This is to certify that the
dissertation entitled

THE CHANGES OF ACCOUNTING CONSERVATISM AROUND EARNINGS RESTATEMENTS: AN ANALYSIS OF THE IMPACT OF CEO COMPENSATION

presented by

Xin Xu

has been accepted towards fulfillment
of the requirements for the

Ph.D. degree in Accounting

Marilyn F. Johnson
Major Professor's Signature

7/24/09
Date

THE CHANGES OF ACCOUNTING CONSERVATISM AROUND EARNINGS RESTATEMENTS: AN ANALYSIS OF THE IMPACT OF CEO COMPENSATION

By

Xin Xu

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTORAL OF PHILOSOPHY

Accounting

2009

TH
EAR

U

conserv

of asym

decrease

restatem

associat

while th

option a

that afte

relations

grants be

used as a

opportun

demonstr

firms' fin

ABSTRACT

THE CHANGES OF ACCOUNTING CONSERVATISM AROUND EARNINGS RESTATEMENTS: AN ANALYSIS OF THE IMPACT OF CEO COMPENSATION

By

Xin Xu

Using a sample of earnings restatements, I investigate how accounting conservatism changes after restatement announcements. Using an accrual-based measure of asymmetric timeliness of earnings, I observe an initial increase and a subsequent decrease in the accounting conservatism of restating firms during the two years after restatement announcements. I also find that the initial increase in conservatism is associated with a high level of CEO option grants awarded before the announcements, while the subsequent decrease of conservatism is associated with a reduction of CEO option awards during the periods following the announcements. Further analysis reveals that after controlling for the restatement magnitude and the accounting fraud, the relationship between the initial increase in conservatism and the change in CEO option grants becomes insignificant. These results suggest that accounting conservatism may be used as a control mechanism to minimize the agency cost that results from management's opportunistic behavior induced by their compensation contracts. The results also demonstrate the significant role of restatement characteristics in explaining restating firms' financial reporting behavior.

inva

Kath

not c

also

Mari

proce

you a

other

fellow

ACKNOWLEDGEMENTS

I would like to thank the members of my dissertation committee for their invaluable guidance and support: Marilyn Johnson (Chair), Ted Fee, Chris Hogan, and Kathy Petroni. Without their support, I could not have finished this long journey. They not only contributed their expertise to this project, but their guidance and expertise will also be critical for my future growth as a researcher. I would especially like to thank Marilyn Johnson for her guidance, insight, and consideration throughout the dissertation process. One thing I learned through working with her is that you must believe in what you are doing and work with great dedication to make things happen.

I am also indebted to workshop participants at Michigan State University, the other faculty members in the Department of Accounting and Information System, and my fellow doctoral students who have provided their comments and support.

TABLE OF CONTENTS

LIST OF TABLES

FIGUR

LIST OF FIGURES

contr

2001

probl

been

be at t

2005:

how s

announ

failure

executi

demand

misalig

their int

U

reports'

influenc

the acco

Because

with mar

generatin

Several re
equity-base
22.1.

CHAPTER 1: INTRODUCTION

Conservative financial reporting has been hypothesized to facilitate efficient contracting between managers and shareholders in the presence of agency problems (Ball 2001, Watts 2003). Jensen (2005) suggests that overvalued equity can lead to agency problems and equity-based compensation of executives makes the problem worse. It has been argued that equity-based incentives, especially option-based compensation, might be at the root of the dramatic increase of earnings restatements in the last decade (Jensen 2005; Burns and Kedia 2006; Efendi et. al. 2007)[1]. In this study, I examine whether and how shareholders change their demand for accounting conservatism after restatement announcements. Because a restatement announcement indicates a financial reporting failure (GAO 2002) and severe agency problems that may have been induced by high executives' option-based compensation, I expect that shareholders will change their demand for accounting conservatism in response to the change in the degree of the misalignment of manager's incentives with those of shareholders in order to ensure that their interests are protected.

Under agency theory, moral hazard problems exist in financial reporting when the reports' accounting measures inform shareholders about managerial performance and influence managers' welfare. Managers have incentives to introduce bias and noise into the accounting measures in order to transfer wealth to themselves from shareholders. Because managers typically have limited liability and limited horizons, settling ex post with managers once they have made excessive distributions to themselves is difficult, generating deadweight costs for the firm and for shareholders. Watts (2003) argues that

[1] Several recent empirical studies provide mixed results regarding the association between executives' equity-based incentives and the likelihood of restatements. These studies are reviewed further in section 2.2.1.

conser

By re

conser

in firm

compe

shareh

betwee

shareh

restate

are am

(Burns

incentiv

tradition

wealth b

firm val

the misa

announc

I expect

compens

In additio
to assess a f
earnings, es
firms.

conservative accounting helps address the issues of limited horizons and limited liability. By requiring a higher degree of verification of recognizing gains versus losses, conservatism reduces the managers' ability to overstate earnings and cumulative changes in firm value at any point in time. Therefore, shareholders are protected from compensation overpayments to managers. [2]

Agency problems as described above arise when the interests of managers and shareholders are not aligned. I expect that the greater the misalignment of interests between managers and shareholders, the greater the demand for conservatism from shareholders in order to minimize their potential losses in the future. Recent literature on restatements shows that CEO compensation incentives, especially stock option holdings, are among the key driving forces behind the aggressive financial reporting behavior (Burns and Kedia 2006; Efendi et. al. 2007). These studies demonstrate that very high incentives from CEOs' option holdings exacerbate the agency problem above a traditional level whereby managers focus on the short-term maximization of their own wealth by artificially inflating earnings beyond the scope allowed by GAAP and sacrifice firm values in the long run. Because restatement announcements reveal to shareholders the misaligned incentives induced by high CEO compensation, I expect that after the announcements shareholders will demand more conservative reporting. More importantly, I expect the increase in conservatism to be positively associated with the level of CEO compensation incentives awarded during the years prior to the announcements.

[2] In addition, Chen, Hemmer, and Zhang (2007) demonstrate that when accounting numbers are also used to assess a firm's expected future payoff, conservatism can dampen managers' incentives to manage earnings, especially in situations in which top management teams have significant equity stakes in their firms.

cannot

incenti

accoun

aggress

firms w

Cheng

contrac

propose

and the

manage

perform

their de

announc

the CEO

through

P

conserva

measures

(2006) a

firms ide

measure.

levels o

The above prediction is based on the assumption that restating firms, on average, cannot address their CEOs' compensation problem in a timely fashion. If the high CEO incentives can be reduced immediately after the announcements, the change in accounting conservatism will only be a mechanistic response on the previous accounting aggressiveness and we should not expect to see *more* conservative reporting by restating firms when comparing them with similar non-restating firms. However, as documented in Cheng and Farber (2008), it takes about two years on average for restating firms to re-contract with their CEOs and significantly reduce their option-based compensation. They propose that restatements result from too high a level of CEO compensation incentives, and the reduction in option grants alleviates the severe agency problem by better aligning managerial incentives with those of the shareholders, resulting in improved firm performance. Based on their finding, I expect that restating firms will, on average, reduce their demand for the *higher* level of conservatism by the end of the second year after the announcements. This decrease in conservatism should be associated with the reduction of the CEO compensation incentives, which alleviates the severe agency problems conveyed through the announcements.

Prior to testing my hypotheses, I provide descriptive evidence on how accounting conservatism changes for restating firms after restatement announcements. I use two measures of conservatism: an accrual-based measure developed by Ball and Shivakumar (2006) and a market-based measure from Basu (1997). Using a sample of 354 restating firms identified by the GAO (2002) and (2006) reports and with the accrual-based measure, I find evidence consistent with my predictions. In particular, I compare the levels of conservatism between restating firms and non-restating firms after the

announcements. Two groups of non-restating firms are used: all other firms from the Compustat database and a size-, industry-, and year-matched group of firms. I find that restating firms' earnings were more conservative in the year of the restatement announcement (FY t). The trend continued in FY t+1. Interestingly, by the second year after the announcement (FY t+2), there were no significant differences in accounting conservatism between restating firms and non-restating firms. I also compare the pre- and post- announcement periods for restating firms. I find that their earnings became more conservative in the year of the restatement announcement (FY t) than in the two years prior to the earliest year restated (FY tn-1 and FY tn-2, where FY tn is the earliest year restated and n refers to the number of restated periods)[3]. However, this high level of conservatism declined during the two years (FY t+1 and FY t+2) following the announcements. Overall, the evidence is consistent with restating firms changing their financial reporting behavior within the two-year period after the announcements.

The second objective of my paper is to examine whether the changes in conservatism are consistent with my hypotheses. I analyze both the level of conservatism at FY t and the change in conservatism from FY tn-1 to FY t and their associations with the change of CEO stock option grants from FY tn-1 to FY t. Similar analysis is also conducted for the period from FY t to FY t+2. Using the accrual-based measure and after controlling for other factors affecting conservatism based on prior literature, I find a positive relationship between the change in CEO option grants and the level of

[3] Following Cheng and Farber (2008) and Badertscher (2007), I define FY tn-1 as the first year prior to the restating firm engaging in aggressive accounting activity. For example, in fiscal year 2001, Kroger Corporation announced it will restate its fiscal year 1998, 1999, and 2000 financial statements. Therefore, FY t is 2001. FY tn-1 is 1997 when Kroger still had normal financial reporting behavior. Comparing FY tn-1 (and FY tn-2) to FY t allows me to examine whether the firm's financial reporting strategy changes after the restatement announcements. Figure 1 illustrates the event years around a restatement announcement.

conservatism in both FY t and FY t+2. Moreover, results from the change of conservatism specification reveal that the increase in conservatism from FY tn-1 to FY t was primarily driven by restating firms that increased CEO option grants during the period tn-1 to t, while the subsequent decrease in conservatism was driven by restating firms that reduced their CEOs' option awards in the two years following the announcements. I fail to find results consistent with my hypotheses using the Basu measure. This is explored further in section 6.1.2.

In addition to CEO compensation incentives, I also investigate the impact of the restatement characteristics on the changes in conservatism, especially the increase in conservatism in FY t. Specifically, a higher restatement magnitude or an indication of accounting fraud might reveal a greater agency problem to shareholders, leading to a demand for more conservative financial reporting immediately after the announcements. I conduct further analysis that includes these two factors. Although I do not find that the increase in conservatism from FY tn-1 to FY t is driven by firms with high restatement magnitudes or fraud firms, the significant association between the change in CEO option grants and the level of conservatism in FY t disappears after I control for these two restatement characteristics. More interestingly, I find fraud firms have a significantly higher level of conservatism than non-fraud firms in FY t[4].

Overall, the above evidence suggests that investors demand a higher level of conservatism in response to the severe agency problem revealed by a restatement announcement. In addition, subsequent to the announcement, they gradually reduce their demand for conservatism as the agency problem is alleviated through re-contracting of

[4] Using the change specification, I find both fraud firms and non-fraud firms significantly increase their accounting conservatism from FY tn-1 to FY t. The level and the change analyses on the impact of the accounting fraud on conservatism present a troubling finding that I hope to explore in future research.

CEO

charact

financi

my pap

has foc

evidenc

contrac

Watts

negativ

authors

betwee

variatic

conserv

misalig

accoun

underly

change

Moore

accruals

content

restater

CEO compensation. Furthermore, in addition to CEO option incentives, the characteristics of restatements also play an important role in explaining restating firms' financial reporting behavior immediately after the announcements.

I believe my study makes two contributions to financial accounting research. First, my paper furthers our understanding of accounting conservatism. While recent literature has focused primarily on the demand for conservatism arising from debt contracting, evidence regarding the demand for conservatism from shareholders due to compensation contracting has been lacking. My study not only provides empirical evidence to support Watts (2003), but also complements LaFond and Roychowdhury (2008) who find a negative association between managerial ownership and accounting conservatism. The authors use managerial ownership as the proxy for the degree of alignment of interests between managers and shareholders. They hypothesize and find that cross-sectional variation in managerial ownership leads to cross-sectional variation in accounting conservatism. In my study, I use the restatement announcement as an indicator of the misalignment of manager's incentives with those of shareholders, and examine how accounting conservatism *changes* in response to the *change* in the degree of the underlying agency problem.

Second, my study extends the restatement literature. Studies examining the change in the financial reporting behavior of restating firms have provided mixed results. Moore and Pfeiffer (2004) find that there are no differences in restating firms' total accruals before and after restatements. Wilson (2008) documents that the information content of earnings announcements (ERC) declines in the period immediately following a restatement, yet returns to the pre-restatement level in an average of four quarters.

Badertsc

accrual

contribut

financial

importar

respons

that I pr

of the d

announ

papers.

conserv

their re

LaGor

annour

evolve

impor

finan

litera

devel

and c

tests.

Badertscher (2007) provides evidence that restatements have reformative effects on both accrual management and real activity management for restating firms. My paper contributes to this literature by predicting and documenting a change of restating firms' financial reporting behavior through examining accounting conservatism. More importantly, existing studies do not examine whether their observed response (or lack of response) is a function of the incentives that drive restatements. My study is different in that I predict and directly examine the association between compensation incentive, one of the determinants of restatements, and the observed change in conservatism after the announcements.

Finally, this study is most closely related to the following two concurrent working papers. Huang and Zhang (2009) hypothesize and find that overstating firms report more conservatively after restatements than before restatements, and after the announcements, their reports are also more conservative than the reports of their non-restating peer firms. LaGore (2008) finds a similar result by comparing the three-year period before the announcements to the three-year period after. Both studies, however, fail to examine the evolvement in conservatism during the years after the announcements. And more importantly, they do not investigate the relation between the incentives for aggressive financial reporting and the change of conservatism.

The reminder of the paper is structured as follows. In chapter 2, I review the literature on conservatism and restatements. Chapter 3 contains my hypothesis development. Chapter 4 outlines my research design. In chapter 5, I introduce my sample and data. Chapter 6 provides the empirical results. Chapter 7 presents several sensitivity tests. I conclude my paper in chapter 8.

CHAPTER 2: RELATED LITERATURE

My paper is related to studies that examine the demand for conservatism due to management compensation contracts. My paper is also related to studies that investigate the causes and consequences of restatements and changes in the financial reporting behavior of restating firms. Below I briefly review these literatures, their relations to my study, and my contributions to these literatures.

2.1 Conservatism Research

Basu (1997) interprets conservatism as capturing accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. Thus, earnings is more timely or concurrently sensitive in reflecting publicly available bad news than good news. Watts (2003) proposes that from the contracting perspective, conservative accounting is a means of addressing moral hazard caused by parties to the firm having asymmetric information, asymmetric payoffs, limited horizons, and limited liability. The asymmetry in the application of conservatism leads to a greater delay in the recognition of gains than losses. The probability of overstating earnings and net assets at any point in time is lowered, thus reducing the likelihood of losses incurred by investors that result from management's manipulation of financial reports.

The role of conservatism as proposed in Watts (2003) has been investigated in prior theoretical work in a principal-agent setting. Kwon, Newman, and Suh (2001) show that under a limited liability construct, the optimal accounting system will always be conservative in order to motivate and compensate the agent. Chen, Hemmer, and Zhang (2007) extend Kwon et. al. (2001) by analyzing the dual roles of accounting numbers. In their paper, the authors model accounting numbers as serving both a valuation role (for

potential investors to assess firm's value) and a stewardship role (for current investors to monitor managers). They show that under conservative accounting standards, the equilibrium level of earnings manipulation is reduced. Conservatism reduces the impact of news on share prices and consequently reduces the benefit of earnings management. Conservatism also increases the cost of earnings manipulation. Therefore, the current owner will engage in less earnings management. As indicated by the authors, the model implies that conservative principles are more likely to arise in situations where the self-interested parties involved in the financial reporting process have a significant equity stake in their firms.

However, there is little empirical evidence demonstrating the demand for conservatism from shareholders due to management compensation contracts. In LaFond and Roychowdhury (2008), the authors examine the association between conservatism and managerial ownership. The authors argue that to the extent that conservatism addresses the agency problem resulting from the separation of ownership and control within a firm, increased managerial ownership should decrease the severity of the agency problem and thus decrease the demand for conservatism. They document that the asymmetric timeliness of earnings is negatively associated with the level of managerial ownership. But interestingly, they find that conservatism does not decrease with the level of managerial option holdings. This finding supports the theory of Chen, Hemmer, and Zhang (2007) and implies that option holdings by management on average require a higher degree of conservatism (or at least do not reduce the demand for conservatism from shareholders).

Chen,

Roycho

alignm

variatio

conserv

misalign

account

underly

executiv

equity in

a norma

manager

control v

provides

change m

to these c

2.2 Resta

2.2.1 Ca

P

internal

indepen

[1] LaFond
m option
owned by

My paper provides empirical evidence supporting Watts (2003) and in particular Chen, Hemmer, and Zhang (2007). Moreover my study complements LaFond and Roychowdhury (2008). They use managerial ownership as the proxy for the degree of the alignment of interests between managers and shareholders, and find that cross-sectional variation of managerial ownership leads to cross-sectional variation in accounting conservatism[5]. My paper uses the restatement announcement as an indicator of the misalignment of manager's incentives with those of shareholders, and examines how accounting conservatism *changes* in response to the *change* in the degree of the underlying agency problem. Moreover, their study assumes equilibrium design in executives' compensation incentives, while my study adopts a setting in which CEOs' equity incentives evolve from an off-equilibrium level to a new equilibrium level. Finally, a normal cross-sectional test might have difficulty identifying a relationship between management compensation designs and accounting choices without carefully specifying control variables and the relations among the variables. Therefore, the restatement setting provides the advantage of being able to exploit an event that highlights the need to change management compensation incentives and how accounting conservatism responds to these changes.

2.2 Restatement Research

2.2.1 Causes of Restatement

Plumlee and Yohn (2009) find that restatements are most often related to basic internal company errors. Agrawal and Chadha (2005) find that the presence of independent directors with finance expertise reduces the likelihood of a misstatement. On

[5] LaFond and Roychowdhury (2008) use a measure of managerial ownership that excludes shares granted in options. They find that conservatism does not vary significantly with the shares in outstanding options owned by the CEOs. This is an equilibrium study while my study adopts an off-equilibrium setting.

the o

set o

possi

ident

incen

incen

term

restri

Arm

equit

subj

(200

and t

incen

CEO

that

misr

Sriv

* The
anno
sent
Dif
conv
finan
deta

the other hand, Baber et. al. (2007) fail to find a significant link between a comprehensive set of internal governance mechanisms and the likelihood of restatements. Regarding possible economic determinants of restatements, Richardson, Tuna and Wu (2002) identify several capital market incentives (e.g., raising cash capital) and debt market incentives (e.g., high leverage) that might explain accounting aggressiveness[6].

A stream of studies focuses on the role played by executive compensation incentives. Larcker et al. (2007) do not find an association between CEOs' total long-term compensation and restatements. Similarly, by adding the incentives of CEOs' stock, restricted stock, and stock options together and using propensity score matching, Armstrong et al. (2009) also do not find evidence of a positive association between CEO equity incentives and accounting irregularities. Using a sample of 87 firms that are the subject of the SEC's Accounting and Auditing Enforcement Releases, Johnson et al. (2009) document a positive relation between executive incentives from unrestricted stock and the likelihood of fraud.

Other studies consider the specific role of CEO stock options in providing incentives for accounting misstatements[7]. Burns and Kedia (2006) demonstrate that the CEO's option sensitivity is positively associated with restatements. They further show that higher incentives from stock options are also associated with higher magnitudes of misreporting. Such a relation does not exist for equity and restricted stock. Efendi, Srivastava, and Swanson (2007) extend Burns and Kedia (2006). They use CEOs' in-the-

[6] These incentives, other than CEO compensation, might also affect the change in conservatism after the announcements, such as leverage. In chapter 4, I discuss other factors that might affect conservatism and control for these factors in my subsequent testing.

[7] Different from restricted stocks and stock ownerships, stock options possess distinctive features: convexity and asymmetric payoff. These features induce strong incentives for executives to manipulate financial reports. Burns and Kedia (2006) and Efendi, Srivastava, and Swanson (2007) contain more detailed discussion on these issues.

mc

ser

be

2.2.

sev

thei

Rich

anno

that r

mont

restat

Srniv

restat

restat

Miller

metho

Palmr

after r

compa

betwe

literatu

money option holdings to capture both equity overvaluation and CEO option price sensitivity. They find that large amounts of in-the-money options are much more likely to be involved in restatements.

2.2.2 Consequences of Restatements

Empirical studies on restatements demonstrate that restatements typically result in severe capital market consequences for restating firms and labor market punishments for their management. From the perspective of the capital market effect, Palmrose, Richardson and Scholz (2004) document a mean market reaction to restatement announcements of –9.2% over a two-day event window. Hribar and Jenkins (2004) find that relative percentage increases in the cost of capital average between 7 and 19% in the month following a restatement. Gleason et. al. (2008) find that the share prices of non-restating firms in the same industry also decline. With respect to the labor market, Srinivasan (2004) finds an abnormally high board turnover within three years of the restatement announcement. Desai, Hogan, and Wilkins (2006) show that almost 60% of restating firms experience top executive turnover within 24 months. Hennes, Leone, and Miller (2007) report even higher (91%) CEO or CFO turnover by using a refined methodology to distinguish intentional misstatements from unintentional ones. Finally, Palmrose and Scholz (2004) demonstrate that 38% of restating firms have civil litigation after restatements.

In addition to management turnover, Cheng and Farber (2008) examine CEOs' compensation re-contracting following restatements. Building on the positive link between stock-based compensation and aggressive accounting established in the prior literature, their analysis shows that the ratio of the value of option grants to total

comp

two-y

firms

same

after

2.2.3

induc

financ

and b

of a r

restat

annou

the

annou

accru

errors

aggre

exhib

follow

firms

compensation for restating firms' CEOs decreases significantly on average during the two-year period after restatement announcements. More importantly, for those restating firms with reductions in CEO option grants, operating performance improved during the same period, implying a better alignment between management and shareholder interests after CEO compensation re-contracting.

2.2.3 Restatement and Financial Reporting Quality

Conventional wisdom suggests that the severe consequences of restatements will induce firms to reform their accounting policies and practices towards less aggressive financial reporting behavior. In addition, heightened SEC scrutiny, more diligent auditors, and board of director oversight could also lead to changes in financial reporting behavior of a restating firm.

