm is close to default on accounting-based debt covenants, managers have the incentive to aggressively manage earnings to avoid the cost of violation. According to Efendi et al. (2005), there is a threshold around 1.0 for interest coverage above which violation becomes costly, and thus creates incentive for managers to misstate earnings. Following Efendi et al., I create an indicator variable *intcov*, which equals 1 if the ratio of interest expense to EBIT is greater than 1 and 0 otherwise. Since *Intcov* is an inverse measure for interest coverage, its expected coefficient, β_7 , is positive.

The fourth control variable *EPS* measures prior analyst forecast error. Following Richardson et al. (2003), I create a dummy variable *EPS* which equals 1 if the firm experienced a positive earnings surprise of 5 cents or less in each of the past four quarters

and 0 otherwise.⁵ Their argument is that when firm performance beats analyst forecasts for the past several quarters in a row, the market expects the firm to perform well in the forthcoming quarter as well. The market will be negatively impacted if the firm fails to deliver a good earnings report. *EPS* focuses on small earnings surprises because they may result from earnings management rather than actual strong firm performance. If a firm has been beating analyst forecasts by large amounts for several quarters in a row, it is probably because the firm consistently realized much better performance than the market expected. However if a firm reported earnings that beats analyst forecast by a very small amount for several quarters in a row, it could be the case that the firm has been managing earnings in order to just beat expectations. Those firms are under pressure to continue to deliver “good” performance in the coming quarters and thus are more likely to aggressively manipulate earnings if actual earnings are going to be disappointing. In other words, the probability for those firms to misstate earnings is higher than for other firms. Therefore the expected coefficient for *EPS*, β_8 , is positive. Analyst forecast data are obtained from the I/B/E/S summary file.

The fifth control variable is *ceochair*, which equals 1 if the CEO of the firm also serves as chairman of the board of directors, and 0 otherwise. Efendi et al. (2005) argues that combining the position of CEO and chairman reduces board effectiveness in monitoring the CEO, who is in turn more likely to make decisions that do not maximize firm value. Therefore the likelihood to misstate earnings is higher for these firms. However, while Efendi et al. (2005) find empirical support for this, Baber, Kang, and

⁵ Richardson et al. (2003) report that *EPS*' predictability of misstatement is insensitive to changing the requirement of 5 cents to 1, 2, 3, 4 cents or using all positive forecast errors.

Liang (2005) do not find that companies with CEO serving as board chairman has higher propensity to misstate. The expected coefficient for *ceochair*, β_9 , is positive.

The sixth control variable is *overpay*, which is another measure of board effectiveness. *Overpay* is an indicator variable that equals 1 if the increase in the CEO's salary exceeds the increase in firm performance, measured as the average of percentage increase of the firm's net income, EPS, and revenue. Efendi et al. (2005) states that the existence of an overpaid CEO is an indication of an ineffective board, which is less likely to prevent the CEO from misstating earnings. The expected coefficient for *overpay*, β_{10} , is positive.

The seventh control variable is *logsalary*, which is defined as log of CEO salary. According to Efendi et al. (2005), a CEO compensated by higher salary has less incentive to misstate earnings. Therefore, the expected coefficient for *logsalary*, β_{11} , is negative.

Another CEO compensation variable is *option*, which is the value of the stock options that the CEO would have realized at year-end from exercising all vested options and unvested options, scaled by CEO salary. Efendi et al. argue that CEOs who own more in-the-money stock options have more incentive to manipulate earnings to increase stock price so that they can later reap the profit by exercising those options. Therefore the coefficient β_{12} for *option* is expected to be positive. The variables of *ceochair*, *overpay*, *logsalary*, and *option* are derived from Execucomp.

The last control variable is a time trend variable that equals 1 if the year of misstatement equals 1996, 2 in 1997, and so on. GAO (2002) reports that the number of accounting restatement announcements has increased significantly each year, from 92 in

1997 to 225 in 2001. Therefore as time goes on, firms are more likely to restate. The expected coefficient for *time*, β_{13} , is positive.

CHAPTER III

DATA AND DESCRIPTIVE STATISTICS

Background of Accounting Restatement and Restatement Data

The main dataset for this study is from the GAO report (2002), which records 919 accounting restatements announced by public corporations from 1997 to 2002.⁶ All of those restatements involved accounting irregularities resulting in material misstatements of financial statements. GAO defines accounting irregularities as “an instance in which a company restates its financial statements because they were not fairly presented in accordance with GAAP. This would include material errors and fraud.” Therefore, the dataset only includes announced restatements that were being made to correct prior material misstatements of financial statements. The database excludes restatement announcements involving stock splits, changes in accounting principles, and all other financial restatements that were not made to correct mistakes in the application of accounting standards.

Because this study examines earnings misstatement as a manifestation of managerial myopia, it is desirable that these misstatements result from managers’ intentional manipulation rather than from their carelessness. Unfortunately, the GAO

⁶ This does not suggest that accounting restatements are non-existent before 1997. Wu (2002) examines the accounting restatements announced between 1977 and 2001. The number of restatement announcements increases dramatically during the time period, especially after 1997.

report does not put such a requirement on the restatements that enter the dataset. This is probably due to the fact that it is impossible to judge the intention of most earnings misstatements from the information provided in a firm's financial statements or its public announcements. However, if managers misstate earnings by pure mistake, then the probability of them overstating earnings and understating earnings should be the same. I examine the GAO dataset and find that the majority of misstatements are overstating earnings.⁷ Therefore, it is not very likely for those misstatements to be unintentional. Moreover, the current literature that uses the GAO database to study the relation between managerial incentives and accounting restatements all assume that the restatements reported by GAO are intentional.

Another underlying assumption of using the GAO restatement data is that all the misstatements are caught and later announced to be restated. However, anecdotal evidence suggests that this probably is not the case. Misstatements sometimes may be caught long after the release of the misstated earnings or may never be caught. Therefore, some of the misstatements may be mistakenly categorized as non-misstatements in my study. This sample problem potentially makes the distinction between misstatements and non-misstatements less sharp, and thus bias against my finding results.

To obtain the misstatement data, I start with the GAO database that contains the name of each company associated with a restatement announcement, its ticker symbol, the exchange on which the stock was trading at the time of the announcement, the date of

⁷ The few number of misstatements that understate earnings are dropped out my sample due to other data restrictions.

restatement announcement, the initiator that prompted the restatement (e.g. auditors, the SEC, or the company), and the reason(s) for the restatement.

Among 919 restatement announcements, 538 announcements are made by firms that can be located in COMPUSTAT. For each announced restatement from this list, I identify the quarter for which earnings are being restated. For example, the 2002 GAO dataset records that on January 25, 2001, Avon Products announced to restate its prior earnings. I then searched articles on Lexis-Nexis around that date to identify which prior earnings are restated. I also search for filings on the SEC website that provided information on the restatements.

Restatements can be reported either as a separate filing of 10Q-A or can be included in a 10Q filed shortly after the restatement announcement. In the case of Avon, no relevant news stories were found on Lexis-Nexis about the restatement, but the firm filed 10Q-As to restate the first three fiscal quarters for the year 2000. Even when news stories on Lexis-Nexis indicate which prior earnings are going to be restated, I still check the firm's 10Q or 10Q-A to make sure that the firm does actually restate those financial reports as promised. There are a very small number of cases where a firm delisted from the exchange after the restatement announcement, and thus did not actually file a restatement. I include those cases in my sample because the firm failed to restate not because the prior earnings did not need to be restated, but because the firm no longer had the chance to restate once it got delisted.

Most of the accounting restatement literature focuses on the restatement announcement quarter, while this study focuses on the earnings misstating quarter. The

difference is crucial in order to examine the managers' incentive to misstate earnings, because managers' decision on financial reporting is observed in the misstating quarter instead of the restatement announcement quarter, which can in some cases occur several years later.

Unlike most restatement literature that examines annual earnings restatement, I focus on quarterly earnings restatements. Some of the studies on quarterly restatements are by Kinney and McDaniel (1989), Balsam, Bartov, and Marquard (2002), and Livnat and Tan (2004). Livnat and Tan (2004) argue that quarterly earnings are not audited and quarterly earnings restatements are of much smaller magnitude compared with annual earnings restatements, therefore quarterly earnings misstatements can be performed by managers without worrying much about external pressure and thus are more likely to reflect actual earnings management than annual restatements. Moreover, the fact that there are a lot more quarterly earnings misstatements than annual earnings misstatements also benefits empirical analyses. Given those advantages, my study focuses on quarterly restatements rather than annual restatements.

Institutional Ownership Data

Bushee (1998, 2001) classifies all institutional investors as transient, dedicated and quasi-indexing institutions based on their investment style in terms of portfolio turnover and diversification. Specifically, for each institution, the level of portfolio diversification is determined by four measures – the average percentage of an institution's total equity holdings invested in each portfolio firm, the average size of the institution's ownership position in its portfolio firms, the percentage of the institution's

equity that is invested in firms where it has more than 5% ownership, and the squared percentage ownership in each portfolio firm. Institution's portfolio turnover is determined by two measures – the average absolute change in the institution's ownership over a quarter scaled by the change in total equity of the institution, and the percentage of the institution's total equity invested in firms that it has continuously held for the prior two years. Then principal factor analysis and cluster analysis are performed to obtain the separation of institutions into three categories. Using the data of up to two years prior, the classification is performed on all institutions every year. Ke and Ramalingegowa (2004) show that the classification is highly stable over time, with a year-to-year correlation of greater than 0.80. Using data from 1983 to 2002, Bushee (2004) summarizes how his institution classification is compared to classification by legal type. As presented in Figure 1, he shows that transient, dedicated, and quasi-indexing institutional investors have a fairly even distribution across banks, insurance companies, investment advisors, and pensions & endowments.

Ke and Ramalingegowa (2004) present empirical evidence on how these three types of institutional investors trade differently in response to earnings release. For each category of institutions, they regress the change of ownership on earnings surprise in the contemporaneous quarter. They find that the estimated coefficient is significantly positive for transient institutions, negative at the 10% level for dedicated institutions, and positive at the 10% level for quasi-indexing institutions. This suggests that transient institutions buy (sell) at good (bad) earnings news. Therefore, assuming that managers care about

stock price, managers of a firm with higher transient institutional investors have more incentive to release good earnings news, perhaps by earnings manipulation.

