Accounting Conservatism and Corporate Reporting in a High Information Asymmetry Environment: Analysis of Initial Stock Offering Firms

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A thesis submitted to the School of Accounting and Finance, the University of Adelaide, in fulfilment of the requirements for the degree of Doctor of Philosophy

May 2014

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Abstract

This thesis investigates whether Initial Public Offering (IPO) firms adopt a high degree of conservatism in response to investors' demand for high quality earnings and subsequently experience increased capital market benefits. The accounting literature suggests that the enforcement of timely loss recognition under a conservative reporting policy can mitigate managerial opportunistic behavior reducing information asymmetries between managers and outside investors (e.g., Watts 2002; LaFond & Watts 2008). This thesis hypothesizes that such benefits of accounting conservatism should be more pronounced for IPO firms because there is inherently high information asymmetry in the IPO market. In particular, financial reports are one of the primary information sources available for investors that provide information regarding a firm's past and expected future performance. As a result, the IPO environment provides an important research setting to investigate the capital market consequences of accounting conservatism.

Based on a large sample of U.S. IPO firms over the period from 1990 to 2010, this thesis investigates whether the extent to which accounting conservatism adopted by IPO firms can predict: (i) the well-documented IPO market anomalies, IPO underpricing and IPO long-term stock return underperformance, (ii) the probability of seasoned equity issue (SEO) in the post-IPO market and the costs associated with the SEO and (iii) the longevity of IPO firms.

The empirical findings of this thesis suggest that firms adopt a higher degree of conservatism prior to going public in response to high information asymmetry at the

IPO and issuers adopting higher conservatism incur a lower indirect cost of going public through less underpricing. The results also suggest that IPO issuers adopting higher conservatism are less likely to reissue equity within five years of the IPO, indicating that these firms do not have short-term cash needs soon after the IPO. However, these firms are more likely to be able to issue their next equity financing on more favorable terms by experiencing less SEO underpricing and better announcement returns. Moreover, the results indicate that issuers adopting a higher degree of conservatism face less risk of failure and survive longer in the stock market. In particular, these firms are more likely to acquire another entity within five years of the IPO and their acquisition announcement returns are positively associated with the extent of conservatism adopted prior to going public.

This thesis makes a significant contribution to the literature on conservatism by providing empirical evidence that: (i) IPO issuers adopting a higher degree of conservatism experience various benefits that the capital markets offer in response to less uncertainty and information asymmetry; and shows (ii) how conservatism can contribute to resolving information asymmetry problems in the IPO market. Specifically, this thesis has important implications for accounting standard setters, policy makers and regulators associated with the IPO market. Against the recent movements of the Financial Accounting Standards Board (FASB) toward fair value accounting, the evidence in this thesis suggests that, in the absence of conservatism, the information quality of financial statements may be jeopardized in the IPO environment, leading to higher information asymmetry between firm insiders and outside investors.

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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Acknowledgements

First and foremost, I deeply thank my supervisors, Associate Professor Alfred Yawson and Professor Grant Richardson for their generous support, guidance and understanding throughout the entire process of my Ph.D. Their great experience and invaluable expertise helped me address various unexplored issues and moved the thesis forward whenever I faced difficulties. They also greatly facilitated my motivation and productivity in completing my thesis by closely monitoring my progress at all times, and by encouraging me at the right time. Without their dedicated involvement, this thesis would not have been completed. I would also like to express my special appreciation to Professor Yossi Aharony for his guidance and tremendous mentoring, especially in the early stage of my Ph.D.

I also wish to express my gratitude to the academic staff of the Business School for their advice and support. Special thanks must go to Associate Professor Janice Loftus for kindly giving her valuable time to answer my questions on various accounting issues. I also thank Associate Professor Bryan Howieson for his generous support and encouragement throughout the process. Thanks also go to my fellow Ph.D. students for their invaluable friendship and support. I am especially grateful to Shan Li and Wayne Chang for their technical assistance in sorting some of the dataset. I also acknowledge the editorial assistance by Mollie Braybrook.

My deepest gratitude goes to my family. Special thanks go to my beloved husband, Greg, for always being supportive, understanding and encouraging throughout the entire process, especially providing me with great comfort and support whenever I was under

pressure. Without his support and love, this thesis would certainly not have been possible.

This thesis is dedicated to my loving parents who were devoted to teaching me the great value of learning and who have always unconditionally supported and encouraged me throughout my life. Their immense love and support truly helped me keep motivated to learn and to complete my Ph.D.

Chapter One

Introduction

1.1 Background

Accounting standard-setters and scholars have offered various definitions of accounting conservatism. Traditionally, the philosophy of accounting conservatism is commonly referred to as "anticipate no profit, but anticipate all losses" (Watts 2002, p. 1). Basu (1997, p. 7) interprets this adage as the accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses. Under conservative accounting, the recognition of economic income is deferred until expected gains are verifiable, while unexpected economic losses are reported immediately after they become expected (Ball & Shivakumar 2005). The Statement of Financial Accounting Concepts (SFAC) 2[1] defines conservatism as follows:

> "Conservatism is a prudent reaction to uncertainty to try to ensure that uncertainties and risks inherent in business situations are adequately considered. Thus, if two estimates of amounts to be received or paid in the future are about equally likely, conservatism dictates using the less optimistic estimates…" (Financial Accounting Standard Board 1980).

Researchers refer to accounting conservatism as asymmetric timeliness of gains versus losses and suggest that the greater the difference in the degree of verification required

[1] SFAC 2 was superseded by SFAC 8 in September 2010. BC3.19 of the SFAC 8 states that prudence or conservatism, which was the aspect of reliability in Concepts Statement 2, is no longer considered an aspect of faithful representation because including either would be inconsistent with the concept of neutrality.

for gains versus losses, the greater the level of conservatism (Basu 1997; García Lara & Mora 2004; e.g., Ball & Shivakumar 2005; LaFond & Watts 2008; Khan & Watts 2009).

Accounting conservatism has been identified as being of two types: (1) unconditional and (2) conditional conservatism. Unconditional conservatism is referred to as news independent income conservatism because it results from accounting standards in place which impose a predetermined understatement of the book value of net assets via acceleration (delay) of expense (revenue) recognition that is independent of economic news (Beaver & Ryan 2005; Chandra 2011). For example, unconditional conservatism includes historical cost accounting, immediate expensing of the costs of most internally developed intangibles and depreciation of property, plant, and equipment that is more accelerated than economic depreciation (see Beaver & Ryan 2005).

Conditional accounting conservatism is referred to as news dependent income conservatism because it requires immediate recognition of economic losses and deferral of economic gains contingent on the new event involved (Chandra 2011). More specifically, under conditional conservatism, book values are written down under sufficiently adverse circumstance via impairment losses, but not written up under favorable circumstances (Beaver & Ryan 2005). Examples of conditional conservatism include impairment accounting for intangible and tangible assets or the application of the lower-of-cost-or-market rule for inventory that requires immediate write-down as losses when the market price declines below recorded cost, but price increases are recognized in earnings only through sales transactions (see Beaver & Ryan 2005; Monahan 2005; Liu 2010).

Investors are more concerned about inadequate disclosure and uncertainty in the event of a bad news event because managers cannot be trusted to provide full disclosure of a bad news event because of their own interests. On the other hand, managers have greater incentives to disclose good news earnings voluntarily. As a result, full disclosures of both good and bad news events are ensured when the manager commits to a conditional conservative reporting policy that requires timely reporting of bad news earnings (Guay & Verrecchia 2007; LaFond & Watts 2008). The accounting literature (see Basu 1997; Ball & Shivakumar 2005; Beaver & Ryan 2005; Qiang 2007; Dhaliwal *et al.* 2014) documents that contracting and monitoring concerns primarily induce conditional conservatism. This is because timely loss recognition forces managers to provide loss information that they are more reluctant to reveal in a timely fashion and alleviates managers' incentives to report upward-biased accounting numbers. Accordingly, previous studies suggest that timely recognition of economic losses under conditional conservatism is an important attribute of financial reporting quality, reducing information asymmetry between managers and outside investors (Ball & Shivakumar 2005; Roychowdhury & Watts 2007; Li 2008; Hui *et al.* 2009).

This thesis investigates the effect of accounting conservatism in the equity market where there is high information asymmetry. In particular, this thesis provides important insights into whether the issuers of Initial Public Offerings (IPOs) who adopt higher conservatism, forgoing managerial incentives from reporting higher earnings, experience increased stock market benefits. Previous studies on conservatism provide evidence of various stock market benefits such as reducing the cost of equity capital, reducing the risk of failure and the likelihood of experiencing future stock price crashes and improving investment efficiency and information environment for outside investors

(e.g., LaFond & Watts 2008; Khan & Watts 2009; García Lara *et al.* 2010; Biddle *et al.* 2011; García Lara *et al.* 2011a; Watts & Zuo 2011; Biddle *et al.* 2012). When there is higher information asymmetry, it becomes easier for managers to be less credible and to manipulate accounting numbers, increasing demand for conservatism to mitigate agency costs (LaFond & Watts 2008). Conditional conservatism is considered a valuable tool for contracting purposes which aligns managerial incentives with those of shareholders (Watts 2002; Cheng *et al.* 2014). Firm stakeholders such as investors, creditors and suppliers demand a higher degree of conservatism to protect their wealth against managers' opportunistic behavior (see Hui *et al.* 2012). In particular, there will be a higher demand for conservatism for IPO issuers because there are greater incentives for managers to report more positive financial results around the IPO. Also, it is more difficult for outside parties to detect earnings management by IPO firms due to high information asymmetry. Therefore, this thesis focuses on conditional conservatism that improves monitoring and contracting efficiencies where there is high information asymmetry.[2]

1.2 Research Objectives

The main objective of this thesis is to investigate whether IPO firms adopt a higher degree of conservatism in response to investors' demand for high quality earnings to reduce information asymmetries surrounding the IPO firms and build long-term stock market credibility. Specifically, this thesis examines whether accounting conservatism adopted by IPO firms can predict well-documented IPO market anomalies such as IPO underpricing and IPO long-term stock return underperformance. Conservative reporting

[2]It is also difficult to measure unconditional conservatism in this thesis since unconditional conservatism measures the relationship between accounting and market data and IPO firms do not have their market value available prior to the IPO.

policy can address investors' concerns about managerial opportunistic behavior by providing more reliable accounting information, in particular where there is high information asymmetry (see Guay & Verrecchia 2006; LaFond & Watts 2008; Dechow *et al.* 2009). Good news disclosures help managers continue employment and boost their wealth connected to firm value, while bad news disclosures are costly to managers as they can lead to quick termination and wealth reduction (Kothari *et al.* 2009). Accordingly, managers have greater incentives to withhold bad news, but to quickly reveal good news to investors (Kothari *et al.* 2009). Such managerial opportunistic behavior can intensify for IPO issuers due to high information asymmetry in the IPO environment. However, if a more conservative reporting policy results in higher quality financial statements reducing information asymmetry between insiders and outside investors, issuers adopting higher conservatism will experience a lower level of IPO underpricing and perform better in the post-issue stock market.

This thesis also examines whether IPO issuers adopting a higher degree of conservatism obtain their next equity financing on more favorable terms via smaller underpricing and higher announcement returns. Greater information asymmetry gives managers opportunities to report earnings more aggressively and make investment decisions to build their own wealth, leading to significant financial losses for investors (LaFond & Watts 2008). Consequently, investors require compensation for such risk by lowering their bid prices, resulting in higher expected returns and lower stock prices (Easley & O'Hara 2004). Previous studies (e.g., Watts 2002; García Lara *et al.* 2011a) suggest that reporting conservatism improves firms' access to external funds and reduces the cost of external financing by facilitating informative disclosure of bad news. Consequently, issuers adopting higher conservatism, forgoing managerial incentives to manage their

earnings upward at the IPO, may be able to signal the quality of their accounting information to outside investors and issue their first seasoned equity offering (SEO) on more favorable terms. Moreover, in the face of less information uncertainty and information asymmetry, investors will have higher demand for these issuers' stock, leading to higher stock returns in the post-SEO market.

Finally, this thesis investigates whether the extent of conservatism adopted by IPO issuers can predict the longevity of IPO firms. Only high quality issuers with solid earnings and growth potential will be concerned about their long-term prospects in the stock market. Thus, these issuers will adopt a high degree of conservatism in response to investors' demand for higher quality earnings in the IPO market. However, low quality issuers do not have the same incentives to adopt a high degree of conservatism at the IPO year to increase their offer price to more than its intrinsic value and to maintain a high market price soon after the IPO. This may suggest that issuers adopting a high degree of conservatism are more likely to have less risk of failure and survive longer in the post-issue stock market.

Overall, this thesis will provide valuable insights into whether conservatism contributes to mitigating information asymmetry, reducing investment risks, and enhancing firm value in the setting where accounting information is one of the most important information sources available to outside investors.

1.3 Motivation

The Financial Accounting Standard Board (FASB) and the International Accounting Standard Board (IASB) have opposed the notion of accounting conservatism and no longer consider it as a desirable qualitative characteristic of accounting numbers in their new joint conceptual framework (see Biddle *et al.* 2011; García Lara *et al.* 2011b). They argue that conservatism introduces a bias of unknown magnitude into accounting numbers and reduce investor insights into future cash flow growth options, increasing information asymmetry among financial statement users.

The FASB has shifted its focus towards supporting fair values to achieve more "neutrality of information" (Watts 2002). However, a number of accounting academics have provided evidence on the equity and debt market contracting benefits of accounting conservatism in various settings, urging the FASB to reconsider their movement towards fair value accounting. In particular, these researchers suggest that the role of accounting standards in equity valuation is only of secondary importance because the primary purpose of financial statements is not to provide valuation information to equity investors, but to promote and ensure efficient contracting, such as performance measurement and stewardship (e.g., Ball 2001; Huijgen & Lubberink 2005; Watts 2006; LaFond & Watts 2008; Kothari *et al.* 2010; Bushman *et al.* 2011). In particular, they argue that financial statements should provide credible accounting information that offers the foundation of the firm-specific information set available to many different parties in the financial markets, forming a basis for outsiders to monitor investment decisions. In response to the FASB's and the IASB's decision to remove conservatism from their conceptual framework, this thesis investigates the influence of

accounting conservatism on the IPO market in order to contribute to the debate surrounding conservatism.

The accrual accounting system under both the Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) permit considerable discretion in recognizing the timing and amounts of revenue and expense information (Kothari *et al.* 2009). In particular, the accounting regulation allowing IPO firms to change their accounting choices via retroactive restatement for all the financial statements presented in the offerings prospectus makes it easier for IPO firms to manage their accounting numbers (Fan 2007). In a stock issue environment, outsiders are generally less informed than insiders regarding the true value of the firm, leading to higher information asymmetry between insiders and outside investors (e.g., Aharony *et al.* 1993; Teoh *et al.* 1998a, 1998b; Jackson *et al.* 2002; Chadha 2003; Corwin 2003; Roosenboom *et al.* 2003; DuCharme *et al.* 2004; Cormier & Martinez 2006). In particular, the IPO environment makes it more difficult for investors to discover the appropriateness of the accounting numbers due to the lack of other sources of corroborative information (See Fan 2007).

The accounting literature suggests that conservative reporting policy reduces information asymmetries between insiders and outside investors by enforcing timely recognition of expected losses mitigating managerial opportunistic behavior (e.g., Watts 2002; LaFond & Watts 2008). Accordingly, previous studies suggest that investors demand a higher degree of conservatism in a high information asymmetry environment (LaFond & Watts 2008). This suggests that investors' demand for conservatism will be greater for IPO firms and thus issuers have greater incentives to adopt a higher degree

of conservatism in response to such investors' demand. As a result, the IPO environment offers a unique setting to empirically test whether accounting conservatism mitigates information asymmetries between insiders and outside investors by providing higher quality earnings information and what are the stock market benefits for the firms adopting higher conservatism where there is high information asymmetry. However, there is limited research on conservatism of IPO issuers. In particular, no studies, to the best of my knowledge, have investigated the stock market benefits of IPO firms adopting a higher degree of conservatism. Therefore, the evidence from this thesis will provide important insights into how conservatism reduces information asymmetry and whether firms experience stock market benefits associated with an increase in conservatism in the U.S. IPO market.

1.4 Summary of Major Findings and Implications

This thesis employs a large sample of U.S. common stock initial offerings during the sample period of 1990 to 2010 and its empirical analysis and findings are provided in Chapters 3, 4 and 5. Further, Chapter 2 provides a comprehensive review of the extant literature on accounting conservatism. It discusses various studies on how conservative financial reporting facilitates shareholder-management contracting in the presence of agency problems. The evidence suggests that firms adopting higher conservatism experience several capital market benefits, such as a lower cost of capital, greater investment efficiencies, a reduction in future stock price crashes, lower operating cash flow downside risk and reduced bankruptcy risk (see e.g., García Lara *et al.* 2010; Biddle *et al.* 2011; García Lara *et al.* 2011a; Watts & Zuo 2011; Biddle *et al.* 2012).

Chapter 2 also reviews prior research on how borrowing firms use conservative accounting to mitigate bondholder-shareholder conflicts and how their conservative reporting policy is affected by different litigious and regulatory environments. It also discusses previous studies on the role of accounting conservatism in reducing information asymmetry. In sum, previous studies provide empirical evidence on how conservatism improves contracting efficiencies and reduces information asymmetry in the capital markets and how firms adopting a higher degree of conservatism experience various capital market benefits (e.g., LaFond & Watts 2008; Zhang 2008; Khan & Watts 2009; García Lara *et al.* 2010; Biddle *et al.* 2011; García Lara *et al.* 2011a; Watts & Zuo 2011; Biddle *et al.* 2012). However, the review of prior research reveals that there is limited research on IPO issuers' conservatism and its effect on stock market benefits, despite the fact that there is inherently high information asymmetry and increased importance of accounting information in the IPO environment.

Chapter 3 examines IPO firms' conservatism in the pre- and post-periods of IPO and investigates whether issuers' conservatism is significantly associated with the degree of underpricing and long-term stock return performance. Chapter 3 provides evidence that IPO firms adopt a higher degree of conservatism in the pre-IPO year compared to the IPO year, indicating that IPO firms on average adopt a higher degree of conservatism prior to going public. The results also suggest that IPO firms adopting a higher degree of conservatism prior to going public, experience significantly less IPO underpricing. A negative association between conservatism and IPO underpricing implies a lower indirect cost of going public borne by the issuing firm when it adopts a more conservative reporting policy prior to going public.

The analysis of long-term stock return performance provides mixed results. IPO firms adopting higher conservatism in the IPO year experience higher post-issue stock market returns, consistent with the literature that conservatism enhances firm and equity values, reducing information asymmetries for outside investors (see Watts & Zuo 2011). However, IPO firms adopting a higher degree of conservatism in the pre-IPO year tend to perform worse in the post-issue market. This result may indicate that firms expecting poor performance in the after-market may adopt a higher degree of conservatism prior to going public as a protection mechanism against potential litigation and regulatory actions, suggesting that these firms may have a different reporting incentive to adopt higher conservatism. Although the accounting literature, in general, suggests various capital markets benefits associated with conservatism, whether a firm gains such benefits or not may also depend on the particular reporting incentive it may have for adopting a more conservative reporting policy.

Chapter 4 investigates whether the extent of conservatism adopted by IPO firms can predict the probability of their SEO within five years of the IPO, SEO announcement returns, SEO underpricing and post-SEO long-term stock return performance. The findings of this chapter suggest that firms adopting a higher degree of conservatism in the IPO year are less likely to reissue equity within five years of the IPO, indicating that firms adopting higher conservatism do not have short-term cash needs soon after their IPO. However, these firms experience less underpricing and better announcement returns for the next equity financing within five years of their IPO. The results also provide some evidence that pre-IPO year conservatism is positively associated with the post-SEO stock return performance. Overall, these findings suggest that firms reporting

earnings more conservatively prior to going public are more likely to raise their next seasoned equity on more favorable terms.

Chapter 5 examines the association between conservatism and the longevity of IPO issuers. The results suggest that firms adopting a higher degree of conservatism in the pre-IPO year face less risk of failure and survive longer in the stock market. Moreover, IPO firms delisted from the stock exchange via mergers and acquisitions (M&As) activity within five years of their IPO show a higher degree of conservatism in the pre-IPO year relative to those that are involuntarily delisted. These results indicate that IPO firms adopting a higher degree of conservatism prior to going public are better investments for IPO investors as they are more likely to survive longer in the stock market.

Further analysis reveals that IPO firms adopting higher conservatism in the pre-IPO year are more likely to acquire another entity within five years of their IPO and their acquisition announcement returns are positively associated with the extent of conservatism adopted by firms in the pre-IPO year. These results could possibly indicate that issuers going public to achieve growth via acquisitions adopt a higher degree of conservatism prior to going public to reduce information asymmetry surrounding the firm so that they can pursue a more efficient acquisition strategy in the post-issue market.

1.5 Contribution

The findings in this thesis are important and relevant to both financial market and accounting researchers because it explores the economic consequences of conservatism, a financial reporting policy which has survived in accounting for many centuries and which appears to have increased in the last 30 years (Watts 2002). In addition, this thesis addresses the issue of how the quality of accounting earnings affects IPOs. Accordingly, this thesis contributes to two streams of the literature. First, it adds to the research on accounting conservatism. Second, it contributes to the limited research on the role of accounting information in the IPO market.

A number of studies in accounting literature document that one of the primary benefits of conservatism in the equity market is to improve information environments of the firm by enforcing timely loss recognition that results in full disclosure of information (see Guay & Verrecchia 2007; LaFond & Watts 2008). Studies on the informational role of accounting conservatism suggest that it helps firms to reduce bankruptcy and operating cash flow risks, decrease the cost of capital, increase firm value and improve contracting and investment efficiencies (e.g., Guay & Verrecchia 2007; Suijs 2008; Francis & Martin 2010; García Lara & García Osma 2010; Biddle *et al.* 2011; García Lara *et al.* 2011a; Biddle *et al.* 2012). However, these studies, in general, do not establish a direct link between the stock market benefits of conservatism and information asymmetry. Rather, they conclude that the informational role of conservatism leads to capital market benefits by showing that conservatism is negatively associated with various measures of information asymmetry, such as stock return volatility and bid-ask spread. However, this thesis employs the environment that

has been characterized by inherently high information asymmetries, namely, the IPO market, as a research setting to investigate the informational benefits of accounting conservatism in financial markets (e.g., Ibbotson 1975; Rock 1986; Welch 1989). Consequently, the findings of this thesis should add value to the extant research on conservatism by providing direct evidence on whether firms adopting a higher degree of conservatism in a high information asymmetry environment experience increased stock market benefits.

This thesis also makes a significant contribution to the literature on the IPO market. Specifically, the IPO market has received a great deal of attention from researchers, practitioners, the media and the public. When valuing an IPO firm, investors rely heavily on financial statements for valuation without alternative sources of information readily available to them. Prior literature suggests that IPO issuers have an exceptional opportunity to boost reported earnings, with documented evidence of earnings management (e.g., Aharony *et al.* 1993; Teoh *et al.* 1998a, 1998b; Jackson *et al.* 2002; Roosenboom *et al.* 2003; DuCharme *et al.* 2004; Cormier & Martinez 2006). The literature suggests that conservatism improves the quality of accounting information in financial statements, reducing information asymmetry between managers and investors, facilitating more efficient risk sharing and resulting in a higher firm value (Givoly & Hayn 2000; Ball & Shivakumar 2005; Suijs 2008). Consequently, the findings of this thesis should provide important implications for accounting standard setters, regulators and policy makers associated with the IPO market by providing evidence on how conservatism reduces information asymmetries in the IPO market, offering various stock market benefits for issuers.

The FASB is now moving towards “mark-to-market” accounting without ensuring verifiability of the market estimates. As a result, this thesis has important implications for accounting standard setters and policy makers who proposed to remove conservatism from the conceptual framework. Empirical evidence of this thesis suggests that conservatism contributes to a reduction in information asymmetry in the IPO market by providing higher quality accounting information for investors and as a consequence, IPO issuers adopting higher conservatism experience various stock market benefits. This means that the new conceptual framework without conservatism may have adverse consequences in the IPO market, potentially intensifying problems associated with information asymmetry. Therefore, this thesis suggests that accounting standard setters and policy makers should reconsider their decision on removing accounting conservatism form the conceptual framework.

1.6 Thesis Structure

The remainder of the thesis is structured as follows. Chapter 2 reviews the extant literature on conservatism. It first introduces the key studies that provide a general overview of conservatism and reviews past empirical and analytical research on various areas that have a direct relevance to accounting conservatism, such as corporate governance, contracting efficiency, different litigious and regulatory environments, information asymmetry and capital markets consequences of conservatism. It also addresses past studies that have raised issues about a decrease in value relevance of earnings reported under conservatism and discusses the role of accounting information in financial markets.

Empirical analyses and findings of this thesis are provided in Chapter 3, 4 and 5, respectively. Specifically, Chapter 3 examines conservatism of IPO firms and its association with IPO underpricing and post-issue long-term stock return performance. Chapter 4 investigates the association between IPO issuers' conservatism and the probability of SEO, SEO announcement returns, SEO underpricing and post-SEO stock return performance. Chapter 5 provides the longevity analysis of IPO firms and investigates how IPO issuers' conservatism affects firms' survival rates. Chapter 5 also investigates the association between IPO issuers' conservatism and the probability of acquiring another entity and acquisition announcement returns. Finally, Chapter 6 provides the summary and conclusion of the thesis.

Chapter Two

Past Empirical Studies on Accounting Conservatism

2.1 Introduction

The objective of this chapter is to provide an overview of the literature in order to develop an understanding of the properties of conservatism and examine its effects and implications in various respects. Large numbers of studies provide both analytical and empirical evidence that conservatism contributes to reducing information asymmetry by enforcing a revelation of loss information on a timely basis, and offers various capital market benefits. However, the review of past studies reveals that there is only limited evidence of the effect of conservatism in an IPO environment.

This chapter first introduces the overview of conservatism in Section 2.2. Section 2.3 reviews past research on the association between conservatism and corporate governance. Section 2.4 provides a review of empirical studies investigating the economic consequences of conservatism in the stock market, such as the effect of conservatism on the cost of capital, investment efficiency and risk of failure. Section 2.5 reviews the studies on the impact of conservatism in the debt market and Section 2.6 considers the different litigious and regulatory environments. Section 2.7 examines the informational role of conservatism. Section 2.8 addresses criticism of conservatism and Section 2.9 discusses how conservatism satisfies the role of accounting information. Finally, Section 2.10 summarizes and concludes the chapter.

2.2 Overview of Accounting Conservatism

Watts (2002) documents that conservatism in financial reporting arises for a number of economic reasons, such as contracting use of accounting measures, shareholder litigation and government regulation of financial reporting. If managerial compensation is linked to reported earnings, then managers have incentives to withhold any information that will adversely affect their compensation from reported earnings. Hence, there is a contracting demand for conservatism as it requires more stringent requirements for recognizing revenues and gains than for recognizing expenses and losses. Debt holders and other creditors also demand conservatism as they require timely recognition of information about bad news since the option value of their claims is more sensitive to a decline in firm value than its increase. The increase in shareholder litigation has also contributed to the emergence of conservatism because managers, auditors and firms are much more likely to be sued for overstatements of earnings and net assets than for understatements. A regulation explanation for conservatism suggests that losses from overvalued assets are more observable and usable in the political process than foregone gains, increasing incentives for regulators and standards-setters to be more conservative.

Basu (1997) first empirically tests the asymmetric timeliness of earnings by regressing accounting earnings on stock returns for the period 1963-1990. He finds that the slope coefficient for negative returns is significantly higher than the slope coefficient for positive returns, suggesting that the extent to which negative stock returns is reflected in earnings is higher than that of positive stock returns. Further, Basu (1997) shows that negative prior earnings changes have a greater tendency to reverse in the next period

than positive prior earnings changes. He claims that bad news has only a temporary impact on the earnings time-series as earnings fully incorporate anticipated future losses in the period they are expected. However, positive cash flows from good news events are more persistent than earnings associated with bad news as capitalized value of the good news is only partially reflected in current earnings and thus will also be reflected in subsequent years after verification.

Similar studies by Givoly and Hayn (2000) and Ryan and Zarowin (2003) also analyze the patterns of incremental earnings response to bad news relative to good news. Consistent with Basu's (1997) findings, they provide evidence that earnings reflect current negative price changes more strongly than current positive price changes. In particular, Givoly and Hayn (2000) examine the change in the time series pattern of reporting conservatism and show that financial reporting became more conservative over time during 1956-1999. García Lara and Mora (2004) also investigate the differential speed with which good and bad news is incorporated into reported earnings in France, Germany and the U.K. over the period 1990 to 1998. They show that the contemporaneous association between earnings and returns is much stronger for bad news than for good news and that the strong reaction to bad news is more pronounced for firms with relatively low capitalization. However, Shroff *et al.* (2013) argue that short-window returns measure good or bad news more accurately compared to long-window returns that aggregate multiple events over the fiscal year such as annual returns. Accordingly, they estimate good (bad) news as unusually high (low) three day market adjusted returns for a firm. Consistent with previous studies, they find that there is a significantly higher correlation between bad news and concurrent earnings than that between good news and concurrent earnings.

2.3 Accounting Conservatism and Corporate Governance

Previous studies suggest that conservative financial reporting facilitates shareholder-management contracting in the presence of agency problems. Lafond and Roychowdhury (2008) argue that managers tend to be primary sources of information about current and expected future firm performance. However, managers have incentives to overstate the value they create by overstating current earnings and expectations of future cash flows due to their limited horizons and liability, generating agency costs. As a result, they argue that conservative reporting, tying their compensation to changes in book value or earnings, effectively penalizes managers for their value-reducing actions and defers their compensation until the benefits are realized. They empirically test the extent to which managerial ownership affects conservative reporting over the period 1994 to 2004 and find that managerial ownership is negatively associated with conservatism. They argue that there is a higher demand for accounting conservatism when managers' equity stakes in the firm are lower because managers' potential losses from declines in firm value due to bad managerial decisions are lower than those of shareholders. Similarly, García Lara *et al.* (2009) also find that firms with strong governance adopt a higher degree of conservatism, suggesting that the acceleration in the recognition of bad news provides the board of directors with early warning signals and that strong governance firms employ conservatism as a monitoring mechanism.

Callen *et al.* (2010a) argue that anti-takeover legislation weakens corporate governance by impeding the threat of hostile takeovers and thus provides an incentive for managers to pursue personal goals rather than maximizing shareholder wealth. Accordingly, they

study changes in conservatism before and after the passage of anti-takeover legislation and find that conservatism increases significantly after the passage of this legislation. They also provide evidence that such a relation is more pronounced for firms with less institutional holdings, suggesting that accounting conservatism plays a substitutive role when the firm's external governance environment is weak. On the other hand, Dhaliwal *et al.* (2014) argue that product market competition mitigates agency conflicts because greater flows of firm-specific information enable external monitoring by a firm's investors and consequently serves to constrain managers. They find that product competition increases with conservatism, suggesting that product market competition demands more conservative accounting information in order to achieve more efficient contracting and to constrain managers from undertaking suboptimal decisions that can lead to firm liquidation.