Yet empirical studies on the change in financial reporting quality after restatements provide mixed results. Moore and Pfeiffer (2004) examine 72 restatements announced between 1997 and 2000. They find that total accruals for the period preceding the restatement do not differ significantly from those of the post-restatement announcement period. Similar results hold for working capital accruals and other accruals. The paper further documents that the patterns in earnings growth and forecast errors are also not different across the two periods.

On the contrary, Badertscher (2007) documents that restating firms identified as aggressive non-GAAP earnings management firms based on the GAO (2002) report exhibit less real activity earnings management and less accrual earnings management following a restatement. Wilson (2008) provides evidence that the ERCs of restating firms fell significantly in the two quarters immediately following restatements when

compa

previou

of ear

restate

restatir

annour

associa

(or lac

compe

in agg

docum

chang

compared with the quarter prior to the restatements (the base quarter). But it returns to its previous level in the 4th quarter. Furthermore, there is no loss in the information content of earnings for firms that make changes in their governance structures following restatements. Finally, both Huang and Zhang (2009) and LaGore (2008) find that restating firms report more conservatively after the announcements than before the announcements.

One limitation of the above papers is that they do not directly examine the association between the incentives that induce misstatements and the observed changes (or lack of changes) after restatements. If factors causing restatements, such as executive compensation remain the same, it is plausible that management may continue to engage in aggressive reporting behavior. My study is different in that I not only predict and document the direction of the change in conservatism, but also directly test whether the change is associated with compensation incentives.

agen

I the

discu

3.1 E

incen

that t

accou

manag

Healy

corpor

partial

propri

based

also de

malfeas

earning

betwee

Warfiel

earnings

CHAPTER 3: DEVELOPMENT OF HYPOTHESES

In this chapter, I first use the earnings management literature to demonstrate the agency problem between shareholders and managers induced by executive compensation. I then focus on the role of conservatism in reducing this agency cost. Based on these discussions, I develop my hypotheses.

3.1 Executive Compensation and Agency Problem

It has long been recognized that earnings-based compensation provides an incentive for management to manipulate accounting income. Sloan (1993) demonstrates that the level of bonus payments is usually linked to reported earnings and other accounting based performance measures. Healy (1985) documents that executives manage accruals to maximize their bonus payments. Guidry et. al. (1999) find support for Healy's conclusion using internal data from different business units within a single corporation. Gaver, Gaver, and Austin (1995) and Holthausen, Larcker, and Sloan (1995) partially confirm and also advance Healy's finding by using refined methodology and a proprietary dataset. In general, this literature demonstrates that incentives from earnings-based compensation induce managers to manipulate earnings. The restatement literature also demonstrates that for restating firms classified as having engaged in accounting malfeasance, executive bonus payments provide an incentive to managers that lead to earnings restatements (Efendi et. al. 2007).

There is also an emerging line of academic research that examines the link between equity-based compensation and aggressive financial reporting. Cheng and Warfield (2005) find that CEOs with high equity incentives are more likely to engage in earnings management in order to meet or beat analyst forecasts. The magnitude of

abnorm

Bergstr

abnorm

incentiv

signific

subsequ

demons

exercisi

discreti

abnorma

enable

incentiv

evidenc

show th

option

financia

stock op

costs by

based

associat

manage

abnormal accruals is positively related to CEO stock-based compensation. Similarly, Bergstresser and Philippon (2004) find a positive correlation between the magnitude of abnormal accruals and the proportion of CEO total compensation that is related to equity incentives. Beneish and Vargus (2002) reveal that income-increasing accruals are significantly less persistent for firms with abnormal insider selling and that these firms subsequently suffer significantly lower stock returns. Bartov and Mohanram (2004) demonstrate that top executives inflate earnings through accruals management prior to exercising their stock options and selling the acquired shares. The abnormally high discretionary accruals reverse in the post-exercise period, and stock price changes are abnormally negative during that period.

In related research on restatements, Burns and Kedia (2006) argue that options enable management to extract rents in the form of excessive compensation and create incentives for management to adopt aggressive accounting practices. They find strong evidence that option sensitivity is positively associated with misreporting. They further show that larger magnitudes of restatements are associated with higher values of CEO option sensitivity. Efendi et al. (2007) demonstrate that the likelihood of a misstated financial statement increases greatly when the CEO has sizable holdings of in-the-money stock options. These results indicate that substantially overvalued equity creates agency costs by causing managers to take actions to support stock price.

The above studies demonstrate that there are agency costs induced by CEO stock-based compensation, especially option holdings, and that these agency costs are associated with earnings management. If option compensation is intended to provide managers with incentives to act in the best interests of shareholders (Jensen and Meckling

1976; St
examine
the agen
Guay, a
that firm
executiv
to chang
stock pr
deviatio
a greate
to earnir

and its
significa
2006).
receive
is dama
when t
and sh
inflate
compe
numbe
report

1976; Smith and Stulz 1985), a natural question that arises is why the option incentives examined in the above studies fail to curb aggressive reporting and, instead, exacerbate the agency problem. Following Cheng and Farber (2008), I appeal to arguments in Core, Guay, and Larcker (2003) and Core and Guay (1999) to help explain this. They propose that firms choose an optimal level of equity incentives when they contract with executives. But over time, managers' equity incentives deviate from the optimal level due to changes in firm and/or manager characteristics. For example, the incentives vary with stock price, stock-return volatility, and the time remaining until the options expire. The deviation exacerbates the sensitivity of CEOs' wealth to short-term stock prices, inducing a greater misalignment of interests between management and shareholders, which leads to earnings management and eventual earnings restatement.

Earnings management and particularly earnings restatements are costly to a firm and its shareholders. It is well documented that restatements are associated with significant decreases in firms' market value (Palmrose et al. 2004; GAO 2002; and GAO 2006). Moreover, as demonstrated in the earnings management literature, executives receive high cash bonuses based on manipulated accounting numbers. Investors' wealth is damaged because the excess amount cannot be fully recovered in the subsequent period when the misconduct is uncovered. This is caused by managers having limited liability and short employment horizons. Similarly, executives engage in earnings management to inflate short-term stock price in order to boost the value of their equity-based compensation. Shareholder values are damaged when executives sell unusually large numbers of shares during the manipulated period, which is normally followed by low reported earnings and stock returns' reversal during the subsequent years (Beneish and

Vargus

values

3.2 Ag

incent

This e

cash v

in Wa

likely

limit

is har

legal

fully

of ev

man

effic

cont

effi

new

ear

los

rep

Vargus 2002; Bartov and Mohanram 2004; Bergstresser and Philippon 2006). Firm values are also reduced when executives focus on non-value added activities.

3.2 Agency Problems and Accounting Conservatism

The above discussion demonstrates that executive compensation provides incentives for managers to overstate earnings in order to transfer wealth to themselves. This excess compensation to managers, in the form of paid cash bonus and/or realized cash value from exercising options and selling stocks, is difficult to recover. As discussed in Watts (2003) and LaFond and Roychowdhury (2008), ex post settling with managers is likely to be extremely costly and incomplete due to managers' limited horizon and limited liability. Moreover, the loss estimation is difficult to verify and the accused fraud is hard to prove or to distinguish from bad outcomes that are due to chance. Even with a legal finding of fraud and a damages award, the excess payments typically cannot be fully recovered (Watts 2003). As discussed earlier, shareholders lose not only in the form of excess compensation payments, but also when stock returns plunge during the post-manipulation period and when managers are distracted from their primary function of efficiently managing the firm. These issues create a demand for more efficient contracting ex ante.

Watts (2003) argues that conservatism emerges as one mechanism to facilitate efficient contracting. By applying stricter verification standards for recognizing good news as gains than for recognizing bad news as losses, the probability of overstating earnings and net assets at any point in time is lowered, thus reducing the likelihood of losses incurred by investors that result from management's manipulation of financial reports. Furthermore, as demonstrated in the analytical model of Chen, Hemmer, and

Zhang

prices.

with ec

shareh

probler

are les

misalig

executi

optimal

restaten

announ

executi

This in

restatin

which

alternat

averag

also re

incent

Zhang (2007), conservative accounting standards reduce the impact of earnings on share prices, thereby reducing the benefit of earnings management. Consequently, executives with equity holdings of the firm will engage in less earnings management.

In summary, conservative financial reporting is hypothesized to facilitate shareholder-management contracting in the presence of agency problems. Agency problems are likely to be more severe when the interests of managers and shareholders are less aligned. In chapter 3.1, I argue that for restating firms, the degree of misalignment of interests between shareholders and managers is exacerbated when executive compensation, especially in the form of stock options, deviates from the optimal level. Thus, I predict that the demand for conservatism will increase after restatement announcements in response to the agency problem revealed through the announcements. This increase in conservatism will restrain the opportunities of executives to further manipulate earnings and limit additional loss of shareholders' value. This increase in conservatism will also result in higher levels of conservatism for restating firms after the announcements when comparing them with non-restating firms, which face less severe agency problems. Accordingly, I hypothesize that (stated in the alternative form):

H1a: immediately after restatement announcements, restating firms will, on average, have higher levels of accounting conservatism relative to non-restating firms and also relative to pre-announcement period;

H1b: the increase in conservatism is associated with the CEO compensation incentives awarded during the years leading up to the announcements.

Hypothesis 1 is based on the assumption that restating firms, on average, cannot address their CEOs' compensation problem in a timely fashion. More specifically, because restatements result from a high level of incentive compensation, restating firms should re-contract with their CEOs, reducing their compensation and mitigating their agency problems. If the high CEO incentives can be reduced immediately after the announcements, the change in accounting conservatism will only be a mechanistic response on the previous accounting aggressiveness, and we should not expect to see *more* conservative reporting by restating firms when comparing them with similar non-restating firms. But as proposed in Core and Guay (1999) and Core et al. (2003), the compensation re-contracting process will likely take some time. Specifically, the authors point out that information gathering and processing costs prevent firms from adjusting incentives to optimal levels on a timely basis. Furthermore, if transaction costs associated with re-contracting exceed the benefits, some restating firms may not start to reduce compensation incentives when the issue emerges. Finally, the action of reducing bonus or option grants may have a negative impact on managers' effort levels, which might also result in some restating firms slowing down the re-contracting process[8].

In fact, Cheng and Farber (2008) find that, on average, it takes about two years for restating firms to re-contract with their CEOs and reduce their option-based compensation significantly. In particular, Cheng and Farber (2008) find that restating firms become more aggressive with option usage during the misstated periods, and their CEOs' option grants are significantly reduced by the end of the second year (i.e., FY t+2)

[8] In Core and Guay (1999) and Core et al. (2003), the authors do not address the compensation re-contracting process when firms experience top executive turnover. It is possible that for restating firms who experience CEO turnover, the hiring of a new CEO and the compensation re-contracting might occur at the same time. I address the turnover issue in my subsequent analysis.

after the announcements. Their findings support the notion that high CEO stock options are the main driving force behind the misstatements, and restating firms start to take actions to address their greater agency problem after the announcements. They further document that for those firms who reduce option grants by FY t+2, their operating performance improved. But more importantly, their observation that there were no significant changes in option grant usage until FY t+2 supports the notion that restating firms will re-contract with their CEOs but the re-contracting process will take some time.

If restating firms reduce their CEO stock option grants by the end of FY t+2, which results in a better alignment of interests between shareholders and managers, I then expect that the demand for greater conservatism after the announcements will fall subsequent to the two-year period following the announcements. Accordingly, I hypothesize that (stated in the alternative form):

H2a: after initially increasing conservatism, restating firms will, on average, reduce their high level of conservatism during the years subsequent to the announcements;

H2b: this decrease in conservatism is associated with the reduction of the CEO compensation incentives during the same period.

CHAPTER 4: RESEARCH DESIGN

4.1 The Accrual-Based Measure of Conservatism

I employ two measures of conservatism. One is accrual-based and the other one is market-based. The accrual-based method is developed in Ball and Shivakumar (2006), who investigate two roles of accruals. The first is consistent with Dechow (1994), who proposes that cash flow "noise" arises from timing and matching problems that reduce the ability of cash flow to reflect firm performance. Accrual accounting shields accounting income from this transitory noise, making it a more efficient performance measure. Thus accruals and cash flows from operations are contemporaneously negatively correlated, and accruals offset transitory increases and decreases in cash flows.

Ball and Shivakumar propose a second role for accruals: asymmetrically timely loss recognition. The authors argue that economic gains and losses can be thought of as the current-period cash flow plus any revision in the present value of expected future cash flows. Because accruals are based in part on revisions in future cash flow expectations, economic gain and loss recognition must be accomplished in part through accruals. This gain and loss recognition role of accruals is a source of positive correlation between accruals and current-period cash flow. They further propose that the positive correlation between accruals and current cash flows is asymmetric due to the conservative nature of accounting where economic losses are more likely to be recognized on a timely basis than economic gains. Based on this discussion, the authors modify the Jones (1991) accrual model by incorporating the loss recognition role of accruals.

To examine the change in conservatism around restatement announcements, I employ the following model:

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt}$$
$$+ \alpha_6 Restate_{jt}(or\ T_j) + \alpha_7 Restate_{jt}(or\ T_j) \times CFO_{jt} + \alpha_8 Restate_{jt}(or\ T_j) \times \Delta Sales_{jt}$$
$$+ \alpha_9 Restate_{jt}(or\ T_j) \times FASSET_{jt} + \alpha_{10} Restate_{jt}(or\ T_j) \times DCFO_{jt}$$
$$+ \alpha_{11} Restate_{jt}(or\ T_j) \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt} \qquad (1)$$

where *ACC* is total accruals, which is defined as net income before extraordinary items minus cash flow from operations; *CFO* is operating cash flow; *ΔSales* is change in sales; *FASSET* is gross property, plant and equipment; *DCFO* takes the value 1 if *CFO* <0 and 0 otherwise. All continuous variables are scaled by beginning total assets. To examine the change in conservatism for restating firms, I adopt the design similar to Ball et al. (2008) where the authors examine the change in conservatism for IPO firms. In particular, I first compare restating firms to non-restating firms (more details in chapter 6). *Restate* takes the value 1 for restating firms and 0 otherwise. I then examine the change in conservatism within restating firms. *T* indicates the time period relative to the year of the restatement announcement, FY t. For H1, I expect α_{11} to be significantly positive when comparing restating firms to non-restating firms for the restatement announcement year and significantly negative when comparing the announcement year (the benchmark year) to other time periods, indicating a higher degree of conservatism in FY t. For H2, I expect α_{11} to be insignificant when comparing restating firms to non-restating firms and significantly negative when comparing restatement announcement year (the benchmark year) to the subsequent period, indicating a reduced level of conservatism after the announcements.

To examine the association between CEO compensation incentives and accounting conservatism, I add the change in option and bonus awards to the above regression and conduct the test within restating firms:

$$
\begin{aligned}
ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\
& + \alpha_6 \Delta Option\%\_Rank_{jt} + \alpha_7 \Delta Option\%\_Rank_{jt} \times CFO_{jt} + \alpha_8 \Delta Option\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_9 \Delta Option\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{10} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{11} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} \\
& + \alpha_{12} \Delta Bonus\%\_Rank_{jt} + \alpha_{13} \Delta Bonus\%\_Rank_{jt} \times CFO_{jt} + \alpha_{14} \Delta Bonus\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_{15} \Delta Bonus\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{16} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{17} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} + ControlVariables + \varepsilon_{jt} \qquad (2)
\end{aligned}
$$

where *ΔOption%_Rank* (*ΔBonus%_Rank*) represents the rank of the change of option grants (bonus awards) as a percentage of CEO's total compensation. A higher value in this variable indicates a higher increase in option grants (bonus awards) from one period to another. All the other variables are the same as above. The three-way interaction terms, $\Delta Option\%\_Rank \times DCFO \times CFO$ and $\Delta Bonus\%\_Rank \times DCFO \times CFO$, represent the incremental impacts of option changes and bonus changes on the main measure of accounting conservatism - $DCFO \times CFO$. Under both H1 and H2, I expect significantly positive α_{11} and α_{17}. The difference is that for H1, the significance implies that increases in CEO option grants and bonus awards from pre-announcement period to the announcement year result in a higher degree of conservatism in the year of restatement announcements. On the other hand, for H2, the significance implies that decreases in CEO option grants and bonus awards from the announcement year to the subsequent period result in a reduced degree of conservatism. In addition to these two compensation measures, I also control for leverage, litigation risk, market-to-book ratio,

and firm size. All the control variables interact with the main variables in the accrual model. The coefficients on their interactions with $DCFO \times CFO$ indicate their relations to conservatism.

Leverage_rank is the rank of the firm's long-term debt divided by average total assets, standardized to the interval (0, 1). As discussed in chapter 2, Watts (2003) argues that conservative accounting can reduce the likelihood of losses incurred by creditors. Firms with a high level of leverage tend to have greater bond-holder and share-holder conflicts. By requiring more conservative accounting, creditors can receive a more timely signal of deteriorating financial performance through a tightening of covenants or a faster triggering of covenant violations, thus improving the efficiency of debt contracting. For example, Ahmed, Billings, Morton, and Harris (2002) hypothesize and find that when firms face more severe bondholder-shareholder conflicts over dividend policy, bondholders will force the firm to adopt more conservative accounting. Zhang (2008) documents that the likelihood of a covenant violation following a negative shock increases in borrower conservatism and more conservative borrowers violate covenants sooner. Therefore, creditors' interests are protected ex ante by conservatism. Based on these studies, I expect the leverage variable to be positively related to conservatism.

Lit is a dummy variable to control for firms with high litigation risk. Overstatement of income and net assets is more likely to generate litigation costs. To reduce expected litigation cost, firms adopt conservative accounting rules (Watts 2003). Huijgen and Lubberink (2005) find that earnings of U.K. firms cross-listed in U.S. are significantly more conservative than earnings of U.K. firms without a U.S. listing. Because both types of firms report under U.K. GAAP, they interpret the result as

indication of a stricter enforcement regime, implying a higher litigation risk faced by the cross-listed firms. I control for litigation risk by including a dummy variable that classifies firms with four-digit industry codes between 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7374 as belonging to high litigation risk industries following Francis, Philbrick, and Schipper (1994) and LaFond and Roychowdhury (2007). These firms in general are in hi-tech and retail industries. I expect these firms to have a higher level of conservatism.

As Roychowdhury and Watts (2007) demonstrate, one-year asymmetric-timeliness measures, such as the Basu measure, are affected by the beginning composition of equity value, including the effects of past asymmetric timeliness. To explicitly control for the beginning level of conservatism, I include the beginning market-to-book ratio following Roychowdhury and Watts (2007) and Lafond and Roychowdhury (2008). *MTB_rank* is the rank of firms' beginning market-to-book ratio and is standardized to the interval (0, 1). I expect firms with high level of beginning MTB to have lower conservatism.

Finally, I control for firm size. Early conservatism studies using size as a control argue that larger firms could report losses in a more timely manner than small firms due to differing agency costs or greater litigation risk. Large firms are also likely to face large political costs that induce them to use more conservative accounting (Watts and Zimmerman, 1978). Ball and Shivakumar (2005) report that conservatism increases with firm size. But more recent developments in conservatism suggest the opposite. LaFond and Watts (2007) argue that information asymmetry is often smaller for large firms because they produce more public information, resulting in a reduced demand for

conserv

aggrega

inferen

asymm

firms.

aggrega

I predi

average

4.2 The

annual

predict

news, t

the cha

E_{jt} F

where

year,

month

other

signi

signi

conservative accounting. Furthermore, Givoly et. al. (2007) demonstrate that the aggregation of projects in large firms can lead to measurement error and incorrect inferences regarding the level of conservatism. Both papers document that the asymmetric timeliness of earnings is significantly smaller for large firms than for small firms. Therefore, based on these recent studies, the information asymmetry and aggregation effects might dominate concerns about agency costs and political costs. Thus I predict size is negatively related to conservatism. *Size_Rank* is the rank of firms' average total assets standardized to the interval (0, 1).

4.2 The Market-Based Measure of Conservatism

The market-based conservatism measure is from Basu (1997). Basu regresses annual earnings on current annual returns. Due to accounting conservatism, earnings is predicted to be more strongly associated with concurrent negative returns, a proxy for bad news, than positive returns, which is a proxy for good news. Similar to my first measure, the change in conservatism is tested using:

$$\begin{aligned} E_{jt} / P_{jt-1} = {} & \alpha_0 + \alpha_1 R_{jt} + \alpha_2 DR_{jt} + \alpha_3 DR_{jt} \times R_{jt} \\ & + \alpha_4 Restate_{jt}(or\ T_j) + \alpha_5 Restate_{jt}(or\ T_j) \times R_{jt} + \alpha_6 Restate_{jt}(or\ T_j) \times DR_{jt} \\ & + \alpha_7 Restate_{jt}(or\ T_j) \times DR_{jt} \times R_{jt} + \varepsilon_{jt} \qquad (3) \end{aligned}$$

where E is the earnings per share, P is the price per share at the beginning of the fiscal year, R is the buy-and-hold stock return on a firm for the 12-month period ended 3 months after a fiscal year end, and DR takes the value 1 if R <0 and 0 otherwise. All the other variables are the same as previously defined. For H1, I expect α_7 to be significantly positive when comparing restating firms to non-restating firms and significantly negative when comparing FY t to previous years, using FY t as the

benchmark year. For H2, I expect α_7 to be insignificant when comparing restating firms to non-restating firms and significantly negative when comparing restatement announcement year to subsequent period, indicating a reduced level of conservatism after the announcements.

CHAPTER 5: SAMPLE AND DATA

5.1 Sample of Restating Firms

My restatement announcement samples are selected from the 2002 and 2006 GAO reports. The 2002 GAO report contains 919 restatements announced by 845 companies from January 1997 through June 2002. The 2006 GAO report identifies 1,390 restatements announced by 1,121 public companies from July 2002 to September 2005. These restatements include those due to an accounting irregularity, which the GAO defines 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). This would include material errors and fraud" (GAO 2002).

For the purpose of performing analyses subsequent to the announcements, I restrict my restatement sample to the period from January 1997 to December 2004, which contains 1,786 restatement announcements. Table 1 Panel A presents the restatement sample reconciliation. 107 restatements could not be matched to the CRSP/Compustat Merged Database using company names. 1,047 restating firms were not available on ExecuComp. I further deleted 222 restatements due to multiple restatements by the same firm. I also deleted 25 restatements by financial firms because their accrual behavior is not well defined. By conducting a Lexis-Nexis search and reading the 8Ks and the subsequent 10K or 10Q filings of each restatement, I further identified 31 announcements for which no real restatements were issued. My final sample contains 354 restatements.