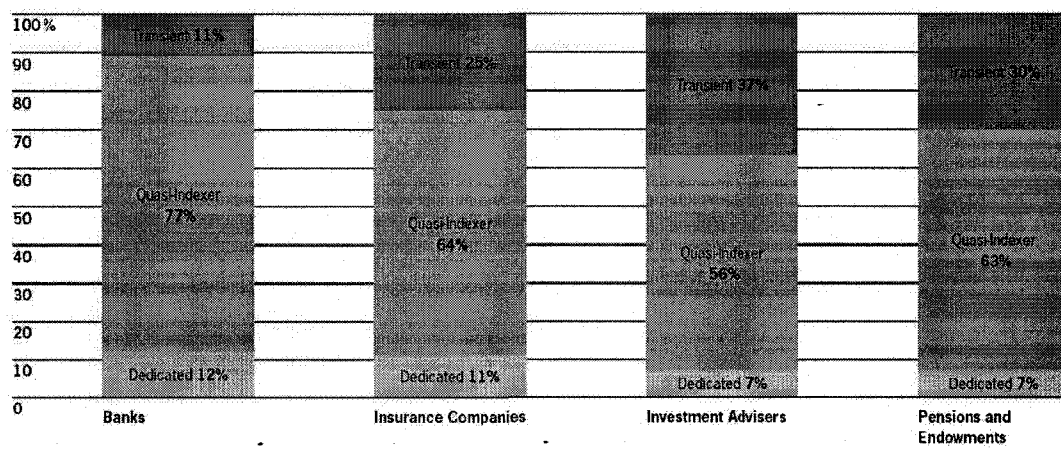


Figure 1. Percent of each category of institutional investors by legal type (1983-2002). This figure is from Bushee (2004). It presents the relation between the institutional investors classification using Bushee (1998, 2001)'s method and the classification by legal type between 1983 and 2002. Bushee classifies institutional investors into transient institutional investors, who hold a diversified portfolio with high turnover, dedicated institutional investors, who hold a concentrated portfolio with low turnover, and quasi-indexing institutional investors, who hold a diversified portfolio with low turnover.

Using Bushee (1998, 2001)'s classification, I create four institutional ownership variables for each firm-quarter.⁸ The variables *Transient*, *Dedicated*, and *Indexer* are the proportion of shares held by transient, dedicated, and quasi-indexing institutions, respectively, and are calculated by dividing the number of shares held by each type of investors by total shares outstanding. The variable *IO* is institutional ownership at the aggregate level, and it equals the total number of shares held by institutions divided by shares outstanding. Aggregate *IO* exceeds the sum of *Transient*, *Dedicated* and *Indexer* by a very small amount because, according to Bushee, there are a very limited number of

⁸ I thank Brian Bushee for providing me with the institutional classification data.

institutions that can not be classified either due to missing data or due to the fact that those institutions hold an extremely small portfolio, i.e., less than 4 stocks. The data on institutional ownership are obtained from Thomson Financial CDA/Spectrum.

Figure 2 contains a timeline illustrating the timing of all the variables in the regression. In order to predict whether fiscal quarter t 's financial statement is going to be misstated, all the predicting variables are measured prior to the end of quarter t , with the timing depending on data availability. Here, quarter t is not the time for announcement of the restatement, but rather the announcement of the original earnings that are later restated. This is important in the empirical tests since on average there are 225 calendar days between the original earnings release and the restatement announcement.

Because institutional ownership data are available at the end of each calendar quarter, I need to account for different fiscal year-ends for different firms. For firms with fiscal year ends in March, June, September, or December, I measure institutional ownership at the end of fiscal quarter t if I want to predict whether quarter t 's financial report will be misstated and needs to be restated later. For firms with a fiscal year that does not end in March, June, September, or December, I measure institutional ownership at the end of a calendar quarter that is between the end of fiscal quarter $t-1$ and the end of fiscal quarter t .⁹ In short, the timing of institutional ownership is intended to precede or coincide with the misstated fiscal quarter end, but minimize the length of time between the institutional ownership measurement and the misstated fiscal quarter end. Variables

⁹ For example, if a firm's fiscal year ends in March and I want to predict whether its financial statement for the second fiscal quarter, which ends in September, will be misstated or not, I measure institutional variables using data at the end of September. However if a firm's fiscal year ends in February and I want to predict whether its financial statement for the second fiscal quarter, which ends in August, will be misstated or not, I measure institutional variables using data at the end of June.

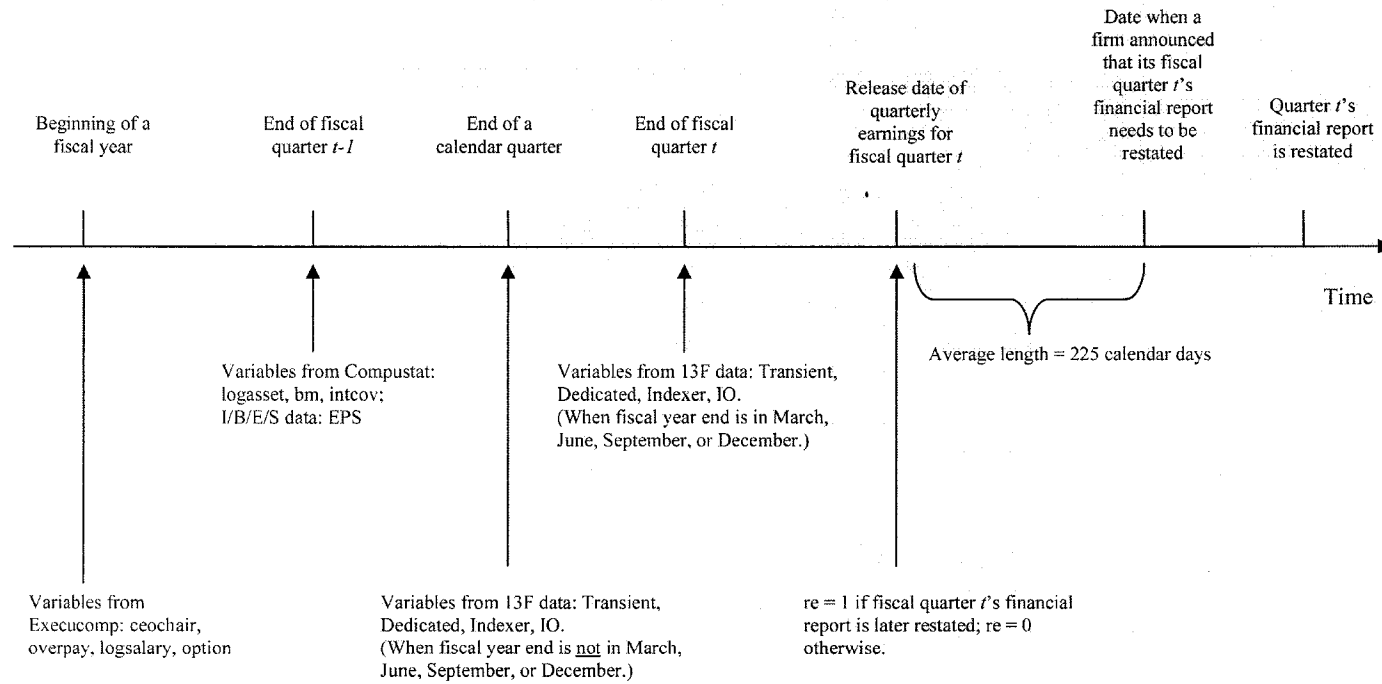


Figure 2. Time line of events and measurement of variables of interest. The figure illustrates when each variable in Equation (1) is measured. If quarter t 's earnings are misstated, then all the independent variables are measured before or right at the end of quarter t , depending on data availability. The dependent variable re is measured on the release date of quarterly earnings, which is usually at least one month after the end of quarter t .

derived from COMPUSTAT and I/B/E/S are measured at the end of fiscal quarter $t-1$, because COMPUSTAT and I/B/E/S data are available on a fiscal quarter basis. Execucomp data are collected on an annual basis, therefore all variables derived from Execucomp are measured at the beginning of the fiscal year.

Three Sample Sets

The final sample consists of 245 misstated earnings firm-quarters with the necessary data from Thomson Financial CDA/Spectrum, COMPUSTAT, Execucomp, and I/B/E/S. Panel A of Table 1 shows the sample sources and changes of sample size due to data restrictions. Those 245 earnings were released between 1996 and 2002 by 91 different firms, which cover 33 different industries as defined by 2-digit SIC code.¹⁰ Some of these 91 firms made multiple restatement announcements, and for each announcement, some firms decided to restate multiple quarterly earnings. For each of those firm-quarters, I create an indicator variable re , which stands for “restatement,” and set it equal to 1.

I then create a group of non-misstating firm quarters, which consist of all firm-quarters, with available data to estimate regressions, from 1996 to 2002 after deleting the following observations: 1) All of the misstating firm-quarters, and 2) All of the firm-quarters in a fiscal year with a misstated annual earnings release that later needs to be restated. For the 18,221 non-misstating firm-quarters and 1,392 unique firms that met those criteria, I set re equal to 0. The combination of the 18,221 non-misstating firm-

¹⁰ The GAO dataset reports restatement announcements that were made between 1997 and 2002, among which the earliest corresponding earnings misstatement with required data was released in 1996.

Table 1. Panel A. Sample Sources and attrition

	Deletion of number of firm-quarters	Number of remaining misstating firm- quarters after deletion	Number of remaining misstating firms after deletion
Number of restatement announcements according to GAO (2002)			919
Number of companies listed on CRSP and COMPUSTAT			538
Number of misstating firm-quarters (Hand-collected from Edgar and LexisNexis)		1208	538
Reasons for deletion			
No release date of misstated earnings from COMPUSTAT	105	1103	468
No institution holdings data on Spectrum	160	943	352
No required data from COMPUSTAT	295	648	258
No required data from I/B/E/S	148	500	205
No required data from Execucomp	255	245	91
No matching firms	26	229	84

quarters with the 245 misstating firm-quarters is reported as the “Full Sample”.