Beekes *et al.* (2004) and Ahmed and Duellman (2007) study whether conservatism varies with the composition of the board of directors. They argue that if outside directors improve accounting quality by mitigating management's tendency to hide bad performance, firms with a high proportion of outside board members should adopt a higher degree of conservatism. They find that a proportion of outside directors is positively associated with conservatism, suggesting that strong boards are likely to understand the benefits of conservatism as a useful tool for directors in fulfilling efficient contracting. García Lara *et al.* (2007) also find in the Spanish setting that firms where the chief executive officer (CEO) has little influence over the functioning of the board of directors, show a greater degree of accounting conservatism than firms where the CEO has a high influence over the board. They argue that stronger corporate governance results in a higher demand for conservatism as CEOs are more likely to

place a governance mechanism in place to prevent managers from hiding less favorable information.

Krishnan and Visvanathan (2008) investigate whether audit committee members with accounting expertise enhance accounting conservatism through their better monitoring capability, driven by their knowledge base and economic incentives to protect their reputation capital. They find that accounting experts on the audit committee are able to effectively perform their monitoring function and promote conservative accounting, but only when a firm has strong governance. They argue that the presence of accounting expertise on the audit committee is ineffective with a weak board because the effect of accounting expertise is undermined by a weak governance mechanism. On the other hand, Ahmed and Duellman (2013) test whether overconfident managers who systematically overestimate future returns from a firm's investment projects adopt less conservative accounting. They argue that overconfident managers accelerate gain recognition and delay loss recognition by erroneously perceiving poorly performing projects as positive net present value (NPV) projects and underestimating the magnitude of potential losses. Accordingly, they find evidence that conservatism is significantly and negatively associated with different measures of overconfidence. However, they do not find any evidence to suggest that the negative association between conservatism and overconfidence weakens in the presence of strong external monitoring. They conclude that external monitors value certain attributes of overconfident managers to avoid potential costs of conservative accounting that managers may terminate profitable projects that have negative realization of cash flows in earlier periods.

Bona-Sánchez *et al.* (2011) test whether the ownership share of the controlling owner significantly affects the extent of conservatism adopted by firms. They investigate listed Spanish firms with the presence of controlling owners that have different levels of ownership and degrees of divergence between voting and cash flow rights. They find that the higher the controlling owners' ownership share, the lower the level of conservatism. They suggest that as the ownership share of the controlling owner increases, managerial incentives to share information with the dominant shareholders also increase due to a larger portion of the firm's capital being provided by that owner. In such a case, information asymmetry between managers and shareholders is more likely to be resolved by private communication channels, reducing the demand for earnings conservatism. Ramalingegowda and Yu (2012) also study how ownership by institutions affects firms' conservative reporting policy. They argue that if institutional investors understand and value the governance benefits of conservatism, they will demand conservatism from managers. They find evidence that higher ownership by monitoring institutions is associated with greater conservatism and that this positive association is more pronounced among firms with more growth options and higher information asymmetry because of greater difficulties associated with directly monitoring these firms.

A recent study by Cheng *et al.* (2014) investigates whether hedge fund intervention in their investment firms induces increases in conservatism, as hedge funds activists aim to increase firm value by addressing agency conflicts through close monitoring and improvements in investment firms' corporate governance. Moreover, hedge funds demand higher conservatism to reduce the risk of earnings overstatements because hedge funds are usually holding an undiversified position and thus a revelation of an

earnings overstatement by the investment firm can be costly to hedge fund investors. Consistent with this conjecture, they find evidence that firms adopt higher conservatism after the intervention of the hedge fund activists. However, their results suggest that increases in conservatism are limited to circumstances in which hedge funds have relatively higher ownership and hold their investments for at least one year, allowing sufficient amount of time to exert their monitoring effects on investment firms.

2.4 The Economic Consequences of Accounting Conservatism in the Stock Market

2.4.1 Conservatism and the Cost of Capital

Prior research provides evidence on the benefits of accounting conservatism in the stock market in various aspects. García Lara *et al.* (2011a) find that the role of conservatism in alleviating information asymmetry problems reduces the discount that markets apply to firm value, leading to a negative association between conservatism and the cost of capital. Artiach and Clarkson (2011) also report a negative association between conservatism and the cost of capital but they argue that such a relationship is only conditional on the firm's informational environment as the marginal benefits of conservatism are diminished in environments of low information asymmetry. However, Li (2010) suggests that a country's institutional structures are one of the most important factors in determining its financial reporting system, arguing that variations in accounting reporting practice is likely to be across countries rather than across firms or industries within a country. Accordingly, Li (2010) conducts a country-level analysis of the association between conservatism and the cost of capital and finds that the negative association between conservatism and the cost of capital is stronger for countries with lower board independence and lower anti-director rights.

Kim and Pevzner (2010) hypothesize that earlier recognition of economic bad news under conservatism enables the market to perceive information delivered by more conservative firms as being less biased and more accurate, while information delivered by less conservative firms is perceived as being more optimistically biased. As a result, for less conservative firms, investors discount possible optimistic bias in earnings announcements for any undisclosed bad news. Their results suggest that the stock market reacts more strongly to the good earnings news of more conservative firms than to the good earnings news of less conservative firms, supporting the view that conservatism contributes to improving the information flow to uninformed investors in the stock market. Kim *et al.* (2013) investigate the effect of conservatism in the seasoned equity offering (SEO) market. They argue that conservatism mitigates the negative impact of information asymmetry between insiders and outside investors for firms issuing SEOs by providing more verifiable accounting information for outside investors and limiting managers' ability to distort accounting information. Accordingly, they find that firms adopting higher conservatism experience less price drop associated with information asymmetry at the SEO announcement.

2.4.2 Conservatism and Investment Efficiency

Other researchers investigate the effect of conservatism on a firm's investment efficiencies. For example, García Lara *et al.* (2010) find evidence that firms with higher conservatism invest less in years when over-investment is likely and invest more when they operate in under-investment industries, in particular where aggregate-economy investment is substantially low. They argue that conservatism mitigates under-investment problems by facilitating a lower cost of external funding. Also,

conservatism deters managers from over-investing in underperforming projects by forcing managers to reveal earnings consequences of their bad investment decisions on a timely basis. Bushman *et al.* (2011) hypothesize that timely recognition of losses influences investment behavior most strongly when managers face deteriorating investment environments, but not in the face of increasing investment opportunities. Accordingly, using cross-country data for twenty five countries, they find that conservatism is significantly associated with investment spending only when investment opportunities are declining. They argue that the asymmetric timeliness of bad news earnings versus good news earnings that place emphasis on negative outcomes under conservatism influence managerial behavior more strongly in situations where managers face a deteriorating operating environment.

Francis and Martin (2010) investigate whether firms adopting a more conservative reporting policy make more profitable acquisitions. They find evidence that conservatism is positively associated with acquirers' three day cumulative abnormal returns and post-acquisition operating performance. They suggest that managers are less likely to make investments in negative NPV projects under conservative accounting. This is because conservatism ensures timely loss recognition resulting from unprofitable acquisitions, encouraging managers to make quicker abandonment decisions when acquisitions turn out to perform poorly. Similarly, Ahmed and Duellman (2011) investigate if conservatism provides managers with *ex ante* incentives to avoid negative NPV projects and *ex post* monitoring of investment decisions. They argue that if conservatism mitigates agency problems associated with investment decisions, firms adopting a more conservative policy should have higher future profitability and take fewer and smaller special items charges and asset write-downs.

Their results show that more conservative firms have higher industry-adjusted operating cash flows and gross profit margins and have a significantly lower likelihood of taking special items charges than firms with less conservative accounting.

Healy *et al.* (1999) also find that there is a negative association between conservatism and acquisition riskiness, but such a negative association disappears for firms without accounting-based debt covenants. They argue that the threat of triggering accounting-based debt covenants is a more important factor that induces firms to adopt higher conservatism. Healy *et al.* (1999) provide an additional test on whether firms with greater conservatism forgo riskier yet positive NPV acquisitions. Their results suggest that more conservative firms tend not to make riskier acquisitions even if they are positive NPV acquisitions, indicating that this is a potential cost of conservatism that can result in less acquisitive firms. A more recent study by Kravet (2014) also provides evidence that firms making less risky acquisitions adopt higher conservatism than those making riskier acquisitions. However, the negative association is significantly weaker for firms without accounting-based debt covenants. He suggests that conservatism is a monitoring mechanism, specifically in conjunction with accounting-based covenants, that reduces the likelihood of managers transferring wealth from debt holders to shareholders by making riskier investments.

Louis *et al.* (2012) suggest that conservatism can mitigate the reduction in the value of cash holdings, alleviating agency problems associated with excess cash that may provide managers with the opportunity to engage in negative NPV projects. In particular, they argue that timely loss recognition under conservatism mitigates managers' incentives to use their free cash flows to make new investments that could

destroy firm value. Accordingly, they find that the value of an additional dollar in cash holdings increases with conservatism, suggesting that conservatism mitigates the value destruction associated with cash holdings.

2.4.3 Conservatism and Risk of Failure

Kim and Zhang (2010) argue that conservatism makes bad news flow into the financial market in a timelier manner, preventing bad news from being hidden and accumulated. Accordingly, they find a positive association between conservatism and the reduction in firm-specific crash risk. Their result suggests that timely loss recognition provides shareholders and the board of directors with an early warning mechanism to promptly identify unprofitable projects and force managers to discontinue such projects, reducing the likelihood of a firm experiencing future stock price crashes. Similarly, Watts and Zuo (2011) argue that a crisis period provides an interesting setting to test the importance of conservatism in strengthening a firm's funding ability. They investigate how conservatism affected a firm's valuation during the 2008 global financial crisis. Their evidence suggests that conservatism is positively associated with the crisis period stock returns and such an effect is more pronounced for firms with higher agency costs associated with information asymmetry. They argue that more conservative firms borrowed and invested more during the crisis period than less conservative firms, since firms adopting more conservative financial reporting are more likely to obtain funding from banks or other creditors during the crisis, substantially lessening firms' financial constraints during the period. However, they find that such results hold only during the crisis-period because the effects of conservatism on changes in shareholder value is less

evident when times are good as firms are less likely to suffer from financial constraints and potential underinvestment.

Biddle *et al.* (2012) provide evidence that conservatism significantly reduces subsequent operating cash flow downside risk. They suggest that timely loss recognition and risk revelations under conservatism enhance the efficiency of managers' risk management activities as they facilitate external monitoring by outside stakeholders, such as shareholders, debt holders, independent directors, auditors and regulators, thus disciplining under-performing managers. Further, Biddle *et al.* (2011) also find that conservatism is negatively associated with subsequent bankruptcy risk because conservatism helps mitigate bankruptcy risk via its cash enhancing and informational roles. They argue that the cash enhancing role of conservatism increases cash availability from external sources and the informational role of conservatism lessens information asymmetry, facilitating debt renegotiations when firms approach default on their debt.

2.5 Conservatism in the Debt Market

Ahmed *et al.* (2002) argue that conservatism mitigates conflicts of interest over dividend policy between shareholders and bondholders. They claim that conservative accounting reduces the risk to bondholders of the firm paying excessive dividends to shareholders as conservative accounting reduces the earnings and retained earnings amounts used in debt contracts to constrain dividends. As a result, borrowing firms are likely to use more conservative accounting when bondholder-shareholder conflicts over dividend policy are potentially more severe. Also, bondholders are likely to require a

lower rate of return to compensate for the reduced risk of excessive dividend payments for firms adopting more conservative accounting practices. They find consistent results with their arguments that firms that potentially have higher bondholder-shareholder conflicts over dividend policy are more likely to adopt higher conservatism and these firms experience more favorable debt ratings.

Zhang (2008) also finds evidence that more conservative borrowers obtain lower interest rates, suggesting that timely loss recognition makes financial covenants more binding by capitalizing bad news, triggering covenant violations when the risk exceeds the threshold set by lenders. Thus, lenders can take protective actions to reduce their downside risk in the event of a covenant violation and are likely to reward more conservative borrowers. Li (2010) also observes a negative association between conservatism and interest rate, but such a relation is stronger in countries where accounting covenants are widely used and creditor rights are properly protected. However, Callen *et al.* (2011) argue that the contracting benefits of conservatism in the debt market only exist in an environment with high information asymmetry in which lenders are more uncertain about borrowers' proclivity to appropriate lenders' wealth. They argue that reporting more conservatively, beyond what is mandated by GAAP, is redundant in the low asymmetric information regime because the borrower will use covenants alone to mitigate potential wealth transfers from debt to equity holders. Accordingly, they find that more conservative financial reporting, combined with more covenant restrictions, reduces the cost of debt only in the high information asymmetry environment.

Haw *et al.* (2010) hypothesize that private equity firms with public debt provide more conservative financial reporting than do those with private debt only. They argue that bondholders demand a higher degree of conservatism from borrowers to protect their debt value because bondholders are more likely to rely on the borrowers' public information than banks. As a result, the informational benefits from high quality financial reporting are greater for bondholders. Their results show that private firms with public debt adopt higher conservatism and private firms with high information asymmetry and high credit risk have a greater increase in conservatism after their initial bond issuance than their counterparts. They suggest that firms issuing public debt have economic incentives to meet the stronger bondholders' demand for conservative accounting to access a lower cost of debt and more favorable contract terms.

Wittenberg-Moerman (2008) argues that conservatism decreases information asymmetry in loan trading by increasing the amount and quality of information available to secondary loan market participants. This is because timely loss recognition allows uninformed loan traders who do not possess private sources of information regarding the borrower to get a timelier and more precise evaluation of the borrower's traded loans. Accordingly, they provide evidence that conservatism reduces the bid-ask spread at which loans are traded, suggesting that timely loss recognition decreases the information advantage of informed traders, increasing the efficiency of the trading of debt securities.

Beatty *et al.* (2008b) document that nearly two thirds of syndicated loan contracts contain income escalators. Income escalators are systematic adjustments to covenants thresholds that exclude a certain percentage of positive net income from covenant

calculations. They argue that there is a positive relation between conservatism and the use of income escalators because when there are greater agency costs of debt, lenders are more likely to incorporate income escalators to protect themselves, and consequently, their demand for conservatism is higher. Consistent with their conjecture, they provide evidence that conservatism measures are positively associated with the use of an income escalator.

As discussed thus far, prior research suggests that conservatism plays a more important role when there are higher agency costs of debt. However, other researchers argue that when there are other mechanisms of mitigating debt holder-shareholder conflicts in place, there is less demand for conservatism. For instance, Wang *et al.* (2011) hypothesize that debt holders' demand for conservatism decreases with the managerial ownership of debt because managers with a higher ownership of debt have less incentive to engage in asset substitution activities to expropriate wealth from debt holders, mitigating the agency costs of debt. By using a CEO's relative leverage measured as the value of her deferred compensation and defined-benefits pension divided by the market value of her stock and stock option ownership, they find that conservatism is negatively associated with CEO relative leverage. Their results also indicate that such negative association is largely concentrated in firms with higher expected agency costs of debt, such as higher leverage, higher bankruptcy risk, fewer tangible assets and more growth options.

Gigler *et al.* (2009), however, argue that it is unlikely that the demand for accounting conservatism arises due to debt contracting considerations because conservatism can increase the probability of false alarms and this would reduce the efficiency of debt

contracts. They claim that the disclosure of income increasing events will occur less frequently in a more conservative regime due to the strict verifiability required for the recognition of gains, but reports of income decreasing events would occur more frequently under conservatism. As a result, such reports will have lower information content because the lax verifiability required for reporting expected losses will convey less information about the probability of the loss actually occurring.

2.6 Conservatism in Different Litigious and Regulatory Environments

Previous research hypothesizes that international differences in the demand for accounting income may affect the way accounting incorporates economic income over time. For example, Pope and Walker (1999) analyze differences in the timeliness of income recognition between the U.S. and the U.K. GAAP financial reporting regimes and show that earnings under the U.S. GAAP exhibit conservatism of slower recognition of good news in earnings, relative to those under the U.K. GAAP. However, they also suggest that if earnings are measured after extraordinary items, the U.K. firms recognize bad news faster than U.S. firms since the U.K. firms have strong incentives to classify bad news earnings components as extraordinary items.

Ball *et al.* (2000) relate timely recognition of economic losses in earnings to the shareholder governance model of common and code law countries. By investigating a sample of four common law countries (Australia, Canada, the U.K and the U.S.) and three code law countries (France, Germany and Japan) during 1985-1995, they report that code-law countries' income in the sample is substantially less timely and less conservative, on average, than common-law countries' income. They attribute such

results to code-law accounting standards that give greater discretion to managers in deciding when economic gains and losses are incorporated into earnings. Bushman and Piotroski (2006) extend the study on the effect of cross-country variation in institutions on conservatism by employing 38 countries for the period 1992-2001. Consistent with Ball *et al*. (2000), their results suggest that firms in countries with strong investor protection and high quality judicial systems reflect bad news in reported earnings numbers in a more timely fashion than firms in countries characterized by low quality judicial systems with weak investor protection.

Ball and Shivakumar (2005) compare earnings conservatism between private and public firms in the U.K. to investigate how differences in the market demand for private and public financial reporting affects earnings conservatism. They find evidence that timely loss recognition is substantially less prevalent in private firms than in public firms, suggesting that managers of private firms adopt a lower verification for recognizing future economic gains and incorporate future economic losses in a less timely fashion. This is because market demand for financial reporting quality is lower for private firms and managers and auditors of private firms face lower litigation costs for supplying a lower level of financial reporting quality.

Prior research also suggests that firms change the degree of conservatism in response to changes in regulatory regimes. He *et al.* (2008) examine whether firms chose to react by filing more conservative financial reports after the Sarbanes Oxley (SOX) Act was introduced in 2002. They suggest that American Depositary Receipts (ADR) have become more conservative during the post-SOX period due to the increased level of monitoring and exposure to litigation risk in the post-SOX period. Similarly, Barth *et al.*

(2008) investigate the effect of the adoption of International Accounting Standards (IAS) on earnings conservatism. Their result suggests that non-IAS firms recognize losses in a less timely fashion compared to IAS firms because managers of non-IAS firms tend to smooth earnings by delaying the effects of large negative earnings. The study on auditor conservatism by Basu *et al.* (2000) also shows that the earnings audited by Big Eight auditors are more conservative than those audited by non-Big Eight auditors. They claim that Big Eight auditors have incentives to ensure that earnings are reported conservatively due to their greater exposure to shareholder class-action lawsuits. Kousenidis *et al.* (2009) examine changes in conservatism for Greek firms after the market crisis of 1999. They suggest that increased legislation and the fear of litigation in the post-crisis period forced firms to adopt more conservative accounting practices as increased levels of conservatism emerged as a natural mechanism for investor protection.

Other researchers suggest that firms adopt a higher degree of conservatism when they face higher litigation risks and costs. Qiang (2007) provides evidence that litigation induces conservatism as a firm's litigation risk, measured as equity beta, share turnover, market value, return skewness and annual return is positively associated with the degree of conservatism. Bluck (2009) also finds that firms with greater *ex-ante* litigation risk report more conservatively than firms with less litigation risk and that conservatism is negatively associated with the incidence of actual litigation. Bluck (2009) argues that managers of firms with greater *ex-ante* litigation risk use conservative financial reporting to reduce future litigation costs because it becomes harder for the plaintiffs to argue that bad news was delayed or the good news reported was misleading when the firm is adopting conservative financial reporting. Similarly, Ettredge *et al.* (2012)

investigate the association between conservatism and the likelihood of securities class action lawsuits alleging violations of U.S. GAAP and find that firms reporting conservatively are less likely to be involved in investors' class action lawsuits.

Using a sample of firms listed on the Toronto Stock Exchange, Chung and Wynn (2008) find that firms with high liability coverage, measured as the sum of directors' and officers' liability insurance and coverage and cash for indemnification, tend to report less conservative earnings than firms with low coverage. They argue that managers have an incentive to report conservative earnings when they face high litigation risks to protect themselves from the expected litigation. However, managers can afford to adopt a less conservative reporting policy when their expected legal liability is reduced via directors' and officers' liability insurance and indemnification.

Huijgen and Lubberink (2005) argue that earnings reported by U.K. firms cross-listed on U.S. stock exchanges are more conservative than those reported by domestically listed firms. They suggest that the U.S. has a more severe litigation environment compared to the U.K., increasing liability exposure for managers and auditors and an incentive to commit to providing higher quality financial information. They report that U.K. firms cross-listed in the U.S. report more conservative U.K. GAAP earnings compared to those reported by their industry matched U.K. firms without a U.S. listing.

Donelson *et al.* (2012) provide evidence that timely revelation of bad news earnings is negatively associated with litigation risk, regardless of whether the lawsuits are settled or dismissed. Chandra (2011) argues that expensing research and development (R&D) costs to a greater degree is the primary determinant of income conservatism for U.S.

technology firms and investigates their income conservatism. He finds that technology firms' earnings are significantly more conservative compared to other U.S firms, suggesting that higher growth opportunities and the increased risk of technology firms expose them to higher shareholder litigation risk, creating strong incentives for income conservatism.

2.7 Conservatism and Information Asymmetry

The prior literature suggests that firms adopt a more conservative reporting policy in response to an increase in information asymmetry. LaFond and Watts (2008) examine the association between annual conservatism and changes in the information asymmetry measures, such as the probability of an information-based trade (PIN) score and the bid-ask spread. They find that PIN score changes in the preceding year are positively associated with the annual conservatism measure, suggesting that changes in information asymmetry lead to a higher degree of conservatism.

Khan and Watts (2009) estimate a firm-year measure of conservatism and show that firms with higher conservatism scores have the characteristics associated with higher information asymmetry, such as longer investment cycles, higher stock return volatility and higher bid-ask spread. Consistent with this result, another study by Callen *et al.* (2010b) reports that firms with a high degree of conservatism show higher leverage and increased volatility of returns. Similarly, Jenkins *et al.* (2009) investigate if there is variation in earnings conservatism across the business cycle in the U.S. from 1980 to 2003. They find that there is a higher degree of conservatism during economic contractions because reporting firms respond to the increased demand for conservative

earnings by reporting more conservatively during economic contractions. García Lara *et al.* (2011b) also argue that firms adopt higher conservatism as a reaction to high information asymmetry in order to improve their future information environment. Accordingly, they provide empirical evidence that conservatism decreases with a reduction in bid-ask spread, stock return volatility, mean analysts' earnings forecast error and cost of equity capital and increases with the likelihood of observing increases in expected credit risk.

Other researchers investigate the role of conservatism in reducing information asymmetry. Hui *et al.* (2009) argue that the voluntary disclosure of financial information through management forecasts is an important component of the information environment surrounding a firm. Accordingly, they claim that conservatism reduces the extent of information asymmetry between managers and shareholders if a higher degree of conservatism decreases the quantitative management forecasts. They find a significant negative association between the conservatism measures and the frequency, specificity, and timeliness of management forecasts, suggesting that accounting conservatism acts as a substitute for management forecasts. Li (2008) provides evidence to show that analysts' absolute forecast errors are negatively associated with conservatism, suggesting that conservative accounting leads to less uncertainty about the amount of earnings to be recognized in the presence of bad news in a later period. Another study by Ettredge *et al.* (2012) investigates how firms reduce the increased information risk following a reinstatement of previously overstated earnings. They find that managers undertake increased conservatism after disclosing overstatements of prior years' earnings in order to directly address investors' concerns and restore credibility.

Hui *et al.* (2012) suggest that the importance of a firm's economic performance to its suppliers and customers leads to a stronger demand for conservatism since managers have incentives to exploit their asymmetrically informed position, relative to other firm stakeholders. As a result, a firm's suppliers and its customers demand higher conservatism to learn about poor performance more quickly. In particular, they incur significant costs if the firm goes out of business, whereas they have lower potential gains from the firm performing above expected levels. Accordingly, Hui *et al.* (2012) provide empirical evidence that conservatism in firms' accounting practices is positively associated with the measures for the bargaining power of firms' suppliers and customers. They suggest that a firm meets the underlying demand for conservatism from its suppliers and customers particularly when those stakeholders have bargaining advantages.

Alam and Petruska (2012) investigate how fraud firms temporarily alter their conservative accounting practices in order to reduce information asymmetry and potentially regain investor confidence. They find that fraud firms show significantly lower levels of conservatism compared to non-fraud firms in the pre-fraud period than during the period they are manipulating their financial statements. Also, during the public discovery of fraud, fraud firms' conservatism levels are higher compared to pre-fraud levels, as fraud firms exercise strategic discretion over conservative financial reporting during periods of uncertainty and information asymmetry. Similarly, Mak *et al.* (2011) examine earnings conservatism in the context of corporate refocusing activities of U.K. firms. They suggest that poor economic performance with significant negative news normally triggers restructuring decisions and thus there is increased information asymmetry between managers and external investors about the firm's

future strategy. They find evidence that refocusing firms adopt higher conservatism in the refocusing announcement year and in the year following the announcement, suggesting that the increased level of information asymmetry and agency conflicts around refocusing events lead firms to adopt higher earnings conservatism.

2.8 Criticism on Conservatism

Penman and Xiao-Jun (2002) argue that conservative accounting can yield lower quality earnings because conservatism creates a "hidden reserve" which can subsequently be used to increase or reduce earnings, depending on the rate of growth in investment. For instance, they argue that the immediate expensing of R&D expenditures and advertising under conservative accounting can be used to change the level of earnings later. This is because increasing R&D expenditures and advertising will depress earnings, whereas decreasing them will increase earnings in subsequent years. Rajan *et al.* (2007) also examine how conservatism may change the level of earnings reported in financial statements. They argue that neutral (unbiased) accounting rules should result in a return on investment (ROI) that equals the internal rate of return (IRR) of a project that reflects economic profitability. However, they argue that conservatism distorts ROI upward or downward relative to the underlying IRR because conservatism and growth jointly distort ROI. Similarly, Monahan (2005) argues that conservative measurement rules bias equity book value below equity market value and conservative reporting practices such as immediate expensing of all R&D costs cause an increase in goodwill and a corresponding decline in the value relevance of earnings.

Lee (2012) argues that a cumulative understatement of net assets in the balance sheet and more timely recognition of losses versus gains in the income statement weaken the appearance of the firms' balance sheet strength and reduces a firm's access to capital, reducing its overall financial flexibility. Accordingly, Lee (2012) examines the association between conservatism and various corporate financial activities such as cash liquidity management, the decision to issue debt or equity and payout decisions that proxy for firms' financial flexibility. He argues that if conservatism facilitates financial contracting, firms with greater reporting conservatism: (1) have better access to financing and hold less precautionary cash, (2) raise capital through the debt market, since issuing debt is less costly than equity, and (3) have greater ability to increase their payout to shareholders either via dividend or through stock repurchases. Lee's (2012) results show that firms with greater reporting conservatism: (1) hold more cash and accumulate more cash out of cash inflows, (2) are more likely to issue equity rather than debt, and (3) show a smaller increase in dividends following positive cash changes. They argue that these results indicate that firms reporting more conservatively experience less financial flexibility in their future access to capital.

Chen *et al.* (2013) raise concerns about the reduced earnings predictability associated with conservatism. They find that pricing multiples on more conservative earnings are smaller than those on less conservative earnings, suggesting that market participants evaluate less persistent earnings unfavorably, despite the positive effects of conservatism in contracting and litigation. Guay and Verrecchi (2006) and Ladas and Negakis (2009) also claim that an asymmetric accounting conservatism that reports bad news in a timely manner, but good news in an untimely manner, may create information

inefficiencies being a potential cause of the distortion of the earnings-returns relation, reducing value-relevance for users of financial statements.

2.9 Defending Accounting Conservatism: the Role of Accounting Information

Watts (2006) suggests that accounting's comparative advantage in supplying information to capital markets is to produce 'hard' verifiable numbers that provide credible evidence on the outcome of previous investments and growth options of the firm. LaFond and Watts (2008) argue that financial statements' reporting of anticipated losses and current and future cash flow realizations produce 'hard' verifiable numbers that can serve as a benchmark for other sources of information in the market. In particular, Ball (2001) claims that the discipline of knowing that actual outcomes will be reported accurately will result in managers being more truthful in revealing non-accounting information, such as more accurate publicly stated expectations in management plans and forecasts. Kim and Zhang (2010) also suggest that conservative accounting will make it more costly for managers to hide bad news or release unverifiable good news because they will suffer a loss of reputation for credibility when more credible "hard" information becomes available via audited financial statements.

Ball (2001) argues that the criteria for an optimal accounting system should not be a simple correlation with stock prices because the resultant financial statements are then merely duplicating existing prices, reporting change in the firm's market value of equity by marking to market the year-end balance sheet. In support of this view, Balachandran and Mohanram (2006) suggest that the decline in value relevance cannot be attributed

to conservatism by providing evidence that firms with low values of conservatism measures experience the greatest decline in value relevance.

2.10 Summary and Conclusion

This chapter reviews the extant literature on accounting conservatism. Previous studies suggest that conservatism benefits different contracting parties in capital markets by disciplining managers to provide more reliable information about their prediction of the future performance of the firms. As a result, conservatism reduces information asymmetry between managers, equity investors and other contracting parties, enabling them to form more accurate expectations of future accounting income. In particular, a large number of previous studies have investigated how firms reduce information asymmetry via a conservative reporting policy and the capital market consequences for these firms. Despite extensive studies being conducted on the informational role of conservatism, there is limited research on the stock market benefits of conservatism in the IPO environment where there is inherently high information asymmetry. In the IPO market, there is inherently high information asymmetry and financial reports are one of the most important financial information sources available to investors. Consequently, the IPO market is an important research setting to study the informational role of accounting conservatism. As a result, the evidence from this thesis will provide important insights into how conservatism reduces information asymmetry and whether firms experience stock market benefits associated with an increase in conservatism in a high information asymmetry environment.

The next chapter examines IPO issuers' conservatism and its association with two IPO anomalies: (1) underpricing and (2) long-term stock return performance.

Chapter Three

The Effect of Accounting Conservatism on IPO Firms

3.1 Introduction

Chapter 2 reviewed prior literature on accounting conservatism and discussed the capital market benefits of conservatism in various aspects. In particular, the literature suggests that investors demand a higher degree of conservatism when there is high information asymmetry between insiders and outside investors. There is generally inherently high information asymmetry in the initial public offering (IPO) market. This may suggest that IPO issuers adopting a higher degree of conservatism in response to investors' demand experience increased stock market benefits. Therefore, this chapter examines IPO issuers' conservatism and how this conservatism affects IPO issuers in the stock market. The objective of this chapter is to explore the following research questions:

- Do IPO issuers adopt a higher degree of conservatism prior to going public?
- How does IPO issuers' conservatism change over time?
- Do issuers adopting a higher degree of conservatism in the pre-IPO year experience smaller IPO underpricing?
- Does the extent to which conservatism adopted by the IPO issuer significantly affect its post-issue stock return performance?

The remainder of the chapter is organized as follows. Section 3.2 develops the conceptual framework and hypotheses. Section 3.3 provides the research methodology designed to empirically test the hypotheses of this chapter. Section 3.4 describes the

sample data of this thesis and reports the descriptive statistics. The empirical results are presented and discussed in Section 3.5. Finally, Section 3.6 summarizes and concludes the chapter.

3.2 Conceptual Framework and Hypotheses Development

3.2.1 Accounting Conservatism of IPO Firms

Earnings management by IPO firms has been empirically supported by a number of studies (e.g., Aharony *et al.* 1993; Teoh *et al.* 1998a, 1998b; Jackson *et al.* 2002; Roosenboom *et al.* 2003; DuCharme *et al.* 2004; Cormier & Martinez 2006). Notably, Teoh *et al.* (1998a) provide evidence that discretionary current accruals of IPO firms are significantly larger than those of average non-IPO firms, suggesting that on average, IPO firms engage in earnings management. However, more recent accounting studies cast some doubt on earnings management of IPO firms. For example, Venkataraman *et al*. (2008) examine the pre-IPO financial statements and find that pre-IPO accruals tend to be negative and less than post-IPO accruals, finding no support for the inference in Teoh *et al.* (1998b).