Panel B of Table 1 presents the distribution of restatements by year. There is a trend of increasing restatements during the 8-year period. More than 50% of the restatements are announced in the years 2002 to 2004. Panel C of Table 1 provides the

distribution of restatement characteristics by initiating entity, exchange listing of the restating firm, and reason for the restatement. Company-initiated restatements account for 38.9% of the cases. More than half of my sample firms are listed on the NYSE. Revenue recognition issues account for 43.0% of restatement cases.

As demonstrated by Hennes et al. (2008), the restatement data from the GAO database might contain both irregularities (intentional misstatements) and errors (unintentional misstatements). By distinguishing between errors and irregularities, restatement studies can significantly enhance the power of tests when examining the causes or consequences of restatements. Consistent with Efendi et al. (2007) and Hennes et al. (2008), I also classify my restatement sample into fraud versus non-fraud cases. By reading the original restatement announcements from Lexis-Nexis, firms' 8Ks and subsequent 10K and/or 10Q filings, I classify those restatements as fraud when: 1) variants of the words "irregularity" or "fraud" are used in describing the misstatement; 2) SEC or DOJ investigations or charges are involved relating to the restatement; 3) independent investigations are conducted (by audit committees, outside forensic firms, etc.) relating to the restatement; 4) the restatements are prompted by auditors or SEC. These procedures help me identify 120 restatement cases (Table 1 Panel C) as fraud. My classification of each restatement is consistent with Hennes et al. (2008).

I also hand collect information about the number of years restated and the magnitude of each restatement. Panel D of Table 1 shows that the median sample firm restates two years of financial statements. For non-income increasing restatements, the average effect of the restatement on net income is a reduction of about $95.24 million. The median, however, is much lower, at $2.3 million. If a firm restated more than one

year, the effect on net income is the average annual effect on earnings over the entire misreported period. The size of the restatement is a nontrivial percentage of net income. For the average firm, the size of the restatement is about 42% of the absolute value of the restated net income, which is calculated using the sum of the restated amount from each restated year divided by the sum of the restated net income over the entire restated period. The median value is lower at about 6.6% of restated net income.

Panel E of Table 1 indicates that my sample firms are from a broad spectrum of industries. Panel F of Table 1 presents descriptive statistics for restating firms in the year of the restatement announcement. The mean market value is $5.3 billion. The mean book to market and leverage ratios were 0.492 and 0.232, respectively. These firms, on average, were not profitable in the restatement announcement year. These descriptive statistics are similar to those reported in Burns and Kedia (2006) and Chen and Farber (2008), except that my firms are larger than those examined by Chen and Farber (2008), who hand-collected compensation data for all of the restating firms in the GAO (2002) report.

CHAPTER 6: EMPIRICAL RESULTS

To test my hypotheses, I first examine changes in conservatism for restating firms around restatement announcements. The results under the accrual-based measure are presented first, followed by results using the market-based measure. I then document the changes in CEO compensation. In the third part of this chapter, I investigate the association between the observed changes of conservatism and the observed changes in CEO compensation before and after restatement announcements.

6.1 Changes in Conservatism around Restatement Announcements

6.1.1 The Accrual-Based Measure

Table 2 presents results from tests of my first hypothesis using the accrual-based measure. In Panel A, I estimate pooled cross-sectional regressions on restating firms and all the non-restating firms on Compustat for event years tn-2, tn-1, t, t+1, and t+2, where t is the fiscal year of the restatement announcement, and tn-1 is the first fiscal year prior to the earliest year restated. *CFO* is significantly negatively related to *ACC* in all the testing years, consistent with the noise reduction role of accruals as proposed in Dechow (1994). As expected, increases in sales are associated with higher levels of accruals (α_2). Higher values of *PPE* result in high depreciation expense and low earnings, which lead to low accrual levels (α_3). Turning to the conservatism indicator, α_5, I find that it is significantly positive across all the periods, demonstrating the role of accruals in timely recognition of bad news versus good news. These main effects are consistent with prior literature.

Because tn-1 and tn-2 are years before the restated period, restating firms are expected to exhibit normal financial reporting behavior during these years. Therefore I do not expect them to have significantly different levels of conservatism when compared to

non-restating firms. My results, as evidenced by an insignificant coefficient on α_{11}, are consistent with my prediction. After restatement announcements, however, restating firms become more conservative than non-restating firms, as indicated by a significant positive coefficient on α_{11} in FY t and t+1. However, by the end of FY t+2, α_{11} becomes insignificant again.

In Panel B of Table 2, I compare the conservatism level of restating firms with a group of non-restating firms operating in the same industries as the restaters and within +/- 10% percent of the restating firm's asset size in the same event year. Restating firms who cannot be matched are excluded from this analysis. The result is mostly in line with my prediction and consistent with Panel A. α_{11} is insignificant in FY tn-2, indicating the financial reporting behavior being in line with the matched non-restating firms in the same period. But the restating firms behave more aggressively before the restated period, which is reflected in the significantly negative α_{11} in FY tn-1. In FY t, restating firms' earnings become significantly more conservative when compared to this matched group, consistent with H1a. Higher levels of conservatism continue for one more year (FY t+1), and the two groups do not show a different conservatism level in FY t+2, consistent with my prediction in H2a.

In Panel C of Table 2, I examine the changes in conservatism within restating firms over time. FY t is my benchmark year. A positive (negative) coefficient on the interaction term $T \times DCFO \times CFO$ indicates that the event year is more (less) conservative then FY t. I find that FY tn-2 has a similar conservatism level as FY t, but FY tn-1 is significantly less conservative than FY t, probably resulting from aggressive accounting behavior in FY tn-1 or changed financial reporting behavior in FY t (more

conservatism). Conservatism hits the highest level in FY t, and it declines over the two-year period following the restatement announcement (significantly negative coefficient of α_{11} for FY t+1 and t+2).

Overall, the above results demonstrate changes in the financial reporting behavior of restating firms after the restatement announcement, consistent with my predictions in H1a and H2a. These firms become more conservative in FY t, and conservatism begins to decline by the end of FY t+2, possibly due to the elimination of high incentives from CEO compensation. There is also some evidence of aggressiveness in accounting even before the restated period.

6.1.2 The Market-Based Measure

In Table 3, I conduct a similar analysis using the market-based Basu measure of conservatism. In Panel A, I find that the coefficient on $DR \times R$ is significantly positive, implying that bad news is recognized in a more timely fashion than good news. The Basu measure shows that restating firms have less conservative financial reports even before the restated period. However, I do not find that they report more conservatively than all other non-restating firms after the restatement announcement.

Turning to Table 3 Panel B, my regression reveals that restating firms do not have different conservatism levels when compared to industry, size and year matched control group across all the five years, as demonstrated by the statistical insignificance of α_7. Although the insignificance for FY tn-1 and tn-2 might be consistent with my expectation, the result for FY t does not support my main hypothesis.

Table 3 Panel C presents the change in conservatism over time for restating firms only. I find that both FY tn-2 and FY tn-1 are less conservative than FY t (marginally

significant). If restating firms are expected to behave normally in these two years, the result indicates changed financial reporting behavior in FY t. But contrary to my expectation, it seems that the degrees of conservatism between FY t and the following two-year period are not different from each other, as reflected by the insignificant coefficient on $T \times DR \times R$ in FY t+1 and FY t+2.

In summary, using the market-based Basu model, I do not find similar results as those under the accrual-based model. In particular, the post-restatement financial reporting behavior of restating firms does not differ from non-restating firms. In Givoly et al. (2007), the authors argue that the Basu measure may contain a large measurement error that prevents the detection of conservatism when it is likely to exist. I believe their argument is particularly relevant to my tests. The authors argue that certain economic events which will affect the current period's returns will never, or only marginally, affect current earnings. They demonstrate that firms with announcements of class action lawsuits or SEC investigations have much lower conservatism using the Basu measure when compared to matched firms during the announcement period. I believe the restatement setting closely resembles these situations. A restatement announcement represents an unfavorable economic event. The future effects of this current shock will likely be immediately impounded in current stock prices. However, current earnings, even with more conservative changes under the circumstance after the announcements, will still have limited ability to completely reflect those effects. The fact that earnings do not respond or only partially respond to this bad news will unduly lead to the inference of aggressive, or at least non-conservative, accounting. Therefore, I believe that this measurement error explains the weaker Basu measure results. To the extent that my study

aims at measuring the "discretionary" component of conservatism over which the executives, who produce the financial reports, have control, the accrual-based measure, which is not subject to the "biased" market impact, might perform a better job than the Basu measure.

I also conduct further analysis to see if different types of restating firms exhibit different "changing" behavior in conservatism. In particular, the descriptive statistics of my sample in chapter 5 show that company-initiated restatements and restatements due to revenue recognition issue account for a larger portion of my sample of restating firms. Table 4 presents the results. It shows that the changes in conservatism after the announcements, for Year t, t+1, t+2, are not different between company prompters and all the other firms and between revenue-recognition restatements and other types of restatements.

6.2 Changes in CEO Compensation

6.2.1 Changes in CEO Compensation

In Table 5, I present descriptive statistics on various compensation variables for restating firms in the pre-restatement (FY tn-1, FY t-1 and FY t-2) and post-restatement periods (FY t through t+2), where FY t is the fiscal year in which the restatement is announced. To calculate the changes from one year to another, I delete all the restating firms which hire a new CEO in either year because the first-year compensation package of new CEOs contains features (signing bonuses, one-time option awards, etc.) that are different from CEO compensation during normal years. Panel A compares compensation components across different time periods. Across all time periods, option grants represent

the largest component of CEO compensation. The values of option grants and restricted stock are highly skewed.

Option grants increase from t-2 to t-1, although the increase is not significant. There is a significant decrease in bonuses. From t-1 to t, option grants experience an insignificant drop while bonuses increase significantly. When I compare tn-1 to t, there is no significant change in bonuses as well as in option grants. In the two years after FY t, the amount of option grants does not change significantly, but bonus awards increase significantly[9]. Before the announcements, these changes have no impact on CEO total compensation, which does not change significantly from tn-1 to t. But there is a significant increase in CEO total compensation after the announcements (from t to t+2). Further analysis reveals that this increase is mainly driven by firms incurring CEO turnover in FY t+1 (mean increase: $ 2.067 million for CEO-turnover firms versus 0.669 million for no-CEO-turnover firms; z-stat for mean difference test: 2.048).

Table 5 of Panel B presents the percentage change analysis for bonus and option grants across the different time periods. The percentage number is defined as:

$$Bonus\ or\ option\% = \frac{Annual\ bonus\ award\ or\ option\ grants\ (\$)}{Total\ compensation\ (\$)} \times 100$$

I then test the mean difference between two periods. The results indicate that restating firms significantly cut CEO annual bonuses during the two years before FY t, with significant increases after restatement announcements. On the other hand, option grants exhibit the opposite trend. Restating firms started to cut the weight of option grants in FY t-1, and this trend continues during the two years subsequent to the announcements.

[9] Although this finding on the option grants is not consistent with my hypothesis and prior literature, this analysis is on the change of the *level* of the option grants. When I analyze the change of option grants as a percentage of CEOs' total compensation, my finding is consistent with my hypothesis and prior literature. In addition, I compare FY t+2 with FY t while prior literature compares FY t+2 with FY t-1.

The increase in bonuses and the decrease in option grants after the announcements might indicate a possible substitution from options to bonus compensation.

Table 5 is largely consistent with findings from prior studies (Chen and Farber 2008; Collins, Reitenga, and Cuevas 2005). More importantly, these statistics show that restating firms begin to re-contract with their CEOs after the announcements and significantly reduce their option grants by the end of FY t+2. There is also some evidence of a substitution effect between bonus and option grants.

6.2.2 The Determinants of the Changes in CEO Stock Option Grants

In chapter 3.2, I argue that having recognized the agency problem associated with CEO high equity incentives, restating firms will reduce their use of option grants to mitigate the problem, and their re-contracting process will likely take more than one year. But the observation from chapter 6.2.1 shows that although the full effect of the compensation re-contracting cannot be observed until FY t+2, some firms already started to reduce CEO option grants in FY t. Thus the hypothesized effects are likely to be stronger at firms who do not reduce their CEO option grants immediately after the announcements.

In this chapter, I explore the firm characteristics that can potentially explain the change in CEO option grants for the period from tn-1 to t and for the period from t to t+2. I adopt the approach from Cheng and Farber (2008) and the firm characteristics represent a set of variables known to influence stock-based compensation from prior literature. The following OLS regression is used:

$$\Delta Option\% = \alpha_0 + \alpha_1 \Delta Share\_Own + \alpha_2 \Delta Exercisable\_Options + \alpha_3 \Delta Unexercisable\_Options + \alpha_4 \Delta Size + \alpha_5 \Delta B/M + \alpha_6 \Delta R\&D + \alpha_7 \Delta Cash\_Constraint + \alpha_8 \Delta Earn\_Constraint + \alpha_9 \Delta Leverage + \alpha_{10} \Delta Idiosyncratic\ Risk + \alpha_{11} \Delta Current\ Return + \alpha_{12} \Delta Past\ Return + \alpha_{13} \Delta Cash\ Compensation + \alpha_{14} ExtantCEO + \alpha_{15} Fraud + Year\ Dummies + \varepsilon \quad (4)$$

The dependent variable, $\Delta Option\%$, is the percentage change of CEO option grants scaled by annual CEO total compensation from one year to another. All the independent variables, except *ExtantCEO* and *Fraud*, are also measured as the change from one year to another. Similar to Cheng and Farber (2008) and Core and Guay (1999), I use the lagged changes of these variables. For example, when analyzing the change in option grants from FY tn-1 to t, the changes of these independent variables are measured between FY tn-2 to t-1, except as indicated otherwise. Finally, I also include year dummies to control for year-specific effects. To save space, I relegate the details for the independent variables to Appendix A.

Table 6 presents the results for the above regression. For the period from tn-1 to t, restating firms that have reduced book-to-market ratio award their CEOs more option grants, consistent with the prediction that managers of growth firms receive higher equity incentive. Restating firms with increased leverage award few option grants to their CEOs, consistent with debtholders' demand for the reduced need of stock-based compensation. I also find that during this period restating firms with increased CEO cash compensation award fewer option grants, demonstrating the substitute effect between CEO cash compensation and option grants. But contrary to my prediction, restating firms with increased CEO stock ownership ($\Delta Shares\_Own$) award more option grants, while those

with increased past stock return award fewer CEO option grants. More surprisingly, those with increased cash constraint award even less CEO option grants during this period[10].

For the period from t to t+2, the coefficients with a significant sign behave in the same way as my prediction. Specifically, restating firms with increased CEO stock ownership (*ΔUnexercisable_Options*) award less option grants while CEOs of firms who increased their R&D expenditures (i.e., growth firms) and of firms with increased past stock returns receive higher option grants.

In summary, from tn-1 to t, the behavior of restating firms' CEO option grants seems to be quite "irrational", which might be related to the "transitional" nature of this period around the announcements. On the other hand, it seems that two years after the restatement announcements, restating firms with high CEO stock ownerships, less growth opportunities, and poor performance in past stock returns are more likely to reduce their CEO option grants.

6.3 Changes in Conservatism and CEO Compensation

Having observed the changes in conservatism and the changes on CEO compensation before and after restatement announcements separately, I now address the question of whether the two changes are associated with each other. Due to the likely measurement error issue in the Basu measure of conservatism (Givoly et al. 2007), I focus my analysis on the accrual-based measure of conservatism.

6.3.1 Changes in CEO Compensation and the Level of Conservatism

I first examine the relationship between the change in CEO compensation and the level of accounting conservatism at FY t and FY t+2, respectively. Based on the above analysis of the change in conservatism and the analysis of the changes in bonus and

[10] Cheng and Farber (2008) find similar result on the cash constraint variable for the period tn-1 to t-1.

option grants over time, FY t is the time when restating firms' financial reporting becomes the most conservative. Following the prediction in my hypotheses, this increase is most likely a result of the high level of option grants utilized during the years leading up to FY t. On the other hand, by the end of FY t+2, conservatism for restating firms declines from its peak level in FY t. Given the decreased usage of option grants during the same period, the reduction in conservatism is most likely a response to the reduced option awards. In addition to these hypothesized relations, I also examine the impact of changes in bonuses on the levels of conservatism.

Panel A of Table 7 provides the results for FY t. Column (i) shows that on average, *CFO* is negatively related to *ACC* and the coefficient on $DCFO \times CFO$ is significantly positive, indicating conservative accounting. In column (ii), I find that the change in option grants from FY tn-1 to t is positively associated with the level of conservatism at FY t, as reflected by the significantly positive coefficient of $\Delta Option\%\_Rank \times DCFO \times CFO$. Thus an increase in CEO option grants from FY tn-1 to FY t is accompanied by a higher level of accounting conservatism. This is consistent with H1a. The main conservatism interaction term, $DCFO \times CFO$, is negative, possibly indicating that for firms with the greatest reduction in option grants (lowest value of $\Delta option\%\_rank$), the demand for conservatism to control CEO's compensation incentive is low. Surprisingly, in column (iii), I find a significant negative association between bonus increases and conservatism. In other words, firms that reduce bonus awards the most from tn-1 to t also have the highest level of conservatism (which is also reflected by the significantly positive coefficient of $DCFO \times CFO$). This is inconsistent with H1.

In column (iv), I examine the changes in options and bonus compensation while incorporating all of the control variables. Both the option and bonus coefficients remain significant. The result also demonstrates that firms with high leverage ratios exhibit a higher degree of conservatism, consistent with the demand of conservatism from debtholders. For control variables, larger firms exhibit a lower degree of conservatism, on average. This is consistent with the argument that the rich information environment of large firms reduces the demand for conservatism. Overall, Panel A of Table 7 demonstrates that the high demand for conservatism at FY t is associated with the change in CEO option grants, indicating that restating firms respond to the high CEO compensation incentives awarded before the announcements.

Panel B of Table 7 presents the result for FY t+2. The main effect of *CFO* is significant as presented in column (i) although the coefficient on $DCFO \times CFO$ is not significant. In column (ii), the change in option grants from t to t+2 has a significant positive impact on conservatism at FY t+2. The more a restating firm decreased its option grants, the less conservative its financial reports became at t+2. In column (iii), I do not find a similar result for the change in bonus. Column (iv) presents the results when the changes in both compensation variables are included in the same regression. Similar to the results from previous columns, I find that change in option grants have a positive (marginally significant) impact on the level of conservatism in FY t+2. The insignificant coefficient on $DCFO \times CFO$ indicates that restating firms reduce CEO option grants the most from t to t+2 exhibit no difference in the recognition of bad news versus good news. Last, firms facing high litigation risk have a higher level of conservatism. However,

contrary to predictions, leverage seems to have a negative impact on conservatism at t+2. Overall, the main results from Table 7 are consistent with my H2.

6.3.2 Changes in CEO Compensation and Changes of Conservatism

In addition to examining the impact of changing CEO bonus and option incentives on the *level* of conservatism, I also investigate whether the *change* in CEO option grants is related to the *change* in conservatism. To address this question, I split my sample firms into two parts, based on the magnitude of the increase in option grants. The half of my sample with the lowest increase in option grants (or high reduction in option grants from tn-1 to t) is named "the top 50%"; while the remaining half is named "the bottom 50%". Again, my analysis is conducted for two time periods and uses the accrual-based measure.

Panel A of Table 8 provides the results for period tn-1 to t where I use FY t as my benchmark year. Recall that in Chapter 6.1, I find that restating firms significantly increase conservatism from tn-1 to t, indicating changed financial reporting behavior. I draw similar inferences from the same changes specification in the first two columns in Panel A. The analysis on the two sub-samples is presented in the next columns. Specifically, for the group with the largest reduction (or smallest increase) in CEO option awards, I do not find a significant difference in conservatism between tn-1 and t. However, for the bottom 50% firms (the right two columns), conservatism was significantly higher in FY t than in FY tn-1, as reflected by the significantly negative coefficient on $T \times DCFO \times CFO$. The coefficients on CFO and $DCFO \times CFO$ are also significant at 5% level. This result demonstrates that the increase in conservatism from tn-1 to t is exclusively driven by firms who increase their option grants the most in the

same period. When firms reduce high incentives of option grants from tn-1 to t, higher conservatism as a control mechanism is no longer necessary.

Panel B of Table 8 presents the results for the period from FY t to FY t+2. Similar to the full sample results replicated in the first two columns, I find that for firms with the largest option decreases, the degree in conservatism is significantly lower in FY t+2 compared with FY t. But there were no differences in conservatism for the bottom 50% firms between the two years. Therefore, the overall decrease in conservatism from t to t+2 is mostly driven by restating firms with the largest reductions in option grants. For firms maintaining or increasing CEO option grants from t to t+2, a high level of conservatism at FY t is maintained as a control mechanism.

To summarize, using the accrual-based measure of conservatism, I find strong evidence of a relationship between changes in CEO option grants and changes in accounting conservatism. When CEO option grants are very high, resulting in high incentives, restating firms increase conservatism. When firms begin to reduce option grants, the accounting conservatism is also reduced. These results, together with those presented in Table 7, demonstrate that investors demand a higher degree of conservatism when facing a severe agency problem due to the high CEO option grants. As restating firms start to alleviate the agency issue between shareholders and management through re-contracting of CEO compensation, the demand for conservatism from shareholders starts to decrease.

6.3.3 The Impact of Restatement Characteristics on the Change in Conservatism

Restatement studies have demonstrated that CEO option holdings are not only related to the propensity of misreporting but also related to the magnitude of the

misr

hold

(200

obse

magi

anno

earni

irreg

the c

great

restat

consc

irregu

varia

the r

the r

estir

the r

grar

con

cha

misreporting. Efendi et. al. (2007) show that CEO bonuses and in-the-money option holdings are positively associated with income-decreasing restatements. Burns and Kedia (2006) show that higher values of CEO option sensitivity lead to larger restatements. My observation of the high degree of conservatism in FY t might also be a response to the magnitude of restatements, independent of the change in CEO option grants before the announcements. In other words, large corrections of earnings lead to more conservative earnings in FY t.

Additionally, as presented in chapter 5, my restatement sample contains both irregularities and errors. Although Table 6 shows that Fraud is not significantly related to the changes in CEO option grants, to the extent that an accounting irregularity indicates a greater agency problem between management and shareholders than other types of restatements, restating firms with accounting irregularities may become more conservative in FY t.