In addition, I conduct tests using a matching sample analysis, which is widely used in studying the determinants of earnings misstatement. I create a matching sample by first restricting the misstating firm-quarters to be the first misstatement in the sample period made by each firm. This restriction yields 91 misstating firms, each with one firm-quarter. For each misstating firm-quarter, one control firm-quarter is matched using the following criteria: 1) The matching firm has the same two-digit SIC as the misstating firm; 2) The matching firm-quarter must be in the same calendar year as the misstating

firm-quarter; 3) The matching firm-quarter's total assets should be within 40 percent of the misstating firm-quarters' observation; 4) The matching firm must not be one of the 91 misstating firms, nor should the same firm be a match for two different misstating firms. 5) If there are multiple firms that meet the above criteria, the matching firm whose total assets are the closest to that of the misstating firm is selected. Seven misstating firms do not have a match, which leaves 84 misstating firms and 84 non-misstating firms.¹¹ This sample set is reported as the "Matching Sample".

In the Full Sample, each firm can have multiple quarters of observations depending on data availability. However, in the Matching Sample, each of the 168 firms is allowed to have only one quarter of observation. To check whether the results generated from the Matching Sample are sensitive to this restriction, I create an additional sample by letting those 168 firms have as many quarters of observations as there are in the Full Sample. This sample, reported as the "Restricted Sample", consists of 229 misstating firm-quarters and 2,773 non-misstating firm-quarters.

Descriptive Statistics

Panel B of Table 1 presents summary statistics for the variables in the Full Sample, the Matching Sample, and the Restricted Sample. In the Full Sample and the Restricted Sample, the aggregate institutional ownership for misstating observations is

¹¹ To check whether those 84 restating firms in Matching Sample behave in the same way as the 7 restating firms that do not have matching non-restating firms, I create an additional sample by deleting from Full Sample the observations from those 7 firms and keeping the rest of the observations in Full Sample. This additional sample and Full Sample yield quantitatively similar results in all regressions, which suggests that those 84 restating firms do not behave differently than the 7 restating firms that do not have a matching firm. For reporting purpose, results related to this sample are not tabulated.

Table 1. Panel B: Summary statistics comparing the misstatement and the non-misstatement samples. The table reports summary statistics for each of the three samples. Variable mean for misstatement observations and non-misstatement observations, and the P-value for the difference are presented. See Appendix 1 for variable definitions and sample descriptions.

Variables	Full Sample		Matching Sample		Restricted Sample	
	Mean	P-value	Mean	P-value	Mean	P-value
IO						
Misstating	0.6125		0.6002		0.6155	
Non-misstating	0.5934		0.5858		0.5815	
Difference	0.0190	0.09	0.0144	0.60	0.0340	0.01
Transient						
Misstating	0.1537		0.1501		0.1549	
Non-misstating	0.1366		0.1231		0.1269	
Difference	0.0170	0.01	0.0270	0.02	0.0280	<.0001
Dedicated						
Misstating	0.1278		0.1303		0.1300	
Non-misstating	0.1303		0.1179		0.1235	
Difference	-0.0025	0.62	0.0124	0.29	0.0060	0.24
Indexer						
Misstating	0.3236		0.3145		0.3244	
Non-misstating	0.3181		0.3379		0.3239	
Difference	0.0050	0.37	-0.0234	0.14	0.0005	0.94
logasset						
Misstating	7.8930		7.6377		7.8108	
Non-misstating	7.4555		7.6379		7.7547	
Difference	0.4370	<.0001	-0.0002	0.99	0.0560	0.57
bm						
Misstating	0.4900		0.4797		0.4617	
Non-misstating	0.5211		0.4107		0.4322	
Difference	-0.0311	0.31	0.0690	0.05	0.0300	0.33
intcov						
Misstating	0.8776		0.8214		0.8734	
Non-misstating	0.8185		0.7500		0.7802	
Difference	0.0590	0.01	0.0714	0.20	0.0930	0.00
EPS						
Misstating	0.2694		0.1786		0.2795	
Non-misstating	0.2000		0.2619		0.2421	
Difference	0.0690	0.02	-0.0833	0.18	0.0370	0.22
time						
Misstating	4.2245		3.7380		4.2052	
Non-misstating	3.7758		3.7380		3.8438	
Difference	0.4490	<.0001	0.0000	--	0.3610	0.00

Table 1. Panel B (Continued): Summary statistics comparing misstatement and non-misstatement samples.

Variables	Full Sample		Matching Sample		Restricted Sample	
	Mean	P-value	Mean	P-value	Mean	P-value
ceochair						
Misstating	0.7469		0.7262		0.7336	
Non-misstating	0.6793		0.6667		0.6824	
Difference	0.0680	0.02	0.0595	0.36	0.0510	0.12
overpay						
Misstating	0.5714		0.5595		0.5721	
Non-misstating	0.5145		0.4762		0.4915	
Difference	0.0570	0.08	0.0833	0.30	0.0810	0.02
logsalary						
Misstating	6.4527		6.3693		6.4326	
Non-misstating	6.2753		6.3809		6.4136	
Difference	0.1770	<.0001	-0.0116	0.82	0.0190	0.58
option						
Misstating	18.9510		17.3923		17.1820	
Non-misstating	102468		41.2539		43.6650	
Difference	-102449	0.01	-23.8616	0.10	-26.4840	<.0001
Number of firm-quarters						
Misstating	245		84		229	
Non-misstating	18221		84		1524	
Number of firms						
Misstating	91		84		84	
Non-misstating	1392		84		84	

1.9% and 3.4% higher than for non-misstating observations, and the differences are significant at the 10% and 1% levels. However, the difference is insignificant in the Matching Sample. The difference in the Full Sample and the Restricted Sample can result from the fact that larger firms, who usually have higher institutional ownership, are more likely to manipulate earnings aggressively. But in the pairwise t-test using the Matching Sample, the firm size, measured by total assets, of the matching non-restating

firm must be within 40% of the restating firm, and the difference in institutional ownership between the misstating and non-misstating firms is not significant.

Consistent with the hypothesis that transient investors increase managers' incentive to misstate earnings, misstating firm-quarters always have a higher transient institutional ownership than non-misstating firm-quarters throughout all three samples. Specifically, transient institutional ownership is 1.7%, 2.7%, and 2.8% higher for misstating observations than non-misstating observations, and the difference is significant at around the 1% level. On the contrary, dedicated institutional ownership does not differ between misstating and non-misstating observations, which is inconsistent with the second hypothesis. Similarly, the two groups of observations do not have significantly different quasi-indexing institutional ownership levels either.

In terms of firm size, misstating firms are on average larger than non-misstating firms in the Full Sample, which is consistent with the existing literature. The pairwise difference of firm size drops to 0 in the Matching Sample, which means that the non-misstating firms are well matched to misstating firms in firm size. Moreover, supporting the GAO's findings that the incidence of restatements is growing over time, the misstating firms in the Full Sample are recorded in more recent years than non-misstating firms. In the Matching Sample, the misstating firms and the non-misstating firms are, by design, matched perfectly in terms of time.

Panel C of Table 1 reports the distribution of industry, measured as two-digit SIC, of the misstating firms in the sample. The misstating firms cover 33 industries in the Full Sample and 30 industries in the other samples. There are relatively more cases of

Table 1. Panel C: Distribution of misstating firm-quarters by industry

SIC	Industry description	Full Sample		Matching and Restricted Sample	
		Counts	%	Counts	%
10	Metal Mining	1	1%	0	0%
13	Oil And Gas Extraction	3	3%	3	4%
15	Building Construction General Contractors And Operative Builders	1	1%	1	1%
16	Heavy Construction Other Than Building Construction Contractors	1	1%	1	1%
20	Food And Kindred Products	4	4%	4	5%
26	Paper And Allied Products	3	3%	3	4%
27	Printing, Publishing, And Allied Industries	2	2%	2	2%
28	Chemicals And Allied Products	5	5%	5	6%
29	Petroleum Refining And Related Industries	1	1%	1	1%
30	Rubber And Miscellaneous Plastics Products	1	1%	1	1%
33	Primary Metal Industries	2	2%	1	1%
34	Fabricated Metal Products, Except Machinery And Transportation Equipment	1	1%	1	1%
35	Industrial And Commercial Machinery And Computer Equipment	11	12%	11	13%
36	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	6	7%	6	7%
37	Transportation Equipment	2	2%	2	2%
38	Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks	5	5%	5	6%
48	Communications	1	1%	1	1%
49	Electric, Gas, And Sanitary Services	7	8%	7	8%
50	Wholesale Trade-durable Goods	2	2%	1	1%
51	Wholesale Trade-non-durable Goods	2	2%	1	1%
53	General Merchandise Stores	1	1%	1	1%
54	Food Stores	2	2%	2	2%
56	Apparel And Accessory Stores	4	4%	4	5%
57	Home Furniture, Furnishings, And Equipment Stores	1	1%	1	1%
58	Eating And Drinking Places	1	1%	0	0%
59	Miscellaneous Retail	2	2%	2	2%
61	Non-depository Credit Institutions	2	2%	1	1%
63	Insurance Carriers	3	3%	3	4%
64	Insurance Agents, Brokers, And Service	1	1%	1	1%
72	Personal Services	1	1%	0	0%
73	Business Services	9	10%	9	11%
79	Amusement And Recreation Services	2	2%	2	2%
99	Nonclassifiable Establishments	1	1%	1	1%
	Total	91	100%	84	100%

misstating earnings in certain industries, such as industrial and commercial machinery and computer equipment. A similar pattern of industry clustering is reported in Efendi et al. Therefore I control for such clustering in the multivariate regressions.

Table 1 Panel D: Distribution of misstating firm-quarters by reason of restatements. The reasons for restatements are collected from the General Accounting Office (2002).