Ball and Shivakuma (2008) also point out that the discretionary current accruals estimates of Teoh *et al.* (1998a) are biased by the unusually high growth of IPO firms. They suggest that the use of IPO proceeds for investing in working capital items, such as receivables and inventory, reduces operating cash flows relative to earnings, leading to abnormally high positive accruals by definition (see also Aharony *et al.* 1993). However, Lo (2008) addresses issues with Ball and Shivakuma's (2008) research context that excludes firms where a direct comparison cannot be made between the IPO

financial statements and those filed with the U.K. Companies House.[3] He claims that if firms were to manage earnings, they would not engage in an activity too obvious to detect, suggesting that firms that managed earnings would deliberately make the IPO financial statements non-comparable in order to disguise their earnings management activities.

IPO firms may have incentives to opportunistically manipulate earnings upward to obtain a high price for their stock issue. However, issuers who engaged in earnings management before the IPO face the risk of subsequent detection and hence litigation and regulatory action (Shu *et al.* 2012). Under Section 11 of the *Securities Act of 1933*, persons who buy stock in the IPO aftermarket are eligible to receive damages if they can show reliance on a prospectus that contained an untrue statement of a material fact or omitted to state a material fact (see TiniÇ 1988). Moreover, to recover damages, a purchaser of an IPO can sue every person associated with the offering. Lowry and Shu (2002) document that the potential costs of litigation are substantial for IPO firms. In their sample, the average settlement payment was $3.3 million which amounts to up to 50% of the IPO proceeds raised. They suggest that the implicit costs of litigation are also significant, which include reputation costs to the IPO firm and its managers, legal fees and the opportunity cost of management time dedicated to the lawsuit.

Prior research suggests that accounting conservatism is expected to increase with the firm's likelihood of litigation (see LaFond & Watts 2008). In particular, Watts (2002) argues that management is given incentives to understate earnings and net assets when

[3] *The UK Companies Act* requires private firms to file annual financial statements. When UK firms go public, prospectuses generally include financials for the past three years. Firms are allowed to restate their prior financials and any restatements are identified in the auditor's report of the prospectus (Ball & Shivakumar 2008).

the likelihood of litigation increases because the expected litigation costs of overstatement are higher than those of understatement (Watts 2002). Also, there is higher quality reporting demanded of public firms by financial statement users and consequentially, higher monitoring by auditors, boards, analysts, rating agencies, press and litigants for issuers after they go public (Ball & Shivakumar 2008). As a result, IPO issuers may report earnings more conservatively in response to such demand for higher quality financial reporting and to protect themselves from the potential litigation they may face after the IPO.

As discussed thus far, a review of the extant literature has provided mixed evidence regarding the reporting quality of IPO firms, resulting in different predictions on the extent of accounting conservatism of IPO issuers. Accordingly, this chapter examines whether IPO firms adopt a higher degree of conservatism or report earnings more aggressively prior to going public.

3.2.2 Accounting Conservatism and IPO Underpricing

Prior literature documents the phenomenon that firms going public experience large positive returns, on average, on their first trading date (e.g., Ibbotson 1975; Beatty & Ritter 1986; Rock 1986; Benveniste & Spindt 1989). A theoretical explanation for IPO underpricing suggests that underpricing arises from information asymmetries among participants in the IPO process (Boulton *et al.* 2011). Notably, Rock (1986) has offered an equilibrium model for IPO underpricing in which uninformed investors face a “winner's curse” when they submit an order for IPO shares. Informed investors withdraw from the market when the issue is priced above its value. As a result,

uninformed investors are more likely to receive a full allocation of shares if the offering is overpriced and a rationed allocation if it is not. Thus, firms are forced to underprice their IPOs to compensate uninformed investors for this adverse selection. Beatty and Ritter (1986) extend Rock's research by showing that IPO underpricing increases in the *ex ante* uncertainty of IPO firms that investors face when they submit a purchase order. They argue that investors will be willing to submit a purchase order for an offering with greater *ex ante* uncertainty, only if the issuer underprices its IPO by a greater amount leaving more money on the table. Since it is more difficult for investors to predict the actual initial return on a high-risk issue, the "winner's curse" problem will be intensified for high-risk issuers.

Several researchers have found evidence that accounting information disclosed in the IPO prospectus reduces information asymmetry, leading to a reduction in the level of IPO underpricing. For example, Jog and McConomy (2003) show that voluntary management earnings forecasts provided in the prospectus reduces the uncertainty faced by uninformed investors and find that IPOs from these issuers are less underpriced. Similarly, Leone *et al.* (2007) find that IPO underpricing is negatively associated with the specificity of the use of IPO proceeds in the prospectus. In particular, they suggest that such a negative association is significantly stronger for IPO firms employing less prestigious investment banks as they have greater need to reduce information asymmetry. Schrand and Verrecchia (2005) also argue that the greater the frequency of information disclosed by a firm prior to the IPO, the lower the level of underpricing. However, they find a positive relation between disclosure frequency and IPO underpricing for internet firms, suggesting that internet firms utilize both underpricing

and information disclosures as tools to generate greater attention to becoming a successful IPO.

Boulton *et al.* (2011) also study how country-level differences in earnings quality influence IPO underpricing and find that firms going public in a country with better earnings information experience significantly lower IPO underpricing. They use the financial information of existing public firms to construct country-level earnings quality measures rather than directly measuring the earnings quality of an IPO firm. As a result, these measures cannot represent the earnings quality of IPO firms because there are significant differences in earnings quality between existing public and IPO firms (Lin & Tian 2012).

Lin and Tian (2012) argue that issuing firms have inherently different characteristics due to the incentives associated with the offer price and the level of underpricing, as well as potential reputation costs. Thus, they emphasize the benefits of studying one country setting and examine the link between earnings quality and underpricing in China. In particular, they employ accounting conservatism as a measure of earnings quality and find that Chinese IPOs adopting higher conservatism are underpriced less and such an effect is more pronounced for firms with high information asymmetry. This result indicates that U.S. IPO issuers adopting a higher degree of conservatism experience a lesser degree of underpricing compared to those reporting less conservatively. However, Watts and Zuo (2011) argue that when there is less information asymmetry there is less demand for conservatism, reducing incentives for firms to adopt a higher degree of conservatism. Accordingly, when they investigate the effect of conservatism on stock returns in the U.S. market before and after the 2008

financial crisis, they do not find evidence of a positive effect of conservatism when times were good before the financial crisis.

U.S. firms provide relatively higher quality earnings given the strong legal and institutional environment compared to China and this may suggest that the positive effect of conservatism on IPO underpricing in China may not be pronounced in the U.S. setting. However, there is generally high information asymmetry for IPO firms and thus investors' demand for conservatism will be higher for IPO issuers in the U.S. This may suggest that issuers adopting a higher degree of conservatism in the U.S. may also experience a lower indirect cost of going public by providing investors with higher quality earnings information. Consequently, it is not evident whether conservatism adopted by IPO issuers significantly affects the degree of underpricing in the U.S. market. Therefore, this chapter empirically tests whether issuers adopting higher conservatism experience a smaller degree of underpricing at the IPO.

3.2.3 Accounting Conservatism and Long-term Stock Return Performance of IPO Firms

Extant research finds that IPO firms significantly underperform in the market in the long-run (e.g., Ritter 1991; Loughran & Ritter 1995). While many researchers have sought to explain such phenomena, earnings management by IPO firms have elicited extensive academic investigation. Studies by Teoh *et al*. (1998a) and Teoh *et al*. (1998c) suggest that issuers with unusually high levels of discretionary accruals in the IPO year experience poor stock return performance in the subsequent three years after the IPO. Following Teoh *et al*. (1998a; 1998c), several studies investigate earnings management by IPO firms in the international setting and present consistent results. The main

argument of these studies is that IPO firms manipulate earnings upward before stock issues, leading investors to form overly optimistic expectations regarding future post-issue earnings (e.g., Jackson *et al.* 2002; Roosenboom *et al.* 2003; DuCharme *et al.* 2004; Cormier & Martinez 2006). However, their earnings do not maintain momentum and the investors lose optimism, resulting in an ultimate price correction (e.g., Teoh *et al.* 1998a).

More recent research, however, casts some doubt on the predictability of discretionary accruals for stock returns. Ball and Shivakuma (2005) call the validity of discretionary accruals estimates of IPO firms into question, claiming that high growth of IPO firms makes accruals inherently high. Fan (2007) tests if issue-year discretionary accruals can predict post-issue stock returns and finds no evidence of a monotonic decline in stock returns from the smallest discretionary accruals portfolio (most conservative) to the largest (most aggressive). Similarly, Shu *et al.* (2012) do not find a significant association between discretionary accruals and long-run stock return performance of IPO firms when examining how earnings management and managerial optimism affect IPO valuation.

IPO issuers can communicate inside information about the firm's value to outside investors by direct disclosure through accounting reports (Hughes 1986). Accounting conservatism provides ‘hard’ verifiable numbers by reporting anticipated losses and current and future cash flow realizations in financial statements (LaFond & Watts 2008). As a result, IPO investors will have higher demand for conservatism as conservative financial reporting can improve the credibility of financial statements in the IPO prospectus. By adopting a higher degree of conservatism, an issuer can credibly signal

that the firm is a good investment to outside investors, especially as their performance is realized in the long-run. In particular, Watts and Zuo (2011) suggest that better managed firms with good corporate governance embrace more conservative financial reporting. Consequently, high quality issuers associated with good governance will adopt a higher degree of conservatism to signal the true value of the firm and to credibly separate themselves from low-quality firms. As a result, investors may value IPOs with higher conservatism more and it may manifest in their long-term stock return performance.

Several studies have investigated the effect of conservatism on stock returns. For example, Penman and Zhang (2002) measure accounting quality by changes in hidden reserves created by conservative accounting in regards to inventory, research and development and advertising expenses relative to net operating assets. They show that a trading strategy, going long on high quality accounting (more conservative) stocks, and shorting low quality (less conservative) stocks, earns an abnormal positive return. Consistent with this finding, Kim and Pevzner (2010) observe that more conservative firms experience a stronger stock market reaction to the revelation of their good earnings news, while the stock market responds less negatively to their bad earnings news. However, they point out that the magnitude of such benefits is small and suggest that future research needs to focus on situations where the benefits of conservatism could be larger.

Watts and Zuo (2011) also provide evidence that conservatism enhances borrowing capacity and constrains managerial opportunism, leading firms with more conservative financial reporting to experience less negative stock returns during a financial crisis.

However, they claim that the effects of conservatism are less evident in normal times, as a financial crisis makes it much harder for firms to borrow, increasing demand for verifiable accounting numbers (Watts & Zuo 2011). Such findings may suggest that the positive effect of conservatism in the stock market may not be found when normal times are under investigation. Furthermore, past studies have often claimed that increasing conservatism is responsible for the decline in the value relevance of accounting earnings and book values over time (see Balachandran & Mohanram 2011). In particular, Kousenidis *et al.* (2009) show that the value relevance of earnings increases when moving from a portfolio of low-conservatism firms to a portfolio of medium-conservatism firms, but reverts and decreases when moving further to a portfolio of high conservatism firms. Their findings indicate that extreme conservatism distorts rather than enhances the value relevance of accounting information. Furthermore, as previously discussed, if more risky issuers adopt higher conservatism as insurance against potential litigation which they may face after the IPO, buying such IPO issues may not be a good investment strategy in the long-term.

As the above discussion reveals, it is not absolutely clear whether IPO firms adopting a higher degree of conservatism display better stock return performance in the long-term. Consequently, this chapter empirically tests the extent to which accounting conservatism adopted by IPO firms can predict their post-issue stock return performance.

3.3 Research Methodology

3.3.1 Measurement of Accounting Conservatism for IPO Firms

Basu (1997) undertook the first study that developed a specific measure of conditional conservatism by estimating asymmetric timeliness of earnings using a regression of accounting earnings on annual stock returns. Basu's (1997) measure of conditional conservatism has been one of the most popular measures used so far. However, despite its conceptual appeal and popularity, the validity of the model has been questioned by a number of researchers (e.g., Dietrich *et al.* 2007; Givoly *et al.* 2007; Roychowdhury & Watts 2007; Beatty *et al.* 2008a; Ball *et al.* 2010; Patatoukas & Thomas 2011a, 2011b). More recently, Callen *et al*. (2010b) also proposed a measure of conditional conservatism based on Vuolteenaho's (2002) return decomposition model. This model utilizes log-linear vector autoregressive regressions (VAR) where the log of stock returns, the log of one plus return on equity and the log-book-to-market ratio are used as three predictor variables. However, this thesis requires a non-market based measure to estimate issuers' conservatism in the pre-IPO year and as a consequence the methods developed by Basu (1997) and Callen *et al.* (2010b) cannot be used due to the absence of stock return data.

Other studies such as Givoly *et al.* (2000) and Ball and Shivakumar (2005) estimate conservatism using non-returns based measures of news. Specifically, Givoly and Hayn's (2000) model estimates the extent of conservatism by cumulating non-operating accruals over five years. Givoly and Hayn (2000) propose that accumulation of negative non-operating accruals is indicative of conservatism because a process of delaying gains and accelerating losses under conservative accounting gradually makes the level

of accumulated accruals more negative. Recent applications of this model use average non-operating accruals over three years (see e.g., Wang *et al.* 2009). However, this thesis cannot employ this method to estimate IPO issuers' conservatism because of the accounting data availability, since this method requires at least three years of accounting data available before the IPO.

Ball and Shivakumar (2005) focus on the idea that accounting conservatism influences the accruals component of earnings rather than the cash-flow component and develop a model that exploits the likelihood that timely loss recognition occurs through accounting accruals. Unlike Basu (1997), where stock returns are used as the proxy for news, Ball and Shivakumar (2005) use positive and negative operating cash flows as proxies for good and bad news, respectively. Accordingly, Ball and Shivakumar's (2005) asymmetric accruals to cash-flow measure appears to be the only applicable method[4] to estimate firm-specific conservatism of IPO issuers, in particular, in the pre-IPO year and is as follows:

$$ACC_i = \alpha_0 + \alpha_1 D_i + \beta_1 CFO_i + \beta_2 D_i * CFO_i + e_i \qquad (1)$$

where ACC_i is accruals and CFO_i is cash flow from operations. Both are scaled by beginning total assets and are obtained from the cash flow statements to avoid problems with balance sheet data which can lead to an erroneous computation of accruals as demonstrated in Hribar & Collins (2002) (see also Ball & Shivakumar 2008). D_i is a binary indicator variable taking the value of one if CFO_i is negative and zero otherwise.

[4] This thesis examines the effect of conditional conservatism. Thus, it does not discuss measures of unconditional conservatism, such as the market-to-book measure by Beaver and Ryan (2000) and the hidden reserve measure by Penman and Zhang (2002).

Ball and Shivakumar (2005) predict the coefficient for cash flow from operations, $\beta_{1,}$ to be negative and the incremental coefficient for negative cash flows, $\beta_{2,}$ to be positive. More specifically, β_1 estimates the association between accruals and cash flows in general and β_2 measures the extent of earnings conservatism. Dechow (1994) argues that realized cash flows can be a "noisy" measure of firm performance due to the difference in the timing of cash outlays and inflows associated with the current period sales. However, under the “matching principle” of accrual accounting, cash outlays associated directly with revenues are required to be expensed in the period in which the firm recognizes the revenue. Thus, accruals reduce the timing problems of cash flows recognition in earnings and are negatively associated with cash flows (Dechow 1994; Dechow *et al.* 1998). However, Ball and Shivakumar (2005) argue that conservatism reduces the role of accruals in mitigating the timing problem of cash flows by enforcing recognition of economic gains when realized and timely recognition of economic losses. As a result, conservatism is a source of positive correlation between accruals and cash flows. In particular, Ball and Shivakumar (2005) suggest that such an effect should be greater in periods of negative cash flows because unrealized economic losses are more likely to be recognized in earnings via accrued charges such as impairment losses.

To estimate a firm-year measure of conservatism, this thesis modifies Ball and Shivakumar’s (2005) measure of asymmetric timeliness (equation 1). The modification process follows Khan and Watts’s (2009) method of estimating firm-level conservatism (see Appendix I). Khan and Watts (2009) expand the regression of asymmetric timeliness, assuming that conservatism is a linear function of firm-specific characteristics (size, market-to-book ratio and leverage) each year. They argue that there is a negative association between firm size and conservatism as larger firms are

likely to be more mature and to have richer information environments, reducing a contracting demand for conservatism. They suggest a positive association between *MTB* and conservatism as asymmetric verification requirements for gains versus losses build up a cumulative understatement of net assets relative to market values. Firm leverage and conservatism are also expected to be positively associated. There are higher incentives for more levered firms to adopt a more conservative reporting policy as financially distressed firms are more likely to be sued and the likelihood of financial distress increases with leverage (Khan & Watts 2009).

The following annual cross-sectional regression model is used to estimate a firm-year measure of conservatism:

$$ACC_i = \alpha_0 + \alpha_1 D_i + CFO_i\,(\mu_1 + \mu_2 size_i + \mu_3\, MTB_i + \mu_4 Lev_i)$$
$$+ D_i{*}CFO_i\,(\lambda_1 + \lambda_2 size_i + \lambda_3 MTB_i + \lambda_4 Lev_i) + (\delta_1 size_i + \delta_2 MTB_i + \delta_3 Lev_i$$
$$+ \delta_4 D{*}_i size_i + \delta_5 D{*}_i MTB_i + \delta_6 D{*}_i Lev_i) + e_i \qquad (2)$$

where ACC_i are accruals, CFO_i is cash flow from operations, D_i takes the value of one if CFO_i is negative and zero otherwise, *size* is firm size which is computed as the natural logarithm of total assets, *Lev* is defined as total debts divided by beginning total assets, *MTB* is the market to book ratio, and e_i is the residual.

Estimators of λ_i, i=1-4 obtained from running the above regression on a pooled sample of firms are substituted into equation (3) to estimate firm-level conservatism of IPO firms. The coefficients of $\mu_{1\text{-}4}$ explain the role of accruals in the mitigation of noise in cash flows and μ_1 is expected to have a negative sign. $\lambda_{1\text{-}4}$ are incremental coefficients for negative cash flows and λ_1 is predicted to be positive since it estimates the extent of asymmetric timeliness of earnings recognition under conservatism. The firm-year

conservatism score (*CSCORE*) is computed by substituting the firm-specific variables into equation (3) and the higher the *CSCORE*, the higher the degree of conservatism.

$$\text{Conservatism Score } (CSCORE) = \lambda_1 + \lambda_2 size_i + \lambda_3 MTB_i + \lambda_4 Lev_i \quad (3)$$

CSCORE varies across firms and over time through cross-sectional variation in the firm-year characteristics (size, market-to-book ratio and leverage) and $\lambda_{1\text{-}4}$ obtained from the annual regressions.

3.3.2 Estimation of *CSCOREs*

IPO issuers' conservatism is measured using annual Compustat data for the period 1989 to 2005. Dechow *et al*. (1998) argue that using quarterly data can introduce considerable measurement error into the empirical analysis due to seasonality in quarterly data. The *integral approach* to quarterly reporting mandated under GAAP requires firms to allocate estimated annual operating expenses to interim periods, based on forecasted annual figures such as sales (Rangan & Sloan 1998). Consequently, as the fiscal year progresses, estimates are revised and any estimation errors from earlier quarters are likely to affect the earnings of the next quarter and this problem can be intensified for the fourth quarter[5] (Collins *et al.* 1984; Kross & Schroeder 1990; Rangan & Sloan 1998). Rangan and Sloan (1998) suggest that such seasonality in quarterly earnings is more severe for smaller firms because they tend to engage auditors only for the annual numbers which are subject to a full audit. Furthermore, accruals measures based on quarterly data can be significantly inflated since the difference between earnings and cash flows are larger when the earnings measurement interval is shorter in

[5] Fourth-quarter earnings are the difference between annual earnings and the sum of the earnings for the first three quarters. As a result, errors or approximations relating to the first three quarters tend to be incorporated into fourth-quarter earnings (Collins *et al.* 1984).

a given fiscal year. The size of IPO firms is smaller in general and this thesis utilizes accruals to estimate regression coefficients required to measure firm-level conservatism. Consequently, this thesis focuses on firm-level annual conservatism and equation (2) is estimated annually over the entire Compustat population for the period 1989 to 2005 to measure the pre- and post-IPO year *CSCOREs* of sample firms.

As shown in equation (3), regression coefficients of $\lambda_{1\text{-}4}$ estimated from the annual regressions of equation (2) are multiplied by the firm-year characteristics (*size*, *MTB*, and *Lev*) to measure issuers' *CSCOREs*. For example, the pre-IPO year *CSCORE* of a firm which went public in 1990 is computed by multiplying its 1989 fiscal year *size*, *MTB*, and *Lev* by the coefficients of $\lambda_{2\text{-}4}$ obtained from the 1989 annual regression, plus λ_1. However, the pre-IPO fiscal year *MTB* is not available due to the absence of stock price prior to going public. Thus, the closing price of the first trading day is used as the stock price to calculate pre-IPO year *MTB*. All continuous variables are winsorized at the 1st and 99th percentiles to mitigate the effect of outliers.

Table 3-1 reports the Fama-Macbeth mean coefficients from the annual cross-sectional regressions (equation 2) over the 1989-2005 period. Prior studies suggest that Δ*SALES* (changes in sales) and *PPE* (fixed assets) are significantly associated with accruals (see Jones 1991; Ball & Shivakumar 2006). Thus, Δ*SALES* and *PPE* are included in model 2 and 3 as control variables in the regression model. This thesis uses the annual coefficients obtained from model 3 to compute the firm-year *CSCORE*.

[Insert Table 3-1 here]

As shown in Table 3-1, the magnitude of coefficients of interest (*CFO*D*, *CFO*D*Size*, *CFO*D*Lev*, *CFO*D*MTB*) does not significantly differ across model 1 to 3. The coefficient on *CFO* is negative and statistically significant at 1%, consistent with previous findings reporting a negative association between accruals and cash flows (Dechow *et al.* 1998; Ball & Shivakumar 2005). The coefficient on *CFO*D* is positive and statistically significant at 1%, confirming the role of conservatism as attenuating the negative association between accruals and cash flows by deferring the recognition of economic gains until realized and enforcing timely recognition of economic losses. In particular, the magnitude of coefficient on *CFO*D* is larger than that of *CFO* in all three models, suggesting that firms are conservative, on average (Khan and Watts 2009; Watts 2003a; Watts 2003b).

The key variables of interest, *CFO*D*Size*, *CFO*D*Lev*, and *CFO*D*MTB* also provide results consistent with Khan and Watts (2009). The coefficient of *CFO*D*Size* is negative (significant at 1%) in all equations, indicating that larger firms report less conservatively. Similarly, the positive coefficients of *CFO*D*Lev* are statistically significant at 1% - 5%, indicating that more levered firms adopt a higher degree of conservatism. However, the coefficients on *CFO*D*MTB* in model 1 and 2 are negative and not statistically significant in all models. Khan and Watts (2009) reported a similar result and attributed it to the 'buffer problem' suggested by Rychowdhury and Watts (2007). Specifically, Rychowdhury and Watts (2007) argue that the beginning period MTB is expected to be negatively associated with conditional conservatism when the estimation period is one year. It is because the prior year's unrecognized increases in asset values (i.e. higher beginning MTB) reduce the necessity to recognize asset value losses in the current period (being less conservative). Since the end-of-

period MTB is highly correlated with the beginning MTB, the end-of-period MTB is also negatively associated with conditional conservatism at the annual horizon (see also Khan & Watts 2009). Khan and Watts (2009) argue that although the direct positive association between MTB and conservatism is not observed empirically, MTB should still be included in the regression model when measuring conservatism since the relevant research with past empirical evidence strongly suggests that conservatism is significantly associated with end-of-period MTB.

3.3.3 Accounting Conservatism and IPO Underpricing

The following regression model is estimated to test the association between IPO issuers' pre-IPO year conservatism and the degree of underpricing:

$$\begin{aligned} Underpricing_i = {} & \alpha_0 + \beta_1 Pre\_CSCORE_i + \beta_2 Lev_{i,\,t-1} + \beta_3 Integer_i + \beta_4 Age_i \\ & + \beta_5 Volatility_i + \beta_6 Offersize_i + \beta_7 Nasdaq_i + \beta_8 ROA_{i,\,t-1} + \beta_9 Underwriter_i \\ & + \beta_{10} VC\_Rep_i + \beta_{11} Auditor_i + \beta_i^n \sum Year\ dummies \\ & + \beta_i^n \sum Industry\ dummies + \varepsilon_i \end{aligned} \tag{4}$$

A description of each variable used in the regression model is provided in Table 3-2. *CSCORE* measured in the pre-IPO year is *Pre_CSCORE* and its coefficient tests the association between the extent of issuers' conservatism adopted in the pre-IPO year and IPO underpricing. The vast majority of IPO studies suggest that information asymmetry plays a key role in determining the level of IPO underpricing (e.g., Beatty & Ritter 1986; Rock 1986; Koh & Walter 1989). Accordingly, the regression model includes as control variables various factors that primarily proxy for information asymmetry, in particular for IPO firms. Valuing an IPO is more difficult for younger firms as they have a shorter

history of operating in the market prior to IPO. Thus, there is higher information asymmetry for younger firms and firm age (*Age*) is predicted to be negatively associated with IPO underpricing (Ritter 1984; Loughran & Ritter 2004). Profitability of a business (*ROA*) influences the level of information available about the firm as a firm with higher profitability is willing to disclose more information to the public to minimize undervaluation of their stock (Wallace & Naser 1995; Inchausti 1997). As a result, there will be additional information available for firms with more profitable operating history prior to IPO, reducing their need to underprice their initial stock offer. The regression model also controls for firm leverage (*Lev*) following Lowry and Shu (2002) who suggest that highly levered firms underprice their IPOs more as insurance against potential litigation because they are exposed to higher litigation risk. Although *Lev* is one of the inputs of *CSCORE*, it is still included as a control variable following Kim *et al.* (2013). They test the association between *CSCORE* and the market reactions to SEO announcements. In their regression model, they include the inputs of *CSCORE* such as size, leverage and market-to-book ratio to alleviate the concern that it could be difficult to discern the extent to which their results are driven by conservatism or by firm characteristics that affect both *CSCORE* and the market reactions to SEO announcements.[6]

Risky firms have higher information asymmetry between insiders and outside investors. Following previous studies (Carter *et al.* 1998; Leone *et al.* 2007; Boulton *et al.* 2011), stock return volatility (*volatility*) is included as a control variable to proxy for firm level information asymmetry. Bradley *et al.* (2004) suggest that integer initial file prices (*Integer*) are positively associated with IPO underpricing. They argue that firms with

[6] Following Kim *et al.* (2013), if the inputs of *CSCORE* such as size, leverage and market-to-book ratio are expected to significantly affect a dependent variable in the model specification based on the theory, then this thesis includes them as control variables.

greater uncertainty are likely to have an integer offer price because the issuing firm and its underwriter tend to negotiate from a set of rounded prices when there is higher after-market price uncertainty. Previous studies (e.g., Lowry & Shu 2002; Leone *et al.* 2007) also report that firms listed on the Nasdaq experience larger IPO underpricing because these firms are harder to value due to their relatively higher risk and smaller size (Corwin & Harris 2001). Thus, the regression model includes *Nasdaq* as one of the control variables to proxy for the higher uncertainty surrounding Nasdaq firms.

Offersize is also included in the regression model to control for any significant influence of IPO offer size on underpricing. Beatty and Ritter (1986) argue that small offerings have substantially higher IPO underpricing due to higher *ex ante* uncertainty associated with the smaller offerings (see also Barry & Brown 1984; TiniÇ 1988). However, Michaely and Shaw (1994) find that the negative association between size and underpricing is not maintained after controlling for the reputation of the underwriter. They argue that reputable investment banks underwrite larger IPOs, but larger IPOs need to be issued to a larger group of investors, requiring greater distribution efforts by the investment banker which leads to larger IPO underpricing. Lowry and Shu (2002) also find that firms with a larger offer size underprice their IPOs more because they are subject to higher litigation risk. They suggest that litigation is economically feasible when sued firms are significantly larger in terms of proceeds raised and market capitalization after the IPO due to the fixed costs associated with filing a lawsuit (see also Alexander 1991).

Prior literature suggests that a third-party monitoring certification by more reputable underwriters, venture capitalists and auditors reduces the uncertainty about the value of

an IPO and the information asymmetry between insiders and outside investors by adding credibility to the offering price of the issue (Carter & Manaster 1990; Datar *et al.* 1991; Megginson & Weiss 1991; Menon & Williams 1991; Michaely & Shaw 1994; Carter *et al.* 1998; Copley & Douthett Jr 2002; Lewellen 2006; Nahata 2008). However, Lowry and Shu (2002) propose the insurance effect of IPO underpricing, suggesting the 'deep pocket' theory that if the IPO firm does not have sufficient funds to meet all damages payments, shareholders can seek the rest of the payments from the other parties such as underwriters, venture capitalists or auditors under Section 11 of the *Securities Act of 1993*. Accordingly, more reputable underwriters, venture capitalists and auditors may underprice their IPOs by a greater amount to reduce their potential litigation costs. Thus, the reputation measures of underwriter (*Underwriter*) and venture capitalists (*VC_Rep*) and an indicator variable that takes the value of one if a firm's auditor is one of the Big Six auditors and otherwise zero (*Auditor*) are included as control variables in the regression model to control for any effect of third-party certification on IPO underpricing.

3.3.4 Accounting Conservatism and Post-Issue Stock Return Performance

Post-issue annual abnormal stock returns are calculated using buy-and-hold abnormal returns (BHAR) and cumulative abnormal returns (CAR) relative to alternative benchmarks: the monthly CRSP value-weighted index. Stock returns are measured for the holding period of one to five years, starting from the issue month after adjusting for the return on the first-trading day. However, when *CSCORE* is measured in the IPO year, stock returns are measured three months after the IPO fiscal-year ends to allow for a reporting lag (see Teoh *et al.* 1998a; Fan 2007). For IPOs that are delisted before the

holding period ends, the after-market period is truncated and the BHAR and CAR end with CRSP's last listing date (see Ritter 1991).

Post-issue buy and hold abnormal portfolio returns (BHAR) are calculated from the cross-section of multi-month returns net of multi-month benchmark returns as follows:

$$\mathrm{BHAR_t} \equiv \frac{\sum_{i=1}^{N}\left[\prod_{t=0}^{T}(1+R_{i,t}) - \prod_{t=0}^{T}(1+\mathrm{M_{i,t}})\right]}{N} \tag{5}$$

where $R_{i,t}$ and $M_{i,t}$ are monthly raw and benchmark returns and N is the number of surviving firms in month T.

Post-issue cumulative abnormal portfolio returns (CAR) are computed from the event time-series of firm-average monthly abnormal returns as follows:

$$\mathrm{CAR_t} \equiv \sum_{t=0}^{T}\left[\frac{\sum_{i=1}^{N}(R_{i,t} - \mathrm{M_{i,t}})}{N}\right] \tag{6}$$

where $R_{i,t}$ and $M_{i,t}$ are monthly raw and benchmark returns and N is the number of surviving firms in month T.