To address the impact of the restatement magnitude and the accounting irregularities on the increase in conservatism in FY t, I incorporate two additional variables into my analysis for the period from FY tn-1 to t. *Fraud* takes the value of 1 if the restatement is classified as an irregularity and 0 otherwise. *Resize_rank* is the rank of the restatement magnitude, standardized to the interval (0, 1). Restatement magnitude is estimated as the sum of the effect of the restatement on net income scaled by the sum of the restated net income over the entire restated period. Similar to my analysis on option grants, I first examine the association between the two variables and the level of conservatism for all the restating firms at FY t. I then investigate the impact on the change of conservatism from FY tn-1 to FY t.

Table 9 presents the result of the analysis for the level of conservatism at FY t. Of the 215 restating firms used in Table 7 Panel A, 28 firms are further deleted. These firms either do not have enough information to determine restatement magnitudes or they report income-increasing restatements. Therefore, only 187 restating firms are included in the level analysis. After including the two additional controls, I rerun my regression on the association between the change in option grants from tn-1 to t and the level of conservatism at FY t. Column (i) shows that the increase in option grants from FY tn-1 to t is associated with higher level of conservatism at FY t, as evidenced by the positive coefficient of $\Delta Option\%\_Rank \times DCFO \times CFO$. When I add the fraud indicator to the regression, the effect of option grant change remains significant. But an accounting irregularity does not induce more demand for conservatism in FY t (column (ii)). When I incorporate the restatement size only into my regression (column (iii)), the impact of options on conservatism goes away. But the coefficient of $Resize\_Rank \times DCFO \times CFO$ is not significant either. In column (iv), I run the full model with all the variables. Both the coefficients on $\Delta Option\%\_Rank \times DCFO \times CFO$ and $Resize\_Rank \times DCFO \times CFO$ are insignificant. However, the coefficient on accounting irregularity is now significant. Overall, Table 9 shows that the impact of change of CEO option grants on conservatism in FY t disappears after controlling for the restatement magnitude and the accounting irregularities. Moreover, it shows that accounting fraud has a dominant effect in determining the level of conservatism for restating firms in FY t.

Due to the reduced sample size and the large number of independent variables presented in the level regression, the insignificance of the coefficients of $Resize\_Rank \times DCFO \times CFO$ and $\Delta Option\%\_Rank \times DCFO \times CFO$ might be attributed to

multicollinearity. Therefore, a change analysis might provide us additional evidence. In particular, if a large restatement indicates a higher degree of agency problems, shareholders might demand more conservative accounting in FY t for high restatement-size firms than for low restatement-size firms. Similarly, because fraud reveals a severe agency problem, fraud firms might become more conservative in FY t than non-fraud firms.

In Table 10, I examine the impact of the two variables on the change in conservatism from FY tn-1 to FY t. Panel A presents the results for fraud firms versus non-fraud firms, while Panel B gives the results for the restatement magnitude. Similar to my analysis on the change of option grants, column (i) of Panel A presents the change of conservatism for the fraud sub-sample while column (ii) presents the results for the non-fraud sub-sample. Both groups show an increase in the degree of conservatism from FY tn-1 to FY t, but the increase is marginally significant for the fraud firms. Fraud firms are not more conservative than non-fraud firms. To the extent that option incentives drive conservatism changes and there is no particularly significant association between change of option grants and the type of restatements (Table 6), I expect those firms that increase option grants from FY tn-1 to FY t to be randomly distributed within each sub-group. These firms thus drive the significant increase in conservatism for both groups. Although this result contradicts the result in Table 9, Table 10 Panel A seems to be consistent with my main results in Table 8.

For the impact of the restatement magnitude on the change in conservatism from FY tn-1 to FY t, I rank my sample firms based on the size of the restatements. The top 50% represents the half of my sample firms with low ranks (i.e., small size of

restatements) while the bottom 50% represents the half of the sample firms with high ranks. Panel B of Table 10 shows that for firms with low magnitude of restatements (the top 50%), their degree of conservatism increases significantly from FY tn-1 to FY t (column (i)). But for those firms with the large restatement sizes (the bottom 50%), there is no difference in conservatism between FY tn-1 and FY t.

This result seems to be inconsistent with the expectation that large magnitudes of restatements lead to high conservatism after the announcements, however, it might be consistent with my option incentive argument. In particular, higher option incentives lead to higher magnitudes of restatements (Burns and Kedia (2006)) and firms with high CEO option grants before the announcements are more likely to reduce grant size after the announcements (Cheng and Farber (2008)). Thus firms with large restatements in my sample are more likely to be the firms that have high CEO option grants before the announcements and that significantly reduce option grants at FY t. As already shown in Table 8, restating firms with a large reduction in option grants do not show a different degree of conservatism between FY tn-1 and FY t. This potentially explains the insignificance of conservatism between the two years for the group with large restatements because these firms are more likely to reduce their CEO option grants at FY t. In fact, further analysis reveals that after I split my sample into two subgroups based on the size of the restatements (high-restatement group versus low-restatement group), the high-restatement group exhibits a greater drop in CEO option grants (i.e., lower amounts of change in CEO option grants) from tn-1 to t than that of the low-restatement group (z-stat: -1.55; one-sided p-value: 0.06).

In summary, the results from Table 9 and Table 10 indicate the important role of the characteristics of restatements in explaining the increase in conservatism from FY tn-1 to FY t. Although Table 10 seems to be in line with my hypothesis, by incorporating the change of CEO option grants, the restatement magnitude, and fraud indicator in one regression, Table 9 presents a more complete picture of the dominant effects of the characteristics of restatements, especially accounting irregularities, in determining the level of conservatism for restating firms in FY t.

CHAPTER 7: SENSITIVITY ANALYSES

7.1 Change in Conservatism and the "Big Bath" Theory

It has long been documented in accounting and finance research that new CEOs are likely to boost future earnings at the expense of transition-year earnings by increasing write-offs and income-reducing accounting accruals – "taking a big bath". Moore (1973) points out that through these discretionary accounting decisions, "the reported new earnings may be blamed on the old management, and the historical bases for future comparison will be reduced." More importantly, "future income would be relieved of these charges, so that improved earnings trends could be reported." (Moore 1973: 101) Moore (1973) compares a sample of management change companies with companies having other personnel changes. He finds that incomes reducing discretionary accounting decisions are more likely to be made in the year of the management change for his sample of the management change companies.

Following Moore (1973), a stream of studies provides further support for this hypothesis. Strong and Meyer (1987) compare a group of firms that record asset writedowns with a group of non-writedown firms. They find that a change in senior management is the most important factor observed for the writedown firms. Similarly, in a sample of large discretionary write-offs examined by Elliott and Shaw (1988), 39 percent of the firms experience a change in the CEO, president, and/or CFO during the year of the write-offs. Pourciau (1993) argues that the environment surrounding nonroutine executive changes (i.e., no orderly and well-planned process of turnover) provides strong incentives and opportunities for earnings management by the new executives. Based on this argument, she finds that for a sample of firms having

experienced nonroutine executive changes, their earnings and accruals decrease significantly in the year of the executive change and then reverse dramatically in the following year. Murphy and Zimmerman (1993) provide further support. Through analyzing a large sample of over 1,000 CEO departures from almost 600 firms, the authors find that accounting accruals and growth in earnings are significantly lower in the transition year than in previous years, and the incoming CEO's first full year is associated with a pronounced increase in earnings. They further document that when focusing on cases of nonroutine, inferior departing CEOs, the accruals are significantly negative in the transition year, although they do not find the dramatic reversal in accruals in the following year as found in Pourciau (1993). Finally, Geiger and North (2006) document that firms appointing new CFOs report significantly higher income decreasing discretionary accruals in the first full reporting year under the new CFOs.

The above discussion demonstrates the "big bath" behavior in firms' financial reports immediately after the appointments of top executives. As presented in section 2.2.2, the restatement literature has documented that restating firms experience significantly higher executive turnover after the announcements. Further analysis of my sample finds that more than 39% of restating firms appoint new CEOs in the period from FY t to FY t+2. If these new CEOs use write-offs and accruals to take an "earnings bath" in the turnover years, then compared with non-restating firms, restating firms will appear to have a more timely recognition of bad news, resulting in more conservative financial reports. This potentially explains the observed increase in conservatism in FY t. Although my analyses of the change in CEO compensation and the association between CEO option incentives and conservatism already exclude the new CEO firm-year observations,

my analysis of the change in conservatism in section 6.1 might be influenced by the "big bath" behavior. To address this issue, I re-examine the change in conservatism around restatement announcements using the accrual model and for each event year regression I delete all the restating firms with CEO transitions in that year.

Table 10 presents the results. Panel A uses all the other firms in Compustat as the control group. Compared with Table 2 Panel A, Table 10 Panel A loses about 40 to 60 restating firms across the five-year period. But the regression results are qualitatively similar to those reported in Table 2 Panel A: restating firms become more conservative in FY t and FY t+1 and then they exhibit a similar conservatism level in FY t+2 when compared with non-restating firms. Table 10 Panel B is also largely consistent with Table 2 Panel B: restating firms engage in aggressive financial reporting behavior in FY tn-1 while they report more conservatively in FY t and FY t+1. Interestingly and also different from Table 2 Panel B, in FY t+2, restating firms report significantly less conservatively than the matched group. This is consistent with "big bath" behavior. Specifically, if restating firms that appoint new CEOs in FY t+2 are more conservative than other restating firms due to a "big bath", including these firms might potentially offset the aggressive behavior shown in Table 10 Panel B, resulting in an insignificant coefficient of $Restate \times DCFO \times CFO$ as reported in Table 2 Panel B. Finally, Panel C of Table 10 is also consistent with Panel C of Table 2, which shows that FY t is the most conservative year among all the five event years.

Overall, after deleting firms with CEO turnover in each event year, my observation of the change in conservatism around restatement announcements documented in section 6.1.1 is largely unchanged qualitatively. Furthermore, there is

some evidence supporting "big bath" behavior by firms experiencing CEO turnover, especially in FY t+2.

7.2 The Relationship between Change in Conservatism and Restating Firms' Performance

A significant portion of restating firms had very poor financial performance before the restatement announcements based on my observation, and some of the restating firms also significantly improved their performance by the end of the second year after the announcements (e.g., Cheng and Farber 2008). An interesting issue is, thus, whether the observed increase in conservatism in FY t is a reflection of the restating firms' poor performance and the following decrease in conservatism by FY t+2 is a result of their performance improvement. In other words, the conservatism measure itself might be affected by firms' performance, leading to the observed behavior of change in conservatism for restating firms.

To address the concern, I first tried to match on performance (i.e. +/- 20% of ROA) in addition to match on year, industry, and size when comparing the level of conservatism between restating firms and the matched group of non-restating firms. But adding performance matching significantly reduces my sample size. To the extent that the conservatism measure itself might be affected by firms' performance, I conduct separate analysis to examine the effect of performance on the measure of conservatism in a general setting. I investigate the accounting conservatism of all the non-financial firms in Compustat for the period of 1997-2006. I employ the following model:

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt}$$
$$+ \alpha_6 ROA_{jt} + \alpha_7 ROA_{jt} \times CFO_{jt} + \alpha_8 ROA_{jt} \times \Delta Sales_{jt}$$
$$+ \alpha_9 ROA_{jt} \times FASSET_{jt} + \alpha_{10} ROA_{jt} \times DCFO_{jt}$$
$$+ \alpha_{11} ROA_{jt} \times DCFO_{jt} \times CFO_{jt} + ControlVariables + \varepsilon_{jt} \qquad (5)$$

where performance is measured by return on assets (*ROA*), which is the standardized decile rank of the firm's net income before extraordinary items divided by its average total assets. All of the other variables are the same as the variables defined in Equation (2) from section 4.1, except that all of the continuous control variables are measured by using standardized decile rank. All of the control variables interact with the main variables in the accrual model. If a firm's performance affects the conservatism measure, I expect α_{11} to be significantly negative - increasing performance reduces conservatism.

My test result, presented in Table 12, does not indicate a significant impact of *ROA* on the measure of conservatism. Although this test does not directly attack the restating firms, it provides some evidence that the conservatism measured by the accrual model is not a mechanistic reflection of firms' performance.

7.3 CEO Compensation Incentives

As I noted earlier, prior research shows that the likelihood of a restatement is increasing in the sensitivity of the value of the CEO stock option holdings. To the extent that the agency problem between management and shareholders is exaggerated by high CEO option incentives, the change in CEO option sensitivity might be a better measure to capture the underlying change in the agency problem. Following Core and Guay (2002) and Burns and Kedia (2006), I measure option sensitivity as the change in the value of stock options held for a percentage change in firm value, which is obtained by multiplying the option delta by 1% of the stock price and the number of options held.

I re-run equation (2) on all of the observations with available data on the option sensitivity measure. I replace $\Delta Option\%\_Rank$ with $\Delta Optionsen\_Rank$, which measures the change in option sensitivity from one year to another. I also include the change in the sensitivity of CEO equity holdings - $\Delta Equitysen\_Rank$, which is obtained by multiplying the number of shares of equity held by 1% of the stock price. Both are ranked and standardized to the interval (0, 1). Both variables are expected to be positively related to the level of conservatism in the event years tested. The results are presented in Table 13.[11]

Column (i) of Table 13 presents the result for FY t. Although the main effect of $DCFO \times CFO$ is significantly positive, none of the sensitivity variables have a significant impact on conservatism. Column (ii) shows similar result for FY t+2. These results are inconsistent with my hypotheses, but should be interpreted cautiously due to the small sample sizes in each year.

7.4 Analysis of Discretionary Accruals around Restatement Announcements

In addition to restating firms' conservatism changes, I also conduct analysis to investigate restating firms' discretionary accrual changes around the announcements. I adopt the methodology similar to Ball and Shivakumar (2008) in which the authors examine the changes of both accounting conservatism and discretionary accruals for UK IPO firms. Normal accruals are estimated using Jones model modified by Ball and Shivakumar (2006):

[11] I exclude bonuses in my analysis due to its weak impact on conservatism as observed in Table 7. I only include the three-way interaction term of each control variables in my regression to increase the degree of freedom for my regression. Including bonuses and all the complete interaction terms of the control variables does not change my conclusion.

$$ACC_{it} = \alpha_{j0} + \alpha_{j1} CFO_{it} + \alpha_{j2} \Delta Sales_{it} + \alpha_{j3} FASSET_{it} + \alpha_{j4} DCFO_{it} + \alpha_{j5} DCFO_{it} \times CFO_{it} + \varepsilon_{it} \quad (6)$$

Variables are as defined in Chapter 4. Model parameters are estimated separately for each restating firm j from a cross-section of all non-restating firms i in its 2-digit SIC with data for year t. Only industry-years with at least 10 observations are considered. 1% on both extremes of each continuous variable are trimmed.

Abnormal accruals ABN_ACC_{jt} for restating firm j in year t are computed as the difference between the actual accruals and estimated normal accruals (^ denotes estimates):

$$ABN\_ACC_{jt} = ACC_{jt} - [\hat{\alpha}_{j0} + \hat{\alpha}_{j1} CFO_{jt} + \hat{\alpha}_{j2} \Delta Sales_{jt} + \hat{\alpha}_{j3} FASSET_{jt} + \hat{\alpha}_{j4} DCFO_{jt} + \hat{\alpha}_{j5} DCFO_{jt} \times CFO_{jt}] \quad (7)$$

Table 14 presents summary statistics for restating firms for event years tn-2, tn-1, t-2, t-1, t, t+1, and t+2. In FY tn-2 and tn-1, both mean and median abnormal accruals are positive and statistically significant (1% to 2% of total assets), indicating that restating firms already engage in earnings management activity even before the manipulated period (but within GAAP). Abnormal accruals become statistically insignificant in FY t and marginally significant in FY t+1 (the mean is negative in each year), demonstrating a reduced level of earnings management immediately after the announcements. However, by the end of the second year after the announcements, it seems that restating firms resume their old earnings management behavior, with significantly positive median abnormal accruals.

I also examine the abnormal accruals in FY t-2 and t-1. It seems that restating firms engage in significant accrual management activity in t-2 but do not manage accrual in t-1. These results, however, should be viewed cautiously because data originally

reported by restating firms in t-2 and t-1 might be "contaminated" by restated data updated through Compustat[12].

My above finding for FY t and t+1 is consistent with Badertscher (2007) in which the author shows that restating firms significantly reduce their accrual management activity in the first year after the announcement. But more importantly, Table 14 also fits well with my finding regarding the change in conservatism that restating firms are less conservative in FY tn-1, become more conservative immediately after the announcements, and then reduce conservatism in the two years afterwards.

[12] Based on discussions with Compustat, I learned that restated data is recorded in Restated data items, and the original data is never changed. But my analysis finds that this policy is not consistently followed by Compustat. For example, Net Income (data172) should record the original net income number as first reported and subsequent restatements should be recorded into Net Income-Restated (Data177). I randomly picked 20 restating firms from my sample. I compared Compustat's net income data during restated years with the net income numbers in the 10Ks and 10K/As filed through Edgar. I found that in 7 of 20 cases in which a 10K/A is filed for a particular year, Compustat replaces data172 with the restated number for that year. But in the 13 cases in which no 10K/As were filed (i.e., a firm's 2001 restatement is reported through its 2002 10K), Compustat changes Data177, not Data172 for 11 cases, and does not make any changes for 2 cases.

CHAPTER 8: CONCLUSION

In this paper, I investigate whether restating firms improve their financial reporting quality after restatement announcements by examining one important accounting quality dimension – conservatism – which assumes the role of a control mechanism to curb managements' opportunistic behavior. If restatements indicate aggressive reporting behavior which implies a severe agency problem between management and shareholders, I expect an increase in conservatism after a restatement announcement. On the other hand, as restating firms take actions to address the agency problem during the years after the announcements, I expect a subsequent decrease in conservatism after the initial increase.

I further explore the change in conservatism around restatement announcements by directly linking the change to CEOs' compensation incentives. Empirical studies have documented that high incentives from CEO option grants exaggerate the agency problem, leading to aggressive accounting behavior, and restating firms significantly reduce their CEO option grants two years after the announcements. Thus I expect cross-sectional differences in the change in conservatism based on the changes in CEO option grants. Changes in conservatism should be positively associated with the changes in CEO option grants.

I adopt two measures of conservatism: an accrual-based measure and a market-based measure. Both measures build on the concept of earnings' asymmetric timeliness in bad news recognition. Using the accrual-based model, I find that restating firms become more conservative in the announcement year, demonstrating a change in financial reporting behavior. There is also evidence of decreased conservatism by the end of the

second year after a restatement announcement. When I incorporate changes in CEO annual compensation into my analysis, I find that the increase in conservatism in the restatement announcement year is significantly associated with the increased usage of option grants during the prior period. After the announcement, the decrease in conservatism is significantly related to the reduction in CEO option grants during the following two years. In other words, restating firms, on average, started to reduce option usage so as to reduce the undesirable incentive effects and address the agency problem. Thus, as the severe agency problem is alleviated, investors' demand for conservatism as a control mechanism declines.

In addition to CEO option incentives, I also examine the impact of restatement characteristics on the initial increase in conservatism. Specifically, I consider the restatement magnitude and the presence of accounting irregularities. Large restatements or an indication of accounting fraud may demonstrate a more severe agency problem to shareholders, leading to an increased demand for conservative financial reporting immediately after the announcements. Using the change specification, I do not find that the increase in conservatism from FY tn-1 to FY t is driven by firms with high restatement magnitudes or by fraud firms. But when analyzing the level of conservatism for FY t, the significant relationship between the change of CEO option grants and conservatism disappears after controlling for the restatement magnitude and the accounting irregularities. Interestingly, I find that fraud firms have a significantly higher level of conservatism than non-fraud firms in FY t. Overall, these findings demonstrate the important role of the characteristics of restatements in explaining restating firms' financial reporting behavior immediately following the announcements.

My paper makes the following contributions. First, with respect to the conservatism literature, the argument that there is a demand for conservatism arising from compensation contracting is well established but empirical studies on this issue have been lacking. By using the restatement setting, I can examine how the demand for conservatism changes when there is a change in the agency problem between management and shareholders. Second, most of the restatement studies that examine the changes of restating firms' financial reporting behavior fail to investigate the factors that explain these changes. I not only examine a change in conservatism but also document an association between the change and CEO compensation incentives, a major factor that leads to restatements.

My results suggest several additional issues for further research. First, I find fraud firms have a significantly higher level of conservatism than non-fraud firms in FY t. But using the change specification, I find both fraud firms and non-fraud firms significantly increase their accounting conservatism from FY tn-1 to FY t. This finding needs to be addressed in the future, and more analyses are necessary to fully evaluate the impact of restatement characteristics on the change in accounting conservatism after the announcements.

When I incorporate the restatement magnitude, the fraud indicator, and the change in CEO option grants into the regression of the level of conservatism in FY t, the reduced sample size and the large number of independent variables and their interactions might create multicollinearity, potentially explaining the insignificant impact of the restatement magnitude and the change in CEO option grants on conservatism. A larger sample size will increase the power of the regression analysis. On the other hand, a separate

investigation can be conducted on the association between these restatement characteristics and the change of CEO option grants. Such analysis will help to determine whether the observed association between CEO option incentives and accounting conservatism is influenced by the restatement characteristics. Moreover, this analysis will further our understanding of how CEO option grants change in the restatement setting.

Second, this dissertation does not consider the possible impact of corporate governance on the change in accounting conservatism after restatement announcements. Although prior literature does not find an association between corporate governance and accounting conservatism for restating firms and there is still no strong empirical support for the argument that poor corporate governance leads to earnings restatements, the inclusion of corporate governance variables would provide a more complete and convincing picture of the change in accounting conservatism and its association with CEOs' compensation contracts.

Finally, my results reveal that some restating firms reduce their CEO option grants immediately after the announcements, while other firms take more than a year to re-contract with their CEOs. Further analysis could investigate whether the CEO option incentives during the restated period predict firms' financial reporting behavior and compensation contracting behavior after the announcements. In particular, restating firms with relatively high CEO option incentives before the announcements might reduce their CEO option grants immediately after the announcements, resulting in the unchanged level of accounting conservatism in FY t; while restating firms with relatively low CEO option incentives might increase accounting conservatism first and re-contract with their

CEOs later. This analysis will also enrich the literature on the interaction between firms' compensation contracts and their financial reporting choices.

Figure 1
Event Year Illustration

This figure illustrates the event years around a restatement announcement. FY t is the fiscal year of the restatement announcements. I define FY tn-1 as the first year prior to the restating firm engaging in aggressive accounting activity. FY t End refers to the end of fiscal year t.