Reason of Restatements	Full Sample of 245 misstatements		Matching Sample of 84 misstatements		Restricted Sample of 229 misstatements	
	Counts	%	Counts	%	Counts	%
Revenue recognition	105	43%	38	45%	100	44%
Cost or expense	40	16%	12	14%	39	17%
Other	24	10%	9	11%	24	10%
Restructuring, assets, or inventory	45	18%	16	19%	45	20%
Acquisitions and mergers	25	10%	7	8%	25	11%
Securities related	6	2%	3	4%	6	3%
Reclassification	21	9%	5	6%	12	5%
IPR&D	4	2%	2	2%	4	2%
Related-party transactions	18	7%	4	5%	13	6%
Unspecified	2	1%	1	1%	1	0%

Panel D of Table 1 presents the distribution of misstating firm-quarters by the reason of restatement recorded in the GAO (2002) data. Around 60% of the misstatements in each of the three sample sets are due to “revenue recognition” and “cost or expense” combined.

According to GAO, a restatement can be prompted by the restating company, an independent auditor, the SEC, or others. As shown in Panel E of Table 1, around 30% of

the restatements in my sample were triggered by the company, around 20% by the SEC and other external parties, and around 40% can not be identified with its prompters¹².

Table 1. Panel E: Distribution of misstating firm-quarters by prompters of restatements. The prompters for restatements are collected from GAO (2002).

Prompter	Full Sample		Matching Sample	
	Counts	%	Counts	%
Auditor	10	4%	3	4%
Company	75	31%	25	30%
SEC	63	26%	16	19%
FASB/SEC	1	0%		
Company/External	2	1%	1	1%
Company/FASB	2	1%	1	1%
Company/Auditor	3	1%	1	1%
?	89	36%	37	44%
Total	245	100%	84	100%

Table 2 provides Pearson and Spearman correlation coefficients between variables of interest in the Full Sample. All else equal, a firm with greater total assets has higher aggregate institutional ownership, which is positively correlated with higher transient, dedicated, and quasi-indexer institutional ownership. Higher transient institutional ownership is also positively correlated with higher dedicated institutional ownership; therefore there is no mechanical offsetting relation between these two types of ownerships. More importantly, the correlation between the probability of misstating earnings and transient institutional ownership is significantly positive, which is consistent

¹² The reason that GAO was not able to identify who prompted the restatement is because the announcement or SEC filing did not clearly state which party first discovered the misstatement.

Table 2. Pearson and Spearman correlation coefficient. In the Full Sample, Pearson and Spearman correlation coefficients are calculated and listed above and under diagonal. P-values are listed under each coefficient. See Appendix 1 for variable definitions and sample description.

	re	IO	Transient	Dedicated	Indexer	logasset	bm	intcov	EPS	time	ceochair	overpay	logsalary	option
re	1.00	0.01	0.02	0.00	0.01	0.03	-0.01	0.02	0.02	0.03	0.02	0.01	0.02	0.00
		0.09	0.00	0.65	0.42	0.00	0.35	0.02	0.01	0.00	0.02	0.08	0.00	0.77
IO	0.01	1.00	0.62	0.51	0.69	0.16	-0.13	0.05	0.13	0.18	0.04	-0.02	0.13	0.00
		0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.99
Transient	0.02	0.64	1.00	0.04	0.16	-0.04	-0.15	-0.04	0.19	0.21	-0.03	-0.06	-0.02	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.57
Dedicated	0.00	0.54	0.13	1.00	0.00	0.12	0.05	0.03	-0.01	0.09	0.02	0.06	0.10	-0.01
		1.00	0.00	0.00	0.82	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.31
Indexer	0.01	0.66	0.20	0.08	1.00	0.21	-0.12	0.10	0.08	0.05	0.08	-0.03	0.14	0.00
		0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
logasset	0.03	0.16	0.00	0.14	0.22	1.00	-0.06	0.14	0.04	0.10	0.23	-0.01	0.39	0.02
		0.00	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.01
bm	-0.01	-0.11	-0.16	0.04	-0.09	-0.07	1.00	0.02	-0.18	0.10	-0.03	0.10	-0.03	-0.01
		0.04	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05
intcov	0.02	0.04	-0.03	0.03	0.09	0.15	0.08	1.00	-0.01	-0.02	0.08	0.04	0.08	0.00
		0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.03	0.00	0.00	0.00	0.90
EPS	0.02	0.14	0.17	0.00	0.08	0.04	-0.29	-0.01	1.00	0.06	-0.01	-0.12	0.02	0.01
		0.01	0.00	0.00	0.92	0.00	0.00	0.00	0.09	0.00	0.27	0.00	0.01	0.14
time	0.03	0.18	0.22	0.12	0.05	0.10	0.06	-0.02	0.06	1.00	-0.03	0.05	0.05	0.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
ceochair	0.02	0.03	-0.01	0.02	0.08	0.24	0.00	0.08	-0.01	-0.03	1.00	0.01	0.16	0.01
		0.02	0.00	0.16	0.00	0.00	0.55	0.00	0.27	0.00	0.00	0.35	0.00	0.08
overpay	0.01	-0.02	-0.06	0.05	-0.03	0.00	0.13	0.04	-0.12	0.05	0.01	1.00	0.06	-0.01
		0.08	0.02	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.35	0.00	0.00	0.05
logsalary	0.04	0.21	0.04	0.21	0.23	0.74	-0.11	0.14	0.06	0.14	0.31	0.05	1.00	-0.30
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
option	0.01	0.27	0.31	0.06	0.17	0.22	-0.50	-0.07	0.24	0.08	0.02	-0.15	0.23	1.00
		0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

with the first hypothesis, which states that a firm with higher transient ownership is more likely to misstate its earnings. However, inconsistent with the second hypothesis, there is no correlation between the likelihood of misstating and dedicated institutional ownership.

CHAPTER IV

RESULTS

The Univariate Logistic Regressions

To test how different types of institutions affect a manager's incentive to misstate earnings, I first run a univariate logistic regression using each of the three samples. The dependent variable is the indicator variable re , which equals 1 if the firm misstates earnings in that quarter, and 0 otherwise. Because a firm is allowed to have multiple firm-quarters entering both the Full Sample and the Restricted Sample, standard errors for coefficient estimates are adjusted for clustering on firms when estimating the logistic regression using these two samples. For the Matching Sample, a conditional logit is used instead of a regular logit because of the matching pairs observations.

Table 3 provides the results of the univariate logistic regressions. Consistent with the first hypothesis, firms with higher transient institutional ownership are more likely to aggressively manipulate earnings in each of the three samples. However, firms with higher dedicated institutional ownership are not less likely to do so, which does not support the second hypothesis. In addition, the level of quasi-indexing institutional ownership and the aggregate institutional ownership are not correlated with the likelihood of a firm misstating its earnings.

Table 3. Univariate Logistic Regressions. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. In the Full Sample and the Restricted Sample, logistic regressions are used and the standard errors are adjusted for clustering on firms. In the Matching Sample, conditional logistic regressions are used. Regressions are estimated by regressing *re* on each of the factors that may potentially influence the probability of misstatement. The variable “time” in the Matching Sample is blank because time was one of the matching criteria, and thus there is no within group variance in the conditional logistic regression. See Appendix 1 for variable definitions and sample descriptions.

	Full Sample		Matching Sample		Restricted Sample	
	Estimate	P value	Estimate	P value	Estimate	P value
IO	0.6217	0.32	0.6023	0.55	1.4561	0.18
Transient	2.0611	0.08	5.4964	0.03	3.5361	0.03
Dedicated	-0.3421	0.76	2.2505	0.29	1.0362	0.56
Indexer	0.4806	0.61	-2.3868	0.15	0.0573	0.97
logasset	0.1689	0.01	-0.0178	0.99	0.0282	0.82
bm	-0.1577	0.62	1.4011	0.06	0.0373	0.64
intcov	0.4632	0.06	0.5596	0.21	0.6643	0.05
EPS	0.3883	0.08	-0.5306	0.18	0.1940	0.49
ceochair	0.3317	0.16	0.3483	0.36	0.2482	0.44
overpay	0.2298	0.20	0.3137	0.30	0.3244	0.12
logsalary	0.6198	0.03	-0.1059	0.82	0.0811	0.82
time	0.1387	0.01	---	---	0.1223	0.05
option	0.0000	0.02	-0.0049	0.14	-0.0039	0.26

Multivariate Regressions

Tables 4, 5 and 6 report results from multivariate logit regressions using the Full Sample, the Matching Sample, and the Restricted Sample, respectively. Estimations of three regression specifications are reported in each table, with the first specification including only the control variables, the second including aggregate institutional ownership and the control variables, and the third including transient, dedicated, and quasi-indexing institutional ownership and the control variables. For both Table 4 and Table 6, two-digit SIC dummies are included as independent variables, due to the tendency for misstatements to cluster in certain industries.

Table 4. Multivariate logistic regressions using the Full Sample. In the Full Sample, a logistic regression is estimated to predict the likelihood of misstating quarterly earnings. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. Two-digit SIC dummies are included as independent variables. Standard errors are adjusted for clustering on firms. Extra tests show that coefficient estimate on TRANSIENT and DEDICATED are different with P-value of 0.0622; the coefficient estimate on TRANSIENT and INDEXER are different with P-value of 0.031. See Appendix 1 for variable definitions and sample descriptions.

	Expected sign	Model (1)		Model (2)		Model (3)	
		Estimate	P value	Estimate	P value	Estimate	P value
Intercept	?	-5.5145	0.00	-5.5802	0.00	-5.8056	0.00
IO	?			0.2602	0.73		
Transient	+					2.6045	0.04
Dedicated	-					-0.7035	0.57
Indexer	?					-0.8526	0.43
logasset	+	0.1866	0.05	0.1853	0.05	0.2162	0.02
bm	-	-0.0142	0.95	-0.0019	0.99	0.0302	0.88
intcov	+	0.4080	0.14	0.4008	0.15	0.4206	0.14
EPS	+	0.2250	0.32	0.2163	0.33	0.1713	0.44
ceochair	+	0.1537	0.54	0.1496	0.55	0.1587	0.53
overpay	+	0.2017	0.27	0.2024	0.27	0.2148	0.24
logsalary	-	-0.0282	0.89	-0.0332	0.87	-0.0038	0.99
option	+	-0.0017	0.37	-0.0017	0.38	-0.0022	0.31
time	+	0.1200	0.02	0.1158	0.03	0.1031	0.06
Pseudo R ²		0.0616		0.0618		0.0661	

Using the Full Sample, the logit regression in Table 4 shows that the level of aggregate institutional ownership is not significantly correlated with the firm's likelihood to misstate its quarterly earnings, as indicated in the second model. However, after decomposing institutions into three classes, transient institutional ownership is significantly positively associated with the likelihood for a firm to misstate earnings at the 5% level. Meanwhile, higher ownership by both dedicated and quasi-indexing institutions reduces the probability of misstatement, but the association is not statistically significant. However the coefficient estimate on transient ownership is significantly different from that of dedicated ownership with a P-value of 0.0622, and is significantly different from that on quasi-indexing institutions with a P-value of 0.0310, suggesting that the impact of transient institutional ownership on a firm's decision to aggressively manage earnings is significantly different than the impact of the other two classes of institutions. As expected, firm size, measured by log of total assets, remains significantly positively associated with the likelihood for a firm to misstate throughout the three models, as does the time trend variable. This is not only consistent with prior studies, but also highlights the importance of identifying matching firms in the following examinations.