Loughran and Ritter (1995) argue that the Fama and French (1993) three-factor model used in the time-series regressions with monthly portfolios returns have less power to identify abnormal returns, especially when value-weighted portfolios returns are used. Accordingly, this thesis employs a regression analysis to cross-sectionally test the association between issuers' conservatism and their long-term stock return performance after controlling for other known potential predictors. The following equation represents the cross-sectional regression model and a description of each variable is provided in Table 3-2:

$$BHAR_i \text{ or } CAR_i = \alpha_0 + \beta_1\, CSCORE_i + \beta_2\, Age_i + \beta_3\, Underpricing_i + \beta_4\, Underwriter_i + \beta_5\, RD_i + \beta_6\, \Delta Asset_i + \beta_7\, Cash_i + \beta_i^n \sum Year\ dummies + \beta_i^n \sum Industry\ dummies + \varepsilon_i \quad (7)$$

The main variable of interest is *CSCORE* and its coefficient tests whether the extent to which conservatism is adopted by an IPO issuer can significantly predict its post-issue stock return performance. *CSCORE* is measured both in the pre-IPO and IPO year. Accounting variables are measured in the same fiscal year over which *CSCORE* is measured for consistency. Following previous studies (Carter & Manaster 1990; Ritter 1991; Loughran & Ritter 2004) which suggest that firm age is a proxy for the risks of the IPO firm, the regression model includes *Age* as a control variable. Prior research also finds evidence that firms with higher IPO underpricing perform worse in the long-run (e.g., Ritter 1991; Carter & Dark 1993; Krigman *et al.* 1999). Ritter (1991) suggests that lower quality IPOs underprice their offer by a larger amount so as not to fully exploit the market's over-optimism at the time of the offering in order to avoid future law suits. Thus, *Underpricing* is included as another control variable in the regression model.

[Insert Table 3-2 here]

The regression model also controls for investment and growth characteristics of an IPO by including the variables *RD* and *ΔAsset*. Eberhart *et al.* (2004) find that investors experience significantly positive long-term abnormal stock returns following increases in research and development (R&D) expenditures. On the other hand, Cooper *et al.* (2008) suggest that firm asset growth is one of the strongest predictors of future returns, reporting a strong negative correlation between a firm's asset growth and subsequent

abnormal returns. Previous studies also suggest that more reputable underwriters market higher quality IPOs with the prospects of better long-term performance to maintain their credibility and protect their reputation in the IPO market (Megginson & Weiss 1991; Michaely & Shaw 1994; Carter *et al.* 1998; Lewellen 2006). Thus, the regression includes *Underwriter* as a control variable. The amount of cash and marketable securities available (*Cash*) is also included in the regression model to proxy for the financial condition of an IPO since low cash holdings are potential indicators of financial distress and financial distress can lead to lower subsequent equity returns (Billett *et al.* 2011).

3.4 Sample Data and Descriptive Statistics

This thesis utilizes the Securities Data Company's (SDC) New Issues database to identify all U.S. common stock initial public offerings during the period 1990 to 2005. This thesis examines the post-IPO status and activities of IPO issuers such as their long-term stock return performance, SEOs, M&As and their stock-market longevity. Accordingly, this thesis adopts a period of five years after the IPO, following the previous research on various post-IPO activities (e.g., Mikkelson *et al.* 1997; Jain & Kini 1999; Bhabra & Pettway 2003; Harjoto & Turetsky 2006). Consequently, although this thesis includes firms that went IPO from 1990 to 2005, the actual period under investigation ends in 2010. Following previous IPO studies (e.g., Fan 2007; Lee & Masulis 2011), unit issues, right issuers, spin-offs, ADRs, reverse LBOs, closed-end funds, unit investment trusts, REITs, and IPOs with offer prices under $1 ("penny stocks") are excluded from the analysis. IPOs from the financial service sector (SIC code 6XXX) and utility sector (SIC 49XX) are also excluded due to their significantly

different financial disclosure and regulation requirements relative to other sample firms (see Lee & Masulis 2011). This leaves 3,795 IPOs identified during the sample period. The detailed sampling process is reported in Table 3-3. To measure firm-level conservatism, firms are required to have three variables available: (1) total assets (*Size*), (2) leverage ratio measured as total debts divided by beginning total assets (*Lev*) and (3) the market-to-book ratio (*MTB*). Such restrictions excluded a further 1,439 IPOs, leaving 2,356 firms as the final sample for empirical analysis.

[Insert Table 3-3 here]

Table 3-4 (Panel A) reports descriptive statistics for the full IPO sample. The number of observations of the post-IPO fiscal year is significantly higher than the pre-IPO year since the pre-IPO year *CSCOREs* are measured only for 37% of the sample firms due to lack of COMPUSTAT prospectus data available in the pre-IPO year. Table 3-4 (Panel B) reports descriptive statistics for the sample firms that have *CSCOREs* available for both the pre-IPO and IPO fiscal year. Finally, Table 3-4 (Panel C) reports descriptive statistics of the variables that are measured only in the IPO year or that do not differ between the pre-IPO and IPO year.

As reported in Table 3-4 (Panel A and B), *CSCORE* is significantly higher in the pre-IPO year compared to that measured in the post-IPO fiscal year which suggests that IPO firms adopt a higher degree of conservatism before they go public. *Size*, Δ*Asset* and *Cash* significantly increased in the post-IPO year because the funds raised at the IPO would have significantly increased the post-IPO total assets which include cash. *Lev* significantly decreased in the post-IPO period, consistent with the previous finding that

newly listed firms significantly decrease their leverage with their IPO proceeds (see Pagano *et al.* 1998).

[Insert Table 3-4 here]

RD significantly decreased in the post-IPO year, but 30% of the sample firms did not incur any R&D expenditures. The mean and median *RE* are negative in both fiscal years, consistent with the life-cycle theory that firms with low *RE* tend to be young firms which raise external funds and invest all of their profits in their relatively abundant investment opportunities (DeAngelo *et al.* 2010). The mean and median *ROA* are also negative, suggesting that the profitability of IPO firms is low in general. However, both *RE* and *ROA* significantly increased in the post-IPO year as compared to the pre-IPO year, suggesting that firms experience increased profitability after the IPO.

In Table 3-4 (Panel C), the mean of *VC_Rep*, *MTB* and *Underpricing* is higher than the median, indicating that its distribution is positively skewed. *Integer*, *Nasdaq* and *Auditor* are dummy variables. Although it is not tabulated in Table 3-4 for brevity, out of 2,356 sample firms, 423 IPOs had an integer offer price, 1,840 IPOs issued their offerings on the NASDAQ and 2,175 IPOs used one of the Big Six auditors.

3.5 Empirical Analysis

3.5.1 Comparisons of *CSCOREs* between the pre-IPO and IPO year

Table 3-5 shows the IPO issuers' *CSCOREs* from the pre-IPO year to five years after the IPO. Table 3-5 (Panel A) reports changes in the mean and median *CSCORE* each year and compares the pre-IPO *CSCORE* to the *CSCOREs* measured in the post-IPO periods (year 0 to year 5). The mean and median pre-IPO year *CSCORE* (year-1) is significantly higher than the IPO year (year 0) *CSCORE* at 1%. In particular, the pre-IPO year *CSCORE* is significantly higher than the *CSCOREs* measured in year 0 to year 5 for all six years. These results provide strong evidence that IPO issuers adopt a higher degree of conservatism before they go public. After the IPO, issuers' conservatism significantly declines in year 0 and this decline continues until year 1. Issuers' conservatism starts increasing again in year 2 but shows no more significant changes after year 3.

[Insert Table 3-5 here]

It is difficult to conclude that firms adopt a more conservative reporting policy prior to going public based on the results obtained from Panel A since it only compares issuers' *CSCOREs* measured between the pre- and post-IPO periods. As a result, Panel B compares the mean and median *CSCOREs* between the IPO sample and non-issue matched firms following Kothari *et al*. (2005). Kothari *et al*. (2005) provide the specification of tests based on performance-matched, discretionary accrual measures. They show that performance-matched measures enhance the reliability of inferences from earnings management research, mitigating problems associated with the

correlation between accruals and a firm's performance. Since conditional conservatism is reflected in both earnings and accruals (see Ball & Shivakumar 2005), this thesis adopts the approach of performance matching to identify non-issue matched firms. Each sample firm is matched with another non-issue firm with the same three-digit SIC code and the closest return on assets (ROA) in the same year. The ROA is measured as income before extra-ordinary items divided by total assets. Matched firms are identified separately for the pre-IPO and IPO year since the IPO is a major corporate event and firms experience significant changes in terms of organizational, financial and capital structure between the pre- and post-IPO year. *CSCOREs* of the IPO year matched firms are computed for the period of six years from the event year (year 0 to year 5) to examine whether changes in reporting conservatism after the IPO significantly differ from those of the matched firms.

In Table 3-5 (Panel C), the performance matched non-issue firms are identified on the basis of the non-issuer's ROA that falls within 90 to 110 percent of the sample firm following Denis and Kruse (2000). For example, if the non-issuer with the same three-digit SIC code has a ROA less than 90% or greater than 110% of the issuer's ROA, then the non-issuer with the closest ROA is identified as a matched firm without matching the SIC code.

The mean and median of the issuer' *CSCORE* in year -1 is significantly higher compared to the matched firms, indicating that the IPO issuers' conservatism in the pre-IPO year is significantly higher than that of the non-issue matched firms. Ball and Shivakumar (2008) claim that a higher level of scrutiny at the IPO from market monitors and regulatory scrutiny increases the incentives for IPO issuers to provide

more conservative IPO prospectus data. This result is also consistent with Venkataraman *et al*. (2008), who report that average pre-IPO accruals are negative and less than post-IPO accruals. The issuers' mean *CSCORE* is also higher than the non-issue matched firms in year 0, although the difference is not statistically significant. The median of sample firms' *CSCORE* is significantly higher than that of the matched firms in year 0. Taken together, this result supports the view that IPO firms do not engage in earnings management, in particular in the pre-IPO and the IPO year. The mean *CSCORE* of the matched firms in year 3, 4 and 5 is significantly higher than that of the IPO sample firms which suggest that firms start moving away from conservatism and reporting more aggressively two years after the IPO. However, this result needs to be interpreted with some caution, as the median difference is not statistically significant.

As discussed above, the results provide evidence that issuers' conservatism changed significantly between the pre- and post-IPO year. Prior literature documents that accounting conservatism changes following changes in information asymmetry (Watts 2002; LaFond & Watts 2008). Although it may be expected that information asymmetry reduces after the IPO and thus firms report less conservatively in the post-IPO year, this thesis examines which specific factors lead IPO firms to significantly change their conservatism from the pre- to post-IPO year. The following equation is developed for the regression analysis and a description of each variable in the model is provided in Table 3-2:

$$\begin{aligned} \Delta CSCORE_i \text{ or } \%\Delta CSCORE_i = {} & \alpha_0 + \beta_1 RE_{i,\,t-1} + \beta_2 Age_i + \beta_3 Inv\_Cycle_{\,i,\,t-1} \\ & + \beta_4 Volatility_i + \beta_5 Underwriter_i + \beta_6 VC\_Rep_i \\ & + \beta_7 Auditor_i + \beta_8 \text{Hightech}_i + \beta_i^n \sum Year\ dummies \\ & + \beta_i^n \sum Industry\ dummies + \varepsilon_i \end{aligned} \tag{8}$$

The dependent variable is *ΔCSCORE* (*%ΔCSCORE*) which measures changes in the *CSCORE* between the pre-IPO and IPO year. The right-hand side variables are suggested by prior literature as the major factors affecting accounting conservatism. Previous studies (LaFond & Watts 2008; Khan & Watts 2009) suggest that conservatism is expected to decrease with firm age (*Age*) because younger firms tend to have more growth options that make the future cash flows less verifiable and produce higher agency costs that lead to higher conservatism. Also, younger firms, particularly in the IPO setting, have less data to aid in the valuation process, increasing the complexity of estimating future cash flows and a suitable offer price (Krinsky & Rotenberg 1989; Ritter 1991). Thus, younger IPO firms have a higher degree of information asymmetry between managers and outside investors than do older firms, increasing the demand for higher conservatism. *Inv_cycle* is a decreasing measure of the length of the investment cycle measured as depreciation expenses scaled by beginning total assets and is expected to be negatively associated with conservatism. Longer investment cycles (i.e., smaller depreciation expenses relative to beginning total assets) increase the difficulty in forecasting the magnitude and timing of future cash flows, generating a higher demand for conservatism (Khan & Watts 2009).

DeAngelo *et al.* (2010) document that firms with high retained earnings (as a proportion of total assets) tend to be more mature established firms with higher profitability. More mature firms have richer information environments than young firms, reducing the need for conservatism. Thus, conservatism is expected to decrease with *RE*. *Volatility* is also included in the model because firms with higher stock return volatility have higher information asymmetry between insiders and outside investors. *Volatility* is expected to be positively associated with *ΔCSCORE* (LaFond & Watts 2008; Khan & Watts 2009).

Hightech is also predicted to have a positive association with *ΔCSCORE*. Firms in the technology sector have higher litigation risk than non-technology firms (Field *et al.* 2005). As a result, firms from the high-tech industry are more likely to adopt a higher degree of conservatism to protect themselves from potential litigation (Ramalingegowda & Yu 2012). Thus, *Hightech*, a dummy variable that takes one if the IPO firm is in the high-tech industry as defined in the SDC and otherwise zero, is included as a control variable in the model.

Prior research indicates that the reputation of *Underwriter*, *VC_Rep* and *Auditor* can affect changes in conservatism between the pre- and post-IPO year. Previous studies suggest that IPO firms engaging more reputable third-party specialists are more likely to have less information asymmetry between insiders and outside investors (Carter & Manaster 1990; Megginson & Weiss 1991; Menon & Williams 1991; Carter *et al.* 1998; Lewellen 2006; Jain & Kini 2008). Accordingly, there are less incentives for these issuers to adopt higher conservatism, so *Underwriter*, *VC_Rep* and *Auditor* are expected to be negatively associated with *ΔCSCORE*. On the other hand, more reputable third-party specialists may enforce issuers to adopt a conservative reporting policy in the IPO year due to their reputational capital at stake. They need to establish a trustworthy reputation in the long-term because their survival, as well as future expected profitability, is strongly influenced by their reputation and reputation is directly affected by the post-IPO stock and accounting performance of the IPO firm they are working with (Megginson & Weiss 1991; Nahata 2008). Accordingly, they have strong incentives to ensure that IPO firms report earnings conservatively in the IPO year so that these firms can maintain their earnings in the future. This suggests a positive association between *ΔCSCORE* and *Underwriter*, *VC_Rep* and *Auditor*.

Table 3-6 provides the correlation matrix[7] of the variables used in equation (8). Contrary to the prediction, *RE* is positively correlated with *ΔCSCORE*, indicating that IPO issuers with higher *RE* in the pre-IPO year tend to increase their conservatism in the IPO year. However, their correlation is only 6.8% and statistically significant at 10%. *Underwriter* is positively correlated with *Audito*r at 38%, indicating that IPO firms hiring more reputable underwriters tend to involve one of the Big Six auditors. Other variables do not appear to have a high level of correlation between each other.

[Insert Table 3-6 here]

The results for the regression analysis are presented in Table 3-7. *VC_Rep* is negatively and statistically significantly associated with both *ΔCSCORE* and *%ΔCSCORE* at 10% and 5% respectively. Previous studies (Megginson & Weiss 1991; Nahata 2008) find that VCs have higher incentives to closely monitor their portfolio firms to establish a good reputation in the market given the highly networked nature of the venture capital industry and the repeated need for funds. Furthermore, VCs have access to inside information on the prospects of their portfolio firm (Jain & Kini 2008). Therefore, reputable VCs can provide certification to outside investors that the offer price of the issue is close to its "true" price, reducing the uncertainty about the quality of an issue (see Megginson & Weiss 1991). Thus, IPO firms backed by more reputable VCs have lower information asymmetry between insiders and outside investors and this significantly reduces the need for these IPO firms to adopt a higher degree of conservatism in the IPO year. As such, firms backed by more reputable VCs show significant negative changes in *CSCOREs* between the pre and post-IPO year.

[7]Each variable in the regression model is tested for a variance inflation factor (VIF) and the results are provided in Appendix II of the thesis. The mean VIF is 1.29 and each VIF reported is under 2, suggesting that the model is not subject to multicollinearity (Kim & Purnanandam 2013).

The coefficient on *Volatility* is positive and statistically significant in both regressions, implying that firms with higher stock return volatility following the IPO significantly increase their conservatism in the post-IPO year in response to higher information asymmetry. The coefficient on *RE* is negative and statistically significant, indicating that IPO issuers with a larger amount of retained earnings are more likely to reduce their conservatism in the IPO year compared to the pre-IPO year. However, the coefficient remains statistically significant only in the model where the dependent variable is *%ΔCSCORE*. Other variables do not appear to have a significant association with issuers' changes in *CSCOREs.*

[Insert Table 3-7 here]

3.5.2 Testing the Effect of Conservatism on IPO Underpricing

To test whether conservatism adopted by issuers prior to going public positively affects issuers' underpricing, equation (4) is estimated employing OLS regression analysis. Table 3-8 reports the correlation matrix[8] among the variables used in this model specification. Prior research documents that IPO underpricing arises due to the information asymmetries among the parties associated with the offering (Beatty & Ritter 1986; Boulton *et al.* 2011). There is a relatively high correlation between *Underpricing* and *Volatility* at 44%. Their high correlation is expected since *Volatility* proxies for the degree of information asymmetry. The correlation between *Offersize* and *Underwriter* is significantly high at 66%. Prior research also provides evidence of this

[8]VIF is tested for each variable and the results are provided in Appendix II of the thesis. The highest VIF is only 1.71 in the regression which is obtained for *Offersize*.

positive relation and documents that both *Offersize* and *Underwriter* are important factors affecting the degree of IPO underpricing (e.g., Carter & Manaster 1990; Carter & Dark 1993; Carter *et al.* 1998). However, given their high correlation, the regression estimation is repeated with only one of the variables included in the regression to ensure that the results are not affected by their high correlation.

[Insert Table 3-8 here]

Table 3-9 (Panel A) reports the results for the regression analysis. The coefficient on *Pre_CSCORE* is negative and statistically significant at 5% in both model 1 and 2, suggesting that issuers adopting a higher degree of conservatism prior to going public experience less IPO underpricing. Prior research suggests that accounting conservatism plays a more significant role when there is higher information asymmetry (LaFond & Watts 2008; García Lara *et al.* 2009; Lin & Tian 2012). To test such an effect, the regressions are re-estimated separately for firms with high and low information asymmetry.

Following previous studies (e.g., Frankel *et al.* 1995; LaFond & Watts 2008; Khan & Watts 2009; Kim *et al.* 2013) which measure information asymmetry using stock return volatility or bid-ask spread, sample firms are divided into high and low information asymmetry groups based on both stock return volatility and bid-ask spread. Specifically, if the issuer's stock return volatility measured over 30 days following the IPO is greater than the median volatility of the entire sample firms, the issuer is placed into the high information asymmetry group. If the issuer's volatility is lower than the median volatility, it belongs to the low information asymmetry group. Similarly, bid-ask spread

is computed as [ask – bid / (ask + bid)/2] and measured over 30 days after the IPO. If the IPO firm's average bid-ask spread over this period is higher than the median bid-ask spread of all sample firms, it is placed into the high-information asymmetry group. If the IPO firm's bid-ask spread is lower than the median bid-ask spread, it is placed into the low information asymmetry group. For robustness tests, sample firms are also divided into high and low information asymmetry groups based on the stock return volatility and bid-ask spread measured over the entire post-IPO fiscal year. The results are consistent and are presented in Appendix III.

Table 3-9 (Panel B) reports the regression results for the high information asymmetry group. Stock return volatility was used as a measure of information asymmetry in models 3 and 4, while models 5 and 6 employ the bid-ask spread measure of information asymmetry. The regression results for the low information asymmetry group are presented in Table 3-9 (Panel C) in which models 7 and 8 use the return volatility measure of information asymmetry and models 9 and 10 use the bid-ask spread.

[Insert Table 3-9 here]

The coefficient on *Pre_CSCORE* is negative and statistically significant at 5% in model 3 and 4 and at 1% in model 5 and 6. In particular, the magnitude of the coefficient on *Pre_CSCORE* is larger than those estimated in model 1 and 2 (from -0.06 to -0.14 or -0.19). However, the coefficient on *Pre_CSCORE* is not statistically significant in model 7, 8, 9 and 10 which implies that there is no significant association between issuers' conservatism and underpricing for the low information asymmetry group. These results

provide evidence that the observed positive effect of issuers' conservatism on underpricing is mainly driven by the IPO firms with higher information asymmetry. Thus, the results suggest that IPO firms with higher information asymmetry benefit more from adopting higher conservatism in the pre-IPO year by underpricing their IPOs to a lesser extent.

Contrary to the prediction, the coefficient on *Integer* is negative and statistically significant across model 1 to model 6. However, other studies such as Banerjee *et al*. (2011), Boulton *et al.* (2011) and Lin and Tian (2012) find similar results. They argue that the use of integer offer price tends to reduce the uncertainty in pricing the IPO because discrete price sets reduce the amount of information required between the negotiating parties associated with the offering (see also Harris 1991). *Offersize* is positively associated with IPO underpricing in all models (except for model 7) which lends support to Lowry and Shu (2002) that larger IPOs are underpriced more for the higher potential litigation risk. The coefficient on *Age* is negative and statistically significant in all regressions, consistent with the prediction that younger firms underprice their IPOs to a greater extent.

Contrary to the prediction, *Lev* has a negative sign in Panel A and B. However, it is consistent with Lin and Tian (2012) who also find evidence that leverage is negatively associated with IPO underpricing. They argue that the monitoring role of leverage deters management's opportunistic behavior, reducing information asymmetry for the IPO firm. *Volatility* is positively associated with IPO underpricing in all regression models (statistically significant at 1%), confirming that more risky firms underprice their IPOs to a greater extent. The coefficient on *Nasdaq* is positive and statistically

significant in Panel A and C, indicating that Nasdaq listed firms are underpriced to a greater extent. However, for the fact that the coefficient remains statistically significant only for the low information asymmetry group, the positive association between *Nasdaq* and IPO underpricing holds only for IPO firms with less information asymmetry. Other variables do not exhibit a significant association with IPO underpricing.

3.5.3 Conservatism and Long-Term Stock Return Performance of IPO Firms

Sample firms are sorted into quartile portfolios based on their conservatism measured in the pre-IPO and IPO year to test the association between issuers' conservatism and long-term stock return performance. Q1 is the most conservative reporting earnings portfolio and Q4 is the least conservative reporting earnings portfolio. Table 3-10 presents the *Pre_CSCORE* quartile portfolios and Table 3-11 provides *Post_CSCORE* quartile portfolios. The sample mean and median abnormal stock returns are all negative, consistent with previous findings of significant after-market underperformance of IPO firms (e.g., Ritter 1991; Teoh *et al.* 1998a).

As presented in Table 3-10, the least conservative portfolio Q4 is the most outperforming portfolio, whereas the most conservative portfolio Q1 is the worst-performing portfolio for all five years of holding periods. In particular, there is a monotonic decrease in the market-adjusted returns from Q4 to Q1 (except for the five years return). However, the *Post_CSCORE* quartile portfolios show different results.

[Insert Table 3-10 here]

In Table 3-11, Q4 and Q1 are not the most outperforming or the worst performing portfolio. In fact, Q2 appears to be the most outperforming portfolio across different holding periods except for two years of returns. Nonetheless, it is difficult to draw inferences from these results as there appears to be no systematic pattern across the quartile market adjusted returns for different holding periods. Accordingly, this chapter also performs a multivariate analysis by estimating regression equation (7) because univariate analysis does not control for other effects on post-issue stock returns and thus the evidence is only suggestive. The regressions are estimated separately for *Pre_CSCORE* and *Post_CSCORE* analysis.

[Insert Table 3-11 here]

Table 3-12 reports the correlation matrix[9] of independent variables used in the regression model for the *Pre_CSCORE* analysis and Table 3-13 for the *Post_CSCORE* analysis. There is a relatively higher correlation between *Cash* and *RD* at 43% in the pre-IPO year and at 50% in the post-IPO year, suggesting that IPO firms with higher cash holdings tend to invest more in R&D activities. However, other variables do not appear to have a high level of correlation between each other.

[Insert Table 3-12 here]

[Insert Table 3-13 here]

[9] Because some variables show a significantly high correlation, each coefficient is tested for VIF. The results are provided in Appendix II of the thesis and there is no sign of multicollinearity in the regressions.

Table 3-14 reports the regression results testing the association between *Pre_CSCORE* and issuers' stock return performance based on buy-and-hold abnormal returns (BHARs). The coefficient on *Pre_CSCORE* is negative in all models and is statistically significant in one, two and three year BHARs regressions at 1 %, 10% and 5%, respectively. Table 3-15 presents the regression results where the cumulative abnormal returns (CARs) are used as a dependent variable in the equation. Consistent with the results reported in Table 3-14, the coefficient on *Pre_CSCORE* is negative and statistically significant in one, two and four year return regressions. Taken together, these results indicate that issuers reporting earnings more conservatively in the pre-IPO year tend to show lower post-issue stock returns at least for two years after the IPO.

[Insert Table 3-14 here]

[Insert Table 3-15 here]

Consistent with predictions, the coefficient on *Underpricing* is negative in all regressions, indicating that issuers with larger initial returns show worse long-term stock return performance. However, it remains statistically significant only for one and two year BHAR and CAR regressions. The coefficient on *Underwriter* is positive and statistically significant in all regressions (except for two and three year CAR regressions), suggesting that IPOs underwritten by more prestigious underwriters tend to perform better in the post-issue market. *Cash* also has a positive coefficient, showing that the market perceives IPO firms with higher amount of cash holdings as a better investment. However, the coefficients remain statistically significant only in the CAR regressions (except for one year window regression).

The coefficient on *ΔAssets* is negative and statistically significant in CAR regressions (except for four year regression) and in five year BHAR regression. The results are in line with prior research that firms with higher asset growth experience subsequent negative equity returns (Cooper *et al.* 2008). *RD* presents mixed results. Contrary to the prediction, the coefficient on *RD* is negative and statistically significant in three and four year BHAR regressions, while it is positive in all CAR regressions. However, its coefficients are not statistically significant across different holding periods of returns.

Tables 3-16 and 3-17 report the regression results testing the association between the *Post_CSCORE* and *BHARs* and the *Post_CSCORE* and *CARs*, respectively. The coefficient on *Post_CSCORE* is positive and statistically significant in all regressions except for two year CAR and one and two year BHAR regressions. Given that the coefficient on *Post_CSCORE* is statistically significant for three to five year return windows in both BHAR and CAR regressions, the results indicate that issuers adopting a higher degree of conservatism in the post-IPO year show a higher long-term stock return performance.

[Insert Table 3-16 here]

[Insert Table 3-17 here]

As for the control variables, *Age* is positively associated with issuers' stock returns but is statistically significant only in five year BHAR, and four and five year CAR regressions which provides some evidence that older firms tend to show a higher stock return performance but mainly in the long-term. The coefficient on *RD* is also positive

in all regressions and remains statistically significant in all CAR regressions. This finding indicates that IPO firms investing more in R&D activities in the post-IPO year experience higher post-issue stock returns. However, it is only weak evidence as the coefficient is not statistically significant across all return windows in BHAR regressions except for one year. For brevity, the results for other control variables are not discussed here because they are similar to the results obtained from the *Pre_CSCORE* regression analysis.

3.5.4 Additional Tests for an Association between Conservatism and Long-Term Stock Return Performance of IPO Firms

To examine whether the extent to which conservatism adopted by issuers in the pre-IPO and IPO year jointly affects their after-market stock returns, sample firms are sorted into four portfolios based on the level of their *Pre_CSCORE* and *Post_CSCORE*, respectively. Sample firms whose *CSCOREs* are above the median *CSCORE* in both the pre-IPO and IPO year are placed into the '*CtoC*' (*conservative to conservative*) portfolio. Sample firms whose *CSCOREs* are above the median *CSCORE* in the pre-IPO year and below the median *CSCORE* in the IPO year are placed into the '*CtoA*' (*conservative to aggressive*) portfolio. Sample firms whose *CSCOREs* are below the median *CSCORE* in the pre-IPO year and above the median *CSCORE* in the IPO year are placed into the '*AtoC*' (*aggressive to conservative*) portfolio. Finally, sample firms whose *CSCOREs* are below the median *CSCORE* both in the pre-IPO and IPO year are placed into the '*AtoA*' (*aggressive to aggressive*) portfolio. The portfolio returns are presented in Table 3-18.

As reported in Table 3-18, despite the fact that firms go through significant changes between the pre- and post-IPO period, 66% of the sample firms are placed in either the '*CtoC*' or '*AtoA*' portfolio. This is consistent with the previous studies which document that accounting conservatism is the firm's reporting characteristic that is not expected to drastically fluctuate from one reporting period to the next (see Watts 2002; Givoly *et al.* 2007). The '*AtoC'* portfolio shows the highest market-adjusted returns throughout different holding periods. The '*CtoC'* portfolio records the second highest portfolio returns and the '*CtoA'* portfolio records the third highest returns, except for the one year return window. The '*AtoA'* portfolio report negative returns for all return windows and is the worst-performing portfolio.

[Insert Table 3-18 here]

Overall, these results suggest that issuers reporting earnings less conservatively in the pre-IPO year but who increase their conservatism in the IPO year exhibit a higher return performance in the post-issue stock market. On the other hand, issuers reporting earnings aggressively both in the pre-IPO and IPO year significantly underperform in the market and the other portfolios for all return windows.

Regression analysis is also employed and three additional dummy variables are included in the regression models as indicators of three portfolios. Specifically, *CtoC* is one if the sample firm is from the '*CtoC'* portfolio and zero otherwise, *AtoC* is one if the sample firm is from the '*AtoC'* portfolio and zero otherwise, and *CtoA* is one if the sample firm is from the '*CtoA'* portfolio and zero otherwise. The base is the sample firms from the '*AtoA'* portfolio.

The regression results are presented in Table 3-19 and Table 3-20 for BHARs and CARs, respectively. The coefficient on *AtoC* is positive and statistically significant in all BHAR and CAR regressions except for the one year return window in the CAR regression. The coefficient on *CtoC* shows a negative sign in most regressions (in particular CAR regressions) but is statistically significant only for the one year return window. The coefficient on *CtoA* is not significant in any return regressions. These results are consistent with the previous regressions results obtained when the association between *Pre_CSCORE* (*Post_CSCORE*) and stock returns is examined in the regression analysis. Taken together, these results provide evidence that IPO issuers who report earnings less conservatively in the pre-IPO year, but increase their reporting conservatism in the IPO year, experience higher post-issue stock return performance.

[Insert Table 3-19 here]

[Insert Table 3-20 here]

This result may indicate that firms that do not expect to perform well after the IPO adopt a higher degree of conservatism in the pre-IPO year as a protection mechanism to decrease the probability of future litigation. Previous studies suggest that conservatism is positively associated with the probability of litigation (see Watts 2002; Khan & Watts 2009). High litigation risk firms are more likely to understate earnings and net assets because there is a higher probability of a firm being sued when it overstates its earnings and assets and subsequently suffers a loss in the value of its stock when the overstatement is discovered (Khan & Watts 2009). Such an effect can be significantly more pronounced for IPO firms in the pre-IPO year since investors can sue the firm to

recover damages after the IPO by showing their reliance on the IPO prospectus (e.g., TiniÇ 1988; Lowry & Shu 2002). However, the results also suggest that investors recognize the benefits of conservative reporting by rewarding the IPO firms reporting more conservatively in the IPO year in the long-term, as evidenced by higher long-term stock returns associated with *Post_CSCORE*. However, provided that *Pre_CSCORE* shows a strong negative association with post-issue stock returns, the litigation effect appears to be dominant in the pre-IPO year.