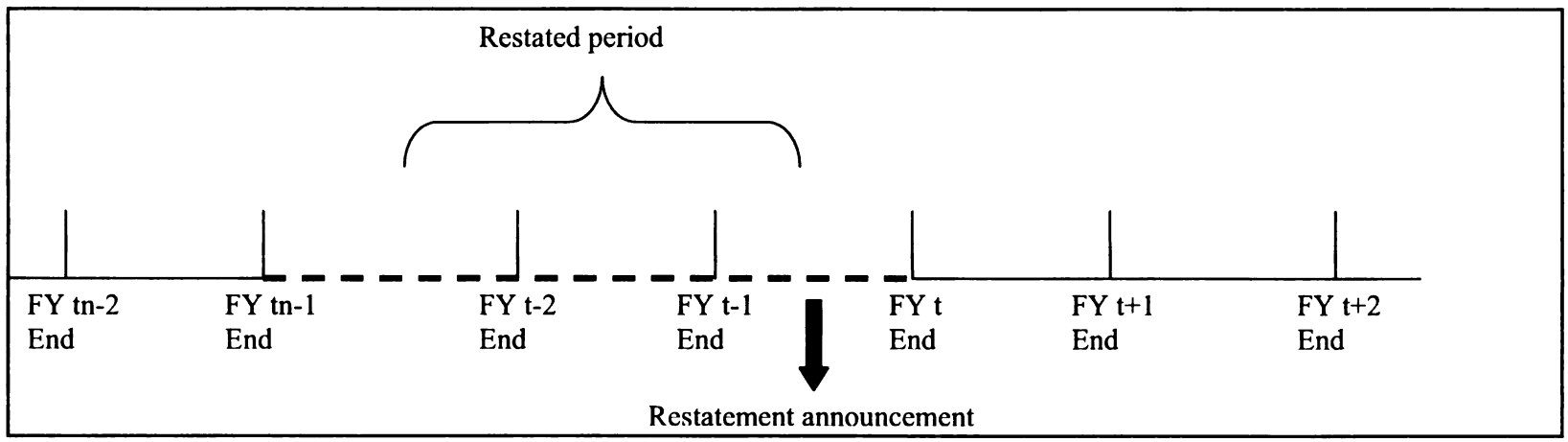

Table 1
Sample Reconciliation and Descriptive Statistics of Restatement Firms

Panel A: Sample Reconciliation

Restriction		Sample Size
Number of restatements per GAO in the period 1997-2004		1786
Less:		
Firms without basic financial data from CRSP/Compustat Merged Database	107	
Firms without compensation data from ExecuComp	1047	
Firms with multiple restatements *	222	
No real restatement found	31	
Financial firms	25	1432
Final restatement sample		354

* I keep only the latest restatement for firms with multiple restatement announcements.

Table 1 (cont'd)

Panel B: Yearly Distribution of Restatements

	Restatement Announcement Year								
	1997	1998	1999	2000	2001	2002	2003	2004	Total
n	11	15	33	32	65	59	55	84	354
% of total	3.1%	4.2%	9.3%	9.0%	18.4%	16.7%	15.5%	23.7%	100.0%

Table 1 (cont'd)

Panel C: Restatement Characteristics

	Frequency	Percentage of total
Full sample	354	100%
*Initiated by**		
Company	138	38.9%
SEC	53	15.1%
Auditor	13	3.7%
FASB	4	1.0%
External/Media	1	0.3%
Unknown	145	40.9%
*Exchange Listing**		
NYSE	183	51.7%
Nasdaq	156	44.0%
AMEX	15	4.4%
*Reason**		
Revenue recognitio	152	43.0%
Cost or expense	61	17.1%
Restructuring	56	15.8%
M&A	20	5.7%
In-process R&D	15	4.4%
Securities related	13	3.7%
Other	37	10.4%
Fraud or not		
Fraud	120	33.9%
Not fraud	234	66.1%

* information is per GAO (2002 and 2006) report.

Table 1 (cont'd)

Panel D: Number of Years Restated and Size of Restatements

	Number of years restated	Size of restatement (non-income increasing) in 000's	Size / Net income (non-income increasing) in %
Q1	1	14.67	0.15
Mean	2.15	95235.40	42.48
Median	2	2334.67	6.67
Q3	3	8738.00	38.19
N	354	296	296

*one extreme observation was deleted for the above two columns.

Table 1 (cont'd)

Panel E: Industry Classification of Restatement Firms

Industry	2-Digit SIC code	n	%	% of Execucomp*
Metal and Coal	10-12	6	1.7%	0.8%
Oil and Gas	13	12	3.4%	3.3%
Food Products	20	9	2.5%	2.7%
Paper and Paper Products	26-27	13	3.7%	3.8%
Chemical Products	28	24	6.8%	7.7%
Manufacturing	30-34	12	3.4%	5.8%
Computer Equipment and Services	35, 73	90	25.4%	18.3%
Electronic Equipment	36	23	6.5%	9.4%
Transportation	37, 39, 42	11	3.1%	4.8%
Scientific Instruments	38	21	5.9%	6.2%
Communications	48	12	3.4%	2.5%
Electric, Gas, Sanitary Service	49	29	8.2%	6.6%
Durable Goods	50	9	2.5%	2.4%
Nondurable Goods - wholesale	51	9	2.5%	1.1%
Eating and drinking	58	8	2.3%	2.2%
Retail	53-57, 59	29	8.2%	7.1%
Entertainment Services	78, 79	5	1.4%	1.0%
Health	80	6	1.7%	1.9%
Professional Services	87	6	1.7%	1.5%
All Others	All others	20	5.6%	10.8%
Total		354	100.0%	100.0%

* Execucomp industry distribution is from fiscal year 2002.

Table 1 (cont'd)

Panel F: Restating Firms' Financial Data in the Restatement Announcement Year

Variable	Mean	Std. Dev.	Q1	Median	Q3
Market Value ($ million)	5,335.1	13,328.3	323.7	867.2	3,664.0
Total Assets ($ million)	5,533.1	11,876.2	423.3	1,257.7	4,437.4
Sales ($ million)	4,411.6	8,829.1	430.5	1,291.9	3,935.5
Book Value ($ million)	1,692.2	5,081.9	157.9	409.4	1,295.7
Net Income ($ million)	-170.4	3,304.9	-33.4	20.7	94.8
Book-to-Market Ratio	0.492	1.019	0.252	0.460	0.729
Leverage	0.232	0.214	0.024	0.213	0.360

Table 2

Testing of Conservatism for Restating Firms around Restatement Announcements Using Accrual Model

Panel A: Using All the Other Firms in Compustat as Control Group

$$\begin{aligned} ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\ & + \alpha_6 Restate_{jt} + \alpha_7 Restate_{jt} \times CFO_{jt} + \alpha_8 Restate_{jt} \times \Delta Sales_{jt} \\ & + \alpha_9 Restate_{jt} \times FASSET_{jt} + \alpha_{10} Restate_{jt} \times DCFO_{jt} \\ & + \alpha_{11} Restate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt} \end{aligned}$$

where ACC is total accruals defined as earnings (data123) minus cash flow from operations (data308), both from cash flow statements; CFO is operating cash flow from cash flow statements (data308); Δsales is change in sales (data12); FASSET is book value of fixed assets (data7); *DCFO* takes the value 1 if *CFO* <0 and 0 otherwise; and *Restate* is an indicator for restating firms. The model is estimated separately for each event year using a control sample which contains all the Compustat firms other than the restating firms during the respective time period covered by the event year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. All continuous variables are scaled by beginning total assets (data6) and are trimmed by 1% at each extreme. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 2 (cont'd)

Panel A (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	0.00	**-3.59**	-0.01	**-4.38**	-0.01	**-6.32**	-0.01	**-7.65**	-0.02	**-9.43**
CFO	-0.52	**-53.67**	-0.51	**-52.49**	-0.47	**-41.99**	-0.45	**-39.94**	-0.45	**-36.58**
Δsales	0.08	**29.56**	0.08	**28.76**	0.07	**19.47**	0.07	**17.50**	0.07	**15.30**
FASSET	-0.03	**-19.67**	-0.03	**-19.95**	-0.03	**-17.54**	-0.03	**-15.87**	-0.03	**-12.96**
DCFO	-0.01	**-5.86**	-0.01	**-5.92**	-0.02	**-7.78**	-0.02	**-7.91**	-0.02	**-7.89**
DCFO*CFO	0.70	**50.36**	0.70	**50.51**	0.67	**42.79**	0.67	**41.61**	0.67	**38.77**
Restate	0.00	0.13	0.00	0.31	-0.03	-1.49	-0.03	**-1.76**	-0.01	-0.57
Restate*CFO	-0.10	-1.03	0.09	1.46	-0.05	-0.39	0.04	0.55	0.05	0.85
Restate*Δsales	0.00	-0.05	-0.02	-0.82	-0.02	-0.48	0.01	0.21	0.04	1.06
Restate*FASSET	0.03	**2.55**	-0.01	-0.88	0.05	**2.74**	0.05	**3.51**	0.01	0.78
Restate*DCFO	0.04	1.33	0.03	0.78	0.03	0.88	0.02	0.57	0.02	0.48
Restate*DCFO*CFO	0.19	0.49	-0.30	-0.98	0.71	**3.62**	0.47	**4.26**	0.20	0.86
R-squared	11.46%		11.45%		10.60%		10.43%		10.40%	
No. of restating firm/years	314		326		317		303		273	
No. of restating firm/years with DCFO=1	49		43		44		35		36	
No. of non-restating firm/years	59916		60092		47789		45752		39919	
No. of total observations	60230		60418		48106		46055		40192	

Table 2 (cont'd)

Panel B: Using Year-, Industry-, and Size- Matched Control Group

$$
\begin{aligned}
ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\
& + \alpha_6 Restate_{jt} + \alpha_7 Restate_{jt} \times CFO_{jt} + \alpha_8 Restate_{jt} \times \Delta Sales_{jt} \\
& + \alpha_9 Restate_{jt} \times FASSET_{jt} + \alpha_{10} Restate_{jt} \times DCFO_{jt} \\
& + \alpha_{11} Restate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}
\end{aligned}
$$

where all the variables are defined in Table 2 Panel A. The model is estimated separately for each event year using a control group which contains firms in the **same industry** as the restating firms and **within +/- 10% of the restating firm's asset size** during the **same year**. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 2 (cont'd)

Panel B (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.03	-1.42	-0.03	**-1.66**	-0.04	**-1.97**	-0.07	**-3.85**	-0.08	**-4.56**
CFO	-0.12	-0.42	-0.39	**-3.81**	-0.36	**-2.73**	-0.47	**-4.34**	-0.13	**-1.74**
Δsales	-0.17	-1.08	0.05	1.52	-0.02	-0.43	0.08	1.40	-0.07	-1.18
FASSET	-0.01	-0.42	-0.03	**-1.67**	-0.02	-1.03	0.02	0.85	0.03	1.39
DCFO	-0.14	**-2.02**	-0.08	**-1.83**	-0.06	-0.81	-0.10	**-2.85**	-0.03	-0.76
DCFO*CFO	0.08	0.28	0.45	1.31	0.91	1.57	0.49	**4.09**	1.24	**5.10**
Restate	-0.03	-0.60	0.00	0.00	-0.09	-0.84	0.02	0.72	0.02	0.59
Restate*CFO	-0.39	-1.23	0.17	1.28	0.21	0.52	0.11	0.63	-0.25	**-1.70**
Restate*Δsales	0.36	**1.83**	-0.02	-0.25	0.28	**1.79**	-0.08	-1.31	0.32	**2.90**
Restate*FASSET	0.04	0.81	0.00	-0.13	0.05	0.67	-0.01	-0.25	-0.02	-0.50
Restate*DCFO	0.15	1.37	0.04	0.41	0.52	**2.67**	0.01	0.11	0.07	0.79
Restate*DCFO*CFO	2.12	0.95	-0.93	**-1.80**	2.58	**2.98**	0.58	**2.70**	-0.09	-0.26
R-squared	5.14%		8.34%		58.15%		10.76%		38.58%	
No. of restating firm/years	129		131		134		131		116	
No. of restating firm/years with DCFO=1	24		24		23		21		22	
No. of non-restating firm/years	381		391		407		380		337	
No. of total observations	510		522		541		511		453	

Table 2 (cont'd)

Panel C: Change in Conservatism within Restating Firms

$$\begin{aligned} ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\ & + \alpha_6 T_{jt} + \alpha_7 T_{jt} \times CFO_{jt} + \alpha_8 T_{jt} \times \Delta Sales_{jt} + \alpha_9 T_{jt} \times FASSET_{jt} + \alpha_{10} T_{jt} \times DCFO_{jt} \\ & + \alpha_{11} T_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt} \end{aligned}$$

where *T* is a dummy variable which takes the value of 1 if an observation is from the event year. All the other variables are defined in Table 2 Panel A. The model is estimated separately for each event year using all the restating firms which have available data. All the financial firms are excluded from the regression, as well as firm years that underwent significant M&A activities. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 2 (cont'd)

Panel C (cont'd)

	Event Year (Benchmark Year = t)							
	tn-2		tn-1		t+1		t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.04	-0.98	-0.04	-0.98	-0.04	-0.98	-0.04	-0.98
CFO	-0.71	**-4.46**	-0.71	**-4.47**	-0.71	**-4.46**	-0.71	**-4.46**
Δsales	-0.03	-0.68	-0.03	-0.68	-0.03	-0.68	-0.03	-0.68
FASSET	0.05	1.17	0.05	1.17	0.05	1.17	0.05	1.17
DCFO	0.22	**2.38**	0.22	**2.38**	0.22	**2.38**	0.22	**2.37**
DCFO*CFO	3.54	**4.63**	3.54	**4.63**	3.54	**4.63**	3.54	**4.63**
T	0.03	0.57	0.03	0.67	-0.01	-0.36	0.02	0.56
T*CFO	-0.03	-0.10	0.38	**2.16**	0.45	**2.51**	0.31	**1.80**
T*Δsales	0.14	**2.10**	0.08	1.48	0.07	1.18	0.12	**1.67**
T*FASSET	-0.03	-0.63	-0.09	**-2.16**	-0.03	-0.80	-0.07	-1.62
T*DCFO	-0.21	**-2.10**	-0.19	**-1.91**	-0.22	**-2.17**	-0.21	**-2.06**
T*DCFO*CFO	-1.88	-1.55	-3.26	**-3.90**	-2.56	**-3.30**	-2.55	**-3.14**
R-squared	44.24%		58.06%		58.20%		57.64%	
No. of total restating firm/years	631		643		620		590	

Table 3
Testing of Conservatism for Restating Firms around Restatement Announcements Using Basu Model

Panel A: Using All the Other Firms in Compustat as Control Group

$$E_{jt}/P_{jt-1} = \alpha_0 + \alpha_1 R_{jt} + \alpha_2 DR_{jt} + \alpha_3 DR_{jy} \times R_{jt} + \alpha_4 Restate_{jt} + \alpha_5 Restate_{jt} \times R_{jt} + \alpha_6 Restate_{jt} \times DR_{jt} + \alpha_7 Restate_{jt} \times DR_{jt} \times R_{jt} + \varepsilon_{jt}$$

where *E* is the earnings per share defined as net income before extraordinary items (data18) divided by total common shares outstanding (data25); *Pt-1* is the stock price per share at the beginning of the fiscal year (data199); *R* is the buy-and-hold stock return from 9 months before the fiscal year-end to 3 months after the fiscal year-end; *DR* takes the value 1 if *R* <0 and 0 otherwise; and *Restate* is an indicator for restating firms. The model is estimated separately for each event year using a control sample which contains all the Compustat firms other than the restating firms during the respective time period covered by the event year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities . All continuous variables are trimmed by 1% at each extreme. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 3 (cont'd)

Panel A (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	0.02	**8.03**	0.02	**7.35**	0.01	**5.49**	0.01	**4.88**	0.01	**4.54**
R	-0.02	**-8.92**	-0.04	**-12.24**	-0.04	**-11.93**	-0.04	**-12.12**	-0.04	**-11.87**
DR	0.01	**2.96**	0.01	**2.05**	0.01	**1.88**	0.02	**3.24**	0.01	**1.83**
DR*R	0.42	**38.50**	0.42	**37.51**	0.42	**33.20**	0.43	**32.95**	0.46	**29.92**
Restate	0.02	**1.66**	0.01	1.59	0.01	1.01	0.01	0.32	0.03	**1.77**
Restate*R	0.02	**3.03**	0.04	**4.68**	0.02	0.72	0.01	0.25	-0.01	-0.29
Restate*DR	0.01	0.69	0.00	-0.09	0.02	0.61	0.01	0.30	-0.01	-0.14
Restate*DR*R	-0.23	**-4.85**	-0.27	**-4.20**	-0.01	-0.11	-0.05	-0.28	0.05	0.17
R-squared	7.65%		6.68%		6.39%		6.30%		6.53%	
No. of restating firm/years	313		324		309		295		266	
No. of restating firm/years with DR=1	131		148		135		100		102	
No. of non-restating firm/years	53101		53086		41706		39778		34599	
No. of total observations	53414		53410		42015		40073		34865	

Table 3 (cont'd)

Panel B: Using Year-, Industry-, and Size- Matched Control Group

$$E_{jt}/P_{jt-1} = \alpha_0 + \alpha_1 R_{jt} + \alpha_2 DR_{jt} + \alpha_3 DR_{jy} \times R_{jt} + \alpha_4 Restate_{jt} + \alpha_5 Restate_{jt} \times R_{jt} + \alpha_6 Restate_{jt} \times DR_{jt} + \alpha_7 Restate_{jt} \times DR_{jt} \times R_{jt} + \varepsilon_{jt}$$

where all the variables are defined in Table 3 Panel A. The model is estimated separately for each event year using a control group which contains firms in the **same industry** as the restating firms and **within +/- 10% of the restating firm's asset size** during the **same year**. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 3 (cont'd)

Panel B (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	0.04	**3.24**	0.05	**2.48**	0.01	0.18	-0.02	-0.80	-0.05	-0.62
R	-0.01	-0.72	-0.04	**-2.04**	0.17	0.95	0.01	0.81	-0.03	-0.84
DR	0.09	0.98	-0.05	**-1.67**	-0.67	-0.98	-0.02	-0.71	0.03	0.28
DR*R	0.15	0.53	0.18	**4.00**	-1.17	-1.02	0.08	1.53	0.28	**2.64**
Restate	0.00	-0.25	-0.01	-0.47	0.02	0.33	0.00	-0.01	0.06	0.71
Restate*R	0.02	1.32	0.03	1.43	-0.22	-1.20	-0.01	-0.30	-0.01	-0.18
Restate*DR	-0.08	-0.87	0.06	1.37	0.19	0.23	0.04	0.51	0.00	0.01
Restate*DR*R	-0.02	-0.07	-0.05	-0.65	1.11	0.85	0.28	0.97	0.03	0.20
R-squared	0.06%		6.14%		1.44%		3.14%		1.02%	
No. of restating firm/years	137		140		140		137		110	
No. of restating firm/years with DR=1	61		64		65		47		48	
No. of non-restating firm/years	368		373		378		385		303	
No. of total observations	505		513		518		522		413	

Table 3 (cont'd)

Panel C: Change in Conservatism within Restating Firms

$$E_{jt}/P_{jt-1} = \alpha_0 + \alpha_1 R_{jt} + \alpha_2 DR_{jt} + \alpha_3 DR_{jy} \times R_{jt} + \alpha_4 T_{jt} + \alpha_5 T_{jt} \times R_{jt} + \alpha_6 T_{jt} \times DR_{jt} + \alpha_7 T_{jt} \times DR_{jt} \times R_{jt} + \varepsilon_{jt}$$

where *T* is a dummy variable which takes the value of 1 if an observation is from the event year. All the other variables are defined in Table 3 Panel A. The model is estimated separately for each event year using all the restating firms which have available data. All the financial firms are excluded from the regression, as well as firm years that underwent significant M&A activities. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity -robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 3 (cont'd)

Panel C (cont'd)

	Event Year (Benchmark Year = t)							
	tn-2		tn-1		t+1		t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	0.02	**2.49**	0.03	**2.57**	0.02	1.57	0.01	1.01
R	0.00	0.04	-0.01	-0.33	-0.02	-0.85	-0.01	-0.61
DR	0.06	**1.85**	0.06	**1.82**	-0.22	-0.78	-0.24	-0.76
DR*R	0.48	**3.68**	0.46	**3.75**	0.07	0.18	0.04	0.10
T	0.01	0.88	0.01	0.53	0.00	-0.03	0.03	1.19
T*R	0.00	0.13	0.00	0.25	-0.01	-0.25	-0.04	-0.78
T*DR	-0.04	-1.22	-0.04	-0.99	0.26	0.89	0.26	0.81
T*DR*R	-0.27	**-1.93**	-0.27	**-1.91**	0.33	0.75	0.51	0.94
R-squared	19.42%		16.58%		1.55%		1.71%	
No. of total restating firm/years	540		562		588		524	

Table 4
Test of the Change in Conservatism within Restating Firms

Panel A: Revenue Recognition Restatement vs. All the Other Restatements

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 RevRestate_{jt} + \alpha_7 RevRestate_{jt} \times CFO_{jt} + \alpha_8 RevRestate_{jt} \times \Delta Sales_{jt} + \alpha_9 RevRestate_{jt} \times FASSET_{jt} + \alpha_{10} RevRestate_{jt} \times DCFO_{jt} + \alpha_{11} RevRestate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}$$

where Rev*Restate* is an indicator for restating firms engaging in revenue recognition restatement. All the other variables are defined in Table 2. The model is estimated separately for each event year using a control sample which contains all the restating firms other than the revenue-recognition restating firms during the respective time period covered by the event year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. Observations with Cook's distance above 1 are deleted as outliners. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

	Event Year					
	FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.03	**-2.24**	-0.04	**-2.03**	-0.04	**-2.50**
CFO	-0.57	**-7.55**	-0.46	**-4.79**	-0.34	**-4.68**
Δsales	0.10	**3.11**	0.08	**2.03**	0.11	**2.14**
FASSET	0.01	0.61	0.02	1.25	-0.01	-0.66
DCFO	0.00	0.00	0.01	0.22	-0.07	-1.45
DCFO*CFO	1.21	**1.85**	0.86	**2.63**	0.26	**1.66**
RevRestate	-0.01	-0.62	0.02	0.58	0.03	1.17
RevRestate*CFO	0.34	**1.96**	0.11	0.91	-0.06	-0.48
RevRestate*Δsales	-0.04	-0.78	0.01	0.19	0.00	0.01
RevRestate*FASSET	-0.03	-0.82	-0.02	-1.06	-0.02	-0.78
RevRestate*DCFO	0.04	0.51	-0.04	-0.86	-0.01	-0.16
RevRestate*DCFO*CFO	0.66	0.89	-0.41	-1.02	-0.47	-0.61
R-squared	28.10%		17.62%		13.36%	
No. of RevRestate firm/years	128		123		110	
No. of other restating firm/years	184		177		161	
No. of total observations	312		300		271	

Table 4 (cont'd)

Panel B: Company-Initiated Restatements vs. All the Other Restatements

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 ComRestate_{jt} + \alpha_7 ComRestate_{jt} \times CFO_{jt} + \alpha_8 ComRestate_{jt} \times \Delta Sales_{jt} + \alpha_9 ComRestate_{jt} \times FASSET_{jt} + \alpha_{10} ComRestate_{jt} \times DCFO_{jt} + \alpha_{11} ComRestate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}$$

where *ComRestate* is an indicator for company-initiated restatement. All the other variables are defined in Table 2. The model is estimated separately for each event year using a control sample which contains all the restating firms other than company prompters during the respective time period covered by the event year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. Observations with Cook's distance above 1 are deleted as outliners. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

	Event Year					
	FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.04	**-2.22**	-0.06	**-2.23**	-0.03	**-2.15**
CFO	-0.43	**-3.77**	-0.31	**-3.20**	-0.35	**-4.04**
Δsales	0.09	**2.69**	0.07	**2.14**	0.04	1.14
FASSET	0.01	0.58	0.01	0.54	-0.01	-0.34
DCFO	0.00	0.08	0.07	**1.71**	0.03	0.46
DCFO*CFO	1.49	**5.34**	0.96	**4.92**	0.57	**1.99**
ComRestate	-0.01	-0.33	0.04	1.61	0.01	0.29
ComRestate*CFO	-0.09	-0.61	-0.22	**-1.72**	-0.07	-0.55
ComRestate*Δsales	0.00	-0.03	0.01	0.32	0.15	**2.55**
ComRestate*FASSET	-0.01	-0.21	-0.01	-0.32	-0.01	-0.23
ComRestate*DCFO	0.00	0.05	-0.11	**-2.30**	-0.18	**-2.00**
ComRestate*DCFO*CFO	0.15	0.32	-0.12	-0.38	-0.90	-1.51
R-squared	30.42%		20.51%		16.21%	
No. of ComRestate firm/years	160		153		135	
No. of other restating firm/years	153		145		136	
No. of total observations	313		298		271	

Table 5
Distributional Statistics of Annual CEO Compensation and Its Components for Restating Firms

Panel A

This table reports descriptive statistics of CEO compensation and its components in the pre- and post-restatement periods for restating firms. All variables are measured in $000. The Wilcoxon rank tests report the two-sided p-values for the testing of the difference in the medians. To calculate the changes from one year to another, I delete all the restating firms which hire a new CEO in either year. The numbers of restating firms deleted are: from t-2 to t-1: 77; from t-1 to t: 70; from tn-1 to t: 49; from t to t+2: 43.