Table 5 presents the conditional logit regression results using the Matching Sample, where each of the 84 misstating firms is matched to one non-misstating firm on firm size, industry, and the year of observation. Supporting the first hypothesis, higher transient institutional ownership is predictive of whether a firm issues a quarterly earnings report that later needs to be restated. However, inconsistent with the second

hypothesis, dedicated ownership is not significantly associated with the probability of misstatement. Quasi-indexing ownership, on the other hand, significantly lowers such probability. Statistics also show that transient institutions' impact on a firm's decision to aggressively manage earnings is statistically different from that of dedicated and quasi-indexing institutions at the 3% and 0% levels.

Table 5. Conditional logistic regressions using the Matching Sample. In the Matching Sample, a conditional logistic regression is estimated to predict the likelihood of misstating quarterly earnings. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. Extra tests show that coefficient estimate on TRANSIENT and DEDICATED are different with P-value of 0.03; the coefficient estimate on TRANSIENT and INDEXER are different with P-value of 0. See Appendix 1 for variable definitions and sample descriptions.

	Expected sign	Model (1)		Model (2)		Model (3)	
		Estimate	P value	Estimate	P value	Estimate	P value
IO	?			1.1175	0.31		
Transient	+					13.1111	0.00
Dedicated	-					4.0496	0.14
Indexer	?					-5.2679	0.02
bm	-	1.4277	0.10	1.4730	0.09	2.6365	0.01
intcov	+	0.6320	0.19	0.6523	0.18	1.0405	0.08
EPS	+	-0.2038	0.65	-0.2592	0.57	-0.1943	0.71
ceochair	+	0.2122	0.62	0.2538	0.56	0.6604	0.23
overpay	+	0.2920	0.40	0.2739	0.44	0.4265	0.30
logsalary	-	-0.5658	0.30	-0.5582	0.31	-0.7506	0.27
option	+	-0.0020	0.58	-0.0022	0.56	-0.0058	0.33
Pseudo R ²		0.0816		0.0908		0.2785	

Table 6 provides logistic regression results using the Restricted Sample, which restricts observations in the Full Sample to the 168 firms in the Matching Sample. Transient institutional ownership remains positively correlated to the likelihood of restatement at the 1% level, and therefore it supports the first hypothesis. The impact of quasi-indexing institutions is not statistically significant. Different from the results shown in Table 4, higher aggregate institutional ownership is correlated with a higher

probability of misstating quarterly earnings. Moreover, the coefficient estimate on transient institutions is significantly different than those on dedicated and quasi-indexing institutions with a P-value of 0.0867 and 0.0062 respectively, which suggest that transient institutions play a significantly different role in predicting firm's decision on aggressive earnings management.

Table 6. Multivariate logistic regressions using the Restricted Sample. In the Restricted Sample, a logistic regression is estimated to predict the likelihood of misstating quarterly earnings. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. Two-digit SIC dummies are included as independent variables. Standard errors are adjusted for clustering on firms. Extra tests show that coefficient estimate on TRANSIENT and DEDICATED are different with P-value of 0.0867; the coefficient estimate on TRANSIENT and INDEXER are different with P-value of 0. See Appendix 1 for variable definitions and sample descriptions.

	Expected sign	Model (1)		Model (2)		Model (3)	
		Estimate	P value	Estimate	P value	Estimate	P value
Intercept		-1.3380	0.58	-1.4625	0.53	-2.3061	0.31
IO	?			0.9155	0.18		
Transient	+					3.7021	0.00
Dedicated	-					1.1216	0.42
Indexer	?					-1.4246	0.25
logasset	+	0.1565	0.24	0.1606	0.22	0.1856	0.15
bm	-	-0.0118	0.90	0.0033	0.97	0.0035	0.97
intcov	+	0.5956	0.04	0.5495	0.06	0.5283	0.07
EPS	+	0.2079	0.42	0.1914	0.46	0.1261	0.62
ceochair	+	0.0403	0.89	0.0531	0.8600	0.1345	0.67
overpay	+	0.1947	0.34	0.1981	0.33	0.2008	0.33
logsalary	-	-0.4549	0.32	-0.5204	0.25	-0.3732	0.38
option	+	-0.0035	0.23	-0.0039	0.20	-0.0047	0.14
time	+	0.1524	0.01	0.1417	0.02	0.1219	0.03
Pseudo R ²		0.0489		0.0508		0.0598	

Except for firm size and time trend, most of the control variables, which are found to be significant in either Efendi et al. (2005) or Richardson et al. (2003), are not statistically significant in my tests. One possible explanation of the different findings is

that while they study the annual earnings misstatements, I focus on quarterly earnings misstatements, which could be much less aggressive in terms of manipulation, thus makes some firm characteristics less sharp. Another difference is the restatements examined in my sample were announced between 1997 and 2002, but Efendi et al. restrict the restatements to 2001 and 2002, when CEO equity compensation is more popular.

All of the regressions in Table 4 through Table 6 lead me to conclude that higher ownership by transient institutions is significantly correlated with a higher probability for a firm to issue quarterly earnings that later need to be restated. For dedicated institutions and quasi-indexing institutions, the correlations are not statistically significant in most cases. As a result, transient institutions appear to provide managers with stronger incentives to misstate earnings, however dedicated institutions do not appear to lower the probability of such misstatement. These findings are consistent with Bushee (1998), who finds that higher ownership by transient institutions is significantly positively correlated with firm's decision to unexpectedly decrease R&D expense, while such correlation for dedicated institutions is statistically insignificant.

Apart from the explanation that dedicated institutions are not monitoring managers effectively, there are two more possible reasons why I observe no impact of dedicated institutional investors on managers' likelihood to misstate earnings. First, as shown in Figure 3, dedicated institutional investors do not seem to have lower turnover than transient and quasi-indexing institutions. Only 7% of all institutions in the lowest turnover quintile are dedicated institutions, with the remaining 84% and 9% goes to quasi-indexing and transient institutions respectively. Moreover, from the lowest turnover

quintile to the highest turnover quintile, the proportion of dedicated institutions does not decrease much, especially for the first four quintiles.

Second, if dedicated institutions are monitoring managers effectively, they can drive the probability of misstatement in two opposing directions. On the one hand, managers who are closely monitored by dedicated institutions are less likely to misstate earnings, and thus suggest a negative association between dedicated institutional ownership and the likelihood of misstatement. On the other hand, due to the activism of dedicated institutions, misstated earnings are more likely to be caught and later be restated, implying a positive association between dedicated institutional ownership and the likelihood of revealed misstatement. Therefore, finding no association between these two variables can either indicate that dedicated institutions are not monitoring managers or that they generate two opposing impacts on the probability of misstatement as analyzed above. I do not have a good test to differentiate these causes at this time, however current studies show that even governance sensitive institutional investors do not monitor managers effectively. Bushee, Carter, and Gerakos (2004) suggests that governance sensitive institutional investors, who base their portfolio on corporate governance, exhibit preferences for good corporate governance mechanisms when they make their investment and trading decisions. However, they find limited evidence that suggests that those institutions play a role in improving the corporate governance of their portfolio firms. This is to some extent consistent with my claim that dedicated institutions do not monitor managers effectively.

Regressions Using Wahal and McConnell (2000)'s Classification

One of the motivations of this study is that the existing evidence is not conclusive about whether short-term institutional investors cause managers to behave myopically. Specifically, Bushee (1998) finds that a manager of a firm is more likely to cut R&D spending if the firm has higher transient institutional ownership. In contrast, using a different institution classification, Wahal and McConnell (2000) find the opposite. Therefore, even though I have found evidence that is consistent with Bushee's, it could arise from using the same institution classification as Bushee. In order to examine whether my results are driven by choice of classification, I create the same classification as used by Wahal and McConnell and test my hypotheses again.

Wahal and McConnell classify all institutions using a turnover measure calculated as:

$$PortTurn_{jt} = \frac{\sum_{i=1}^N |Shr_{jit} AvgP_{it} - Shr_{jit-1} AvgP_{it}|}{\sum_{i=1}^N Shr_{jit-1} AvgP_{it}}$$

where Shr_{jit} is the number of shares held by institution j in firm i at time t , $AvgP_{it}$ is the average of the beginning and end-of-quarter price of stock i at time t , and N is the number of portfolio firms held by institution j at time t . Each year, all institutions are ranked from the lowest to the highest turnover based on the turnover measure in the fourth quarter, and then classified into quintiles. The classification is reformulated every year. On average, the classification has a year-to-year correlation of 0.51 and is less stable than Bushee's classification. Table 7 presents the average turnover within each

quintile over the period of 1995 and 2002. The turnover for the lowest quintile in 1995 is 0.093. This means that for institutions in quintile 1, the average turnover in the fourth quarter of 1995 is 0.093. Therefore, the average turnover for year 1995 is 0.372, implying an average holding period of 2.7 years.