3.5.5 Robustness Tests for the Association between Conservatism and Long-Term Stock Return Performance of IPO Firms

Abnormal returns are sensitive to alternative measurement methodologies (e.g., Loughran & Ritter 2000). To test the robustness of the results, an alternative benchmark is employed to compute abnormal returns. Prior literature suggests that selection bias is reduced when the comparison of outcomes is performed using treated and control subjects which are as similar as possible (Rosenbaum & Rubin 1983; Lee & Masulis 2011). For instance, Lee and Masulis (2011) argue that the propensity score matching method provides a more reliable measure since constructing a control group based on one or two factors is unlikely to be sufficient to eliminate the selection bias and traditional sequential matching techniques that account for all the important factors are cumbersome and inefficient.

Propensity scores are first estimated based on the four firm-characteristics: size (total assets), the market-to-book ratio, leverage (total debts divided by total assets) and return

on assets.[10] Thereafter, a non-issuer which has the closest propensity score with the sample firm within the same two digit-SIC code is identified as a matched firm. If the sample firm drops out, both sample and matched firms are assigned zero returns for the remainder of the period. If the original matched firm drops out before the IPO sample firm, the next best match is included for the remainder of the holding period. This matching process continues until the benchmark return is available for the entire holding period of the sample firm to avoid survivorship bias in the matched sample. However, this matching procedure deteriorates the quality of matching. Specifically, in the sample data, only 15% of the sample firms found a matched firm that was listed for the entire return window of the sample firm. This means that the matching process had to be continued for 85 percent of the sample firms until their benchmark return was available for the entire holding period, resulting in a number of matched firms assigned for one sample IPO. As a result, approximately half of the sample firms had more than five matched firms identified and in some cases, the sample firm ended up with more than 20 matched firms due to the severe delisting problem of the matched firms.

The delisting issue is inherent in any matching firm techniques. As a result, the thesis employs the Fama-French size and book-to-market 5x5 (25) portfolios [11] as a benchmark as this method can provide benchmark returns over the entire return windows without any missing data while still reflecting the firm-characteristics of the sample firms. Consistent with the previous analysis, the regressions are performed to

[10] Size, leverage and market-to-book ratio are the three most commonly used characteristics in the extant literature for matching techniques (e.g., Eckbo & Norli 2005; Fama & French 1995, 1993). Return on assets is also included following Kothari *et al*. (2005) suggesting that performance matching based on return on assets enhances the reliability of inferences, in particular, from earnings management research. Conservatism is measured based on both earnings and accruals as discussed in Section 3.5.1. Thus, return on assets is also selected for the propensity score matching in this thesis.

[11] Fama-French size and book-to-market 25 (5x5) portfolio returns are obtained from the data library of the Kenneth R. French website:
<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html>.

test the effects of *Pre_CSCORE*, *Post_CSCORE* and pre-to-post IPO year *CSCORE* on post-issue stock returns. The regression results for the *Pre_CSCORE* analysis are presented in Table 3-21, the *Post_CSCORE* in Table 3-22 and the pre-to-post IPO *CSCORE* in Table 3-23.

The coefficient on *Pre_CSCORE* is negative in all regressions and is statistically significant for one and two year return windows as shown in Table 3-21, indicating that issuers adopting higher conservatism in the pre-IPO year do not perform well in the aftermarket for two years. The coefficient on *Post_CSCORE* does not show a positive sign in most regressions in Table 3-22, but it is also not statistically significant in any of the regressions. As reported in Table 3-23, the coefficient on *AtoC* is positive and statistically significant in all regressions which suggests that issuers reporting less conservatively prior to going public but reporting more conservatively in the IPO year perform significantly better in the post-issue stock market. Although the *Post_CSCORE* regression analysis does not report consistent results, the results so obtained are broadly consistent with the previous results, provided that *Pre_CSCORE* is negatively associated with post-issue stock returns and the IPO firms from the '*AtoC*' portfolio significantly outperform for all return windows.

[Insert Table 3-21 here]

[Insert Table 3-22 here]

[Insert Table 3-23 here]

3.6 Summary and Conclusions

This chapter examined IPO issuers' conservatism and investigated how the conservatism adopted by IPO issuers affected IPO underpricing and post-issue stock return performance. The results of this chapter provide evidence that IPO issuers adopt a higher degree of conservatism before they go public and the issuers' conservatism is significantly higher than the matched non-issue firms, both in the pre-IPO and the IPO year. These results indicate that IPO firms do not engage in earnings management by adopting more aggressive reporting around the IPO process.

This chapter also finds that issuers' pre-IPO year conservatism is negatively associated with IPO underpricing, suggesting that issuers reporting more conservatively prior to going public underprice their IPO to a lesser extent. The result also reveals that the positive effect of issuers' conservatism on underpricing is mainly driven by the IPO firms with higher information asymmetry. This suggests that IPO firms with higher information asymmetry benefit more from adopting higher conservatism in the pre-IPO year by experiencing a lower indirect cost of issuing the IPO.

Finally, the results of this chapter indicate that IPO issuers reporting more conservatively in the pre-IPO year experience worse aftermarket stock returns. This result may reflect that IPO issuers who do not expect to perform well after the IPO adopt higher conservatism in the pre-IPO year to protect themselves from potential litigation risks. Investors can sue the firm to recover damages after the IPO by showing their reliance on the IPO prospectus (see TiniÇ 1988). However, the results also indicate that issuers reporting more conservatively in the IPO year show a better stock

return performance in the long-term. Consistent with this, the evidence further suggests that a portfolio of firms reporting less conservatively in the pre-IPO year, but adopting higher conservatism in the IPO year performs significantly better in the post-issue stock market. These results are consistent across different return measurements and benchmarks employed. Taken together, the results may indicate that investors recognize the benefits of conservative reporting by rewarding the IPO firms reporting more conservatively in the IPO year in the long-term. However, firms who do not expect to perform well after the IPO adopt higher conservatism in the pre-IPO year due to their higher potential litigation costs, indicating that the litigation effect appears to be dominant in the pre-IPO year.

In the next chapter, this thesis examines the association between IPO issuers' conservatism and their seasoned equity offering activity.

3.7 Tables

Table 3-1: Fama-Macbeth Mean Coefficients from *CSCORE* Annual Regressions

Independent Variables	Model 1	Model 2	Model 3
CONSTANT	-0.096***	-0.097***	-0.070**
	(-3.753)	*(-3.811)*	*(-2.153)*
D	-0.582***	-0.533***	-0.535***
	(-7.434)	*(-6.348)*	*(-5.936)*
CFO	-2.179***	-2.120***	-2.127***
	(-6.611)	*(-6.556)*	*(-6.570)*
CFO*Size	0.089***	0.083***	0.087***
	(5.155)	*(4.769)*	*(4.846)*
CFO*Lev	-0.416***	-0.341***	-0.299**
	(-5.023)	*(-2.793)*	*(-2.142)*
CFO*MTB	0.003	0.003	0.000
	(0.663)	*(0.684)*	*(0.014)*
CFO*D	3.298***	3.201***	3.208***
	(8.608)	*(8.616)*	*(8.785)*
CFO*D*Size	-0.141***	-0.133***	-0.137***
	(-7.954)	*(-7.430)*	*(-7.533)*
CFO*D*Lev	0.411***	0.334***	0.291**
	(4.719)	*(2.636)*	*(2.051)*
CFO*D*MTB	-0.002	-0.003	0.000
	(-0.501)	*(-0.574)*	*(0.069)*
Size	0.005***	0.005***	0.005***
	(3.583)	*(3.590)*	*(2.718)*
Lev	-0.070***	-0.079***	-0.071**
	(-3.283)	*(-3.032)*	*(-2.103)*
MTB	0.002***	0.002**	0.002*
	(3.107)	*(2.238)*	*(1.885)*
D*Size	0.034***	0.031***	0.032***
	(7.655)	*(6.565)*	*(6.104)*
D*Lev	-0.101***	-0.096***	-0.099**
	(-3.356)	*(-2.970)*	*(-2.556)*
D*MTB	-0.000	-0.000	-0.000
	(-0.487)	*(-0.243)*	*(-0.162)*
ΔSALES		0.067***	0.065***
		(5.739)	*(5.391)*
PPE			-0.052***
			(-5.860)
Adj. R^2	*33.30%*	*35.05%*	*35.63%*

*** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. This table presents the mean coefficients from the Fama-Macbeth annual *CSCORE* regressions. *Size* is the natural logarithm of total assets. *MTB* is the market-to-book ratio. *Lev* is short- and long-term debts divided by beginning total assets. *ACC* is accruals obtained from cash flow statement. *CFO* is cash flow

from operations. *ACC* and *CFO* are both scaled by beginning total assets. *D* is a dummy variable taking the value of one if *CFO* is negative and zero otherwise. *ΔSALES* is changes in sales divided by beginning total assets. *PPE* is book value of fixed assets divided by beginning total assets. All continuous variables are winsorised at the 1st and 99th percentiles. Adj_R^2 is the average of the adjusted R^2 from the annual regressions estimated over the period 1989-2005.

Table 3-2 Variable Description

Variable	Description
Pre_CSCORE_i	Conservatism measured in the pre-IPO year.
$Post\_CSCORE_i$	Conservatism measured in the IPO year.
$\Delta CSCORE_i$	Changes in CSCOREs between the pre and post-IPO year, computed as post-IPO CSCORE minus pre-IPO year CSCORE.
$\%\Delta CSCORE_i$	Percentage changes in CSCOREs between the pre and post-IPO year, measured as post-IPO year CSCORE divided by pre-IPO year CSCORE, minus 1.
$Age_{i,t}$	Natural log of one plus the difference between the year of going public and the year of founding in year *t* where year *t* is the IPO year.
$Auditor_{i,t}$	A dummy variable that equals one if the auditor is one of the Big 6 auditors and otherwise zero.
$Cash_{i,t}$	Cash and marketable securities divided by beginning total assets measured in year *t* where year *t* is the IPO year.
$Hightech_{i,t}$	A dummy variable that takes one if the IPO firm is in the high-tech industry as defined in the SDC and otherwise zero.
$Integer_{i,t}$	A dummy variable that equals one if the offer price is an integer and zero otherwise.
$Inv\_cycle_{i,t}$	Depreciation expenses scaled by beginning total assets in year *t* where year *t* is the IPO year and thus is a decreasing measure of the length of the investment cycle.
$Lev_{i,t}$	Total debts divided by beginning total assets in year *t* where year *t* is the IPO year.
$MTB_{i,t}$	Market to book ratio in year *t* where year *t* is the IPO year.
$Nasdaq_{i,t}$	A dummy variable that equals to one if stock is listed on the NASDAQ and otherwise zero.
$Offersize_{i,t}$	Natural logarithm of the number of IPO shares offered, multiplied by the offer price.
$RD_{i,t}$	Expenditure on research and development divided by total beginning assets measured in year *t* where year *t* is the IPO year.
$RE_{i,t}$	Retained earnings divided by beginning total assets in year *t* where year *t* is the IPO year.
$ROA_{i,t}$	Income before extraordinary items divided by beginning total assets measured in year *t* where year *t* is the IPO year.
$Size_{i,t}$	Natural logarithm of total assets in year *t* where year *t* is the IPO year.
$Underpricing_{i,t}$	First-day closing price divided by the final offer price, minus 1.
$Underwriter_{i,t}$	A ranking of the reputation of the lead underwriter on a 0-9 scale obtained from the Jay Ritter's website <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.
$VC\_Rep_{i,t}$	Lead VC's dollar market share of all venture-backed IPOs in the preceding three calendar years and takes zero for non-VC backed IPOs.
$Volatility_{i,t}$	Standard deviation of daily stock returns over the first 30 calendar days following the offering.
$\Delta Assets_{i,t}$	Growth in total assets measured in year *t* where year *t* is the IPO year.

Table 3-3: Sample Construction

Sampling Process	**No of Firms**
U.S. IPOs	6,510
Less penny stocks	(1)
Less unit issues, right issues, spin-offs, ADRs, reverse LBOs, closed-end funds, unit investment trusts and REITs	(1,962)
Less financial and utility firms	(486)
Less type of security not classified as common/ordinary shares	(257)
Less firms without CUSIP identifier	(9)
Sub-Total	3,795
Less firms without conservatism scores	(1,439)
Final IPO Sample	2,356

Table 3-4: Descriptive Statistics

Panel A. Full IPO Sample														
Variables	**N**		**Mean**			**Std. Dev.**		**Median**			**5th Percentile**		**95th Percentile**	
	pre	**post**	**pre**	**post**	**post-pre**	**pre**	**post**	**pre**	**post**	**post-pre**	**pre**	**post**	**pre**	**post**
CSCORE	849	2339	0.935	0.680	-0.255***	0.539	0.405	0.811	0.565	-0.246***	0.287	0.306	1.842	1.336
Size	849	2339	17.637	18.049	0.412***	1.708	1.268	17.334	17.973	0.640***	15.291	15.912	20.731	20.413
Lev	849	2339	0.653	0.309	-0.344***	0.423	0.228	0.620	0.244	-0.376***	0.098	0.047	1.361	0.771
RD	566	1560	0.282	0.100	-0.183***	0.360	0.110	0.182	0.074	-0.108***	0.000	0.000	0.902	0.315
ROA	849	2339	-0.240	-0.050	0.191***	0.538	0.223	-0.014	0.026	0.040***	-1.179	-0.486	0.241	0.164
Cash	848	2338	0.269	0.402	0.134***	0.284	0.313	0.138	0.374	0.236***	0.002	0.007	0.844	0.908
ΔAssets	849	2339	1.420	3.376	1.956***	3.340	6.090	0.380	1.360	0.980***	-0.220	0.020	6.010	13.000
RE	849	2339	-0.861	-0.252	0.609***	1.563	0.552	-0.251	-0.060	0.191***	-3.605	-1.418	0.391	0.272
Inv_Cycle	849	2339	0.095	0.099	0.004	0.097	0.117	0.063	0.065	0.002	0.015	0.015	0.264	0.270
Panel B. IPO Sample with CSCOREs available both in the pre- and post-IPO year														
Variables	**N**		**Mean**			**Std. Dev.**		**Median**			**5th Percentile**		**95th Percentile**	
	pre	**post**	**pre**	**post**	**post-pre**	**pre**	**post**	**pre**	**post**	**post-pre**	**pre**	**post**	**pre**	**post**
CSCORE	841	841	0.939	0.798	-0.142***	0.541	0.522	0.814	0.693	-0.121***	0.292	0.288	1.851	1.489
Size	841	841	17.657	18.622	0.965***	1.693	1.277	17.333	18.413	1.080***	15.463	16.904	20.729	21.074
Lev	841	841	0.605	0.351	-0.254***	0.762	0.677	0.386	0.106	-0.280***	0.000	0.000	2.144	1.350
RD	565	565	0.283	0.110	-0.173***	0.362	0.114	0.184	0.087	-0.096***	0.000	0.000	0.910	0.327
ROA	841	841	-0.244	-0.085	0.159***	0.541	0.244	-0.016	0.007	0.022***	-1.186	-0.619	0.241	0.155
Cash	841	841	0.270	0.410	0.140***	0.285	0.325	0.138	0.399	0.260***	0.002	0.006	0.853	0.909
ΔAssets	841	841	1.440	2.954	1.514***	3.370	5.110	0.380	1.230	0.850***	-0.220	-0.020	6.150	10.770
RE	841	841	-0.870	-0.381	0.488***	1.568	0.636	-0.259	-0.168	0.090***	-3.603	-1.838	0.389	0.215
Inv_Cycle	841	841	0.096	0.094	-0.001	0.098	0.106	0.064	0.064	0.000	0.015	0.016	0.266	0.257
Panel C. IPO year variables	**N**		**Mean**			**Std. Dev.**		**Median**			**5th Percentile**		**95th Percentile**	
Age	2315		0.976			0.402		0.954			0.301		1.748	
VC_Rep	2339		0.006			0.040		0.000			0.000		0.022	
Underpricing	2324		0.234			0.393		0.111			-0.063		0.990	

Table 3-4
(continued)

Panel C. IPO year variables	N	Mean	Std. Dev.	Median	5th Percentile	95th Percentile
MTB	2356	5.149	6.157	3.419	1.020	14.833
Offersize	2356	17.393	0.958	17.399	15.648	18.990
Underwriter	2339	7.296	2.118	8.000	2.000	9.000
Volatility	2320	0.047	0.022	0.042	0.021	0.093
Integer	2356	0.180	0.384	0.000	0.000	1.000
Auditor	2356	0.923	0.266	1.000	0.000	1.000
Nasdaq	2356	0.781	0.414	1.000	0.000	1.000

*** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 3-2. Panel A presents descriptive statistics for the full IPO sample. Panel B reports descriptive statistics for the sample firms that have *CSCOREs* available both in the pre-IPO and IPO fiscal years. Panel C reports descriptive statistics of the variables measured only in the IPO year. Difference in mean between the pre-IPO and IPO year is tested by the t-test and the median difference by the Mann-Whitney test.

Table 3-5: Comparison of IPO Issuers' *CSCOREs* from the Pre-IPO Year until Five Years after the IPO

Panel A. IPO firm Conservatism Scores (*CSCORE*)							
	year -1	**year 0**	**year 1**	**year 2**	**year 3**	**year 4**	**year 5**
Sample Mean	0.935	0.681	0.655	0.682	0.755	0.783	0.776
Δ Mean Each Year		-0.255***	-0.026**	0.027**	0.073***	0.028	-0.008
t-stats		*(-12.606)*	*(-2.272)*	*(2.255)*	*(4.904)*	*(1.510)*	*(-0.388)*
Δ Mean relative to year -1		-0.255***	-0.280**	-0.253**	-0.180***	-0.152***	-0.160***
t-stats		*(-12.606)*	*(-14.092)*	*(-12.267)*	*(-8.284)*	*(-6.480)*	*(-6.918)*
Sample Median	0.811	0.566	0.546	0.575	0.640	0.639	0.671
Δ in Median Each Year		-0.245***	-0.020***	0.029	0.066***	-0.001	0.032
z-stats		*(-15.7954)*	*(-2.709)*	*(1.395)*	*(5.176)*	*(-0.593)*	*(0.952)*
Δ in Median relative to year -1		-0.245***	-0.265***	-0.236*	-0.171***	-0.172***	-0.140***
z-stats		*(-15.795)*	*(-17.027)*	*(-14.541)*	*(-10.058)*	*(-8.987)*	*(-8.058)*
Panel B. Comparison of CSCORE between IPO firms and Non-IPO Performance Matched Firms							
	year -1	**year 0**	**year 1**	**year 2**	**year 3**	**year 4**	**year 5**
Mean of Sample Firms	0.935	0.681	0.655	0.682	0.755	0.783	0.776
Mean of Performance Matched Firms	0.830	0.678	0.674	0.689	0.789	0.832	0.846
Difference	0.105***	0.002	-0.019	-0.007	-0.034*	-0.049**	-0.071***
t-stats	*(3.470)*	*(0.158)*	*(-1.454)*	*(-0.439)*	*(-1.828)*	*(-2.065)*	*(-2.820)*
Median of Sample Firms	0.811	0.566	0.546	0.575	0.640	0.639	0.671
Median of Performance Matched Firms	0.697	0.529	0.534	0.554	0.663	0.679	0.715
Difference	0.114***	0.037***	0.012*	0.021	-0.023	-0.040	-0.044
z-stats	*(5.704)*	*(5.045)*	*(1.883)*	*(0.991)*	*(-0.606)*	*(-1.112)*	*(-0.975)*
Panel C. Comparison of CSCORE between IPO firms and Non-IPO 90-110% ROA Matched Firms							
Mean of 90-110% ROA Matched Firms	0.837	0.669	0.673	0.692	0.790	0.835	0.847
Difference	0.099***	0.012	-0.018	-0.010	-0.035*	-0.051**	-0.072***
t-stats	*(3.172)*	*(0.842)*	*(-1.330)*	*(-0.634)*	*(-1.831)*	*(-2.091)*	*(-2.626)*
Median of 90-110% ROA Matched Firms	0.699	0.526	0.534	0.560	0.658	0.673	0.710
Difference	0.112***	0.039***	0.012**	0.015	-0.017	-0.033	-0.039
z-stats	*(5.809)*	*(5.562)*	*(2.389)*	*(0.906)*	*(-0.185)*	*(-0.696)*	*(-0.456)*

Table 3-5 reports the issuers' *CSCOREs* from the pre-IPO year to five years after the IPO. Panel A reports changes in the mean and median *CSCORE* each year and also compares the mean and median *CSCOREs*

measured in the post-IPO periods (year zero to year five) to the pre-IPO *CSCORE*. In Panel B, the mean and median *CSCOREs* of the IPO sample are compared to that of performance matched firms. Following Kothari *et al.* (2005), performance matched firms are identified by finding non-issuers with the same three-digit SIC code and the closest return on assets (ROA) in the same year. In Panel C, the performance matched non-issue firms are identified on the basis of the non-issuer's ROA that falls within 90 percent to 110 percent of the sample firm without matching the non-issuer's SIC code. For example, if the non-issuer with the same three-digit SIC code has ROA less than 90% or greater than 110% of the issuer's ROA, then the SIC code is disregarded and the non-issuer with the closest ROA is identified as a matched firm. Difference in mean is tested by the t-test and the median difference by the Mann-Whitney test. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Table 3-6: Pearson Correlation Matrix for the Regression Analysis Examining Changes in *CSCORE*

	$\Delta CSCORE_{i,t}$	$Underwriter_{i,t}$	$VC\_Rep_{i,t}$	$Auditor_{i,t}$	$Age_{i,t}$	$Volatility_{i,t}$	$Inv\_cycle_{i,t-1}$	$RE_{i,t-1}$
$Underwriter_{i,t}$	-0.007							
$VC\_Rep_{i,t}$	-0.073**	0.055***						
$Auditor_{i,t}$	0.013	0.380***	0.037*					
$Age_{i,t}$	-0.038	0.123***	-0.014	0.039*				
$Volatility_{i,t}$	0.149***	0.087***	0.006	0.021	-0.256***			
$Inv\_cycle_{i,t-1}$	0.019	-0.002	0.006	0.015	0.001	0.021		
$RE_{i,t-1}$	0.068*	0.073**	-0.004	-0.017	0.206***	-0.190***	-0.273***	
$Hightech_{i,t}$	-0.022	-0.135***	0.038	-0.113***	0.242***	-0.315***	0.032	0.242

This Table reports the Pearson correlations of the variables used in equation (8). Description of each variable is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Table 3-7: The Regression Analysis for Changes in *CSCORE*

	Dependent variable	
Independent Variable	***ΔCSCORE***	***%ΔCSCORE***
Underwriter$_{i,t}$	0.008	0.022
	(0.729)	(1.182)
VC_Rep$_{i,t}$	-0.389*	-0.557**
	(-1.680)	(-2.127)
Auditor$_{i,t}$	0.026	-0.035
	(0.421)	(-0.332)
Age$_{i,t}$	0.008	0.017
	(0.175)	(0.195)
Volatility$_{i,t}$	1.572***	1.591*
	(2.755)	(1.712)
Inv_cycle$_{i,t-1}$	-0.089	-0.321
	(-0.193)	(-0.579)
RE$_{i,t-1}$	-0.010	-0.093**
	(-0.309)	(-2.431)
Hightech$_{i,t}$	-0.007	0.035
	(-0.169)	(0.457)
Constant	-0.277***	-0.284*
	(-2.867)	(-1.746)
Year Dummies	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*
F-Stats	32.044***	18.080***
Adj. R^2	18.1%	9.6%
Obs	809	809

The dependent variable *ΔCSCORE* is measured as IPO year *CSCORE* minus pre-IPO year *CSCORE*. *%ΔCSCORE* is percentage changes in *CSCORE* computed as IPO year *CSCORE* divided by pre-IPO year *CSCORE*, minus 1. A description of independent variables is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Table 3-8: Pearson Correlation Matrix for the Regression Analysis Examining the Effect of Conservatism on IPO Underpricing

	$Underpricing_{i,t}$	Pre_CSCORE_i	$Integer_{i,t}$	$Underwriter_{i,t}$	$Offersize_{i,t}$	$VC\_Rep_{i,t}$	$Auditor_{i,t}$	$Age_{i,t}$	$Lev_{i,t-1}$	$ROA_{i,t-1}$	$Nasdaq_{i,t}$
Pre_CSCORE_i	0.048										
$Integer_{i,t}$	-0.136***	-0.094***									
$Underwriter_{i,t}$	0.127***	-0.011	-0.168***								
$Offersize_{i,t}$	0.163***	0.058*	-0.174***	0.662***							
$VC\_Rep_{i,t}$	0.005	0.033	-0.030	0.055***	0.054**						
$Auditor_{i,t}$	0.049**	-0.062*	-0.067***	0.380***	0.299***	0.037*					
$Age_{i,t}$	-0.165***	-0.124***	0.006	0.123***	0.151***	-0.014	0.039*				
$Lev_{i,t-1}$	-0.123***	0.074**	-0.011	-0.115***	0.077**	-0.060*	-0.041	0.173***			
$ROA_{i,t-1}$	-0.101***	-0.175***	0.084**	0.051	0.102***	-0.030	-0.028	0.320***	-0.082**		
$Nasdaq_{i,t}$	0.120***	0.171***	-0.041**	0.123***	-0.060***	0.019	0.163***	-0.120***	-0.163***	-0.156***	
$Volatility_{i,t}$	0.439***	0.211***	-0.153***	0.087***	0.060***	0.006	0.021	-0.256***	-0.122***	-0.313***	0.195***

This table reports the Pearson correlations of the variables used in equation (4). A description of each variable is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Table 3-9: Regression Analysis Testing the Effect of Conservatism on IPO Underpricing

	Panel A. All Sample Firms		Panel B. Firms with High Information Asymmetry				Panel C. Firms with Low Information Asymmetry			
			Volatility		Bid-Ask		Volatility		Bid-Ask	
Independent Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**
Pre_CSCORE$_i$	-0.061**	-0.062**	-0.139**	-0.139**	-0.186***	-0.186***	-0.002	-0.005	0.015	0.014
	(-2.005)	(-2.037)	(-2.174)	(-2.176)	(-2.994)	(-2.998)	(-0.128)	(-0.303)	(0.867)	(0.818)
Integer$_{i,t}$	-0.054**	-0.056**	-0.145***	-0.147***	-0.110**	-0.115**	0.003	0.001	-0.007	-0.008
	(-2.506)	(-2.566)	(-3.290)	(-3.261)	(-2.355)	(-2.435)	(0.189)	(0.057)	(-0.501)	(-0.520)
Offersize$_{i,t}$	0.090***	0.098***	0.184***	0.187***	0.200***	0.206***	0.017	0.031***	0.027**	0.033***
	(3.470)	(4.874)	(3.403)	(3.978)	(3.633)	(4.220)	(1.176)	(3.084)	(2.149)	(3.310)
Age$_{i,t}$	-0.116***	-0.116***	-0.277***	-0.277***	-0.243**	-0.245**	-0.028*	-0.028*	-0.038**	-0.037**
	(-3.323)	(-3.317)	(-2.868)	(-2.875)	(-2.534)	(-2.569)	(-1.727)	(-1.743)	(-2.391)	(-2.360)
Lev$_{i,t-1}$	-0.100**	-0.104**	-0.116	-0.117	-0.126*	-0.129*	0.006	0.001	0.009	0.007
	(-2.337)	(-2.441)	(-1.566)	(-1.583)	(-1.716)	(-1.764)	(0.196)	(0.034)	(0.386)	(0.290)
ROA$_{i,t-1}$	-0.002	-0.002	-0.001	-0.001	-0.005	-0.004	0.013	0.012	0.054**	0.053**
	(-0.045)	(-0.059)	(-0.029)	(-0.024)	(-0.116)	(-0.092)	(0.463)	(0.423)	(2.124)	(2.133)
Nasdaq$_{i,t}$	0.065*	0.067**	0.041	0.042	-0.034	-0.029	0.035**	0.039**	0.042***	0.043***
	(1.938)	(2.029)	(0.509)	(0.526)	(-0.307)	(-0.269)	(2.093)	(2.355)	(2.764)	(2.861)
Volatility$_{i,t}$	6.996***	7.011***	6.986***	6.983***	6.337***	6.331***	6.607***	6.608***	2.579***	2.589***
	(6.790)	(6.813)	(3.975)	(3.977)	(4.056)	(4.051)	(7.262)	(7.210)	(3.435)	(3.445)
Underwriter$_{i,t}$	0.008		0.003		0.007		0.013*		0.005	
	(0.735)		(0.157)		(0.397)		(1.922)		(1.074)	
VC_Rep$_{i,t}$	0.012	0.011	-0.320	-0.322	-0.399	-0.403	0.132	0.137	0.172**	0.174**
	(0.094)	(0.087)	(-1.024)	(-1.042)	(-1.309)	(-1.342)	(1.293)	(1.452)	(2.099)	(2.200)
Auditor$_{i,t}$	0.024	0.037	0.075	0.080	0.133	0.144	-0.027	-0.006	-0.007	0.002
	(0.483)	(0.776)	(0.825)	(0.905)	(1.375)	(1.531)	(-0.865)	(-0.190)	(-0.236)	(0.058)
Constant	-1.539***	-1.640***	-2.958***	-2.988***	-3.166***	-3.236***	-0.422*	-0.597***	-0.478**	-0.549***
	(-3.822)	(-4.877)	(-3.519)	(-3.929)	(-3.703)	(-4.094)	(-1.936)	(-3.438)	(-2.326)	(-3.091)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	8.770***	9.379***	7.097***	7.623***	7.161***	7.731***	6.246***	6.779***	3.059***	3.257***
Adj. R^2	26.3%	26.2%	23.3%	23.3%	23.3%	23.3%	16.7%	15.8%	11.7%	11.5%
Obs	807	807	423	423	432	432	386	386	378	378

The dependent variable *Underpricing* is measured as the first-day closing price divided by the final offer price, minus 1. A description of independent variables is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Table 3-10: Quartile Portfolio Returns Based on *Pre_CSCORE*

	1 Year Return	2 Year Return	3 Year Return	4 Year Return	5 Year Return	*Obs*
Q1	-19.31%	-16.69%	-20.23%	-22.70%	-21.28%	*215*
Q2	-11.35%	-14.41%	-13.70%	-18.65%	-13.30%	*215*
Q3	-0.98%	-4.56%	-12.71%	-17.53%	-17.55%	*214*
Q4	0.24%	13.84%	-1.93%	-3.72%	-6.64%	*214*
Mean	-7.88%	-5.48%	-12.16%	-15.66%	-14.70%	*858*
Median	-25.35%	-42.26%	-47.18%	-48.34%	-52.32%	

Portfolio returns are calculated based on the average monthly buy and hold returns for a holding period of one, two, three, four and five years from the IPO month excluding the returns on the first trading day and are adjusted for the monthly CRSP value weighted index returns. All return variables are winsorized at 1st and 99th percentile.