Event Years		Salary	Bonus	Option Grants	Restricted Stocks	Other Comp	Total comp
t-2	Mean	612.04	587.79	2916.89	406.25	216.99	4739.96
	Q3	743.75	706.62	3073.45	0.00	113.69	5480.58
	Median	550.00	297.50	874.62	0.00	38.80	2313.18
	Q1	359.49	75.50	79.16	0.00	5.92	1024.86
t-1	Mean	629.92	476.49	3072.53	521.90	236.21	4937.05
	Q3	800.89	595.75	2817.31	0.00	138.05	5086.46
# of restaters:	Median	584.77	227.34	837.75	0.00	37.91	2229.69
240	Q1	392.78	0.00	0.00	0.00	8.31	1104.87
Mean difference		17.87	-111.29	155.64	115.65	19.22	197.10
Wilcoxon rank test p-value		<.0001	0.049	0.678	0.268	0.001	0.694
t-1	Mean	619.01	507.58	2618.85	229.35	141.61	4116.40
	Q3	775.03	600.00	2566.46	0.00	128.94	4574.42
	Median	584.77	253.69	852.94	0.00	34.57	2133.40
	Q1	397.09	0.00	0.00	0.00	6.05	1153.69
t	Mean	645.10	544.31	2123.73	283.93	229.35	3826.42
	Q3	807.87	783.86	2254.20	0.00	156.52	4581.80
# of restaters:	Median	600.00	288.01	867.40	0.00	42.50	2391.71
226	Q1	422.50	0.00	0.00	0.00	7.16	
Mean difference		26.09	36.73	-495.12	54.57	87.74	-289.99
Wilcoxon rank test p-value		<.0001	0.031	0.545	0.316	0.085	0.594

Table 5 (cont'd)

Panel A (cont'd)

tn-1	Mean	591.06	591.55	3494.16	271.45	136.39	5084.62
	Q3	768.68	750.30	2757.31	0.00	115.64	4252.56
	Median	550.00	315.43	708.20	0.00	33.39	1859.05
	Q1	350.00	50.00	48.35	0.00	5.98	1007.64
t	Mean	660.70	603.73	2255.24	269.37	255.56	4044.59
	Q3	854.06	848.15	2511.93	0.00	162.75	4818.14
# of restaters:	Median	630.00	340.99	928.51	0.00	50.76	2422.73
222	Q1	445.00	0.00	0.00	0.00	8.00	1135.88
Mean difference		69.64	12.18	-1238.92	-2.09	119.16	-1040.03
Wilcoxon rank test p-value		<.0001	0.399	0.573	0.064	0.005	0.189

t	Mean	625.40	509.31	2010.45	198.70	275.54	3619.41
	Q3	812.50	755.20	2458.45	0.00	168.67	4530.00
	Median	593.58	240.51	756.62	0.00	32.76	2387.58
	Q1	402.12	0.00	7.17	0.00	6.77	966.74
t+2	Mean	688.11	804.60	2260.89	462.84	395.59	4612.02
	Q3	908.31	937.39	2790.09	353.50	245.99	6066.34
# of restaters:	Median	687.27	476.32	619.22	0.00	57.26	2937.94
164	Q1	444.06	35.95	0.00	0.00	10.31	1135.80
Mean difference		62.70	295.29	250.43	264.13	120.05	992.61
Wilcoxon rank test p-value		<.0001	<.0001	0.787	0.000	0.025	0.003

Table 5 (cont'd)

Panel B

This table reports the mean difference in CEO bonus and option grants between two years. Option (bonus) is measured as the value of CEO annual stock option grants (bonus awards) scaled by the value of CEO total annual compensation.

	Mean Difference between			
	t-2 & t-1	**t-1 & t**	**t & t+2**	**tn-1 and t**
bonus%	-2.60%	0.27%	3.76%	-2.28%
	[0.0551]	[0.9451]	[0.0076]	[0.143]
option%	-0.41%	-4.58%	-5.31%	-2.52%
	[0.6274]	[0.07]	[0.0067]	[0.1306]

Table 6
Regression Analyses of Changes in CEO Option-Based Compensation

This table reports regression results of the following equations for the period tn-1 to t and for the period t to t+2, where t is the restatement announcement year:

$$\begin{aligned}\Delta\text{Option\%} = {} & \alpha_0 + \alpha_1 \Delta\text{Share\_Own} + \alpha_2 \Delta\text{Exercisable\_Options} \\ & + \alpha_3 \Delta\text{Unexercisable\_Options} + \alpha_4 \Delta\text{Size} + \alpha_5 \Delta\text{B/M} \\ & + \alpha_6 \Delta\text{R \& D} + \alpha_7 \Delta\text{Cash\_Constraint} + \alpha_8 \Delta\text{Earn\_Constraint} \\ & + \alpha_9 \Delta\text{Leverage} + \alpha_{10} \Delta\text{Idiosyncratic Risk} + \alpha_{11} \Delta\text{Current Return} \\ & + \alpha_{12} \Delta\text{Past Return} + \alpha_{13} \Delta\text{Cash Compensation} + \alpha_{14} \text{ExtantCEO} \\ & + \alpha_{15} \text{Fraud} + \text{Year Dummies} + \varepsilon\end{aligned}$$

where the independent variable, Δ$Option%, is the difference in the dollar value of annual CEO option grants scaled by annual CEO total compensation (in percent) between years tn-1 to t and t to t+2, where year t is the restatement year. All continuous dependent variables are measured as the differences (Δ) between years tn-2 to t-1 when examining tn-1 to t and between years t-1 to t+1 when examining t to t+2, except for current return, which is measured as the difference between the years examined. Shares_Own (%) is CEO ownership in shares scaled by outstanding shares; Exercisable_Options (%) is the CEO's exercisable options in shares scaled by outstanding shares; Unexercisable_Options (%) is the CEO's unexercisable options in shares scaled by outstanding shares; Size is the natural log of sales (in $million, Compustat data12); B/M is the book-to-market ratio, measured as book value (data 60) divided by market value (data25*data199); R&D is research and development expense (data46) scaled by total assets (data6); Cash_Constraint is measured as common and preferred dividends (data127) plus net cash flow used in investment activities (data311) minus net cash flow from operations (data308), divided by total assets (data6); Earn_Constraint equals one if there is an operating loss (i.e., if data178 is negative) and zero otherwise; Leverage is measured as long-term debt (data9) divided by total assets (data6); Idiosyncratic Risk is the standard deviation of the residual from the market model using weekly returns over 12 months; CurrentReturn is the accumulated monthly stock return for the current year; PastReturn is the accumulated monthly stock return for the last year; CashCompensation is the sum of salary and bonus scaled by sales. ExtantCEO is a dummy variable taking the value of 1 if the restating firm did not experience CEO turnover during the period examined and 0 otherwise; Fraud is a dummy variable taking the value of 1 if the restatement is classified as a fraud case and 0 otherwise. Bold indicates significance at the 10% level or better. The results for year dummies are omitted for brevity.

Table 6 (cont'd)

Variables	Predicted sign	tn-1 to t Coeff.	tn-1 to t t-stat.		t to t+2 Coeff.	t to t+2 t-stat.
Intercept	?	0.04	0.60		0.04	0.58
ΔShares_Own	-	**1.33**	**1.70**		0.07	0.17
ΔExercisable_Options	-	1.19	0.53		-6.68	-1.46
ΔUnexercisable_Options	-	1.74	0.29		**-12.96**	**-2.30**
ΔSize	+	-0.12	-1.58		0.14	1.29
ΔB/M	-	**-0.06**	**-2.46**		0.00	0.06
ΔR&D	+	-0.24	-0.25		**1.62**	**2.20**
ΔCash_Constraint	+	**-0.39**	**-1.81**		-0.02	-0.09
ΔEarn_Constraint	?	0.01	0.10		0.03	0.34
ΔLeverage	-	**-0.83**	**-3.31**		0.03	0.15
ΔIdiosyncratic Risk	+	-0.05	-0.56		-0.63	-0.97
ΔCurrent Return	+	0.00	0.03		0.00	0.08
ΔPast Return	+	**-0.12**	**-3.56**		**0.04**	**1.71**
ΔCash Compensation	?	**-0.02**	**-1.85**		0.03	1.41
ExtantCEO	-	-0.05	-0.65		-0.12	-1.50
Fraud	-	0.11	1.49		-0.04	-0.56
n		151			121	
Adj. R-squared		8.78%			11.84%	

Table 7

The Relationship between Level of Conservatism and CEOs' Bonus and Option Changes

The regression being estimated is:

$$
\begin{aligned}
ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\
& + \alpha_6 \Delta Option\%\_Rank_{jt} + \alpha_7 \Delta Option\%\_Rank_{jt} \times CFO_{jt} + \alpha_8 \Delta Option\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_9 \Delta Option\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{10} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{11} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} \\
& + \alpha_{12} \Delta Bonus\%\_Rank_{jt} + \alpha_{13} \Delta Bonus\%\_Rank_{jt} \times CFO_{jt} + \alpha_{14} \Delta Bonus\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_{15} \Delta Bonus\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{16} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{17} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} + ControlVariables + \varepsilon_{jt}
\end{aligned}
$$

where Option%_rank is the rank of percentage change of CEO stock option grants in CEO total annual compensation, standardized to the interval (0, 1); Bonus%_rank is the rank of percentage change of CEO bonus awards in CEO total annual compensation, standardized to the interval (0, 1); The triangle symbol in front stands for change. Control variables include: leverage_rank is the rank of firms' leverage ratio defined as total debt (data9 +data34) divided by total assets (data6), standardized to the interval (0, 1); Lit is coded one if a firm was in a litigious industry identified by SIC codes: 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7374; MTB_rank is the rank of market to book ratio defined as market value of equity (data199*data25) divided by book value of equity (data60), standardized to the interval (0, 1); Size_rank is the rank of firm's average total assets (data6), standardized to the interval (0, 1). All the control variables interact with the main variables in the accrual model. For Panel A, restating firms who hire a new CEO in FY tn-1 or FY t are deleted (49 firms). For Panel B, restating firms who hire a new CEO in FY t or FY t+2 are deleted (43 firms). Firm-years that underwent significant M&A activities are deleted. All the other variables are defined in Table 2. Heteroskedasticity-robust t-statistics are reported. Bold indicates significance at the 10% level or better.

Table 7 (cont'd)

Panel A: Conservatism at Time t

	(i)		(ii)		(iii)		(iv)	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.03	-1.03	-0.04	-1.08	-0.03	-1.17	-0.18	**-2.38**
CFO	-0.53	**-4.09**	-0.69	**-3.24**	-0.36	**-1.79**	-0.12	-0.17
Δsales	0.17	**1.84**	0.27	**2.18**	0.10	1.31	0.21	1.20
FASSET	0.01	0.14	0.00	0.02	-0.02	-0.37	0.11	1.17
DCFO	0.27	**2.38**	-0.28	**-2.20**	0.22	**2.12**	0.00	-0.01
DCFO*CFO	3.48	**4.64**	-2.74	**-1.66**	5.69	**20.91**	**4.18**	**2.38**
Δoption%_rank			0.07	1.13			0.13	2.04
Δoption%_rank * CFO			0.37	0.92			-0.16	-0.30
Δoption%_rank * Δsales			-0.22	-1.08			-0.09	-0.47
Δoption%_rank * FASSET			-0.08	-0.81			-0.10	-1.14
Δoption%_rank * DCFO			0.77	**2.98**			0.44	2.76
Δoption%_rank *DCFO*CFO			8.08	**3.89**			**9.51**	**2.78**
Δbonus%_rank					0.03	0.58	0.10	1.66
Δbonus%_rank * CFO					-0.17	-0.59	-0.33	-0.72
Δbonus%_rank * Δsales					0.01	0.06	0.03	0.21
Δbonus%_rank * FASSET					-0.01	-0.10	-0.06	-0.78
Δbonus%_rank * DCFO					-0.62	**-2.76**	-0.57	-3.19
Δbonus%_rank *DCFO*CFO					-15.85	**-9.55**	**-9.85**	**-3.89**
Leverage_rank							0.02	0.32
Leverage_rank* CFO							-0.74	-1.33
Leverage_rank * Δsales							0.21	1.26
Leverage_rank * FASSET							0.05	0.43
Leverage_rank * DCFO							-0.09	-0.34
Leverage_rank *DCFO*CFO							2.93	**2.48**

Table 7 (cont'd)

Panel A (cont'd)

Lit				-0.03	-0.78
Lit * CFO				0.07	0.20
Lit * Δsales				0.10	1.02
Lit * FASSET				0.00	-0.08
Lit * DCFO				0.53	**1.87**
Lit *DCFO*CFO				3.32	1.22
MTB_rank				0.03	0.74
MTB_rank * CFO				0.09	0.23
MTB_rank * Δsales				-0.05	-0.29
MTB_rank * FASSET				0.01	0.13
MTB_rank * DCFO				-0.18	-0.63
MTB_rank *DCFO*CFO				-10.08	-1.47
Size_rank				0.05	0.92
Size_rank * CFO				0.22	0.42
Size_rank * Δsales				-0.47	**-3.04**
Size_rank * FASSET				-0.09	-1.49
Size_rank * DCFO				0.23	1.20
Size_rank *DCFO*CFO				-3.24	**-1.81**
R-squared	65.50%	81.29%	91.47%	94.98%	
No. of total observations	215	215	215	215	

Table 7 (cont'd)

Panel B: Conservatism at Time t+2

Variable	(i)		(ii)		(iii)		(iv)	
	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Intercept	-0.04	**-2.64**	-0.07	**-1.71**	-0.10	**-2.26**	-0.19	**-2.60**
CFO	-0.28	**-3.19**	-0.06	-0.24	-0.16	-0.61	0.24	0.49
Δsales	0.06	1.44	0.11	1.22	0.09	0.93	0.48	**3.07**
FASSET	-0.01	-0.67	-0.01	-0.63	0.02	0.42	0.09	1.31
DCFO	-0.01	-0.13	-0.13	-0.74	-0.16	-1.04	-0.90	**-2.94**
DCFO*CFO	0.82	1.24	-1.48	-1.28	-0.23	-0.13	-1.29	-0.37
Δoption%_rank			0.04	0.67			0.10	**1.68**
Δoption%_rank * CFO			-0.37	-0.96			-0.28	-0.75
Δoption%_rank * Δsales			-0.09	-0.63			-0.05	-0.38
Δoption%_rank * FASSET			0.00	0.00			-0.06	-1.27
Δoption%_rank * DCFO			0.21	0.65			1.84	**1.82**
Δoption%_rank *DCFO*CFO			4.54	**2.51**			30.40	**1.71**
Δbonus%_rank					0.10	**1.75**	0.07	1.22
Δbonus%_rank * CFO					-0.20	-0.48	-0.13	-0.26
Δbonus%_rank * Δsales					-0.09	-0.75	-0.43	**-2.94**
Δbonus%_rank * FASSET					-0.05	-0.77	-0.03	-0.52
Δbonus%_rank * DCFO					0.37	**1.76**	-1.26	-1.07
Δbonus%_rank *DCFO*CFO					2.15	0.82	-28.99	-1.21
Leverage_rank							0.01	0.19
Leverage_rank* CFO							-0.07	-0.17
Leverage_rank * Δsales							-0.18	-1.50
Leverage_rank * FASSET							-0.08	-0.85
Leverage_rank * DCFO							0.32	**1.75**
Leverage_rank *DCFO*CFO							-26.06	**-2.15**
Lit							-0.12	**-2.46**
Lit * CFO							0.21	1.02

Table 7 (cont'd)

Panel B (cont'd)

Lit * Δsales				-0.39	**-2.51**
Lit * FASSET				0.08	1.39
Lit * DCFO				0.47	**2.76**
Lit *DCFO*CFO				23.84	**2.31**
MTB_rank				0.02	0.34
MTB_rank * CFO				-0.14	-0.33
MTB_rank * Δsales				0.30	**3.23**
MTB_rank * FASSET				-0.02	-0.37
MTB_rank * DCFO				1.04	0.99
MTB_rank *DCFO*CFO				20.17	1.20
Size_rank				0.14	**2.82**
Size_rank * CFO				-0.59	-1.62
Size_rank * Δsales				-0.17	-1.50
Size_rank * FASSET				-0.01	-0.23
Size_rank * DCFO				-1.42	**-1.76**
Size_rank *DCFO*CFO				-48.00	-1.40
R-squared	5.46%	13.14%	13.86%	58.37%	
No. of total observations	159	159	159	159	

Table 8
The Relationship between Change in Conservatism and Change in CEOs' Option Grants

The regression being estimated is:

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 T_j + \alpha_7 T \times CFO_{jt} + \alpha_8 T_j \times \Delta Sales_{jt} + \alpha_9 T_j \times FASSET_{jt} + \alpha_{10} T_j \times DCFO_{jt} + \alpha_{11} T_j \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}$$

where all the variables are defined in Table 2. The benchmark year is Year t. Firm-years that underwent significant M&A activities are excluded. For Panel A, restating firms who hire a new CEO in FY tn-1 or FY t are deleted (49 firms). For Panel B, restating firms who hire a new CEO in FY t or FY t+2 are deleted (43 firms). Heteroskedasticity-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Panel A: Change in Conservatism from tn-1 to t

	whole sample		**Top 50% firms with low Δoption%**		**Bottom 50% firms with high Δoption%**	
Variable	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Intercept	-0.03	-1.01	-0.03	-1.55	-0.03	-0.41
CFO	-0.52	**-3.99**	-0.56	**-5.21**	-0.56	**-2.22**
Δsales	0.18	**1.91**	0.14	**2.66**	0.24	1.36
FASSET	0.00	0.03	-0.01	-0.42	0.01	0.10
DCFO	0.30	**2.67**	-0.10	-1.24	0.47	**2.71**
DCFO*CFO	3.49	**4.71**	0.28	0.85	3.81	**5.79**
T	0.03	0.82	0.03	1.07	0.01	0.13
T*CFO	0.22	1.43	0.17	1.04	0.34	1.31
T*Δsales	-0.13	-1.29	-0.17	**-1.96**	-0.14	-0.79
T*FASSET	-0.06	-0.92	-0.03	-0.91	-0.06	-0.46
T*DCFO	-0.27	**-2.16**	0.09	0.93	-0.44	**-2.18**
T*DCFO*CFO	-3.20	**-3.89**	-0.61	-0.84	-3.47	**-4.70**
R-squared	63.55%		24.70%		71.98%	
No. of total observations	428		214		214	

Table 8 (cont'd)

Panel B: Change in Conservatism from t to t+2

	whole sample		Top 50% firms with low Δoption%		Bottom 50% firms with high Δoption%	
Variable	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Intercept	-0.04	**-2.28**	-0.02	-0.62	-0.05	**-2.06**
CFO	-0.43	**-3.69**	-0.75	**-5.73**	-0.27	**-1.75**
Δsales	0.11	**2.72**	0.10	**2.10**	0.13	**2.17**
FASSET	0.00	0.18	0.02	0.77	-0.01	-0.40
DCFO	0.03	0.52	-0.07	-0.70	0.09	**1.96**
DCFO*CFO	2.11	**6.37**	1.91	**4.08**	2.32	**10.49**
T	0.00	-0.04	-0.04	-1.07	0.03	0.93
T*CFO	0.14	0.99	0.62	**3.18**	-0.11	-0.56
T*Δsales	-0.05	-0.78	-0.02	-0.20	-0.06	-0.72
T*FASSET	-0.02	-1.04	-0.04	**-1.66**	-0.02	-0.56
T*DCFO	0.00	0.05	-0.02	-0.15	0.03	0.32
T*DCFO*CFO	-1.68	**-2.00**	-2.96	**-3.33**	0.36	0.87
R-squared	23.23%		25.66%		36.43%	
No. of total observations	318		160		158	

Table 9
The Impacts of the Restatement Magnitudes and the Accounting Irregularity on the Level of Conservatism at Time t

The regression being estimated is:

$$
\begin{aligned}
ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\
& + \alpha_6 \Delta Option\%\_Rank_{jt} + \alpha_7 \Delta Option\%\_Rank_{jt} \times CFO_{jt} + \alpha_8 \Delta Option\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_9 \Delta Option\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{10} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{11} \Delta Option\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} \\
& + \alpha_{12} \Delta Bonus\%\_Rank_{jt} + \alpha_{13} \Delta Bonus\%\_Rank_{jt} \times CFO_{jt} + \alpha_{14} \Delta Bonus\%\_Rank_{jt} \times \Delta Sales_{jt} \\
& + \alpha_{15} \Delta Bonus\%\_Rank_{jt} \times FASSET_{jt} + \alpha_{16} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \\
& + \alpha_{17} \Delta Bonus\%\_Rank_{jt} \times DCFO_{jt} \times CFO_{jt} + ControlVariables + \varepsilon_{jt}
\end{aligned}
$$

In addition to all the variables defined in Table 7, I include two more control variables in the above regression: Resize_rank is the rank of the restatement magnitude, standardized to the interval (0, 1). Restatement magnitude is calculated using the sum of the restated amount from each restated year divided by the sum of the restated net income over the entire restated period. Fraud takes the value of 1 if the restatement is classified as fraud and 0 otherwise. All the control variables interact with the main variables in the accrual model. Firm-years that underwent significant M&A activities are deleted. **Bold** indicates significance at the 10% level or better. Heteroskedasticity-robust t-statistics are reported.