Table 7. Summary statistics for the classification measure used by Wahal and McConnell (2000). The table shows the year-by-year portfolio turnover of institutional investors. Following Wahal and McConnell (2000), each institutional investors' turnover measure is calculated as

$$PortTurn_{jt} = \frac{\sum_{i=1}^N |Shr_{jit} AvgP_{it} - Shr_{j,t-1} AvgP_{it}|}{\sum_{i=1}^N Shr_{j,t-1} AvgP_{it}}, \text{ where } Shr_{jit} \text{ is the number of shares held by}$$

institution j in firm i at time t , $AvgP_{it}$ is the average of the beginning and end-of-quarter price of stock i at time t , and N is the number of portfolio firms held by institution j at time t . Each year, all institutions are ranked from the lowest to the highest turnover based on the turnover measure in the fourth quarter, and then classified into quintiles. The classification is reformulated every year.

	Turnover quintile 1 (lowest)	Turnover quintile 2	Turnover quintile 3	Turnover quintile 4	Turnover quintile 5 (highest)
1995	0.093	0.188	0.291	0.462	0.998
1996	0.089	0.178	0.288	0.477	1.494
1997	0.090	0.191	0.301	0.472	1.687
1998	0.103	0.208	0.328	0.517	1.615
1999	0.069	0.157	0.274	0.487	1.123
2000	0.098	0.197	0.310	0.523	1.221
2001	0.071	0.165	0.290	0.588	1.680
2002	0.065	0.150	0.264	0.529	1.239

Figure 3 compares this classification with Bushee (1998, 2001). From institutions grouped in Quintile 1 to Quintile 5, the average turnover increases. This is accompanied by an increasing percentage of Transient institutions and decreasing percentage of Quasi-indexing institutions, according to Bushee's classification. However, Wahal and McConnell's classification does not take portfolio diversification into consideration. Therefore, by definition, high Quintile institutions are more in line with Transient

institutions, while low Quintile institutions can be composed of Dedicated or Quasi-indexing institutions.

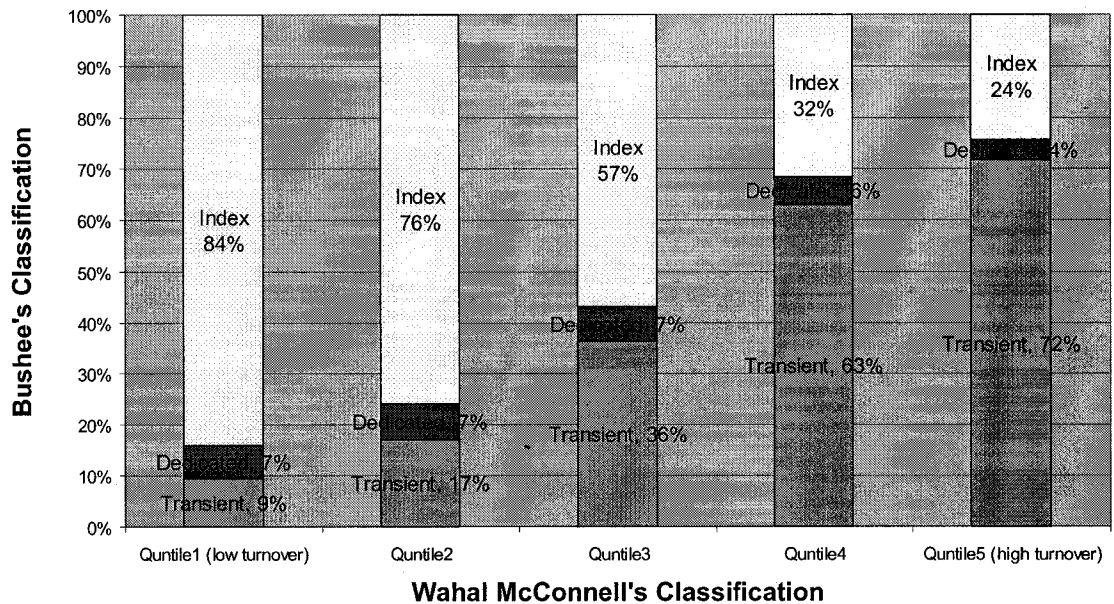


Figure 3. Comparison of institutional investor classification by Bushee and Wahal and McConnell method (1995-2002). The figure shows the relation between Bushee (2001)'s institution classification and Wahal and McConnell (2000)'s institution classification using data between 1995 and 2002. Bushee classifies institutional investors into transient institutional investors, who hold a diversified portfolio with high turnover, dedicated institutional investors, who hold a concentrated portfolio with low turnover, and quasi-indexing institutional investors, who hold a diversified portfolio with low turnover. Wahal and McConnell (2000) classify institutional investors into quintiles based on portfolio turnover.

I then re-perform regression (1) by substituting Bushee's classification with Wahal and McConnell's as follows:

$$\begin{aligned} \text{Prob}(re_{it} = 1) = & F(\beta_1 + \beta_2 \text{Quintile1}_{i,t-1} + \beta_3 \text{Quintile2}_{i,t-1} + \beta_4 \text{Quintile3}_{i,t-1} + \beta_5 \text{Quintile4}_{i,t-1} + \beta_6 \text{Quintile5}_{i,t-1} \\ & + \beta_7 \log \text{asset}_{i,t-1} + \beta_8 \text{bm}_{i,t-1} + \beta_9 \text{int cov}_{i,t-1} + \beta_{10} \text{EPS}_{i,t-1} + \beta_{11} \text{ceochair}_{i,t-1} \\ & + \beta_{12} \text{overpay}_{i,t-1} + \beta_{13} \log \text{salary}_{i,t-1} + \beta_{14} \text{option}_{i,t-1} + \beta_{15} \text{time}_{i,t-1} + \varepsilon_{i,t}) \end{aligned} \quad (2)$$

where Quintile1 through Quintile5 are ownerships by institutional investors that are categorized as Quintile 1 through 5.

The three columns in Table 8 present the regression results by using the Full Sample, the Matching Sample, and the Restricted Sample respectively. Throughout the three samples, the coefficient of Quintile5 is significantly positive, which indicates that firms with greater ownership by high turnover institutions are more likely to misstate earnings. This evidence is consistent with my findings, when using Bushee's classification, that higher Transient institutional ownership is associated with a greater likelihood to misstate earnings. This indicates that my results presented earlier are not driven by the choice of classification.

Table 8. Multivariate logistic regressions using Wahal and McConnell (2000) classification. A logistic regression is estimated to predict the likelihood of misstating quarterly earnings in three samples. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. Following Wahal and McConnell (2000), turnover quintiles are formed at the end of the year by calculating the turnover of each institution relative to the previous quarter. See Appendix 1 for other variable definitions and sample descriptions.

	Full Sample		Matching Sample		Restricted Sample	
	Estimate	P value	Estimate	P value	Estimate	P value
Intercept	-7.6939	0.00			-2.7548	0.22
Ownership of quintile 1(low turnover)	0.5386	0.70	-3.3708	0.53	3.0584	0.18
Ownership of quintile 2	-2.9705	0.04	-8.5434	0.04	-3.4165	0.01
Ownership of quintile 3	0.7286	0.55	1.3656	0.62	1.7918	0.09
Ownership of quintile 4	-1.3973	0.42	3.9429	0.39	-0.1885	0.91
Ownership of quintile 5(high turnover)	6.1546	0.01	26.0243	0.01	9.1178	0.00
logasset	0.2511	0.02			0.1597	0.22
bm	-0.0747	0.77	1.7586	0.09	0.0046	0.96
intcov	0.4329	0.13	0.9446	0.20	0.4948	0.09
EPS	0.2383	0.30	-0.7530	0.23	0.2007	0.42
ceochair	0.1557	0.54	0.2107	0.75	-0.0093	0.98
overpay	0.2511	0.17	0.3493	0.47	0.2001	0.33
logsalary	0.0057	0.98	-0.2059	0.80	-0.3247	0.45
option	-0.0020	0.34	-0.0082	0.15	-0.0041	0.17
time	0.1400	0.02			0.1719	0.01
Pseudo R ²	0.0594		0.1252		0.071	

One additional finding that is not recorded when using Bushee's classification is that a higher ownership by Quintile 2 institutions is associated with a significantly lower probability of misstatements. This can be interpreted as institutional investors with relatively low turnover do not trade heavily on earnings news, and thus provide their portfolio firms with less incentive to misstate earnings. However, the fact that the level of ownership by Quintile 1 institutions does not impact managers' likelihood to misstate earnings suggests that the association between turnover and the likelihood is not linear.

Regressions Using Larger Datasets

As shown in Panel A of Table 1, the sample size decreases due to increasing data restrictions. In order to test whether the previously presented regression results are sensitive to different data requirements, I conduct multivariate logistic regressions using samples with fewer data restrictions. Table 9 presents the results of the regressions. In general, across different data requirements, transient institutional ownership is always significantly positively associated with managers' likelihood to misstate quarterly earnings. Therefore, the regression results hold independent of data restrictions.

Table 9. Multivariate logistic regressions with different data restrictions. Using different datasets depending on data restriction, a logistic regression is estimated to predict the likelihood of misstating quarterly earnings. The dependent variable *re* is measured on the release date of quarterly earnings and is set to 1 if the released earnings are later restated and 0 otherwise. All the independent variables are measured immediately prior to the quarter-end. Specifically, Sample 1 requires all firm-quarters to have available data from Spectrum, CRSP and Compustat; Sample 2 requires I/B/E/S data beyond Sample 1. Two-digit SIC dummies are included as independent variables. Standard deviations are adjusted for clustering on firms. See Appendix 1 for variable definitions and sample descriptions.