Table 3-11: Quartile Portfolio Returns Based on *Post_CSCORE*

	1 Year Return	2 Year Return	3 Year Return	4 Year Return	5 Year Return	*Obs*
Q1	-15.07%	-17.97%	-9.62%	-13.44%	-10.93%	*585*
Q2	-0.76%	-21.86%	-2.82%	-10.35%	-8.78%	*585*
Q3	-10.12%	-8.84%	-11.52%	-24.75%	-32.27%	*585*
Q4	-8.41%	-15.61%	-20.83%	-18.17%	-24.11%	*584*
Mean	-8.58%	-16.05%	-11.22%	-16.69%	-19.06%	*2339*
Median	-22.28%	-40.31%	-47.51%	-52.02%	-55.78%	

Portfolio returns are calculated based on the average monthly buy and hold returns for a holding period of one, two, three, four and five years, adjusted for the CRSP value-weighted index returns starting three months after the IPO fiscal-year ends to allow for a reporting lag. All return variables are winsorized at 1st and 99th percentile.

Table 3-12: Pearson Correlation Matrix for the Return Regressions with *Pre_CSCORE*

	Pre_CSCORE_i	$Age_{i,t}$	$Cash_{i,\ t-1}$	$\Delta Assets_{i,\ t-1}$	$RD_{i,\ t-1}$	$Underwriter_{i,t}$
Pre_CSCORE_i						
$Age_{i,\ t}$	-0.106***					
$Cash_{i,\ t-1}$	0.199***	-0.364***				
$\Delta Assets_{i,\ t-1}$	0.130***	-0.211***	0.277***			
$RD_{i,\ t-1}$	0.156***	-0.241***	0.433***	-0.051		
$Underwriter_{i,t}$	0.083**	-0.195***	0.282***	0.188***	0.082**	
$Underpricing_{i,t}$	-0.005	0.072**	0.148***	0.029	-0.012	0.135***

The accounting variables used for the *Pre_CSCORE* regressions analysis are obtained from the pre-IPO fiscal year as only the pre-IPO fiscal year variables are available when the return window starts. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of variables is provided in Table 3-2.

Table 3-13: Pearson Correlation Matrix for the Return Regressions with *Post_CSCORE*

	$Post\_CSCORE_i$	$Age_{i,t}$	$Cash_{i,t}$	$\Delta Assets_{i,t}$	$RD_{i,\ t}$	$Underwriter_{i,t}$
$Age_{i,t}$	-0.170***					
$Cash_{i\ t}$	0.230***	-0.346***				
$\Delta Assets_{i\ t}$	0.301***	-0.275***	0.383***			
$RD_{i\ t}$	0.078***	-0.162***	0.500***	0.044**		
$Underwriter_{i,t}$	0.270***	-0.174***	0.274***	0.273***	0.023	
$Underpricing_{i,t}$	0.024	0.123***	0.019	-0.017	0.048**	0.135***

For the *Post_CSCORE* analysis, the return window starts three months after the IPO fiscal-year ends, thus the regressions use the accounting variables of the IPO fiscal year. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of variables is provided in Table 3-2.

Table 3-14: Regression Analysis Testing the Predictive Power of *Pre_CSCORE* for Post-Issue Stock Returns (One to Five Years of BHARs)

Independent Variable	1 year	2 years	3 years	4 years	5 years
Pre_CSCORE_i	-0.162***	-0.151*	-0.160**	-0.136	-0.059
	(-3.309)	(-1.876)	(-2.052)	(-1.565)	(-0.631)
$Age_{i,t}$	0.062	0.059	0.075	0.075	0.148
	(1.068)	(0.687)	(0.840)	(0.717)	(1.337)
$Cash_{i,t-1}$	0.002	0.096	0.217	0.167	0.191
	(0.015)	(0.563)	(1.331)	(0.996)	(1.070)
$\Delta Assets_{i,t-1}$	-0.014	-0.011	-0.013	-0.013	-0.020*
	(-1.541)	(-0.981)	(-1.095)	(-1.139)	(-1.870)
$RD_{i\ t-1}$	0.160	0.037	-0.205*	-0.278**	-0.168
	(1.392)	(0.227)	(-1.877)	(-2.142)	(-1.014)
$Underpricing_{i,\ t}$	-0.232***	-0.210**	-0.108	-0.141	-0.152
	(-4.363)	(-2.019)	(-1.003)	(-1.369)	(-1.407)
$Underwriter_{i,t}$	0.046***	0.064***	0.099***	0.090***	0.094***
	(3.457)	(3.180)	(5.700)	(5.158)	(4.823)
Constant	-0.270*	-0.430**	-0.793***	-0.746***	-0.965***
	(-1.841)	(-2.132)	(-4.452)	(-3.750)	(-4.600)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	7.078***	4.820***	6.974***	5.845***	4.588***
Adj. R^2	7.0%	4.9%	5.9%	5.7%	4.2%
Obs	808	808	808	808	808

This table reports the results of regression analysis testing the association between *Pre_CSCORE* and post-issue stock returns. The dependent variable is the average monthly buy and hold abnormal returns (BHARs) for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day, adjusted for the monthly CRSP value weighted index returns. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 3-2.

Table 3-15: Regression Analysis Testing the Predictive Power of *Pre_CSCORE* for Post-Issue Stock Returns (One to Five Years of CARs)

Independent Variable	1 year	2 years	3 years	4 years	5 years
Pre_CSCORE_i	-0.111**	-0.140*	-0.127	-0.197**	-0.152
	(-2.360)	(-1.861)	(-1.433)	(-2.066)	(-1.538)
$Age_{i,t}$	0.093	0.064	0.083	0.121	0.149
	(1.587)	(0.766)	(0.868)	(1.185)	(1.351)
$Cash_{i,t-1}$	0.173	0.298*	0.366*	0.599***	0.488**
	(1.612)	(1.788)	(1.853)	(2.874)	(2.328)
$\Delta Assets_{i,t-1}$	-0.025***	-0.025**	-0.024*	-0.025	-0.028*
	(-2.925)	(-2.037)	(-1.702)	(-1.624)	(-1.715)
$RD_{i\ t-1}$	0.168	0.160	0.338*	0.238	0.237
	(1.423)	(1.036)	(1.748)	(1.125)	(1.115)
$Underpricing_{i,\ t}$	-0.213***	-0.344***	-0.130	-0.078	-0.058
	(-2.708)	(-3.168)	(-1.087)	(-0.620)	(-0.435)
$Underwriter_{i,t}$	0.042***	0.024	0.039	0.054**	0.064**
	(2.670)	(1.095)	(1.576)	(2.014)	(2.171)
Constant	-0.319**	-0.073	-0.206	-0.332	-0.422
	(-2.027)	(-0.320)	(-0.819)	(-1.220)	(-1.452)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	4.689***	3.054***	2.636***	2.404***	2.125**
Adj. R^2	6.8%	5.0%	4.3%	4.1%	4.2%
Obs	808	808	808	808	808

This table reports the results of regression analysis testing the association between *Pre_CSCORE* and post-issue stock returns. The dependent variable is the average monthly cumulative abnormal returns (CARs) for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day, adjusted for the monthly CRSP value weighted index returns. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 3-2.

Table 3-16: Regression Analysis Testing the Predictive Power of *Post_CSCORE* for Post-Issue Stock Returns (One to Five Years of BHARs)

Independent Variable	1 year	2 years	3 years	4 years	5 years
$Post\_CSCORE_i$	0.042	0.107	0.370***	0.309***	0.400***
	(0.813)	(1.637)	(3.762)	(2.744)	(3.340)
$Age_{i,t}$	0.023	0.016	0.025	0.112	0.170*
	(0.669)	(0.308)	(0.366)	(1.411)	(1.940)
$Cash_{i,t}$	0.035	0.004	0.068	0.134	0.229*
	(0.589)	(0.053)	(0.600)	(1.047)	(1.662)
$\Delta Assets_{i,t}$	-0.012***	-0.011***	-0.015***	-0.014***	-0.015***
	(-4.665)	(-2.995)	(-3.474)	(-2.767)	(-2.785)
$RD_{i,t}$	0.338*	0.446	0.527	0.672	0.562
	(1.767)	(1.602)	(1.422)	(1.587)	(1.247)
$Underpricing_{i,t}$	-0.047	-0.145***	-0.109*	0.013	-0.019
	(-1.231)	(-3.449)	(-1.709)	(0.152)	(-0.238)
$Underwriter_{i,t}$	0.023***	0.034***	0.057***	0.065***	0.082***
	(3.583)	(3.623)	(4.384)	(4.122)	(5.289)
Constant	-0.247***	-0.408***	-0.810***	-1.101***	-1.401***
	(-3.431)	(-3.975)	(-5.612)	(-6.725)	(-8.199)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	14.087***	8.379***	6.056***	4.534***	4.833***
Adj. R^2	6.2%	4.2%	2.6%	2.4%	2.9%
Obs	2218	2218	2218	2218	2218

This table reports the results of regression analysis testing the association between *Post_CSCORE* and post-issue stock returns. The dependent variable is the average monthly buy and hold abnormal returns (BHARs) for the holding period of one, two, three, four and five years, adjusted for the CRSP value-weighted index returns starting three months after the IPO fiscal-year ends to allow for a reporting lag. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 3-2.

Table 3-17: Regression Analysis Testing the Predictive Power of *Post_CSCORE* for Post-Issue Stock Returns (One to Five Years of CARs)

Independent Variable	1 year	2 years	3 years	4 years	5 years
$Post\_CSCORE_i$	0.121**	0.101	0.287***	0.161*	0.202**
	(2.178)	(1.414)	(3.467)	(1.803)	(2.232)
$Age_{i,t}$	0.021	0.039	0.077	0.145**	0.142**
	(0.620)	(0.855)	(1.410)	(2.379)	(2.172)
$Cash_{i,t}$	0.085	0.219***	0.348***	0.581***	0.629***
	(1.427)	(2.699)	(3.646)	(5.408)	(5.644)
$\Delta Assets_{i,t}$	-0.010***	-0.016***	-0.018***	-0.018***	-0.019***
	(-3.379)	(-3.633)	(-3.519)	(-3.228)	(-3.180)
$RD_{i,t}$	0.452**	0.494**	0.746**	0.816**	0.756**
	(2.484)	(1.983)	(2.393)	(2.306)	(2.054)
$Underpricing_{i,t}$	-0.022	-0.016	0.045	0.049	0.072
	(-0.444)	(-0.274)	(0.603)	(0.568)	(0.836)
$Underwriter_{i,t}$	0.028***	0.037***	0.063***	0.068***	0.073***
	(4.220)	(3.975)	(5.668)	(5.561)	(5.528)
Constant	-0.328***	-0.436***	-0.843***	-0.933***	-0.953***
	(-4.668)	(-4.495)	(-7.257)	(-7.314)	(-7.177)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	9.347***	6.997***	9.162***	10.095***	11.557***
Adj. R^2	5.9%	4.5%	6.0%	6.4%	7.1%
Obs	2218	2218	2218	2218	2218

This Table reports the results of regression analysis testing the association between *Post_CSCORE* and post-issue stock returns. The dependent variable is the average monthly cumulative abnormal returns (CARs), adjusted for the CRSP value-weighted index returns starting three months after the IPO fiscal-year ends to allow for a reporting lag. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 3-2.

Table 3-18: Market-Adjusted Returns of Portfolios Sorted Based on the Level of Pre-to-Post IPO Year *CSCORE*

	1 Year Return	2 Years Return	3 Years Return	4 Years Return	5 Years Return	*Obs*
CtoC	-0.90%	-3.85%	9.05%	4.74%	10.98%	*275*
CtoA	0.64%	-4.09%	0.73%	-1.20%	3.60%	*145*
AtoC	6.11%	0.52%	14.13%	7.87%	13.00%	*145*
AtoA	-12.86%	-14.61%	-9.30%	-14.87%	-15.63%	*276*

Sample IPO firms are sorted into four portfolios based on the level of their *CSCOREs* in the pre-IPO and IPO year. Sample firms whose *CSCORE*s are above the median *CSCORE* in the both pre-IPO and IPO year are placed into the '*CtoC*' portfolio. Sample firms whose *CSCOREs* are above the median *CSCORE* in the pre-IPO year and below the median *CSCORE* in the IPO year are placed into the '*CtoA*' portfolio. Sample firms whose *CSCOREs* are below the median *CSCORE* in the pre-IPO year and above the median *CSCORE* in the IPO year are placed into the '*AtoC'* portfolio. Sample firms whose *CSCOREs* are below the median *CSCORE* both in the pre-IPO and IPO year are placed into the '*AtoA*' portfolio. Portfolios returns are calculated based on the average monthly BHARs for a holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day and are adjusted for the monthly CRSP value weighted index returns. All return variables are winsorized at 1st and 99th percentile.

Table 3-19: Regression Analysis for Portfolio BHARs Sorted Based on the Level of Pre-to-Post IPO Year *CSCORE*

Independent Variable	*1 year*	*2 years*	*3 years*	*4 years*	*5 years*
C_C_i	-0.198**	-0.178	-0.111	0.007	0.126
	(-2.531)	(-1.212)	(-0.868)	(0.053)	(0.864)
C_A_i	-0.004	-0.123	0.033	-0.008	0.094
	(-0.060)	(-1.095)	(0.259)	(-0.071)	(0.724)
A_C_i	0.192*	0.447**	0.350*	0.353**	0.479**
	(1.681)	(2.063)	(1.863)	(1.988)	(2.346)
$Age_{i,t}$	0.114	-0.011	0.058	0.050	0.138
	(1.633)	(-0.092)	(0.514)	(0.390)	(0.927)
$Cash_{i,t}$	0.208*	0.301	-0.054	-0.074	-0.028
	(1.829)	(1.572)	(-0.285)	(-0.425)	(-0.148)
$\Delta Assets_{i,t}$	0.015	0.000	0.010	0.005	0.010
	(1.541)	(0.016)	(0.654)	(0.345)	(0.620)
$RD_{i,t}$	0.079	0.766	0.607	0.055	0.200
	(0.201)	(1.126)	(0.871)	(0.093)	(0.274)
$Underpricing_{i,t}$	-0.162*	-0.157	-0.074	-0.150	-0.180
	(-1.823)	(-1.225)	(-0.560)	(-1.273)	(-1.360)
$Underwriter_{i,t}$	0.061***	0.099***	0.125***	0.120***	0.142***
	(4.369)	(4.218)	(5.707)	(5.652)	(6.272)
Constant	-0.657***	-0.807***	-1.167***	-1.133***	-1.488***
	(-4.148)	(-3.196)	(-4.936)	(-4.465)	(-5.211)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	4.552***	4.619***	5.377***	4.658***	4.270***
Adj. R^2	6.6%	7.2%	6.1%	4.8%	5.0%
Obs	834	834	834	834	834

This table reports the results of regression analysis testing whether there is a significant difference in stock returns across the portfolios sorted, based on the level of pre-to-post IPO year *CSCOREs*. *CtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoC'* and zero otherwise, *CtoA* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoA*' and zero otherwise and *AtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*AtoC*' and zero otherwise. Portfolio returns are calculated based on the average monthly BHARs for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day, and are adjusted for the CRSP value-weighted index returns. A description of other variables is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 3-20: Regression Analysis for Portfolio CARs Sorted Based on the Level of Pre-to-Post IPO Year *CSCORE*

Independent Variable	1 year	2 years	3 years	4 years	5 years
C_C_i	-0.185**	-0.172	-0.013	-0.001	0.008
	(-2.520)	(-1.552)	(-0.103)	(-0.007)	(0.055)
C_A_i	0.044	-0.004	0.082	-0.077	-0.067
	(0.698)	(-0.042)	(0.749)	(-0.638)	(-0.519)
A_C_i	0.153	0.251*	0.332**	0.397**	0.373**
	(1.542)	(1.799)	(2.157)	(2.449)	(2.206)
$Age_{i,t}$	0.137*	0.126	0.157	0.175	0.214*
	(1.937)	(1.291)	(1.458)	(1.501)	(1.742)
$Cash_{i,t}$	0.274**	0.446***	0.453**	0.573***	0.653***
	(2.235)	(2.695)	(2.463)	(2.909)	(3.122)
$\Delta Assets_{i,t}$	0.012	0.005	0.014	0.010	0.006
	(1.402)	(0.580)	(1.305)	(0.878)	(0.479)
$RD_{i,t}$	-0.028	0.692	0.607	0.553	0.756
	(-0.075)	(1.234)	(0.949)	(0.807)	(1.031)
$Underpricing_{i,t}$	-0.246***	-0.420***	-0.282**	-0.231	-0.230
	(-2.837)	(-3.512)	(-2.106)	(-1.588)	(-1.519)
$Underwriter_{i,t}$	0.050***	0.046**	0.060**	0.072**	0.079***
	(3.023)	(2.013)	(2.285)	(2.577)	(2.583)
Constant	-0.598***	-0.537**	-0.741***	-0.866***	-0.924***
	(-3.558)	(-2.226)	(-2.698)	(-2.951)	(-2.890)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	3.995***	3.216***	2.810***	2.605***	2.627***
Adj. R^2	6.5%	6.7%	5.3%	5.0%	5.4%
Obs	834	834	834	834	834

This table reports the results of regression analysis testing whether there is a significant difference in stock returns across the portfolios sorted based on the level of pre-to-post IPO year *CSCOREs*. *CtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoC'* and zero otherwise, *CtoA* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoA*' and zero otherwise and *AtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*AtoC*' and zero otherwise. Portfolio returns are calculated based on the average monthly CARs for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day and are adjusted for the CRSP value-weighted index returns. A description of other variables is provided in Table 3-2 *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 3-21: Regression Analysis for the Association between the *Pre_CSCORE* and Post-Issue Stock Returns Adjusted for Fama-French Size and Market-to-Book 5x5 Portfolio Returns

Independent Variable	1 year	2 years	3 years	4 years	5 years
Pre_CSCORE_i	-0.190***	-0.156*	-0.117	-0.096	-0.004
	(-3.998)	(-1.942)	(-1.533)	(-1.144)	(-0.048)
$Age_{i,t}$	0.051	0.054	0.048	0.049	0.137
	(0.903)	(0.641)	(0.539)	(0.482)	(1.247)
$Cash_{i,t-1}$	0.089	0.333**	0.312*	0.318*	0.392**
	(0.806)	(1.980)	(1.939)	(1.922)	(2.201)
$\Delta Assets_{i,t-1}$	-0.015*	-0.015	-0.016	-0.016	-0.026**
	(-1.651)	(-1.368)	(-1.492)	(-1.480)	(-2.495)
$RD_{i\ t-1}$	0.138	0.060	-0.166	-0.237*	-0.120
	(1.246)	(0.382)	(-1.554)	(-1.934)	(-0.754)
$Underpricing_{i,\ t}$	-0.200***	-0.197*	-0.059	-0.090	-0.079
	(-3.596)	(-1.939)	(-0.564)	(-0.903)	(-0.750)
$Underwriter_{i,t}$	0.043***	0.063***	0.099***	0.093***	0.102***
	(3.269)	(3.133)	(5.537)	(5.149)	(4.930)
Constant	-0.203	-0.436**	-0.854***	-0.850***	-1.178***
	(-1.410)	(-2.193)	(-4.689)	(-4.185)	(-5.327)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	7.440***	4.633***	6.331***	6.132***	5.597***
Adj. R^2	8.2%	5.3%	5.8%	6.3%	5.8%
Obs	809	809	809	809	809

This table reports the results of regression analysis testing the association between *Pre_CSCORE* and stock returns. The dependent variable is the average monthly BHARs for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day. The monthly returns of 5x5 Fama-French portfolios formed on size and book-to-market are used as benchmark returns. A description of each variable is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 3-22: Regression Analysis for the Association between the *Post_CSCORE* and Post-Issue Stock Returns Adjusted for Fama-French Size and Market-to-Book 5x5 Portfolio Returns.

Independent Variable	1 year	2 years	3 years	4 years	5 years
$Post\_CSCORE_i$	-0.022	-0.021	0.078	-0.062	-0.056
	(-0.445)	(-0.329)	(0.820)	(-0.551)	(-0.468)
$Age_{i,t}$	0.010	-0.017	-0.014	0.086	0.122
	(0.287)	(-0.333)	(-0.193)	(1.094)	(1.392)
$Cash_{i,t}$	0.086	0.076	0.149	0.262**	0.366***
	(1.516)	(0.937)	(1.328)	(2.067)	(2.638)
$\Delta Assets_{i,t}$	-0.011***	-0.012***	-0.014***	-0.013***	-0.015***
	(-4.521)	(-3.226)	(-3.335)	(-2.826)	(-2.778)
$RD_{i,t}$	0.308*	0.553**	1.034***	1.033**	0.790*
	(1.685)	(2.076)	(2.702)	(2.466)	(1.702)
$Underpricing_{i,t}$	-0.016	-0.106***	-0.034	0.058	0.039
	(-0.448)	(-2.596)	(-0.523)	(0.698)	(0.498)
$Underwriter_{i,t}$	0.018***	0.022**	0.039***	0.033**	0.048***
	(2.951)	(2.404)	(3.020)	(2.110)	(3.061)
Constant	-0.159**	-0.158	-0.391***	-0.448***	-0.618***
	(-2.267)	(-1.549)	(-2.713)	(-2.760)	(-3.610)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	8.983***	8.411***	6.947***	7.035***	6.023***
Adj. R^2	4.1%	3.5%	3.0%	3.0%	2.9%
Obs	2218	2218	2218	2218	2218

This table reports the results of regression analysis testing the association between *Post_CSCORE* and stock returns. The dependent variable is the average monthly BHARs for the holding period of one, two, three, four and five years starting three months after the IPO fiscal-year ends to allow for a reporting lag. The monthly returns of 5x5 Fama-French portfolios formed on size and book-to-market are used as benchmark returns. A description of each variable is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 3-23: Regression Analysis for Fama-French Size and Market-to-Book 5x5 Portfolio Returns Sorted Based on the Level of Pre-to-Post IPO year *CSCORE*

Independent Variable	1 year	2 years	3 years	4 years	5 years
C_C_i	-0.226***	-0.130	-0.055	0.059	0.126
	(-2.982)	(-0.902)	(-0.428)	(0.457)	(0.875)
C_A_i	-0.049	-0.103	0.085	0.088	0.145
	(-0.800)	(-0.944)	(0.653)	(0.733)	(1.088)
A_C_i	0.218**	0.445**	0.405**	0.415**	0.470**
	(1.971)	(2.136)	(2.107)	(2.369)	(2.355)
$Age_{i,t}$	0.090	-0.024	0.047	0.041	0.117
	(1.340)	(-0.212)	(0.416)	(0.329)	(0.784)
$Cash_{i,t}$	0.260**	0.365**	0.053	0.088	0.185
	(2.337)	(1.976)	(0.275)	(0.518)	(0.986)
$\Delta Assets_{i,t}$	0.014	-0.004	0.004	-0.003	0.001
	(1.469)	(-0.387)	(0.268)	(-0.244)	(0.055)
$RD_{i,t}$	0.109	0.816	0.812	0.356	0.498
	(0.287)	(1.225)	(1.131)	(0.611)	(0.695)
$Underpricing_{i,t}$	-0.136	-0.108	-0.010	-0.086	-0.089
	(-1.526)	(-0.880)	(-0.079)	(-0.756)	(-0.698)
$Underwriter_{i,t}$	0.061***	0.104***	0.130***	0.126***	0.155***
	(4.384)	(4.468)	(5.650)	(5.809)	(6.534)
Constant	-0.610***	-0.892***	-1.308***	-1.307***	-1.705***
	(-3.913)	(-3.607)	(-5.390)	(-5.172)	(-5.851)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	4.893***	4.995***	5.277***	5.162***	5.120***
Adj. R^2	8.8%	7.8%	7.1%	6.1%	6.8%
Obs	834	834	834	834	834

This Table reports the results of regression analysis testing whether there is a significant difference in stock returns across the portfolios sorted, based on the level of pre-to-post IPO year *CSCOREs*. *CtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoC'* and zero otherwise, *CtoA* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*CtoA*' and zero otherwise and *AtoC* is a dichotomous variable that takes one if a sample firm belongs to the portfolio '*AtoC*' and zero otherwise. Portfolio returns are calculated based on the average BHARs for the holding period of one, two, three, four and five years from the IPO month, excluding the returns on the first trading day, and are adjusted for the CRSP value-weighted index returns. A description of other variables is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Chapter Four

The Effect of Accounting Conservatism of IPO Firms on their First Seasoned Equity Offerings

4.1 Introduction

Chapter 3 examined the accounting conservatism of Initial Public Offering (IPO) firms and investigated how conservatism benefits IPO firms in terms of IPO underpricing and long-term post-issue stock return performance. Chapter 4 investigates how IPO firms' conservatism affects their first seasoned equity offerings (SEOs). Specifically, this chapter examines the following research questions:

- Are IPO issuers who adopt a higher degree of conservatism more likely to return to the equity market soon after their IPO?
- Do IPO issuers who adopt a higher degree of conservatism experience better stock returns when they make an announcement of their first SEO?
- Do IPO issuers who adopt a higher degree of conservatism experience a less degree of underpricing in their first SEO?
- Does the extent of accounting conservatism adopted by the IPO issuers significantly affect their post-SEO stock return performance?

The remainder of the chapter is organized as follows. Section 4.2 develops the conceptual framework and hypotheses examined in this chapter. Section 4.3 provides the methodology designed to empirically test the hypotheses. Section 4.4 describes the sample and presents the descriptive statistics. Section 4.5 reports the empirical results and Section 4.6 provides the summary and concluding remarks.

4.2 Conceptual Framework and Hypotheses Development

4.2.1 IPO Firms' Accounting Conservatism and the Probability of Reissuing Stock

In the IPO setting, the lack of publicly available information increases information asymmetry between insiders and outside investors, making it easier for issuers to manage earnings through income-increasing adjustments. However, the capital market imposes substantial costs on firms revealed to have manipulated earnings because earnings performance after the IPO helps investors update their beliefs about the value of the firm, resulting in a subsequent decline in the stock price (e.g., Aharony *et al.* 1993; Teoh *et al.* 1998a, 1998b; Jackson *et al.* 2002; Roosenboom *et al.* 2003; DuCharme *et al.* 2004; Cormier & Martinez 2006)

Prior literature suggests that accounting conservatism reduces information asymmetries by alleviating managers' earnings management and improving a firm's information disclosure and investment efficiency (Watts 2002; Masulis *et al.* 2007; LaFond & Watts 2008). In particular, Guay and Verrecchia (2012) argue that conservative financial reporting promotes a firm's full disclosures by enforcing disclosures of both good and bad news on a timely basis. This is because conservatism ensures that losses from bad economic events are incorporated into earnings as soon as expected, while expected gains from good economic events are voluntarily disclosed by managers through the notes to the financial statements, conference calls and management guidance etc (see Masulis *et al.* 2007). Accordingly, IPO firms that are expected to reissue soon after their IPO may adopt a higher degree of conservatism to reduce information asymmetry between insiders and outside investors and to enhance investors' perceptions of the firm

value so that they can ultimately raise the next seasoned equity financing on more favorable terms.

Prior research shows that many IPO firms raise equity financing again soon after their IPO (e.g., Welch 1989; Jegadeesh *et al.* 1993; Levis 1995). For example, Levis (1995) documents that 22% of his IPO sample went SEO within five years after the IPO and Jegadeesh *et al.* (1993) also show that 21% of their IPO sample reissue equity. Ching *et al.* (2006) also report that 20-25% of IPO firms return to the market to make capital-raising seasoned offerings in each of the three years following the IPO. Overall, these studies indicate that a large number of firms have extra cash needs soon after they raise equity financing via IPO. In particular, Teoh *et al*. (1998b) report that SEOs occur when cash flows are declining, not when they are at a peak, claiming that issuers have an incentive to boost their earnings to increase their offering proceeds. This is also consistent with DeAngelo *et al*. (2010) who suggest that the primary motive for SEOs is a near-term cash need.

IPO issuers adopting a higher degree of conservatism need to forgo the incentives associated with reporting higher earnings around the IPO. This means that only high quality issuers with strong earnings and growth potential will adopt a higher degree of conservatism for their long-term prospects in the stock market. Consequently, IPO issuers adopting a higher degree of conservatism may be less likely to experience a near-term cash need soon after they raise the IPO proceeds. Therefore, the likelihood of these firms reissuing equity soon after their IPO may be significantly lower compared to those reporting earnings less conservatively. As discussed thus far, it is not clear whether the extent to which conservatism is adopted by IPO issuers is significantly

associated with the probability of reissuing equity soon after their IPO. Consequently, it is an empirical question as to whether firms adopting a higher degree of conservatism are more likely or less likely to issue SEO in the first five years of operation subsequent to the IPO. Thus, this chapter is devoted to addressing this issue.

4.2.2 IPO Firms' Accounting Conservatism and SEO Announcement Returns

Previous studies provide evidence that the market reacts negatively to SEO firms with poor quality earnings. For example, Rangan (1998) finds significantly higher discretionary accruals around SEO announcement quarters and suggests that discretionary accruals represents deliberate earnings management because issuing firms experience earnings declines in subsequent years after the offer. Lee and Masulis (2009) argue that when firms with poor accounting quality announce SEOs, investor uncertainty about the value of issuers' common stock rises and thus lowers investors' demand for these equity issuers. In particular, they argue that poor accruals quality creates more uncertainty for outside investors about a firm's true performance, regardless of whether it is created through earnings management or not. Shivakuma (2000) also argues that SEO offering announcements signals earnings overstatement to investors and causes investors to revise their beliefs about the future earnings of these firms.

A more recent study by Kim *et al.* (2013) investigates whether firms reporting more conservatively experience significantly higher SEO announcement returns. This study finds that conservatism is positively associated with three-day announcement returns, indicating that more conservative firms experience smaller price reductions at SEO

announcements. Kim *et al.* (2013) argue that firms adopting more conservative accounting have lower information asymmetry between insiders and outside investors, mitigating the agency costs around the SEO. Taken together, past studies suggest that the market penalizes firms that manage earnings upward prior to the SEO by significantly lowering its valuation of these firms subsequently (see Sloan 1996). Therefore, if IPO firms expect to raise additional equity subsequent to the issue, they may adopt a higher degree of conservatism around the IPO to signal their quality to outside investors in order to achieve better terms in a subsequent seasoned offering. This is because IPO firms with higher conservatism can increase investors' demand in their next equity issue by signalling to the market that they provide higher quality earnings information through more conservative reporting. Consequently, IPO firms with higher conservatism may experience better SEO announcement returns in their next equity issue.

Kim *et al.*'s (2013) research is closely related to this thesis as it investigates the effect of conservatism on the seasoned equity market. However, Kim *et al.*'s (2013) study includes all SEO issuers in its sample and investigates the association between the conservatism measured in the pre-SEO announcement year and announcement returns. Consequently, Kim *et al.* (2013) cannot answer the question as to whether IPO issuers' conservatism is significantly associated with their first SEO announcement returns. Therefore, this chapter empirically investigates whether IPO firms adopting more conservative accounting experience more positive market reaction around SEO announcements.