Table 9 (cont'd)

	(i)		(ii)		(iii)		(iv)	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.20	**-2.62**	-0.24	**-2.90**	-0.16	**-1.76**	-0.22	**-2.48**
CFO	0.16	0.23	0.64	0.88	0.24	0.28	0.89	0.98
Δsales	0.13	1.04	0.16	1.28	0.10	0.69	0.03	0.20
FASSET	0.11	1.30	0.11	1.29	0.04	0.29	0.05	0.45
DCFO	0.12	0.34	0.26	0.71	0.32	0.50	0.76	1.04
DCFO*CFO	-1.98	-0.64	-2.00	-0.61	8.87	0.66	16.84	1.00
Δoption%_rank	0.17	**2.57**	0.18	**2.61**	0.15	**2.26**	0.17	**2.61**
Δoption%_rank * CFO	-0.27	-0.47	-0.47	-0.81	-0.35	-0.62	-0.65	-1.07
Δoption%_rank * Δsales	0.14	0.85	0.15	0.92	0.17	0.99	0.25	1.29
Δoption%_rank * FASSET	-0.16	**-1.83**	-0.14	**-1.79**	-0.13	-1.27	-0.11	-1.29
Δoption%_rank * DCFO	0.31	**1.83**	0.27	**1.80**	0.02	0.07	-0.10	-0.45
Δoption%_rank *DCFO*CFO	8.28	**2.35**	8.53	**2.38**	4.31	1.04	2.19	0.48
Δbonus%_rank	0.12	**2.05**	0.16	**2.49**	0.12	**2.04**	0.16	**2.54**
Δbonus%_rank * CFO	0.08	0.17	-0.22	**-0.42**	0.02	0.04	-0.33	-0.60
Δbonus%_rank * Δsales	0.03	0.26	0.03	0.29	0.05	0.41	0.04	0.34
Δbonus%_rank * FASSET	-0.14	**-1.82**	-0.15	-1.62	-0.13	**-1.82**	-0.13	-1.58
Δbonus%_rank * DCFO	-0.40	**-2.49**	-0.51	**-2.71**	-0.41	**-2.56**	-0.57	**-2.92**
Δbonus%_rank *DCFO*CFO	0.12	0.04	0.45	0.13	-6.55	-1.01	-10.61	-1.28
leverage_rank	0.03	0.42	0.04	0.57	0.05	0.79	0.06	0.97
leverage_rank * CFO	-1.24	**-1.70**	-1.45	**-1.98**	-1.35	**-1.80**	-1.53	**-2.00**
leverage_rank * Δsales	0.12	0.69	0.10	0.56	0.07	0.49	0.04	0.26
leverage_rank * FASSET	0.13	1.07	0.13	1.13	0.12	1.08	0.11	1.03
leverage_rank * DCFO	-0.59	-1.17	-0.61	-1.21	-0.74	-1.45	-0.69	-1.31
leverage_rank *DCFO*CFO	0.56	0.39	0.75	0.52	1.83	0.93	2.92	1.18

Table 9 (cont'd)

Lit	-0.03	-0.92	-0.04	-1.27	-0.03	-0.90	-0.05	-1.36
Lit * CFO	-0.02	-0.08	-0.11	-0.38	0.01	0.04	-0.09	-0.30
Lit * Δsales	0.04	0.44	0.01	0.14	0.04	0.41	0.04	0.40
Lit * FASSET	0.02	0.47	0.05	1.00	0.02	0.41	0.05	1.05
Lit * DCFO	0.58	1.63	0.65	**1.72**	0.65	**1.99**	0.72	**2.02**
Lit *DCFO*CFO	5.91	**2.05**	6.17	**2.15**	4.42	1.44	2.92	0.88
MTB_rank	0.03	0.66	0.05	1.06	0.05	0.98	0.07	1.37
MTB_rank * CFO	-0.17	-0.46	-0.29	-0.82	-0.22	-0.60	-0.36	-0.96
MTB_rank * Δsales	-0.36	**-1.96**	-0.34	-1.63	-0.37	**-1.92**	-0.39	-1.65
MTB_rank * FASSET	0.05	0.83	0.03	0.44	0.04	0.60	0.03	0.47
MTB_rank * DCFO	-0.47	-1.06	-0.50	-1.11	-0.81	-1.60	-0.96	**-1.73**
MTB_rank *DCFO*CFO	-7.11	-0.92	-7.50	-0.94	-11.64	-1.16	-14.86	-1.31
Size_rank	0.02	0.29	0.02	0.33	-0.01	-0.23	0.00	0.06
Size_rank * CFO	0.44	0.65	0.50	0.73	0.42	0.56	0.34	0.44
Size_rank * Δsales	-0.12	-0.80	-0.05	-0.35	-0.09	-0.58	0.05	0.29
Size_rank * FASSET	-0.11	-1.59	-0.11	**-1.69**	-0.07	-0.90	-0.07	-1.14
Size_rank * DCFO	0.71	**2.68**	0.66	**2.29**	0.70	**1.77**	0.37	0.73
Size_rank *DCFO*CFO	2.21	0.70	1.48	0.43	-1.11	-0.18	-6.04	-0.74

Table 9 (cont'd)

Fraud		0.03	0.86			0.02	0.50
Fraud * CFO		-0.09	-0.34			-0.06	-0.15
Fraud * Δsales		-0.18	**-2.69**			-0.21	**-2.02**
Fraud * FASSET		-0.02	-0.31			0.00	0.08
Fraud * DCFO		0.01	0.06			0.11	0.60
Fraud *DCFO*CFO		4.07	1.62			6.14	**2.12**
Resize_rank				-0.07	-1.17	-0.04	-0.69
Resize_rank * CFO				0.08	0.16	-0.08	-0.11
Resize_rank * Δsales				0.02	0.18	0.15	0.81
Resize_rank * FASSET				0.10	1.28	0.07	0.92
Resize_rank * DCFO				0.21	0.57	0.00	0.00
Resize_rank *DCFO*CFO				-4.76	-0.85	-8.20	-1.19
R-squared	96.81%	97.08%		96.98%		97.30%	
No. of total observations	187	187		187		187	

Table 10
The Impacts of the Restatement Magnitudes and the Accounting Irregularity on the Change in Conservatism

The regression being estimated is:

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 T_j + \alpha_7 T_j \times CFO_{jt} + \alpha_8 T_j \times \Delta Sales_{jt} + \alpha_9 T_j \times FASSET_{jt} + \alpha_{10} T_j \times DCFO_{jt} + \alpha_{11} T_j \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}$$

where all the variables are defined in Table 2. The benchmark year is Year t. Firm-years that underwent significant M&A activities are excluded. Heteroskedasticity-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Panel A: Change in Conservatism from tn-1 to t: Fraud Firms vs. Non-Fraud Firms

	Fraud		**Non-fraud**	
Variable	coeff.	t-stat	coeff.	t-stat
Intercept	-0.03	-1.51	-0.03	-0.72
CFO	-0.63	**-4.91**	-0.54	**-3.14**
Δsales	0.06	1.60	0.26	**1.78**
FASSET	0.01	0.47	0.00	-0.01
DCFO	0.08	**2.53**	0.37	**2.55**
DCFO*CFO	3.51	1.52	3.59	**4.84**
T	0.06	**1.91**	0.00	0.10
T*CFO	0.19	1.20	0.33	**1.76**
T*Δsales	-0.05	-1.02	-0.23	-1.41
T*FASSET	-0.08	**-2.01**	-0.03	-0.41
T*DCFO	-0.02	-0.31	-0.35	**-2.26**
T*DCFO*CFO	-3.90	**-1.67**	-3.28	**-4.09**
R-squared	60.68%		65.05%	
No. of total observations	122		306	

Table 10 (cont'd)

Panel B: Change in Conservatism from tn-1 to t:
High Restatement Size Firms vs. Low Restatement Size Firms

	whole sample		**Top 50% low restatement**		**Bottom 50% high restatement**	
Variable	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Intercept	-0.07	**-2.13**	-0.07	-1.11	-0.07	**-3.51**
CFO	-0.45	**-3.05**	-0.61	**-3.16**	-0.39	**-1.84**
Δsales	0.08	**1.88**	0.08	1.08	0.11	**2.54**
FASSET	0.06	1.03	0.11	0.92	0.04	1.23
DCFO	0.24	**2.83**	0.45	**2.41**	-0.05	-0.87
DCFO*CFO	3.58	**6.06**	4.06	**9.09**	0.06	0.20
T	0.07	**1.83**	0.08	1.08	0.05	1.56
T*CFO	0.16	0.96	0.31	1.37	0.17	0.63
T*Δsales	-0.04	-0.65	-0.02	-0.26	-0.12	-1.21
T*FASSET	-0.12	**-1.89**	-0.17	-1.31	-0.08	**-2.02**
T*DCFO	-0.18	-1.63	-0.43	**-1.84**	0.08	0.74
T*DCFO*CFO	-3.20	**-4.65**	-3.44	**-6.97**	-0.59	-0.93
R-squared	78.12%		89.31%		18.18%	
No. of total observations	372		186		186	

Table 11
Testing of Conservatism for Restating Firms around Restatement Announcements Using Accrual Model after Deleting New-CEO Firm-Years

Panel A: Using All the Other Firms in Compustat as Control Group

$$\begin{aligned} ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\ & + \alpha_6 Restate_{jt} + \alpha_7 Restate_{jt} \times CFO_{jt} + \alpha_8 Restate_{jt} \times \Delta Sales_{jt} \\ & + \alpha_9 Restate_{jt} \times FASSET_{jt} + \alpha_{10} Restate_{jt} \times DCFO_{jt} \\ & + \alpha_{11} Restate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt} \end{aligned}$$

where all the variables are defined in Table 2. The model is estimated separately for each event year using a control sample which contains all the Compustat firms other than the restating firms during the respective time period covered by the event year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. All the restating firms which hire a new CEO in each event year are deleted for that event-year analysis. All continuous variables are trimmed by 1% at each extreme. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 11 (cont'd)

Panel A (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	0.00	**-2.83**	-0.01	**-3.53**	-0.01	**-5.36**	-0.01	**-6.36**	-0.02	**-7.89**
CFO	-0.52	**-38.99**	-0.51	**-39.34**	-0.47	**-34.38**	-0.45	**-32.51**	-0.45	**-30.35**
Δsales	0.08	**26.32**	0.08	**25.66**	0.07	**18.09**	0.07	**16.28**	0.07	**14.37**
FASSET	-0.03	**-15.67**	-0.03	**-15.98**	-0.03	**-14.67**	-0.03	**-13.09**	-0.03	**-10.65**
DCFO	-0.01	**-5.05**	-0.01	**-5.12**	-0.02	**-6.90**	-0.02	**-6.93**	-0.02	**-6.93**
DCFO*CFO	0.70	**40.60**	0.70	**41.15**	0.67	**36.80**	0.67	**35.48**	0.67	**33.39**
Restate	0.01	0.44	0.01	0.47	-0.01	-0.67	-0.02	-0.88	-0.01	-0.70
Restate*CFO	-0.11	-0.98	0.11	1.58	-0.12	-0.93	0.01	0.17	0.06	0.94
Restate*Δsales	-0.02	-1.10	-0.03	-0.87	-0.03	-0.57	-0.01	-0.51	0.02	0.56
Restate*FASSET	0.03	**2.48**	-0.01	-0.97	0.04	**2.34**	0.05	**2.98**	0.01	0.97
Restate*DCFO	0.05	1.43	0.03	0.84	0.01	0.33	0.00	0.10	-0.05	-1.03
Restate*DCFO*CFO	0.60	1.50	-0.29	-0.92	0.76	**3.91**	0.54	**5.25**	-0.46	-1.60
R-squared	11.45%		11.45%		10.61%		10.43%		10.38%	
No. of restating firm/years	260		283		268		243		237	
No. of restating firm/years with DCFO=1	37		26		36		29		32	
No. of non-restating firm/years	59916		60092		47789		45752		39919	
No. of total observations	60176		60375		48057		45995		40156	

Table 11 (cont'd)

Panel B: Using Year-, Industry-, and Size- Matched Control Group

$$\begin{aligned} ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} \\ & + \alpha_6 Restate_{jt} + \alpha_7 Restate_{jt} \times CFO_{jt} + \alpha_8 Restate_{jt} \times \Delta Sales_{jt} \\ & + \alpha_9 Restate_{jt} \times FASSET_{jt} + \alpha_{10} Restate_{jt} \times DCFO_{jt} \\ & + \alpha_{11} Restate_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt} \end{aligned}$$

where all the variables are defined in Table 2. The model is estimated separately for each event year using a control group which contains firms in the same industry as the restating firms and within +/- 10% of the restating firm's asset size during the same year. All the financial firms are excluded from the regression, as well as firms years that underwent significant M&A activities. All the restating firms which hire a new CEO in each event-year analysis are deleted. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 11 (cont'd)

Table 11 (cont'd)

Panel B (cont'd)

	Event Year									
	FY tn-2		FY tn-1		FY t		FY t+1		FY t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.05	**-3.03**	-0.03	-1.43	-0.04	**-2.41**	-0.06	**-3.73**	-0.07	**-4.91**
CFO	-0.30	**-2.13**	-0.41	**-3.69**	-0.33	**-3.12**	-0.44	**-4.10**	-0.22	**-3.05**
Δsales	-0.01	-0.15	0.06	**2.52**	-0.01	-0.20	0.10	**1.66**	0.01	0.18
FASSET	0.01	0.63	-0.02	-1.44	-0.02	-1.33	0.03	1.10	0.02	1.07
DCFO	-0.07	**-1.82**	-0.07	**-1.69**	-0.06	**-1.88**	-0.09	**-2.63**	-0.07	**-1.83**
DCFO*CFO	0.08	0.43	0.73	**3.12**	0.62	**2.87**	0.47	**4.03**	1.00	**3.63**
Restate	0.05	**1.89**	0.01	0.22	0.00	0.11	0.05	**2.11**	0.04	1.38
Restate*CFO	-0.11	-0.58	0.20	1.49	-0.05	-0.33	-0.09	-0.67	-0.25	**-1.92**
Restate*Δsales	0.06	0.76	-0.03	-0.50	0.14	**2.26**	-0.09	-1.28	0.22	**2.37**
Restate*FASSET	-0.02	-1.22	-0.02	-0.73	0.01	0.25	-0.01	-0.39	-0.02	-0.78
Restate*DCFO	0.12	1.49	0.01	0.12	0.16	**2.63**	-0.01	-0.13	-0.07	-0.98
Restate*DCFO*CFO	0.08	0.16	-1.28	**-2.72**	1.50	**3.42**	0.81	**4.76**	-0.88	**-1.95**
R-squared	10.56%		12.68%		14.57%		11.40%		21.31%	
No. of restating firm/years	114		126		108		108		101	
No. of restating firm/years with DCFO=1	18		20		13		16		17	
No. of non-restating firm/years	301		357		360		316		309	
No. of total observations	415		483		468		424		410	

Table 11 (cont'd)

Panel C: Change in Conservatism within Restating Firms

$$ACC_{jt} = \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 T_{jt} + \alpha_7 T_{jt} \times CFO_{jt} + \alpha_8 T_{jt} \times \Delta Sales_{jt} + \alpha_9 T_{jt} \times FASSET_{jt} + \alpha_{10} T_{jt} \times DCFO_{jt} + \alpha_{11} T_{jt} \times DCFO_{jt} \times CFO_{jt} + \varepsilon_{jt}$$

where all the variables are defined in Table 2. The model is estimated separately for each event year using all the restating firms which have available data. All the financial firms are excluded from the regression, as well as firm years that underwent significant M&A activities. For each event-year analysis, the restating firms which hire a new CEO in either the event year or the benchmark year are deleted. All the observations with Cook's distance above 1 are deleted. Heteroskedasticity-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 11 (cont'd)

Panel C (cont'd)

	Event Year (Benchmark Year = t)							
	tn-2		tn-1		t+1		t+2	
Variable	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**	**coeff.**	**t-stat**
Intercept	-0.01	-0.20	-0.01	-0.20	-0.01	-0.20	-0.01	-0.20
CFO	-0.81	**-5.77**	-0.81	**-5.77**	-0.81	**-5.76**	-0.81	**-5.76**
Δsales	-0.02	-0.45	-0.02	-0.45	-0.02	-0.45	-0.02	-0.45
FASSET	0.03	0.75	0.03	0.75	0.03	0.75	0.03	0.75
DCFO	0.22	**2.09**	0.22	**2.09**	0.22	**2.09**	0.22	**2.09**
DCFO*CFO	3.67	**4.83**	3.67	**4.84**	3.67	**4.83**	3.67	**4.83**
T	0.00	0.07	0.00	-0.09	-0.04	-1.12	-0.02	-0.60
T*CFO	0.03	0.10	0.49	**3.10**	0.50	**3.11**	0.43	**2.81**
T*Δsales	0.08	1.27	0.07	1.17	0.08	1.55	0.10	**1.69**
T*FASSET	0.00	-0.05	-0.08	**-1.75**	-0.02	-0.45	-0.05	-1.07
T*DCFO	-0.22	**-1.82**	-0.19	**-1.69**	-0.23	**-2.02**	-0.28	**-2.41**
T*DCFO*CFO	-1.46	-1.03	-3.37	**-4.05**	-2.61	**-3.40**	-3.44	**-4.22**
R-squared	47.38%		63.11%		63.46%		63.70%	
No. of total restating firm/years	528		551		511		505	

Table 12
The Relationship between the Accrual Measure of Conservatism and Firm's Performance

The regression being estimated is:

$$\begin{aligned} ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} \\ & + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 ROA_{jt} + \alpha_7 ROA_{jt} \times CFO_{jt} \\ & + \alpha_8 ROA_{jt} \times \Delta Sales_{jt} + \alpha_9 ROA_{jt} \times FASSET_{jt} \\ & + \alpha_{10} ROA_{jt} \times DCFO_{jt} + \alpha_{11} ROA_{jt} \times DCFO_{jt} \times CFO_{jt} \\ & + ControlVariables + \varepsilon_{jt} \end{aligned}$$

where ACC is total accruals; CFO is operating cash flow; Δsales is change in sales; FASSET is book value of fixed assets; DCFO takes the value 1 if CFO <0 and 0 otherwise. They are defined in Table 2. ROA is the standardized decile rank of net income before extraordinary items (data18) divided by average total assets (data6). Other control variables include: Leverage is the standardized decile rank of leverage ratio defined in Table 7 Lit is coded one if the firm was in a litigious industry defined in Table 7; MTB is the standardized decile rank of market to book ratio defined in Table 7; Size is the standardized decile rank of average total assets defined in Table7. These control variables also interact with the main variables in the accrual model. Standardized decile rank is determined by first ranking observations each year into 10 groups, and then scaling the ranking by 9. All the financial firms are excluded from the regression, as well as firm-years that underwent significant M&A activities. The sample period is 1997-2006. Pooled regression is used for the estimation. Heteroskedasticity and within firm serial correlation-robust t-statistics are reported. **Bold** indicates significance at the 10% level or better.