	Expected sign	Sample 1 (Require S34 , CRSP, COMPUSTAT)			Sample 2 (Require S34 , CRSP, COMPUSTAT, I/B/E/S)		
		Estimate	t	P value	Estimate	t	P value
Intercept		-4.5927	-7.64	0.00	-4.5694	-10.46	0.00
Transient	+	1.0667	2.28	0.02	1.0186	1.97	0.05
Dedicated	-	-0.0821	-0.18	0.86	-0.3494	-0.65	0.52
Indexer	?	0.6142	1.76	0.08	0.1968	0.48	0.63
logasset	+	0.1479	5.81	0.00	0.1811	5.71	0.00
bm	-	-0.1149	-1.80	0.07	-0.0477	-0.56	0.58
intcov	+	0.0400	0.42	0.67	-0.0039	-0.03	0.97
EPS	+				-0.0088	-0.45	0.66
time	+	0.0759	4.08	0.00	0.0834	3.83	0.00
Pseudo R ²		0.0512			0.0513		
N		Misstake firm- quarters:	Misstake firms:	Total obs:	Misstake firm- quarters:	Misstake firms:	Total obs:
		648	258	118306	500	205	67610

CHAPTER V

ALTERNATIVE EXPLANATIONS

Given the evidence that a higher transient institutional ownership is positively correlated with a higher likelihood for a firm to misstate its quarterly earnings, I conclude that transient institutions give managers more incentive to aggressively manage earnings. However, the causality could go in the opposite direction, which is that transient institutional investors are somehow attracted to the misstating firms before their earnings release. In other words, if transient institutions are attracted to firms with certain characteristics, which also happen to be the characteristics of firms that are likely to misstate earnings, then the previously claimed causality is spurious. The remaining section is devoted to identifying the firm characteristics that may seem attractive to transient institutions, and then determining whether those characteristics are unique to misstating firms.

One of the firm characteristics that are attractive to transient investors are the positive CAR around forthcoming earnings release. Baker, Litov, Wachter and Wurgler (2005) indicate that mutual funds with certain characteristics have the ability to pick the firms that are about to release earnings that positively impact their stock prices. Then if *both* of the following conditions are satisfied, it could be the case that transient institutional investors are attracted to firms that are about to release misstated earnings.

First, misstating firms must experience better returns than non-misstating firms around earnings releases. Second, transient institutions may be sophisticated enough to correctly foresee the forthcoming announced earnings and adjust their holdings favorably before the earnings release.

Table 10. Panel A. Summary statistics of CAR for misstating and non-misstating firms. Using the Matching Sample, I calculate the three-day CAR around earnings release for the misstating and non-misstating firms. Market model is estimated using data 200 to 10 days prior to earnings release. Market return is measured by value-weighted market return. See Appendix 1 for variable definitions and sample descriptions.

	Average 3-day CAR	P-value
Misstating firm	0.022	0.004
Non-misstating firm	0.010	0.253
Difference	0.012	0.320

Based on the Matching Sample, Panel A of Table 10 shows that the three-day average CAR around earnings release for misstating firms is 2.2% and is significantly positive. However the CAR is not significantly different than that of non-restating firms. Therefore, the first condition is not satisfied. In other words, transient institutions find misstating and non-misstating firms equally appealing in terms of CAR, and therefore their trading is not caused by CAR. Panel B of Table 10 presents the correlation coefficients between the change in institutional ownership in the quarter before the earnings release and the 3-day CAR around earnings release. If transient institutions are good at picking firms, one should expect the correlation coefficients to be positive throughout different samples. However, the only marginally significant correlation coefficient is for the sample that combines misstating and non-misstating firms. The

Table 10. Panel B. Correlation coefficients between change in institutional ownership in the quarter before the earnings release date and the three-day CAR around earnings release. The correlation coefficients are calculated using the Matching Sample. P-values are presented in the parentheses. See Appendix 1 for variable definitions and sample descriptions.

	CAR		
	All firms in matching sample	Misstating firm in the matching sample	Non-misstating firms in the matching sample
ΔIO	0.19300 (0.0139)	0.21429 (0.1532)	0.18858 (0.0939)
$\Delta Transient$	0.12568 (0.1110)	0.19695 (0.1761)	0.04958 (0.6623)
$\Delta Dedicated$	-0.01927 (0.8077)	-0.10121 (0.3656)	0.06254 (0.5816)
$\Delta Indexer$	0.20547 (0.0087)	0.21848 (0.1486)	0.21654 (0.0537)

coefficient is 0.12 and is significant at the 11% level. This evidence suggests that transient investors are not able to consistently pick good firms. Given that neither condition is satisfied, a promising CAR of forthcoming earnings release can not be a factor that both attracts transient investors and also differentiates misstating and non-misstating firms.

According to Bushee (2001, 2004), other firm factors that are attractive to transient institutional investors are greater liquidity and lower dividend yield. This is because high liquidity allows transient institutions to buy in and sell off those stocks without encountering high round trip transaction costs. Lower dividend yield is desirable for transient institutions because low dividend yields tend to mean higher potential profit from short term capital appreciation. In order to get the reverse causality, misstating firms

should have significantly greater liquidity and lower dividend yield than non-misstating firms.

Using the matching sample, I find that the correlation coefficient between the quarterly dividend yield, measured at the end of fiscal quarter $t-1$, and the transient institutional ownership by the fiscal quarter t , is -0.33 at the 1% level. This confirms Bushee's finding that transient institutional investors are attracted to firms with lower dividend yield. Then splitting the sample into misstating and non-misstating firms, I find that misstating and non-misstating firms' average dividend yields are 0.0132 and 0.0131 respectively, and the difference is not statistically significant. Therefore, transient institutional investors are not attracted to misstating firms due to their preference for firms with low dividend yield.

A similar analysis is performed by examining liquidity. I define liquidity as the log of average daily volume from 12-month to 1-month before the quarter when transient institutional ownership is measured divided by shares outstanding at the end of the 11-month period. The correlation coefficient between the transient institutional ownership and liquidity is 0.42 at the 1% level. This is consistent with Bushee's finding that transient institutions are attracted to firms with higher liquidity. I also find that misstating and non-misstating firms' average liquidity is 1.42 and 1.50, with the difference of 0.085 at the 44% level. This suggests that misstating firms do not have higher liquidity than non-misstating firms, and thus transient institutions are not attracted to misstating firms due to their preference for firms with high liquidity.

In case that there are some unknown firm characteristics that attract transient institutional investors, I study the trading pattern of those investors around the release of misstated earnings. The alternative explanation that transient institutions are attracted to the misstating firms before the misstated earnings release suggests that they should increase their holdings of those misstating firms during that time period, regardless of what firm characteristics they are attracted to. Panel A of Table 11 presents the quarterly change of average transient institutional ownership in the fifteen quarters around the misstated earnings release, which occurs in quarter $t = 0$. Using the Matching Sample, I do not find that transient institutions change their ownership of the misstating firms in the seven quarters leading up to the misstated earnings release, except for the quarter $t = -5$, when they increase their ownership by 1.09%. In particular, in quarter $t = -1$, the quarter immediately prior to the misstated earnings release, the change of ownership by transient institutions is 0.22% with the t -statistics of 0.41. Additionally, Figure 4-1 presents the level of transient institutional ownership in the four-year period around the misstated earnings release for firms in the Matching Sample. It shows that transient institutional ownership does not change much prior to misstated earnings release and is higher for misstating firms than non-misstating firms in all the quarters.

Table 11. Mean change in institutional ownership around the release of misstated earnings. For the misstating and the non-misstating firms in the Matching Sample, this table shows the average quarterly change in percentage ownership by transient institutional investors (Panel A), dedicated institutional investors (Panel B), and quasi-indexing institutional investors (Panel C) for the quarters around the release of misstated earnings. The numbers of observations for misstating and non-misstating firms in each quarter are given in the first row. *T*-statistics reported in parentheses test the null hypothesis that the mean change does not differ from zero. The misstated earnings are released in quarter $t = 0$.

	Quarters around earnings misstatements that are released in quarter 0														
	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
N (Misstate/Non-misstate)	82/84	83/84	84/84	84/84	84/84	84/84	84/84	84/83	84/82	84/81	84/80	83/79	82/75	77/74	71/72
Panel A: Mean change in transient institutional ownership (%)															
Misstating firms	0.56 (1.08)	-0.06 (0.31)	1.09 (2.29)	-0.55 (-1.21)	-0.46 (-0.78)	-0.45 (-0.69)	0.22 (0.41)	-0.26 (-0.52)	0.40 (0.87)	0.44 (0.88)	-0.01 (-0.04)	0.09 (0.19)	0.42 (2.03)	-0.86 (-1.05)	0.51 (0.96)
Non-misstating firms	-0.15 (0.26)	-0.11 (-0.28)	-0.15 (-0.35)	0.18 (0.35)	0.40 (1.17)	-0.20 (-0.48)	-0.02 (-0.05)	-0.01 (0.15)	-0.57 (-2.12)	0.22 (1.15)	0.59 (1.62)	0.72 (1.16)	0.59 (0.56)	-0.11 (-0.37)	0.11 (0.47)
Panel B: Mean change in dedicated institutional ownership (%)															
Misstating firms	0.15 (0.29)	0.58 (2.06)	0.62 (1.79)	-0.10 (-0.18)	1.36 (2.34)	0.40 (1.07)	-0.08 (-0.22)	0.94 (2.43)	0.22 (0.59)	-0.25 (-0.55)	-0.62 (-1.67)	-0.22 (-0.91)	0.17 (0.24)	-0.30 (-0.32)	-0.01 (-1.21)
Non-misstating firms	0.42 (1.79)	-0.04 (-0.13)	0.62 (1.55)	0.52 (1.44)	0.24 (0.65)	0.19 (0.50)	-0.14 (-0.48)	0.33 (0.81)	0.27 (0.85)	0.15 (0.20)	0.88 (1.94)	0.05 (0.56)	-0.36 (-0.79)	0.80 (1.72)	0.37 (0.42)
Panel C: Mean change in quasi-indexing institutional ownership (%)															
Misstating firms	0.59 (0.70)	-0.14 (0.54)	0.65 (0.89)	-0.52 (-1.04)	1.44 (3.64)	-0.34 (-0.81)	-0.27 (-0.69)	0.51 (1.40)	0.17 (0.43)	0.13 (0.33)	-0.20 (-0.52)	-0.61 (-1.43)	0.56 (1.27)	0.27 (0.47)	0.71 (0.53)
Non-misstating firms	0.77 (2.84)	0.63 (1.81)	0.62 (1.26)	0.79 (1.35)	0.63 (1.68)	-0.44 (-1.20)	0.21 (0.53)	0.94 (1.84)	-0.14 (-0.47)	-0.07 (-0.19)	-0.74 (-1.57)	0.13 (0.27)	0.12 (1.15)	-0.33 (-1.19)	0.21 (1.10)