4.2.3 IPO Firms' Accounting Conservatism and SEO Underpricing

The vast majority of research on the capital market consequences of accounting disclosures suggests that there are long-term benefits to building a reputation for providing reliable accounting disclosures. These benefits include increases in stock returns, institutional ownership, analyst following and stock liquidity, and a decrease in cost of equity capital (e.g., Lang & Lundholm 1993; Botosan 1997; Healy *et al.* 1999; Healy & Palepu 2001). In particular, Botosan (1997) argues that greater disclosure is associated with a lower cost of equity capital because disclosure of private information reduces a firm's information asymmetry thereby increasing investors' demand for its securities and raising the current stock price. Francis *et al.*(2004) also find that firms with higher accrual quality experience a lower cost of equity capital. This is because high quality earnings enhance the ability of earnings to convey information about future cash flows, reducing information risk for investors. Similarly, Francis *et al.* (2008) also report that firms with greater voluntary disclosure incur a lower cost of capital. However, they argue that such an effect disappears after controlling for earnings quality, concluding that earnings quality is the direct cause for the reduced cost of capital and that firms with good quality earnings provide higher levels of voluntary disclosure (Francis *et al.* 2008).

The extant literature suggests that reporting conservatism facilitates firms' access to external funds by reducing the cost of those funds (see García Lara *et al.* 2010). García Lara *et al.* (2011a) find that conservatism is negatively associated with expected stock returns, suggesting that investors reward more conservative firms with a lower cost of capital. They argue that conservative reporting which facilitates more informative

disclosure of bad news reduces the cost of capital by improving risk sharing across investors. Artiach and Clarkson (2003) also find that conservatism is negatively associated with the cost of equity capital. However, they argue that such benefits are diminished in environments of low information asymmetry with high disclosure, suggesting that the marginal impact of conservatism systematically declines as the firm's information environment improves. Li (2010) extends this research to the international context and obtains consistent results, showing that country-year conservatism measures are negatively associated with both the cost of equity and debt capital. Taken together, previous studies suggest that more conservative reporting contributes to a reduction in firms' cost of capital by improving the quality of accounting disclosures and reducing information asymmetries between insiders and outside investors.

Prior research documents that SEOs are significantly underpriced and SEO underpricing has been gradually increasing over time (e.g., Healy *et al.* 1999; Lowry & Schwert 2002; Jog & McConomy 2003; Andrade & Stafford 2004; Donelson *et al.* 2012). Andrade and Stafford (2004) argue that the increase in SEO underpricing is due to the fact that firms issuing seasoned equity more recently are subject to higher levels of uncertainty than issuers in earlier periods. In particular, Huijgen and Lubberink (2005) suggest that SEO underpricing results directly from the information asymmetry among investors because it adversely affects the cost of equity capital. Accordingly, prior literature suggests that the increase in uncertainty about the value of the equity offer increases SEO underpricing (Corwin 2003; Huijgen & Lubberink 2005; Daske *et al.* 2008). For example, Kim and Park (2005) find that SEO firms employing aggressive accounting decisions using discretionary accruals in order to issue new shares at

inflated prices experience a larger degree of SEO underpricing. Consequently, IPO firms reissuing shortly after their IPO may benefit in their follow-on equity financing by adopting a higher degree of conservatism. This is because IPO firms with more conservative earnings can signal the quality of their reported earnings to outside investors, differentiating themselves from low quality IPOs with poor quality accounting information. Thus, it will lead to greater investors' demand when they come back to the equity market for their next issue, reducing their need to underprice their offer. Thus, this chapter investigates whether the extent to which conservatism is adopted by IPO firms significantly affects the degree of underpricing in their first seasoned equity offering.

4.2.4 IPO Conservatism and Post-Issue SEO Performance

A number of empirical studies report significant long-term underperformance of SEOs relative to non-issuing firms (e.g., Loughran & Ritter 1995; Spiess & Affleck-Graves 1995; Loughran & Ritter 1997). These studies show that SEO firms experience low post-issue stock returns because investors are over-optimistic about the earnings potential of firms issuing stock and these firms take advantage of this overvaluation (see also Cai & Loughran 1998). Teoh *et al*. (1998b) suggest that previously documented post-issue stock return underperformance of SEO issuers is due to those that manage earnings aggressively using discretionary current accruals prior to the offer. Consistent with this view, Cohen and Zarowin (2010) provide evidence of significant positive abnormal accruals in the year of SEO. In particular, they argue that SEO firms do not only engage in accrual-based earnings management, but also real activities manipulations by adjusting production costs and discretionary expenses. They suggest

that SEO firms that manage earnings around the offer tend to have better operating performance than do their industry peers in the period preceding the SEO, but they significantly underperform following the SEO.

IPO issuers can influence their offer price or the initial market valuation by manipulating earnings upward. However, those who engage in earnings manipulation will risk long-term reputational benefits for the prospect of their short-term gains as the firm's performance is realized after the issue and thus the market discovers the true quality of the issuer between the IPO and SEO. Consequently, IPO issuers who need to return to the capital markets in the near future have strong incentives to provide higher quality earnings to investors for long-term stock market benefits. LaFond and Watts (2008) suggest that conservatism can serve as a mechanism to reduce information asymmetry between firm insiders and outside investors by providing assurance to investors that gains are not overstated and losses are not understated in financial statements.

Higher information asymmetry increases risk to uninformed investors because only informed investors can reweight their portfolio as they receive new private information (Easley & O'Hara 2004). As a result, when investors recognize lower information asymmetry for the equity issuer, their demand for this issuer’s stock will significantly increase (see Botosan 1997). This may suggest that IPO issuers who will soon require equity financing will report earnings more conservatively to reduce information asymmetries and to develop a reputation for high-quality financial disclosures in the capital market (see Dechow *et al.* 1996). As a result, IPO issuers with higher conservatism reissue equity soon after their IPO may perform well in the stock market.

Thus, this chapter investigates whether the extent to which conservatism is adopted by IPO issuers can predict the stock return performance in the post-SEO market.

4.3 Research Methodology

4.3.1 IPO Conservatism and the Probability of First Seasoned Equity Offering

A probit model is employed to test whether conservatism adopted by IPO issuers is significantly associated with the probability of reissuing within five years subsequent to the IPO and is as follows:

$$\begin{aligned} SEO\_n_i = {} & \alpha_0 + \beta_1 CSCORE_i + \beta_2 Cash_{i,t} + \beta_3 Lev_{i,t} + \beta_4 AFTRET_i + \beta_5 Tobins'q_i \\ & + \beta_6 Age_{i,t} + \beta_7 IPO\_Underpricing_i + \beta_8 IPO\_Underwriter_i \\ & + \beta_i^n \sum Year\ dummies + \beta_i^n \sum Industry\ dummies + \varepsilon_i \end{aligned} \quad (1)$$

Equation (1) tests the association between SEO probability and IPO issuers' conservatism. The dependent variable *SEO_n* is a binary indicator that takes the value of one if an IPO firm reissues equity within *n* years subsequent to the IPO (where *n*=1, 2, 3, 4 and 5) and otherwise zero. The association between IPO firms' conservatism and the probability of reissuing is investigated from one to five years, subsequent to the IPO. The investigation period ends five years after the IPO because the effect of conservatism adopted around IPO will be diminished as the timing of the first seasoned equity offering moves further away from the IPO (e.g., Mikkelson *et al.* 1997; Jain & Kini 1999; Bhabra & Pettway 2003). *CSCORE* is measured both in the pre-IPO and IPO year. Accounting variables are measured in the same fiscal year over which *CSCORE* is measured for consistency. For example, when *CSCORE* is measured in the

pre-IPO year, all other accounting variables are also measured in the pre-IPO year. A description of each variable used in the regression model is provided in Table 4-1.

[Insert Table 4-1 here]

The level of cash and marketable securities (*Cash*) and leverage ratio (*Lev*) are included in the regression to control for the financial condition of an IPO firm. DeAngelo *et al.*(2010) find that a majority of SEO issuers would have run out of cash in the year after the offer without the proceeds received, suggesting that a near-term cash need is the primary SEO motive. A debt reduction is also one of the well-known motivations for equity financing (see Walker & Yost 2008), suggesting that firms with a greater amount of debt need to raise capital soon after the IPO to pay down those debts.

The after-market valuation of an IPO may also affect a firm's decision to equity finance soon after their IPO since poor after-market valuation by investors may discourage firms from issuing shares again soon. Thus, cumulative market-adjusted stock returns in the 20-day trading periods after the IPO (*AFTRET*) and Tobin's q (*Tobins'q*) are included in the regression to control for the after-market performance and valuation of an IPO, respectively (see Jegadeesh *et al.* 1993). DeAngelo *et al*.(2010) argue that most of the firms conducting SEOs are young high-growth firms. In particular, they find that the median SEO issuer in the full 1973-2001 sample is listed 5.1 years at the time of the SEO and has a market-to-book (M/B) ratio of 71% above the industrial firm median. Accordingly, the regression controls for a firm's age (*Age*). However, the regression does not include M/B ratio, since both M/B and *Tobins'q* are used as a proxy for growth opportunities.

The regression also includes IPO underpricing (*IPO_Underpricing*) as a control variable. Welch (1989) hypothesizes that high quality firms underprice their IPOs more to distinguish themselves from low quality firms and to raise future external financing on more favorable terms. Slovin *et al.* (1994) provide empirical evidence that is consistent with Welch's (1989) view that IPO underpricing is positively associated with share-price response to a first seasoned equity offering. This implies that firms underpricing their IPOs to a larger extent are more likely to have their first seasoned equity offering soon after their IPO. However, Michaely and Shaw (1994) and Spiess and Pettway (1997) do not find the result supporting Welch (1989). Rather, they find evidence that the likelihood of seasoned equity offerings is inversely related to initial return and that the decision to reissue is related to the firm's success in the market in its first years of public operation.

IPO underwriter rankings (*IPO_Underwriter*) are also included in the regression to control for the quality of the IPO underwriter. Krigman *et al.* (2009) suggest that one of the reasons why IPO firms switch their lead underwriter at the follow-on offering is to hire more prestigious underwriters. Prior studies (e.g., Carter & Manaster 1990; Carter *et al.* 1998) have documented the signalling hypothesis that prestigious underwriters market larger and more established IPOs due to their reputation being at stake and that higher quality (less risky) issuing firms signal their quality by employing more prestigious underwriters. Accordingly, a third-party monitoring certification by more reputable underwriters reduces the uncertainty about the value of an IPO and the information asymmetry between insiders and outside investors (Carter & Manaster 1990; Datar *et al.* 1991; Megginson & Weiss 1991; Menon & Williams 1991; Michaely & Shaw 1994; Carter *et al.* 1998; Copley & Douthett Jr 2002; Lewellen 2006; Nahata

2008). As a result, firms that are going to raise equity finance soon after their IPO may employ more prestigious underwriters for their IPOs to increase their value by reducing the information asymmetry between insiders and outside investors.

4.3.2 The Effect of IPO Conservatism on SEO Announcement Returns

Certain characteristics, such as the capital structure, financial condition, after-market performance and valuation may affect a firm's decision to raise SEO soon after the IPO. Such an effect should be controlled in the regression testing the association between IPO conservatism and the profitability of the first SEO to avoid omitted variables bias. Consequently, to control for potential endogeneity, Heckman's (2008) two-stage estimation method is used in this chapter to test whether the degree of conservatism measured at the IPO is significantly associated with the share price response to the announcement, underpricing of the first seasoned equity offering and the post-SEO stock return performance. Accordingly, Siougle (2007) suggests that there is a need to control for self-selection bias in the case of SEO studies because the external financing decision through a SEO is a firm's natural self-selecting event. Equation (1) provided in Section 4.3.1 is the first-stage probit regression model in which the inverse mills ratio (*IMR*) is calculated for the second-stage regressions as shown in equation (2) through to equation (4). The dependent variable used in the first-stage probit regression (equation 1) is a binary indicator that equals one if an IPO firm reissues equity within five years subsequent to the IPO and otherwise zero.

$$CAR_i = \alpha_0 + \beta_1 CSCORE_i + \beta_2 Volatility\_Ann_i + \beta_3 Runup_i + \beta_4 Mrunup_i$$
$$+ \beta_5 SEO\_Underwriter_i + \beta_6 Time\_IPO_i + \beta_7 Relsize_i$$
$$+ \beta_8 IPO\_Underpricing_i + \beta_9 IMR_i + \beta_i^n \sum Year\ dummies$$
$$+ \beta_i^n \sum Industry\ dummies + \varepsilon_i \quad (2)$$

Equation (2) tests whether IPO firms' conservatism is significantly associated with the abnormal announcement returns of the first SEO. The dependent variable is *CAR* measured as the three-day market-adjusted cumulative abnormal stock returns measured in days -1 through +1 where day 0 is the SEO announcement date and the market return is the CRSP value weighted index returns. Consistent with equation (1), $CSCORE_i$ is measured both in the pre-IPO and IPO year and all accounting variables are measured in the same fiscal year over which $CSCORE_i$ is measured. Table 4-1 provides a description of each variable used in the regressions.

Firms with higher stock return volatility face higher uncertainty and risk exposure (see Lee & Masulis 2009). Previous research (e.g., Frankel *et al.* 1995; Lang & Lundholm 2000) suggests that SEO firms with higher levels of uncertainty and information asymmetry between insiders and outside investors prior to the offerings experience an increase in cost of capital. Accordingly, firms with higher stock return volatility will experience a negative stock price response to their SEO announcement. Thus, stock return volatility, (*Volatility_Ann*) measured as a return volatility over the 60 trading days ending 11 days prior to the SEO announcement, is included in the regression to control for the effect of a firm's stock return volatility on the price response around the SEO announcement. Masulis and Korwar (2012) suggest that firms with relatively large stock price run-ups prior to the offering announcements experience a larger negative stock reaction, whereas the run-up in the stock market index is positively associated

with the announcement period stock returns. Accordingly, the regression also includes both individual stock price run-ups (*Runup*) and market returns (*Mrunup*) as control variables.

Prior researchers document the signalling hypothesis that high quality firms signal their type by underpricing their initial issue of shares to receive a more favorable market response to subsequent offerings (e.g., Allen & Faulhaber 1989; Grinblatt & Hwang 1989; Welch 1989; Slovin *et al.* 1994). Accordingly, IPO underpricing (*IPO_Underpricing*) is included in the regression to control for the effect of IPO underpricing on the SEO announcement returns. The regression also includes SEO underwriter rankings (*SEO_Underwriter*) to proxy for the underwriter quality (see Carter & Manaster 1990; Carter & Dark 1993).

Slovin *et al.*(1994) argue that the longer the time lapses between the IPO and the subsequent equity offering, the greater the volume of public information released about the firm, reducing uncertainty about the firm value. In particular, Walker and Yost (2008) suggest that information asymmetry results in greater value loss in a SEO. Accordingly, the regression includes the log of the number of days between the IPO and the first SEO (*Time_IPO*) as a control variable. Similarly, *Relsize*, which measures the size of the SEO as a fraction of the IPO size, is also included in the regression as a control variable following Jegadeesh *et al.* (1993) who suggest that there is higher *ex ante* uncertainty associated with smaller SEO offerings, relative to their IPO size (see also Barry & Brown 1984; Beatty & Ritter 1986; TiniÇ 1988).

4.3.3 The Effect of IPO Conservatism on SEO Underpricing

Equation (3) is employed to test whether the extent to which conservatism is adopted by IPO firms is negatively associated with the degree of underpricing in a subsequent equity offering. Equation (3) is as follows:

$$\begin{aligned} SEO\_Underpricing_i = \alpha_0 &+ \beta_1\, CSCORE_i + \beta_2\, Volatility\_Issue_i + \beta_3 CAR\_6months_i \\ &+ \beta_4\, SEO\_Underwriter_i + \beta_5 Relsize_i \\ &+ \beta_6\, Avr\_Underpricing_i + \beta_7\, NYSE_i + \beta_8 MV\_SEO_i \\ &+ \beta_9 IMR_i + \beta_i^n \sum Year\ dummies \\ &+ \beta_i^n \sum Industry\ dummies + \varepsilon_i \end{aligned} \tag{3}$$

Consistent with equation (2), inverse mills ratios (*IMR*) are calculated using equation (1) as the first-stage probit regression. The dependent variable is *SEO_Underpricing* measured as the closing price on the offer day, minus the offer price divided by the offer price. Prior research shows that firms with high levels of uncertainty and asymmetric information are more underpriced to compensate uninformed investors (e.g., Beatty & Ritter 1986; Rock 1986). Firm size and stock return volatility proxy for information asymmetry prior to the offer (see Corwin 2003). Accordingly, the market value at SEO (*MV_SEO*) and the stock return volatility over the 60 trading days ending 11 days prior to the SEO issue (*Volatility_Issue*) are included as control variables.

The regression also includes *SEO_Underwriter* as a control variable. Previous studies suggest that more reputable underwriters reduce the uncertainty and information asymmetry between informed and uninformed investors because they provide more accurate information about the issuing firm to maintain their reputation (Carter & Manaster 1990; Carter *et al.* 1998; Lewellen 2006). As discussed above, *Relsize* is also

included in the model to control for the level of uncertainty associated with the size of the offering.

Kim and Park (2005) suggest that pre-offer stock market returns are negatively associated with the degree of SEO underpricing because issuers who have experienced a greater recent increase in their price expend less effort in bargaining over the offer price with underwriters. Thus, the cumulative market adjusted return over 6 months, ending the day prior to the issue (*CAR_6months*), is included as a control variable. Corwin (2003) argues that factors affecting the degree of underpricing, such as the relative bargaining positions of issuers, underwriters and investors depending on business and industry cycles should affect both IPO and SEO underpricing. Accordingly, an average IPO initial return during the same month as the SEO (*Avr_Underpricing*) is included as a control variable. The regression also includes *NYSE* as per previous studies reporting that the stocks listed on the NYSE exchange tend to be less underpriced than NASDAQ issues (e.g., Lowry & Schwert 2002; Corwin 2003; Leone *et al.* 2007).

4.3.4 IPO Conservatism and Post-SEO Stock Return Performance

Equation (4) tests the association between IPO firms' conservatism and post-SEO stock return performance. A description of each variable[12] in the regression is provided in Table 4-1. Inverse mills ratios (*IMR*) are calculated based on equation (1).

[12] Section 3.3.4 of the thesis provides the justification of the control variables used in the return regressions.

$$R_{i,t} = \alpha_0 + \beta_1 CSCORE_i + \beta_2 Age_i + \beta_3 SEO\_Underpricing_i + \beta_4 MV\_SEO_i$$
$$+ \beta_5 Asset\_growth_i + \beta_6 R\&D_i + \beta_7 Cash\_SEO_i + \beta_8 IMR_i$$
$$+ \beta_i^n \sum Year\ dummies + \beta_i^n \sum Industry\ dummies + \varepsilon_i \quad (4)$$

The dependent variable in the regression is the post-SEO annual abnormal stock returns ($R_{i,t}$) measured by using buy-and-hold abnormal return (BHAR) and cumulative abnormal return (CAR) relative to alternative benchmarks: monthly CRSP value-weighted index and Fama-French size and market-to-book 5x5 portfolio returns.[13] The model includes *Age* and *MV_SEO* as control variables. Older firms have a longer history of their operation in the market, thus these firms entail lower risks due to the larger amount of information available (e.g., Carter & Manaster 1990; Ritter 1991; Loughran & Ritter 2004). Similarly, firm size is also negatively associated with the level of uncertainty about the firm value (Corwin 2003).

SEO_Underpricing is also included as a control variable following previous studies which suggest a negative association between the degree of underpricing and the long-term stock return performance (e.g., Ritter 1991; Carter & Dark 1993; Krigman *et al.* 1999). Lagged changes in total assets (*Asset_growth*) and research and development expenditure (*RD*) proxy for the investment and growth characteristics of an issuing firm and are included in the regression, following previous studies that suggest these variables are a strong predictor of future stock returns (see Eberhart *et al.* 2004; Cooper *et al.* 2008). Finally, *Cash* is also included in the regression to proxy for the financial condition of an issuing firm (Billett *et al.* 2011).

[13] A detailed description of how stock returns are measured is not discussed here since the methods used in this chapter are consistent with those used and discussed in Chapter 3 of the thesis.

4.4 Sample Data and Descriptive Statistics

The Securities Data Corporation (SDC) Platinum database is utilized to obtain firms that went IPO during the period 1990 to 2005 and reissued equity financing within five years subsequent to the IPO from 1990 to 2010. Out of 2,356 IPO sample firms,[14] 855 firms went SEO within five years subsequent to the IPO. However, when the SEO occurs in the same fiscal-year as the IPO it is difficult to examine the effect of IPO year conservatism (*Post_CSCORE*) on their next equity financing. This is because *Post_CSCORE* is measured after the SEO as conservatism in the IPO year is measured after the IPO fiscal-year ends. As a result, when examining *Post_CSCORE*, 418 firms that reissued equity within one year of their IPO are excluded from the sample, leaving 437 firms in the sample. When the pre-IPO year *CSCORE* is under analysis, there is no need to exclude firms reissuing equity in the IPO year as the pre-IPO year *CSCORE* is measured prior to their first SEO. Out of 855 IPO firms which reissued equity within five years of their IPO, 313 firms have *CSCORE* measured in the pre-IPO year.

Table 4-2 provides the descriptive statistics of all the variables used in the empirical analysis. Table 4-2 (Panel A) reports the variables measured in the pre-IPO year and Table 4-2 (panel B) provides the variables measured in the IPO year.

[Insert Table 4-2 here]

The mean and median of *Cash* and *IPO_Underpri*cing differ considerably from each other, suggesting that they are both positively skewed. Although the mean and median

[14]See Section 3.4 of the thesis for the detailed IPO sample selection process.

AFTRET have the opposite sign, they are both very close to zero, suggesting that the IPO sample firms did not outperform the market, on average, in the one-month period after the IPO. Table 4-2 (Panel C) reports the descriptive statistics of the variables measured in the SEO announcement and issue year. The mean and median *CSCORE* measured in the year prior to the SEO announcement (*AnnCSCORE_SEO*) are close to those measured in the year prior to the SEO issue (*IssCSCORE_SEO*), reflecting the fact that the sample firms issued their SEO in the same year as their announcement year except for 11 firms. Due to these 11 firms, *IssCSCORE_SEO* is measured and employed in the model specification where a dependent variable is measured after the SEO issue to increase the precision of the regression analysis. Both *AnnCSCORE_SEO* and *IssCSCORE_SEO* are available for 416 sample firms.

The mean of *Asset_growth* is higher than the median, indicating that *Asset_growth* is positively skewed. Although it is not reported in Table 4-2 for brevity, the analysis of sample data reveals that 23% of the sample firms experience more than a 100% increase in the size of their assets in the SEO year. *Cash_SEO, R&D, Relsize,* and *SEO_Underpricing* are also positively skewed. In particular, only 220 issuers reported *R&D*, indicating that only half of the sample firms incurred R&D expenditures in the SEO year. Both the mean and median *Relsize* are greater than one, suggesting that the sample firms' first SEO size is, on average, greater than their IPO size. In addition, the mean *IPO_Underpricing* of 13.2% is higher than the mean *SEO_Underpricing* of 3.2%, indicating that firms reissuing equity within five years of their IPO show a lower degree of underpricing at their SEO compared to the level of underpricing they had at the IPO.

4.5 Empirical Analysis

4.5.1 IPO Conservatism and the Probability of Issuing a SEO

To examine the distribution of the sample based on their *CSCORE*, the sample firms are sorted into quartiles based on *PreCSCORE_IPO* and *PostCSCORE_IPO*. The first quartile (Q1) has the highest mean conservatism score and is the most conservative earnings reporting group. The fourth quartile (Q4) has the lowest mean conservatism score and is the least conservative earnings reporting group. The analysis of *PreCSCORE_IPO* quartiles is reported in Panel A of Table 4-3 and *PostCSCORE_IPO* in Panel B. In particular, 158 out of 313 firms (50%) went for SEO within one year of their IPO in the *PreCSCORE_IPO* analysis and 223 out of 437 firms (51%) within two years of their IPO in the *PostCSCORE_IPO* analysis. This indicates that half of the sample IPO firms reissued equity at least in the first two years of their operation after the IPO.

As reported in Panel A of Table 4-3, Q1 has the lowest number of IPO firms that reissued equity within one to three years after the IPO. For four and five years subsequent to the IPO, Q2 has the lowest number of firms and Q1 has the second lowest. Q4 reports the largest number of firms that reissued equity all across one to five years after the IPO. Accordingly, this result indicates that firms reporting less conservatively in the pre-IPO year tend to come back to the equity market within one to five years subsequent to the IPO.

[Insert Table 4-3 here]

Table 4-3 (Panel B) provides consistent results. Specifically, Q1 has the lowest number of firms that reissued equity within two to five years of the IPO, while Q4 reports the largest number of firms. There is a monotonic increase in the number of firms from Q1 to Q4 across different years. This result indicates that firms reporting less conservatively in the IPO year tend to obtain equity financing again within five years subsequent to the IPO. *Frequent issuers* are the firms that reissue equity more than once within the five years of their IPO and there appears to be no systematic pattern across the quartile of the *Frequent Issuers* sample.

A multivariate analysis is also employed to test the association between IPO conservatism and the probability of next equity financing. Table 4-4 presents the correlation matrix [15] of independent variables used in the regression model for *PreCSCORE_IPO* analysis and Table 4-5 for *PostCSCORE_IPO* analysis. As tabulated in Table 4-4 and 4-5, *Age* is negatively correlated with *Cash* which is not consistent with the life-cycle theory that young firms are in the growth-stage with lower operating cash flow. DeAngelo *et al.* (2010) suggest that more mature firms selling stock tend to have Altman Z-scores indicative of serious financial distress. Accordingly, this may indicate that older private firms experiencing a cash short-fall may decide to go public to raise cash, driving a negative correlation between *Age* and *Cash* in the dataset. The reported correlation coefficients [16] are not overly high as the higher correlations obtained are those between *Tobin's q* and *IPO_Undepricing* (at 38% in Table 4-4 and

[15] The correlation between the conservatism scores and IPO characteristics, such as IPO underwriter and IPO underpricing are provided and discussed in Section 3.5 of the thesis.

[16] Each variable in the model is tested for a variance inflation factor (VIF) and provided in Appendix IV of the thesis. All VIFs reported are below two, confirming that the model is not subject to multicollinearity (see Kim & Purnanandam 2013).

44% in Table 4-5), *Tobin's q* and *Cash* (at 35% in Table 4-5), and *Lev* and *Cash* (at -32.% in Table 4-4 and -45% in Table 4-5).

[Insert Table 4-4 here]

[Insert Table 4-5 here]

The results for *PreCSCORE_IPO* regression analysis are presented in Table 4-6 and the results for *PostCSCORE_IPO* are reported in Table 4-7. In Table 4-6, the coefficient on *PreCSCORE_IPO* is negative in all regressions (*SEO_1* to *SEO_5*), but is not statistically significant. In Table 4-7, the coefficient on *PostCSCORE_IPO* is negative and statistically significant at 1% in all regressions, suggesting that the extent of conservatism adopted by a firm in the IPO year is negatively associated with the probability of reissuing equity within two to five years subsequent to the IPO. Consistent with this result, the coefficient on *PostCSCORE_IPO* is also negative and statistically significant at 1% in the regression where *SEO_Frequent* is the dependent variable, suggesting that the lower the conservatism in the IPO year, the higher the probability of reissuing equity more than once within five years of the IPO.

[Insert Table 4-6 here]

[Insert Table 4-7 here]

The coefficients on *Cash* are negative, indicating that the higher the amount of cash, the lower the probability of reissuing soon after the IPO. However, the coefficient is

statistically significant only in *SEO_1* regression in *PreCSCORE_IPO* analysis and *SEO_2* and *SEO_3* regression in *PostCSCORE_IPO* analysis. The coefficient on *Lev* is positive and statistically significant in all regressions in *PostCSCORE_IPO* analysis (except for the *SEO_2* regression), indicating that the IPO firms with higher leverage in the IPO year are more likely to go for equity financing again soon after their IPO. However, the coefficient is not statistically significant in *PreCSCORE_IPO* analysis.

The coefficient on *IPO_Underpricing* is negative and statistically significant in *SEO_2* to *SEO_5* regressions in both *PreCSCORE_IPO* and *PostCSCORE_IPO* analysis. This result suggests that firms underpricing their IPO less are more likely to issue SEO soon after the IPO. This result is in line with Michaely and Shaw (1994) and Spiess and Pettway (1997) who argue that the likelihood of SEO is related to the firm's success in the after-issue market rather than the degree of its initial return. The coefficient on *IPO_Underwriter* is positive and statistically significant in all regressions in both *PreCSCORE_IPO* and *PostCSCORE_IPO* analysis (except for *SEO_1* regression). This result suggests that firms employing more prestigious underwriters at the time of their IPO are more likely to issue SEO soon after the IPO. Prior research finds that more prestigious underwriters reduce information asymmetry for equity issuing firms by adding credibility to the issue (e.g., Carter & Manaster 1990; Carter & Dark 1993; Carter *et al.* 1998). Thus, firms that are going to reissue soon after their IPO may want to reduce the information asymmetry by employing more prestigious underwriters to raise the next equity financing on more favorable terms.

In the regression where *SEO_Frequent* is the dependent variable, only the coefficient on *Lev* is positive and statistically significant in *PostCSCORE_IPO* analysis, suggesting

that firms with higher leverage in the IPO year are more likely to reissue equity more than once within five years subsequent to the IPO. All other control variables do not have a statistically significant coefficient.

4.5.2 IPO Conservatism and the Probability of Raising Funds through Divestitures

In this section, the thesis investigates the association between issuers' conservatism and the probability of raising funds through divestitures. The results from the previous section are interpreted as IPO firms reporting more conservatively in the IPO year having less need for extra financing within five years of their IPO. However, it is possible that these IPO firms may use other means of raising cash instead of equity financing such as divestment. Dhaliwal *et al.* (2014) document that divestment is an important instrument that firms use to generate cash. As a result, this thesis conducts an additional regression analysis testing the association between the *PreCSCORE_IPO* and *PostCSCORE_IPO* and the probability of divestment. Divestment data is obtained from the M&A module of the SDC database. The M&A transactions which occurred from the period 1990 to 2010 and which were identified as having the same target as the ultimate parent are matched against the IPO sample data. Out of 2,356 sample firms, 301 firms divested a subsidiary within five years subsequent to the IPO. The dependent variable of the regressions is *Div_n* (where n=1, 2, 3, 4 and 5) that equals one if the firm divested within *n* years subsequent to the IPO and otherwise zero.

Table 4-8 reports the results for *PreCSCORE_IPO* analysis and Table 4-9 for *PostCSCORE_IPO* analysis. The coefficient on *PreCSCORE_IPO* is negative across all regressions in Table 4-8, but statistically insignificant, suggesting that IPO firms'

conservatism in the pre-IPO year is not significantly associated with the probability of divestment. The coefficient on *PostCSCORE_IPO* is negative and statistically significant at 1% to 5% in all regressions in Table 4-9 (except for the *Div_3* regression), providing some evidence that the extent of conservatism adopted by firms in the IPO year is negatively associated with the likelihood of divestiture within five years subsequent to the IPO.

[Insert Table 4-8 here]

[Insert Table 4-9 here]

It is noted that the χ^2 for some of the regressions provided in Table 4-8 and Table 4-9 is not statistically significant, rejecting the overall significance of these regressions. However, this result at least confirms that the extent of IPO issuers' conservatism is not significantly associated with the probability of divestment subsequent to the IPO. This also supports the previous finding that issuers adopting higher conservatism in the IPO year are less likely to reissue equity within five years of the IPO due to their lower near-term cash needs. As for the control variables, only the coefficient on *Age* remains statistically significant across *Div_2* to *Div_5* regressions in the *PreCSCORE_IPO* analysis, providing some evidence that younger IPO firms are more likely to go for divestiture soon after their IPO.