Table 12 (cont'd)

Variable	coeff.	t-stat
Intercept	0.00	-1.03
CFO	-0.57	**-13.27**
Δsales	0.05	**11.08**
FASSET	-0.02	**-6.47**
DCFO	0.05	**11.17**
DCFO*CFO	0.52	**10.52**
ROA	0.05	1.39
ROA * CFO	0.35	1.32
ROA * Δsales	0.12	**8.07**
ROA * FASSET	0.01	0.59
ROA * DCFO	0.57	**14.37**
ROA *DCFO*CFO	0.11	0.42
Leverage	0.00	-0.33
Leverage* CFO	-0.09	-1.44
Leverage * Δsales	-0.02	-1.53
Leverage * FASSET	-0.02	**-1.79**
Leverage * DCFO	-0.01	-1.28
Leverage *DCFO*CFO	0.11	**1.76**
Lit	-0.01	**-2.57**
Lit * CFO	0.04	**1.69**
Lit * Δsales	0.01	1.47
Lit * FASSET	-0.01	-1.47
Lit * DCFO	0.02	**4.38**
Lit *DCFO*CFO	-0.02	-0.65
MTB	0.00	0.01
MTB * CFO	0.00	0.19
MTB * Δsales	0.00	-0.51
MTB * FASSET	0.00	-0.01
MTB * DCFO	0.00	0.94
MTB *DCFO*CFO	0.00	0.23
Size	0.00	**-2.93**
Size * CFO	0.00	**2.24**
Size * Δsales	0.00	**-4.79**
Size * FASSET	0.00	**3.51**
Size * DCFO	0.00	**-5.53**
Size *DCFO*CFO	0.00	**-5.49**
R-squared	49.36%	
No. of total observations	40442	

Table 13
The Relationship between Level of Conservatism and Changes of CEO Option and Equity Sensitivities

The regression being estimated is:

$$
\begin{aligned}
ACC_{jt} = {} & \alpha_0 + \alpha_1 CFO_{jt} + \alpha_2 \Delta Sales_{jt} + \alpha_3 FASSET_{jt} + \alpha_4 DCFO_{jt} \\
& + \alpha_5 DCFO_{jt} \times CFO_{jt} + \alpha_6 \Delta Optionsen\_Rank_{jt} \\
& + \alpha_7 \Delta Optionsen\_Rank_{jt} \times CFO_{jt} + \alpha_8 \Delta Optionsen\_Rank_{jt} \\
& \times \Delta Sales_{jt} + \alpha_9 \Delta Optionsen\_Rank_{jt} \times FASSET_{jt} \\
& + \alpha_{10} \Delta Optionsen\_Rank_{jt} \times DCFO_{jt} + \alpha_{11} \Delta Optionsen\_Rank_{jt} \\
& \times DCFO_{jt} \times CFO_{jt} + \alpha_{12} \Delta Equitysen\_Rank_{jt} \\
& + \alpha_{13} \Delta Equitysen\_Rank_{jt} \times CFO_{jt} + \alpha_{14} \Delta Equitysen\_Rank_{jt} \\
& \times \Delta Sales_{jt} + \alpha_{15} \Delta Equitysen\_Rank_{jt} \times FASSET_{jt} \\
& + \alpha_{16} \Delta Equitysen\_Rank_{jt} \times DCFO_{jt} + \alpha_{17} \Delta Equitysen\_Rank_{jt} \\
& \times DCFO_{jt} \times CFO_{jt} + ControlVariables + \varepsilon_{jt}
\end{aligned}
$$

where Δoptionsen_rank is the rank of the change of CEO option sensitivity, standardized to the interval (0, 1); ΔEquitysen_rank is the rank of the change of CEO stock equity sensitivity, standardized to the interval (0, 1). CEO Option sensitivity is measured by multiplying the option delta by 1% of the stock price and the number of option held. CEO stock equity sensitivity is calculated by multiplying the number of shares of equity held by 1% of the stock price. All the other variables are as defined in Table 6, and only the three-way interaction terms of the control variables are included. Firm-years that underwent significant M&A activities are deleted. **Bold** indicates significance at the 10% level or better. Heteroskedasticity-robust t-statistics are reported.

Table 13 (cont'd)

Variable	(i): FY t		(ii): FY t+2	
	coeff.	t-stat	coeff.	t-stat
Intercept	0.00	-0.09	-0.20	**-3.86**
CFO	-0.90	-1.55	0.50	1.55
Δsales	0.57	**3.68**	0.11	1.10
FASSET	-0.07	-1.01	0.04	1.11
DCFO	0.04	0.35	0.02	0.24
DCFO*CFO	9.08	**4.83**	-1.56	**-2.52**
Δoptionsen_rank	-0.05	-1.04	0.06	1.15
Δoptionsen_rank * CFO	0.86	1.51	-0.28	-0.78
Δoptionsen_rank * Δsales	0.24	1.22	-0.11	-0.52
Δoptionsen_rank * FASSET	0.04	0.61	0.01	0.19
Δoptionsen_rank * DCFO	0.18	0.52	0.29	**2.18**
Δoptionsen_rank *DCFO*CFO	-8.89	-1.22	2.15	1.61
Δequitysen_rank	0.07	1.19	0.23	**2.91**
Δequitysen_rank * CFO	-0.02	-0.03	-0.95	**-2.57**
Δequitysen_rank * Δsales	-0.34	-1.62	-0.01	-0.10
Δequitysen_rank * FASSET	-0.09	-1.19	-0.13	**-1.87**
Δequitysen_rank * DCFO	-0.12	-0.66	-0.75	**-4.37**
Δequitysen_rank *DCFO*CFO	-7.41	-1.38	-1.53	-1.24
leverage_rank *DCFO*CFO	18.09	**3.42**	-17.74	**-14.23**
Lit *DCFO*CFO	-4.20	-0.92	4.19	**4.35**
MTB_rank *DCFO*CFO	-11.95	**-2.78**	2.59	**10.26**
Size_rank *DCFO*CFO	-0.59	-0.08	6.22	**4.38**
R-squared	72.42%		64.56%	
No. of total observations	138		130	

Table 14
Discretionary Accruals for Restating Firms around Restatement Announcements

This table presents summary statistics for abnormal (discretionary) accruals for restating firms for the event year tn-2, tn-1, t-2, t-1, t, t+1, and t+2. Normal accruals are estimated using Jones model modified by Ball and Shivakumar (2006):

$$ACC_{it} = \alpha_{j0} + \alpha_{j1} CFO_{it} + \alpha_{j2} \Delta Sales_{it} + \alpha_{j3} FASSET_{it} + \alpha_{j4} DCFO_{it} + \alpha_{j5} DCFO_{it} \times CFO_{it} + \varepsilon_{it}$$

α_{j1} to α_{j5} are estimated separately for each restating firm j from a cross-section of all the non-restating firms in its 2-digit SIC with data for the contemporaneous year t. Only industry-years with at least 10 observations are considered. All the variables are as defined in Table 2. I exclude the extreme 1% on either side of each continuous variable. Abnormal accruals ABN_ACCjt for restating firm i in year t are computed as the difference between actual and normal accruals:

$$ABN\_ACC_{jt} = ACC_{jt} - [\hat{\alpha}_{j0} + \hat{\alpha}_{j1} CFO_{jt} + \hat{\alpha}_{j2} \Delta Sales_{jt} + \hat{\alpha}_{j3} FASSET_{jt} + \hat{\alpha}_{j4} DCFO_{jt} + \hat{\alpha}_{j5} DCFO_{jt} \times CFO_{jt}]$$

	tn-2	tn-1	...	t-2	t-1	t	t+1	t+2
No. of obs	312	324		331	332	313	299	268
Mean abnormal accrual	0.012	0.009		0.005	-0.006	-0.016	-0.003	0.002
Median abnormal accrual	0.019	0.010		0.013	0.004	0.010	0.005	0.008
% positive abnormal accrual	63.5%	60.2%		62.2%	52.7%	54.3%	56.2%	58.6%
Wilcoxon signed-rank test (p-value)	<.0001	0.001		0.000	0.604	0.498	0.098	0.020
Skewness	-4.265	-0.474		-3.558	-1.332	-3.535	-2.983	-0.933

APPENDIX A

DEFINITION OF VARIABLES

Following Cheng and Farber (2008), I adopt their model to analyze the change in CEO option grants. Prior research finds that CEOs' stock or option ownership is negatively related to annual CEO option or stock grants: when a CEO's stock or option ownership is low, the firm tends to award its CEO more option or stock grants and vice-versa (Core and Guay 1999; Bryan et al. 2000). To measure CEO ownership, I use the actual number of shares owned (*Shares_Own*) and the number of both exercisable (*Exercisable_Options*) and unexercisable options (*Unexercisable_Options*), all scaled by shares outstanding. I predict negative signs on the coefficients of these variables.

Core and Guay (1999) argue that the optimal level of equity incentives increases with firm size. The larger the firm, the more complex it becomes, giving rise to agency conflicts. Also, CEOs of large firms tend to be wealthier and need more stock-based compensation to be motivated to work in the interests of shareholders. I therefore predict a positive sign on the coefficient of *Size*, which I measure as the natural logarithm of sales.

Prior literature proposes that because it is difficult for shareholders to determine the appropriate corporate/operational strategy for a growth firm, it is likely that growth firms provide their managers with higher equity incentives to align their interests with those of shareholders (Smith and Watts 1992; Gaver and Gaver 1993; Core and Guay 1999; Hanlon et al. 2003). Consistent with these studies, I use the book-to-market ratio (*B/M*) and research and development intensity (*R&D*) to proxy for growth opportunities. I predict a negative coefficient on *B/M* and a positive coefficient on *R&D*.

Compared to cash-based compensation, such as salary and bonus, stock-based compensation exerts relatively little pressure on a company's current cash flow. Thus, firms with cash constraints are more likely to use stock-based compensation (Yermack 1995; Dechow et al. 1996). I measure cash constraint (*Cash_Constraint*) as common and preferred dividends plus cash flows used in investment activities minus cash flows from operations, divided by total assets. I predict a positive sign on the coefficient of this variable.

Prior literature argue that firms with earnings constraints (*Earn_Constraint*) are also more likely to use option-based compensation, especially prior to FAS 123R (fiscal 2006) when option-based compensation was not required to be expensed. I use a dummy variable to indicate firms with an operating loss. However, the empirical evidence on the relation between Earn Constraint and stock-based compensation is mixed (Yermack 1995; Core and Guay 1999; Bryan et al. 2000). Thus similar to Cheng and Farber (2008), I make no directional prediction for the coefficient on this variable.

If a CEO's stock-based compensation induces risk-taking, then shareholders receive a benefit over debtholders. It follows that shareholders will bear this debt agency cost in the form of higher interest. Therefore, stock-based compensation will be negatively related to debt. In addition, debt financing also serves as a monitoring mechanism that can reduce the need for stock-based compensation. Consistent with these arguments, Bryan et al. (2000) identify a negative relation between incentive-intensity and leverage. I measure *Leverage* as long-term debt divided by total assets and predict a negative sign on the coefficient of this variable.

Prior research finds a positive relation between equity incentives and a firm's idiosyncratic risk (*Idiosyncratic Risk*) (e.g., Core and Guay 1999; Hanlon et al. 2003). When the uncertainty surrounding a firm's performance is higher, it is more difficult for shareholders to monitor managers, thus making it more likely that the firm will use option-based compensation to motivate managers. I measure idiosyncratic risk as the standard deviation of the residual from the market model over the prior 12 months and predict a positive sign on its coefficient.

Prior research finds a positive relation between a firm's current returns (*Current Return*) and CEO compensation (Hanlon et al. 2003), consistent with CEOs being compensated for good firm performance. Hanlon et al. (2003) also find that firms with greater lagged stock returns (*Past Return*) grant more stock options to their CEOs. I use these variables and predict positive signs on their coefficients.

With greater cash compensation - a proxy for outside wealth -managers can reduce their risk-aversion through better diversification, thus reducing the need for using options grants to encourage managers to invest in risky projects (Guay 1999). In support of this prediction, Hanlon et al. (2003) find that firms with greater CEO cash compensation (*Cash Compensation*) grant fewer stock options. However, as proposed in Cheng and Farber (2008), this relation can be positive as firms might award managers additional cash compensation to offset the additional risk they bear through increased option grants. I therefore do not predict a sign on the coefficient on this variable.

Prior studies show that a restatement is frequently associated with CEO turnover (e.g., Desai et al. 2006). As proposed in Cheng and Farber (2008), new CEOs might prefer more cash-based compensation in lieu of stock-based compensation because of the

risk of further decline in the company's stock price subsequent to the restatement. On the other hand, because new CEOs likely have a lower level of ownership in the company than former CEOs, restating firms may actually award new CEOs more option grants than those given to former CEOs. Finally, it is also possible that restating firms are more likely to reduce option grants for extant CEOs than for new CEOs as a punishment for the wrongdoings associated with the restatements. But as documented in Cheng and Farber (2008), both restating firms with CEO turnover and those without CEO turnover are equally likely to reduce their CEO option grants after the announcements. To test these effects, I include a dummy variable, *ExtantCEO*, which takes the value of 1 if the restating firm retains its CEO during the period examined and 0 otherwise. I predict a negative sign on the coefficient of this variable as an indication of the punishment effect associated with the restatements.

Finally, I examine whether the nature of restatements is associated with the changes in CEO option grants. Specifically, if restatements classified as fraud are associated with severe agency problem between management and shareholders, I expect fraud firms are more likely to reduce their CEO option grants after the announcements than restatements classified as technical restatements. *Fraud* is a dummy variable taking the value of 1 if a restatement is classified as fraud and 0 otherwise. I predict a negative sign on the coefficient of this variable.

BIBLIOGRAPHY

Ahmed, A. S., B. K. Billings, R. M. Morton, and M. Stanford-Harris. 2002. The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review* 77 (4): 867-890.

Ahmed, A. S. and S. Duellman. 2007. Accounting conservatism and board of director characteristics: an empirical analysis. *Journal of Accounting and Economics* 43 (2-3): 411-437.

Armstrong, C. S., A. D. Jagolinzer, and D. F. Larcker. 2009. Chief executive officer equity incentives and accounting irregularities. The Wharton School Working Paper.

Badertscher, B. 2007. Evidence on the pecking order of earnings management. Doctoral Dissertation. University of Iowa.

Ball, R. 2001. Infrastructure requirements for an economically efficient system of public financial reporting and disclosure. Brookings-Wharton Papers on Financial Services: 127-182.

Ball, R., S. P. Kothari, and A. Robin. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29 (1): 1-51.

Ball, R. and L. Shivakumar. 2005. Earnings quality in U.K. private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics* 39 (1): 83-128.

Ball, R. and L. Shivakumar. 2006. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44 (2): 207-255.

Ball, R and L. Shivakumar. 2008. Earnings quality at initial public offerings. *Journal of Accounting and Economics* 45 (2-3): 324-349.

Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24. (1): 3-37.

Bergstresser, D. and T. Philippon. 2006. CEO incentives and earnings management. *Journal of Financial Economics* 80 (3): 511-529.

Bryan, S., LeeSeok, H., Lilien S., 2000. CEO stock-based compensation: An empirical analysis of incentive-intensity, relative mix, and economic determinants. *Journal of Business* 73(4): 661-693.

Bushman, R. and J. Piotroski. 2006. Financial reporting incentives for conservative accounting: the influence of legal of political institutions. *Journal of Accounting and Economics* 42 (1-2): 107-148.

Burns, N. and S. Kedia. 2006. The impact of performance-based compensation on misreporting. *Journal of Financial Economics* 79 (1): 35-67.

Chandra, U., C. E. Wasley, and G. B. Waymire. 2004. Income conservatism in the US technology sector. Simon School Working Paper No. FR 04-01.

Cheng, Q. and D. B. Farber. 2008. Earnings restatements, chanage in CEO compensation, and frim performance. *The Accounting Review* 83 (5): 1217-1250.

Chen, Q., T. Hemmer, and Y. Zhang, 2007. On the relation between conservatism in accounting standards and incentives for earnings management. *Journal of Accounting Research* 45 (3): 1-25.

Cheng, Q. and T. D. Warfield. 2005. Equity Incentives and earnings management. *The Accounting Review* 80 (2): 441-476.

Collins, D., A. L. Reitenga, and J. M. Cuevas. 2005. The managerial consequences of earnings restatements. Working paper. The University of Memphis.

Core, J. and W. Guay. 1999. The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting and Economics* 28 (2): 151-184.

Core, J., W. Guay, and D. Larcker. 2003. Executive equity compensation and incentives: A survey. FRBNY Economic Policy Review (Apr. 2003): 27-50.

Core, J. and D. Larcker. 2002. Performance consequences of mandatory increases in executive stock ownership. *Journal of Financial Economics* 64 (3): 317-340.

Dechow, P., Shoan, and R., Sweeney, A., 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research* 13 (Spring): 1-36.

Desai, H., C. E. Hogan, and M. S. Wilkins. 2006. The reputational penalty for aggressive accounting: earnings restatements and management turnover. *The Accounting Review* 81 (1): 83-112.

Efendi, J., A. Srivastava, and E. P. Swanson. 2007. Why do corporate managers misstate financial statements? The role of in-the-money options and other incentives. *The Journal of Financial Economics* 85(3): 667-708.

Elliott, J. A. and W. H. Shaw. 1988. White-offs as accounting procedures to manage perceptions. *Journal of Accounting Research* 26(Supplement): 91-119.

Farber, D. B. 2005. Restoring trust after fraud: Does corporate governance matter?. *The Accounting Review* 80 (2): 539-561.

Francis, J., D. Philbrick, and K. Schipper, 1994. Shareholder litigation and corporate disclosures. *Journal of Accounting Research* 32 (2): 137-164.

Gaver, J. J. and K. M. Gaver, 1993. Addition evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Accounting and Economics* 16: 125-160.

Gaver, J. J., K. M. Gaver, and J. R. Austin, 1995. Additional evidence on bonus plan and income management. *Journal of Accounting and Economics* 19 (1): 3-28.

Giannetti, M. and A. Simonov. 2006. Which investors fear expropriation? Evidence from investors' portfolio choices. *Journal of Finance* 61 (3): 1507-1547.

Givoly, D. and C. Hayn. 2000. The changing time series properties of earnings, cash flow and accruals. *Journal of Accounting and Economics* 29 (3): 287-320.

Givoly, D., C. Hayn, and A. Natarajan. 2007. Measuring reporting conservatism. *The Accounting Review* 82 (1): 65-106.

Guay, W., 1999. An empirical analysis of the convexity of between stock price and CEO's wealth. Journal of Accounting and Economics 53: 43-71.

Guidry, F., A. J. Leone, and S. Rock. 1999. Earnings-based bonus plans and earnings management by business-unit managers. *Journal of Accounting and Economics* 26 (1-3): 113-142.

Hanlon, M., Rajgopal, S., and Shevlin, T., 2003. Are executive stock options associated with future earnings? *Journal of Accounting and Economics* 36: 3-43.

Healy, P. M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7 (1-3): 85-107.

Hennes, K. M., A. J. Leone, and B. P. Miller. 2008. Management intent and CEO and CFO turnover around earnings announcements. *The Accounting Review* 83 (6): 1487-1519.

Holthausen, R. W., D. F. Larcker, and R. Sloan. 1995. Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics* 19 (1): 29-74.

Hribar P. and N. T. Jenkins. 2004. The effect of accounting restatements on earnings revisions and the estimated cost of capital. *Review of Accounting Studies* 19 (2-3): 337-356.

Huijgen, C. and M. J. P. Lubberink. 2005. Earnings conservatism, litigation and contracting: the case of cross-listed firms. *Journal of Business Finance & Accounting* 32 (7-8): 1275-1309.

Huang, Y. and W. Zhang, 2009. Earnings restatements and subsequent accounting conservatism. Working paper. University of Kansas.

Jensen, M., 2005. Agency costs of overvalued equity. Financial Management 34, 5-19.

Johnson, S. A., H. E. Ryan, JR., and Y. S. Tian. 2009. Managerial incentives and corporate fraud: the sources of incentives matter. *Review of Finance* (2009) 13: 115-145.

Klein, A. and C. A. Marquardt. 2006. Fundamentals of Accounting Losses. *The Accounting Review* 81 (1): 179-206.

Kwon, Y. K., D. P. Newman, and Y. S. Suh. 2001. The demand for accounting conservatism for management control. *Review of Accounting Studies* 6 (1): 29-51.

Larcker, D. F., S. A. Richardson, and I. Tuna. 2007. Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review* 82 (4): 963-1108.

LaFond, R. and S. Roychowdhury. 2008. Managerial ownership and accounting conservatism. *Journal of Accounting Research* 46 (1): 101-135.

LaFond, R. and R. Watts. 2008. The information role of conservatism. *The Accounting Review* 83 (2): 417.

LaGore, W. 2008. Conditional and unconditional conservatism following a fincial reporting failure: an empirical study. Doctoral dissertation. Florida State University.

Moore, E. A. and R. J. Pfeiffer. 2004. The effects of financial statement restatements on firms' financial reporting strategies. Working paper. University of Massachusetts.

Moore, M. L., 1973. Management changes and discretionary accounting decisions. *Journal of Accounting Research* 11 (1): 100-107.

Murphy, K. J. and J. L. Zimmerman. 1993. Financial performance surrounding CEO turnover. *Journal of Accounting and Economics* 16 (1993): 273-315.

Richardson, S. A., A. I. Tuna, and M. Wu. 2003. Predicting earnings management: the case of earnings restatements. Working paper. The Wharton School.

Palmrose, Z., V. J. Richardson, and S. Scholz. 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* 37 (1): 59-89.

Palmrose, Z. and S. Scholz, 2004. The circumstances and legal consequences of Non-GAAP reporting: evidence from restatements. *Contemporary Accounting Research* 21 (1): 142-180.

Plumlee, Marlene and Teri Yohn, 2009. An analysis of the underlying causes of restatements. Working paper, University of Utah.

Pourciau, S., 1993. Earnings management and nonroutine executive changes. *Journal of Accounting and Economics* 16 (1993): 317-336.

Roychowdhury, S. and R. Watts. 2007. Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting. *Journal of Accounting and Economics* 44 (1): 2-31.

Sloan, R. 1993. Accounting earnings and top executive compensation. *Journal of Accounting and Economics* 16 (1-3): 55-100.

Smith, C. and Watts, R., 1992, The investment opportunity set and corporate financing, dividends, and compensation policies. *Journal of Financial Economics* 32: 263-292.

Srinivasan, S. 2005. Consequences of financial reporting failure for outside directors: evidence from accounting restatements and audit committee members. *Journal of Accounting Research* 43 (2): 291-334.

Strong, J. S. and J. R. Meyer, 1987, Asset writedowns: managerial incentives and security returns. *Journal of Finance* 42(3): 643-661.

Financial Accounting Standards Board, 1978. Statement of Financial Accounting Concepts No.1.

U.S. General Accounting Office (GAO), 2002. Financial statement restatements: trends, market impacts, regulatory responses, and remaining challenges. GAO-03-138.

U.S. General Accounting Office (GAO), 2006. Financial statement restatements: update of public company trends, market impacts, and enforcement activities. GAO-0-678.

Watts, R. 2003. Conservatism in accounting Part I: explanations and implications. *Accounting Horizon* 17 (3): 207-221.

Watts, R. and J. L. Zimmerman. 1978. Toward a positive theory of the determination of accounting standards. *The Accounting Review* 53 (1): 112-134.

Wilson, W. 2008. The information content of earnings following restatements. *The Accounting Review* 83 (2): 519-548.

Zhang, J. 2008. The Contracting Benefits of Accounting Conservatism to Lenders and Borrower. *Journal of Accounting and Economics* 45 (1): 27-54.

Yermack, D., 1995. Do corporation award CEO stock options effectively? Journal of Financial Economics 39 (2-3): 237-269.