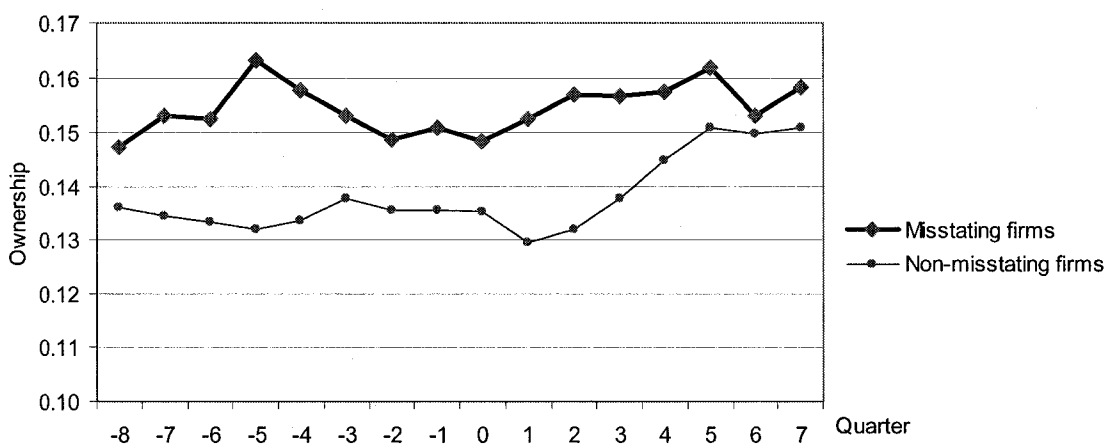


Figure 4-1. Transient institutional ownership around the release of misstated earnings. For the misstating and the non-misstating firms in the Matching Sample, this figure shows the percentage ownership by transient institutional investors for the quarters around the release of misstated earnings. The misstated earnings are released in quarter $t = 0$.

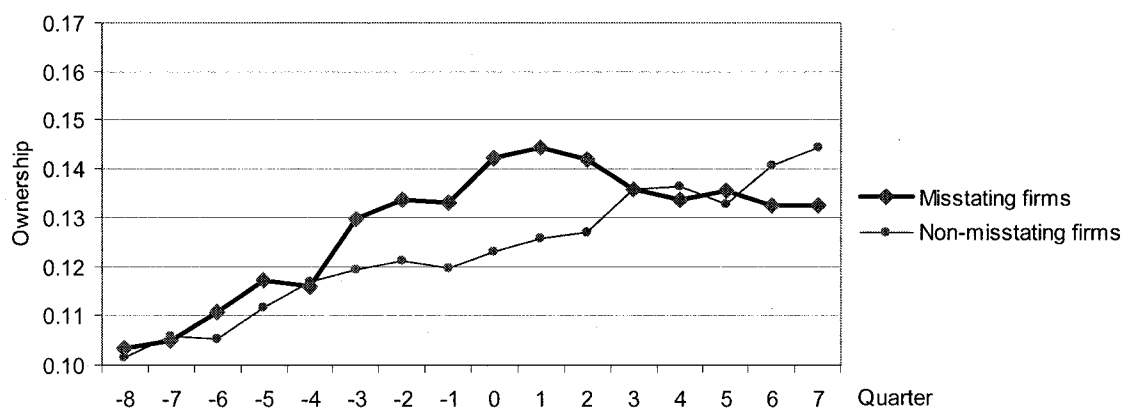


Figure 4-2. Dedicated institutional ownership around the release of misstated earnings. For the misstating and the non-misstating firms in the Matching Sample, this figure shows the percentage ownership by dedicated institutional investors for the quarters around the release of misstated earnings. The misstated earnings are released in quarter $t = 0$.

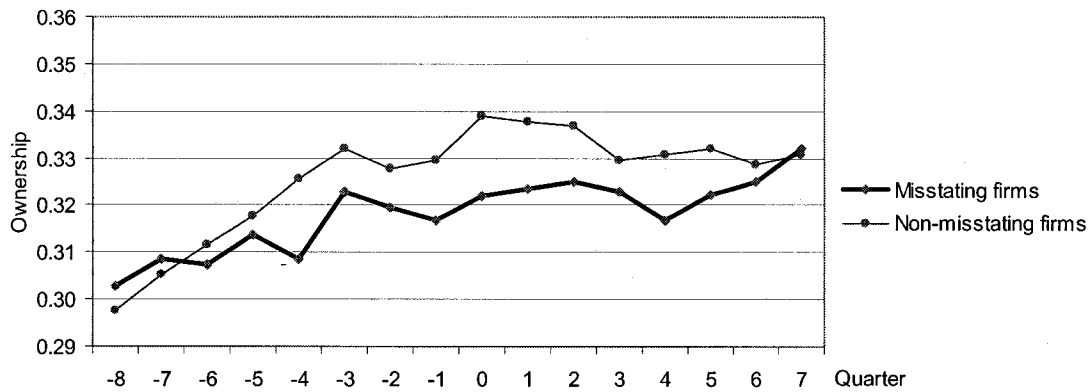


Figure 4-3. Quasi-indexing institutional ownership around the release of misstated earnings. For the misstating and the non-misstating firms in the Matching Sample, this figure shows the percentage ownership by quasi-indexing institutional investors for the quarters around the release of misstated earnings. The misstated earnings are released in quarter $t = 0$.

The above analyses show that transient institutional investors are not attracted to misstating firms due to higher CAR around forthcoming earnings announcement, or lower dividend yield, or higher liquidity. Moreover, there is no evidence that the transient institutions increase their holdings of the misstating firms before the release of misstated earnings. Therefore the alternative explanation that transient institutional investors are attracted to misstating firms before the earnings misstatement is not likely to be true.

CHAPTER VI

CONCLUSION

I examine how different classes of institutional investors impact managers' incentive to misstate earnings. Following Bushee (1998, 2001), I classify institutions into three categories: transient institutions, dedicated institutions, and quasi-indexing institutions. Because transient institutions trade more actively on corporate news release than other institutions, firms that announce worse-than-expected earnings will experience more selling and thus a deeper stock price drop if transient institutional ownership is high. Therefore, managers who want to avoid this price drop have stronger incentives to aggressively manipulate earnings given the ownership structure. On the other hand, dedicated institutions who act more like owners of the firm than traders are more likely to monitor managers and prevent them from misstating earnings. If so, a high dedicated institutional ownership is expected to be associated with a lower likelihood for a firm to misstate.

By studying 245 misstated quarterly earnings from 1996 to 2002, I show that higher ownership by transient institutions significantly predicts a higher likelihood of a manager misstating earnings, while dedicated institutional ownership, quasi-indexing institutional ownership, or aggregate institutional ownership is not associated with such

likelihood. The results suggest that transient institutions exacerbate managerial myopia in the case of accounting restatements.

This is the first study to document the influence of institutional investors on managerial incentives to aggressively manipulate earnings. Therefore it helps academics and investors better understand managerial myopia and accounting restatements, and may potentially help firms reduce misstatement by attracting the desired group of investors.

For future research, I want to be able to draw a more convincing conclusion on the role of dedicated institutional investors on managers' propensity to misstate earnings. To do that, I need to first have a better measure for institutional investors who are more likely to monitor managers. Second, I want to differentiate the two opposing impacts of those institutions on managers' probability to misstate earnings, perhaps by controlling for the likelihood that a misstatement will later be caught. I also want to examine why some of the control variables that have been found to predict annual earnings misstatements do not predict quarterly earnings misstatement. For example, I could retest my hypotheses using alternative measure of executive compensation. If these alternative measure are still insignificant in predicting misstatements, it may be the case that managers have different incentives in misstating annual earnings and quarterly earnings.

APPENDIX 1 VARIABLE DEFINITION AND SAMPLE DESCRIPTION

Variable Definitions

re	= 1 if the quarterly financial report is later restated, and 0 otherwise
IO	= Institutional ownership = (number of shares held by institutional investors) / (shares outstanding)
Transient	= (Number of shares held by transient institutions) / (shares outstanding)
Dedicated	= (Number of shares held by dedicated institutions) / (shares outstanding)
Indexer	= (Number of shares held by quasi-index institutions) / (shares outstanding)
logasset	= ln (total assets)
bm	= Book to market
intcov	= <u>Inverse</u> interest coverage, that equals to 1 if (interest expense) / (operating income before depreciation) > 1 and 0 otherwise.
EPS	= 1 if all past 4 quarters have small positive surprise in EPS (i.e. if actual EPS exceeds analyst forecast by no more than 5 cents)
ceochair	= 1 if CEO is chairman of the board of directors and 0 otherwise
overpay	= 1 if the percentage increase of CEO salary exceeds percentage increase of firm performance, measured by the average of percentage increase of net income, EPS, and revenue, and 0 otherwise
logsalary	= ln (CEO salary)
option	= (In the money exercisable options + In the money unexercisable options) / salary

time = 1 if the financial statement is issued in year 1996, 2 if 1997, 3 if 1998, up to 7 if year 2002.

Transient, dedicated, and quasi-indexer institutions are defined as in Bushee (2001). More specifically, transient institutions hold diversified portfolios with high turnover; dedicated institutions hold much less diversified portfolios with low turnover; quasi-index institutions hold diversified portfolios with low turnover.

Sample Description

The Full Sample:

This sample consists of all the misstating firm-quarters with necessary data and all the non-misstating firm-quarters in all the industries covered by misstating firms from 1996 to 2002. There are total of 18466 firm-quarters, with 245 misstating firm-quarters, and 18221 non-misstating firm-quarters. There are 91 different misstating firms in the sample.

The Matching Sample:

This sample consists of 84 misstating firm in the quarter when it first misstated earnings and 84 non-misstating firm-quarter, each matched to a misstating firm on year, 2-digit SIC, and total assets. The total assets of the non-misstating firm are within 40% of that of the misstating firm. If multiple firms met the matching criteria, the closest firm in total assets is selected. This Sample is a subset of the Full Sample

and 7 misstating firms in the Full Sample does not have a matching firm. Time period ranges from year 1996 to 2002.

The Restricted Sample:

In the full sample, I keep only the 168 firms in the Matching Sample. There are 229 misstating firm-quarters and 2,773 non-misstating firm-quarters in this sample. Time period ranges from year 1996 to 2002.

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