4.5.3 IPO Conservatism and SEO Announcement Returns

The three-day cumulative abnormal stock returns (CARs) are measured around the SEO announcement date. The SDC database does not provide the announcement dates separately. Thus, following previous studies (e.g., Jegadeesh *et al.* 1993; Kim & Purnanandam 2013; Kim *et al.* 2013), filing dates are used as a proxy for the announcement dates. In particular, Kim and Purnanandam (2013) check the actual SEO announcement dates for a sub-sample of 300 firms in 1993-2000 using Factiva search. They find that 90% of SEOs make their announcements on the same day as their filing dates. They also report that, out of the remaining 10%, the majority make announcements a day before the filing date.

As shown in Table 4-10, sample firms are divided into quartiles based on their *CSCORE* measured in the pre-IPO year (*PreCSCORE_IPO*) in Panel A, *CSCORE* measured in the IPO year (*PostCSCORE_IPO*) in Panel B and *CSCORE* measured in the year prior to the SEO announcement (*AnnCSCORE_SEO*) in Panel C. As can be seen from the average conservatism scores from each quartile, Q1 is the most conservative earnings reporting quartile and Q4 is the least conservative earnings reporting quartile. The average announcement CAR provided in each panel of Table 4-10 is negative, consistent with previous findings that IPO firms experience negative announcement returns on average for their first SEO (e.g., Jegadeesh *et al.* 1993; Levis 1995).

As reported in Table 4-10 (Panel A), there appears to be no systematic pattern across the *PreCSCORE_IPO* quartiles. In Panel B, Q4 reports the highest CAR while Q1

reports the lowest. However, there is no monotonic increase in the CARs from Q1 to Q4, which makes it difficult to draw inferences from this result. Panel C provides the CARs sorted based on *AnnCSCORE_SEO* quartile. There is a monotonic increase in the CARs from Q1 to Q4, suggesting that the sample firms reporting more conservatively in the year prior to the SEO announcement tend to experience more negative SEO announcement returns. The results from the univariate analysis are only suggestive because this does not control for other effects on the SEO announcement returns. Thus, regression analysis is also employed to examine the association between IPO conservatism and the SEO announcement returns.

[Insert Table 4-10 here]

Table 4-11 provides the correlation matrix for the variables used in the regression analysis. *PreCSCORE_IPO* and *PostCSCORE_IPO* are positively correlated at 42% and *PostCSCORE_IPO* and *AnnCSCORE_SEO* are also positively correlated at 52%,[17] indicating that the IPO firms adopting a higher degree of conservatism in the pre-IPO year also tend to adopt higher conservatism in the IPO year. Also, the firms reporting earnings conservatively in the IPO year tend to show higher conservatism in the year prior to their first SEO. *Volatility_Ann* is positively correlated with *Runup* at 43% (statistically significant at 1%), indicating that the firms with higher stock return volatility tend to experience higher stock returns prior to the announcements. All other variables do not report a significantly high correlation.[18]

[17] *PreCSCORE_IPO*, *PostCSCORE_IPO* and *AnnCSCORE_SEO* are not included in the same regression. Thus, their correlation does not have an impact on the regression results.

[18] VIF is checked for each coefficient and the results are provided in Appendix IV of the thesis. The results show no indication of multicollinearity.

[Insert Table 4-11 here]

Table 4-12 provides the CAR regression results which control for selectivity using the inverse mills ratios (*IMR*). The *IMR*s are obtained from the first stage regression of equation (1) as provided in Section 4.3.1 of the thesis where the dependent variable is *SEO_5*, a binary indicator that equals one if a firm reissues equity within five years of the IPO and otherwise zero. The *IMR* is included in the second stage regressions provided in Table 4-12. The coefficient on *IMR* is negative and statistically significant at 5% in model 1, providing some evidence that the factors affecting the IPO firm's decision to issue SEO needs to be controlled when the SEO is conducted soon after the IPO to avoid self-selection bias. Also, the negative coefficient on *IMR* indicates that such unobservable factors simultaneously decreases the SEO decision and also reduces the announcement returns.

The coefficient on *PreCSCORE_IPO* in model 1 is positive and statistically significant at 5%, suggesting that the extent of conservatism adopted by issuers in the pre-IPO year is positively associated with the announcement returns at their first SEO. As both the mean and median CAR are negative, the result can be interpreted that firms adopting a higher degree of conservatism prior to going public experience significantly less negative returns to their first SEO announcement. However, the coefficient on *PostCSCORE_IPO* is not statistically significant in model 2.

As reported in model 3, the coefficient on *AnnCSCORE_SEO* is also positive but not statistically significant. This finding is not consistent with Kim *et al.* (2013) who find that firms with a greater degree of conservative reporting in the year prior to the SEO

experience better SEO announcement returns. However, the sample of Kim *et al.* (2013) consists of all SEO issuers while this thesis focuses on IPO firms issuing SEO within five years of their IPO. Consequently, the results of this thesis suggest that the degree of conservatism prior to the SEO does not have a significant effect on the valuation of seasoned equity issues for issuers who come back to the equity market soon after their IPO. Rather, the results suggest that the extent of conservatism adopted in the pre-IPO year conveys more important information about the quality of SEO investment.

[Insert Table 4-12 here]

Consistent with Hui *et al.* (2012), the coefficient on *Runup* is negative and statistically significant at 1% to 5% across all regressions, suggesting that firms with larger stock price run-ups prior to announcements experience lower SEO announcement returns. The coefficient on *MRUNUP* is positive and statistically significant at 1% to 5% in all regressions, indicating that higher market returns prior to the SEO announcements lead to better stock returns at the announcement. The coefficient on *Avr_Underpricing* is negative and statistically significant at 5% in model 1, but it does not remain statistically significant in any of the other regressions.

Previous studies suggest that conservatism reduces information asymmetry between insiders and outside investors by providing verifiable "hard" accounting information which limits managers' ability to manage earnings (e.g., LaFond & Watts 2008; Khan & Watts 2009). Kim *et al.* (2013) provide evidence that SEO issuers with greater information asymmetry experience a more severe price reduction at SEO announcements and that this negative association becomes significantly weaker for issuers with a greater degree of conservatism. Following Kim *et al.* (2013), the

regressions are re-estimated by including the measures of information asymmetry to examine whether the effect of conservatism becomes more pronounced when information asymmetry is higher. Following previous studies (e.g., Frankel *et al.* 1995; LaFond & Watts 2008; Khan & Watts 2009; Kim *et al.* 2013) that measure information asymmetry using stock return volatility and bid-ask spread, the regression includes two dummy variables *DVolatility_Ann* and *DBidAsk_Ann* and their interaction terms with conservatism scores (*PreCSCORE_IPO*, *PostCSCORE_IPO* and *AnnCSCORE_SEO*). *DVolatility_Ann* is assigned one if the firm's standard deviation of daily stock returns over the 60 trading days ending 11 days prior to the SEO announcement is above the sample median and otherwise zero. *DBidAsk_Ann* is one if the firm's average percentage quoted bid-ask spreads measured as [ask - bid]/bid over the 60 trading days ending 11 days prior to the SEO announcement date is above the sample median and otherwise zero.

Table 4-13 (Panel A) provides the regression results for *PreCSCORE_IPO*, Panel B for *PostCSCORE_IPO* and Panel C for *AnnCSCORE_SEO* after controlling for selection bias. As provided in Panel A, the coefficient on *PreCSCORE_IPO* is positive and statistically significant at 1% in model 1 and at 5% in model 2. This is consistent with the previous results that the firms adopting higher conservatism in the pre-IPO year experience significantly less negative announcement returns. However, the coefficient on the interaction terms *PreCSCORE_IPO*DBidAsk_Ann* in model 1 and *PreCSCORE_IPO*DVolatility_Ann* in model 2 are not statistically significant, indicating that the positive association between *PreCSCORE_IPO* and SEO announcement returns do not significantly differ between firms with high and low information asymmetry.

[Insert Table 4-13 here]

As reported in Table 4-13 (Panel B and C), the coefficients on *PostCSCORE_IPO* in model 3 and 4, and the coefficients on *AnnCSCORE_SEO* in model 5 and 6 are positive, but none of them are statistically significant, consistent with the results from the previous analysis. The coefficients on the interaction terms are also not statistically significant in model 3 to model 6, providing no evidence that the association between *PostCSCORE_IPO* (*AnnCSCORE_SEO*) and the SEO announcement returns significantly changes when the sample firms are divided into a high and low information asymmetry group. For brevity, the results for the control variables are not discussed here, as they are consistent with those obtained in Table 4-12.

4.5.4 IPO Conservatism and SEO Underpricing

To test the association between IPO conservatism and underpricing of IPO issuers' first SEO, equation (3) is estimated as provided in Section 4.3.3 of the thesis. Table 4-14 provides the correlation matrix for the variables used in the regressions. The correlation between *CSCORE* measured in the IPO year (*PostCSCORE_IPO*) and *CSCORE* measured in the year prior to the SEO issue (*IssCSCORE_SEO*) is 48% and is statistically significant at 1%, indicating that firms adopting higher conservatism in the IPO year tend to adopt conservative reporting in the year prior to the SEO issue.[19] The correlation between *SEO_Underwriter* and *MV_SEO* is 46% and statistically significant at 1%, suggesting that larger firms tend to employ more prestigious underwriters for

[19] *PostCSCORE_IPO* and *IssCSCORE_SEO* are not included in the same regression model.

their SEO, consistent with Carter and Manaster (1990) and Carter and Dark (1993). All other variables do not report a high correlation.[20]

[Insert Table 4-14 here]

Table 4-15 provides the regression results. The inverse mills ratios (*IMR*) are obtained from equation (1). The coefficient on *IMR* is positive and statistically significant at 1% in model 1, suggesting that some unobservable factors affecting the firm's decision to go IPO increase the degree of underpricing it experiences in the first SEO. The coefficients on *IMR* are not statistically significant in model 2 and 3.

The coefficient on *PreCSCORE_IPO* in model 1 is negative and statistically significant at 1%, suggesting that the conservatism adopted by firms in the pre-IPO year is negatively associated with the degree of underpricing at the SEO within five years of the IPO. However, the coefficients on *PostCSCORE_IPO* and *IssCSCORE_SEO* are not statistically significant in model 2 and 3. Kim and Park (2005) provide evidence that the firms that opportunistically manage earnings through discretionary accruals prior to the SEO experience larger underpricing. This finding may indicate that the conservatism adopted by firms prior to the SEO issue is negatively associated with the degree of underpricing at the SEO. However, the results of this thesis indicate that only the pre-IPO year conservatism is significantly associated with the degree of SEO underpricing, suggesting that issuers adopting a higher degree of conservatism prior to going public obtain their next equity financing on more favorable terms, experiencing a smaller degree of underpricing.

[20] Because some of the reported correlations are high, each regression is tested for the VIF and the results are provided in Appendix IV of the thesis. The results do not show any sign of multicollinearity.

[Insert Table 4-15 here]

Contrary to the prediction, the coefficient on *CAR_6months* is positive indicating a positive association between a recent stock price increase prior to SEO and SEO underpricing. However, it is statistically significant only at 10% in model 1. The coefficient on *NYSE* is negative, indicating that the firms listed on the *NYSE* experience less underpricing. However, it remains statistically significant at 5% only in model 1. The coefficient on *MV_SEO* is negative and statistically significant at 10% in model 2 and at 5% in model 3, suggesting that a firm's market value prior to the SEO is inversely related to the degree of underpricing.

Prior research suggests that conservatism plays a more important role when there is higher information asymmetry (LaFond & Watts 2008; García Lara *et al.* 2009; Lin & Tian 2012). In particular, Kim and Park (2005) provide evidence that the negative association between discretionary accruals and SEO underpricing becomes more significant for issuers with high information asymmetry. Consistent with the previous analysis, the regressions are re-estimated by employing two information asymmetry measures: *DVolatility_Issue* and *DBidAsk_Issue*[21] to test whether the effect of IPO firms' conservatism on the underpricing of their first SEO becomes stronger when there is high information asymmetry.

The regression results with the effect of information asymmetry are provided in Table 4-16. Panel A provides the results for *PreCSCORE_IPO*, Panel B for *PostCSCORE_IPO* and Panel C for *IssCSCORE_SEO*. Consistent with the results from

[21] A description of these variables is provided in Table 4-1 of the thesis.

Table 4-15, the coefficient on *PreCSCORE_IPO* is negative and statistically significant at 5% in Panel A. However, the coefficient on *PreCSCORE_IPO*DVolatility_Issue* and *PreCSCORE_IPO*DBidAsk_Issue* is not statistically significant, indicating that the association between *PreCSCORE_IPO* and *SEO_Underpricing* does not significantly differ for issuers with high information asymmetry. Similarly, none of the main variables of interest is statistically significant in Panel B and Panel C, providing no evidence on the effect of *PostCSCORE_IPO* and *IssCSCORE_SEO* on SEO underpricing regardless of the level of information asymmetry. The results for the control variables do not significantly differ from those reported in Table 4-15, apart from the statistically significant and positive coefficient on *BidAsk_Issue* which suggests that the IPO issuers with higher information asymmetry experience larger SEO underpricing. However, the coefficient remains statistically significant at 10% only in model 2 in the *PreCSCORE_IPO* analysis.

[Insert Table 4-16 here]

4.5.5 IPO Conservatism and Long-Term Stock Return Performance after SEO

Quartile portfolio returns are calculated based on *PreCSCORE*_IPO, *PostCSCORE*_IPO, and *IssCSCORE*_IPO to perform a univariate analysis for the IPO issuers' post-SEO stock return performance. Stock returns are calculated based on the average monthly buy-and-hold (BHAR) and cumulative abnormal returns (CAR) for a holding period of one, two and three years from the SEO issue month, excluding the returns on the first trading day. Returns are adjusted for the monthly CRSP value-weighted index returns. Q1 is the most conservative reporting portfolio and Q4 is the least conservative reporting portfolio. Analysis for *PreCSCORE_IPO* is provided in Panel A, *PostCSCORE_IPO* in Panel B and *IssCSCORE_IPO* in Panel C of Table 4-17. As reported in Table 4-17, the mean BHAR and CAR reported across different holding periods are all negative, consistent with previous studies reporting significant long-term underperformance of SEO issuers (e.g., Loughran & Ritter 1995; Spiess & Affleck-Graves 1995; Loughran & Ritter 1997; Teoh *et al.* 1998b). There appears to be no systematic pattern across the quartile returns either for BHAR or CAR in *PreCSCORE_IPO* analysis, as provided in Panel A. For the *PostCSCORE_IPO* quartile, Q1 reports higher BHARs and CARs than Q4 for all three years of holding periods although there is no monotonic decrease from Q1 to Q4. Similarly, for the *IssCSCORE_SEO* quartile, both BHARs and CARs of Q1 are higher than those of Q4 (except for 1 year BHAR) across different holding periods. However, there appears to be no systematic pattern across the quartiles. A multivariate analysis is also conducted by running regression equation (4) to control for other effects on the long-term stock return performance of issuers.

[Insert Table 4-17 here]

Table 4-18 provides the correlation matrix[22] for the variables used in the regressions. There is a relatively higher correlation between *Cash_SEO* and *R&D* at 51% (significant at 1%), indicating that IPO issuers holding larger amounts of cash in the SEO year tend to incur larger R&D expenditures. All other variables do not report a high correlation.

[Insert Table 4-18 here]

Table 4-19 provides the regression results testing the association between *PreCSCORE_IPO* and the long-term stock return performance after the SEO. The dependent variable is the monthly BHAR in panel A and C and the monthly CAR in Panel B and D. The monthly CRSP value-weighted index returns are used as the benchmark returns in Panel A and B and the Fama-French size and market-to-book 5x5 portfolio returns are used as the benchmark returns in Panel C and D. The coefficient on *IMR* is negative and statistically significant in the *PreCSCORE_IPO* analysis (except for 3 year return regressions). The coefficient on *PreCSCORE_IPO* is positive and statistically significant in all regressions but only in Panel A and C. Also, the regressions with a one year return window do not yield statistically significant *F-stats.* Accordingly, these results provide only weak evidence that issuers adopting a higher degree of conservatism in the pre-IPO year tend to show higher stock returns in the post-SEO market.

[22]All regressions are tested for the VIF and the results are provided in Appendix IV of the thesis. The VIF reported for each coefficient confirms that the regressions are not subject to multicollinearity.

[Insert Table 4-19 here]

Table 4-20 provides the regression results testing the association between *PostCSCORE_IPO* and long-term post-SEO stock returns. Table 4-21 provides the results for the *IssCSCORE_SEO* analysis. The coefficient on *PostCSCORE_IPO* is not statistically significant in any regressions in Table 4-20. In Table 4-21, the coefficient on *IssCSCORE_SEO* is negative in all regressions but remains statistically significant only in Panel A and three year CAR regression in Panel B. Note that the reported *F-stats* in some regressions are not statistically significant, in particular, Panel C and D of Table 4-20 and Table 4-21. The fact that there is considerable time lag between the IPO and the first SEO may reduce the statistical power of the regression analysis being tested. In sum, the results from Table 4-19 provide weak evidence that the conservatism adopted by issuers in the pre-IPO year is positively associated with their post-SEO stock returns.

The coefficient on *Asset_growth* is negative and statistically significant (mainly in Table 4-19 Panel A and C), providing weak evidence of a negative association between the level of growth in a firm's assets and its stock return performance (see Cooper *et al.* 2008). The coefficient on *MV_SEO* is positive and statistically significant in Panel A of Table 4-20 and Panel A and B of Table 4-21, providing some evidence that the size of the firm is positively associated with its post-SEO stock return performance. However, the coefficient on *MV_SEO* is negative in Table 4-19, but is statistically significant only when two years of return window is under analysis.

[Insert Table 4-20 here]

[Insert Table 4-21 here]

4.6 Summary and Conclusions

This chapter investigated whether the extent of conservatism adopted by IPO issuers is significantly associated with the probability of reissuing equity soon after their IPO. It also tested whether IPO conservatism is significantly associated with SEO announcement returns and SEO underpricing. This chapter also provided analysis of post-SEO long-term stock return performance associated with IPO conservatism.

The results of this chapter provide evidence that issuers adopting higher conservatism in the IPO year are less likely to reissue equity soon after their IPO. In particular, there was no evidence found that the issuers with higher IPO conservatism raise external funds through divestment, supporting the view that the IPO firms reporting more conservatively do not have near-term cash needs soon after they raise the IPO proceeds.

This chapter also finds that the extent of conservatism adopted by IPO issuers in the pre-IPO year is positively associated with the announcement returns at their first SEO. Also, evidence is presented that firms with higher conservatism in the pre-IPO year experience a less degree of underpricing in their first SEO. Taken together, these results suggest that issuers reporting more conservatively in the pre-IPO year raise the next equity financing on more favorable terms. Finally, the results in this chapter provide weak evidence that issuers with higher conservatism in the pre-IPO year tend to show higher post-SEO stock returns.

In summary, the findings of this chapter provide evidence that issuers reporting more conservatively prior to going public are more likely to raise their next equity financing on more favorable terms by experiencing less negative SEO announcement returns and smaller SEO underpricing. The results also show that the previously reported association between earnings conservatism prior to the SEO issue and the profitability of SEO may not hold for firms reissuing soon after their IPO. For these issuers, the evidence suggests that the quality of accounting earnings reported prior to the IPO may signal more important information to investors.

In the next chapter, this thesis examines the association between IPO conservatism and the longevity of IPO firms.

4.7 Tables

Table 4-1: Variable Description

Variable	Definition
$PreCSCORE\_IPO_i$	*CSCORE* measured in the pre-IPO fiscal year.
$PostCSCORE\_IPO_i$	*CSCORE* measured in the IPO fiscal year.
$AnnCSCORE\_SEO_i$	*CSCORE* measured in the pre-SEO announcement year.
IssCSCORE_SEOi	*CSCORE* measured in the pre-SEO issue year.
$AFTRET_{i,t}$	Cumulative market-adjusted (CRSP value weighted index) stock returns in the 20-trading day periods after the IPO.
$Age_{i,t}$	Firm age in year *t*.
$Asset\_growth_{i,t}$	Lagged changes in total assets measured in year *t* where year *t* is the SEO issue year.
$Avr\_Underpricing_{i,t}$	An average IPO initial return during the same month as the SEO, where monthly IPO underpricing estimates are obtained from Jay Ritter's Website at <http://bear.cba.ufl.edu/ritter/ipoall.htm>.
$BidAsk\_Ann_{i,t}$	Average of percentage quoted bid-ask spreads measured as [ask - bid]/bid over the 60 trading days ending 11 days prior to the SEO announcement date.
$BidAsk\_Issue_{i,t}$	Average of percentage quoted bid-ask spreads measured as [ask - bid]/bid over the 60 trading days ending 11 days prior to the date in which SEO is issued.
$CAR_{i,t}$	Three day market-adjusted cumulative abnormal stock returns measured in days -1 through +1 where day 0 is the SEO announcement date and the market return is the CRSP value weighted index returns.
$CAR\_6months_{i,t}$	Cumulative market-adjusted return over 6 months ending the day prior to the issue, where market return is defined as the return on the CRSP value-weighted index.
$Cash_{i,t}$	Cash and marketable securities divided by beginning total assets measured in year *t* where year *t* is the IPO-year.
$Cash\_SEO_{i,t}$	Cash and marketable securities divided by beginning total assets measured in year *t* where year *t* is the SEO issue year.
$DBidAsk\_Ann_{i,t}$	A dummy variable that takes the value of one if a firm's average bid-ask spreads measured as [ask - bid]/bid over the 60 trading days ending 11 days prior to the SEO announcement date is above the sample median and otherwise zero.
$DBidAsk\_Issue_{i,t}$	A dummy variable that takes the value of one if a firm's average bid-ask spreads measured as [ask - bid]/bid over the 60 trading days ending 11 days prior to the date in which SEO is issued is above the sample median and otherwise zero.
$DVolatility\_Ann_{i,t}$	A dummy variable that takes the value of one if a firm's daily stock return volatility over the 60 trading days ending 11 days prior to the SEO announcement is above the sample median and otherwise zero.
$DVolatility\_Issue_{i,t}$	A dummy variable that takes the value of one if a firm's daily stock return volatility over the 60 trading days ending 11 days prior to the SEO issue is above the sample median and otherwise zero.
$IMR_{i,t}$	Inverse mills ratio obtained from equation (1) as provided in Section 4.3.1 of the thesis.

Table 4-1
(Continued)

Variable	Definition
$IPO\_Underpricing_{i,t}$	The percentage difference between the offer price and the closing price on the first day of trading.
$IPO\_Underwriter_{i,t}$	A ranking of the reputation of the lead underwriter on a 0-9 scale obtained from the Jay Ritter's website <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.
$Lev_{i,t}$	Total debts divided by beginning total assets measured in year *t* where year *t* is the IPO-year.
$Mrunup_{i,t}$	Daily compounded market returns in the 60 trading days before the SEO offering announcement.
$MV\_SEO_{i,t}$	Logarithm of market capitalization on the day prior to the SEO offer defined as the number of shares outstanding, multiplied by the price.
$NYSE_{i,t}$	An indicator variable that equals one if the firm was listed on NYSE at the time of the offer and otherwise zero.
$R\&D_{i,t}$	Research and development expenditure divided by beginning total assets measured in year *t* where year *t* is the SEO issue year.
$Relsize_{i,t}$	Size of the SEO as a fraction of the IPO size.
$Runup_{i,t}$	Daily compounded individual stock returns in the 60 trading days before the offering announcement.
$SEO\_Underpricing_{i,t}$	Closing price on the SEO offer day minus the offer price divided by the offer price.
$SEO\_Underwriter_{i,t}$	SEO's underwriter's reputation measures from the Jay Ritter's website <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.
$Time\_IPO_{i,t}$	Log of the number of days between the IPO and the first SEO.
$Tobin's\ q_{i,t}$	Tobins'q measured in year *t* where year *t* is the IPO year.
$Volatility\_Ann_{i,t}$	Standard deviation of daily stock returns over the 60 trading days ending 11 days prior to the SEO announcement.
$Volatility\_Issue_{i,t}$	Standard deviation of daily stock returns over the 60 trading days ending 11 days prior to the SEO issue.

Table 4-2: Descriptive Statistics

Panel A. Pre-IPO Year Variables						
Variables	mean	median	stdev	5th percentile	95th percentile	*obs*
PreCSCORE_IPO	0.887	0.757	0.535	0.158	1.837	*313*
Cash	0.184	0.087	0.224	0.002	0.734	*432*
Lev	0.650	0.636	0.455	0.030	1.324	*313*
Panel B. IPO Year Variables						
PostCSCORE_IPO	0.595	0.524	0.286	0.290	1.204	*437*
AFTRET	0.001	-0.002	0.168	-0.277	0.246	*437*
Age	1.014	0.954	0.385	0.477	1.747	*435*
Cash	0.244	0.155	0.247	0.007	0.821	*434*
IPO_Underpricing	0.132	0.065	0.224	-0.069	0.500	*436*
IPO_Underwriter	7.561	8.000	1.872	3.000	9.000	*437*
Lev	0.323	0.255	0.246	0.042	0.837	*437*
Tobin's q	2.770	2.125	2.621	0.527	6.939	*431*
Panel C. SEO Related Variables						
Variables	mean	median	stdev	5th percentile	95th percentile	*obs*
AnnCSCORE_SEO	0.610	0.542	0.300	0.254	1.172	*416*
IssCSCORE_SEO	0.603	0.542	0.291	0.249	1.152	*416*
Asset_growth	0.944	0.346	1.799	-0.207	4.396	*415*
Avr_Underpricing	0.215	0.169	0.192	0.062	0.696	*421*
BidAsk_Ann	0.052	0.048	0.023	0.022	0.095	*427*
BidAsk_Issue	0.051	0.047	0.025	0.020	0.095	*429*
CAR_6months	0.431	0.347	0.649	-0.507	1.605	*437*
Cash_SEO	0.308	0.201	0.300	0.003	0.884	*416*
Mrunup	0.051	0.049	0.058	-0.044	0.155	*416*
MV_SEO	19.395	19.379	1.098	17.607	21.259	*426*
NYSE	0.140	0.000	0.35	0.00	1.00	*437*
R&D	0.171	0.101	0.209	0.000	0.640	*220*
Relsize	1.814	1.471	1.371	0.375	4.140	*437*
Runup	0.375	0.262	0.486	-0.114	1.334	*437*
SEO_Underpricing	0.032	0.019	0.047	-0.017	0.123	*435*
SEO_Underwriter	7.688	8.000	1.940	3.000	9.000	*437*
Volatility_Ann	0.038	0.034	0.015	0.019	0.071	*426*
Volatility_Issue	0.038	0.035	0.017	0.019	0.069	*429*

All continuous variables are winsorized at the 1st and 99th percentiles .A description of each variable is provided in Table 4-1. Panel A presents descriptive statistics for the variables measured in the pre-IPO and IPO year and Panel B reports descriptive statistics for the variables measured in the SEO announcement and issue year.

Table 4-3: IPO Firms' Accounting Conservatism and the Probability of Issuing a Seasoned Equity Offering

Panel A. *PreCSCORE_IPO* and No of SEO Issuers within *n* years after IPO								
Quartile	**Mean *CSCORE***	**1 Year after IPO**	**2 Years after IPO**	**3 Years after IPO**	**4 Years after IPO**	**5 Years after IPO**	**Frequent Issuers (>1)**	**No of IPO Firms**
Q1	1.62	27	53	61	70	76	36	*215*
Q2	1.03	34	54	63	63	66	26	*215*
Q3	0.70	44	63	70	73	77	24	*214*
Q4	0.39	53	74	84	90	94	46	*214*
	Total Obs	158	244	278	296	313	132	858

Panel B. *PostCSCORE_IPO* and No of SEO Issuers within *n* years after IPO							
Quartile	**Mean *CSCORE***	**2 Years after IPO**	**3 Years after IPO**	**4 Years after IPO**	**5 Years after IPO**	**Frequent Issuers (>1)**	**No of IPO Firms**
Q1	1.19	29	45	54	62	26	*482*
Q2	0.67	59	81	98	108	34	*481*
Q3	0.51	59	96	115	124	48	*481*
Q4	0.37	76	115	132	143	42	*481*
	Total Obs	223	337	399	437	150	1925

Firms that went IPO during the period 1990 - 2005 are sorted into quartiles based on *PreCSCORE_IPO* (Panel A) and *PostCSCORE_IPO* (Panel B). The first quartile (Q1) is the most conservative earnings reporting group and the fourth quartile (Q4) is the least conservative earnings reporting group. Panel A shows the association between the pre-IPO year *CSCORE* (*PreCSCORE_IPO*) and the probability of issuing a SEO within one to five years after the IPO. Panel B reports the association between the IPO year *CSCORE* (*PostCSCORE_IPO*) and the probability of issuing a SEO within two to five years after the IPO.

Table 4-4: Pearson Correlation Matrix for the Regression Analysis for *PreCSCORE_IPO* and the Probability of Issuing a SEO

	$PreCSCORE\_IPO_i$	$Age_{i,t}$	$AFTRET_{i,t}$	$IPO\_Underpricing_{i,t}$	$IPO\_Underwriter_{i,t}$	$Cash_{i,t-1}$	$Tobin's\ q_{i,t}$
$PreCSCORE\_IPO_i$							
$Age_{i,t}$	-0.135***						
$AFTRET_{i,t}$	-0.081**	0.014					
$IPO\_Underpricing_{i,t}$	0.065*	-0.217***	-0.017				
$IPO\_Underwriter_{i,t}$	-0.012	0.076**	0.035	0.142***			
$Cash_{i,t-1}$	0.199***	-0.308***	-0.055	0.272***	0.143***		
$Tobin's\ q_{i,t}$	0.070*	-0.225***	0.187***	0.383***	0.065*	0.246***	
$Lev_{i,t-1}$	0.109***	0.132***	-0.030	-0.072**	-0.122***	-0.323***	-0.028

The accounting variables used for the *PreCSCORE_IPO* regression analysis are obtained from the pre-IPO fiscal year since *PreCSCORE_IPO* is also measured over the pre-IPO year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 4-1.

Table 4-5: Pearson Correlation Matrix for the Regression Analysis for *PostCSCORE_IPO* and the Probability of Issuing a SEO

	$PostCSCORE\_IPO_i$	$Age_{i,t}$	$AFTRET_{i,t}$	$IPO\_Underpricing_{i,t}$	$IPO\_Underwriter_{i,t}$	$Cash_{i,t}$	$Tobin's\ q_{i,t}$
$PostCSCORE\_IPO_i$							
$Age_{i,t}$	-0.163***						
$AFTRET_{i,t}$	-0.112***	0.009					
$IPO\_Underpricing_{i,t}$	0.254***	-0.173***	-0.056**				
$IPO\_Underwriter_{i,t}$	0.006	0.130***	0.002	0.115***			
$Cash_{i,t}$	0.188***	-0.256***	0.032	0.222***	-0.034		
$Tobin's\ q_{i,t}$	0.180***	-0.217***	0.217***	0.440***	0.090***	0.351***	
$Lev_{i,t}$	0.005	0.270***	0.005	-0.214***	0.003	-0.445***	-0.300***

The accounting variables used for the *PostCSCORE_IPO* regression analysis are obtained from the IPO fiscal year as *PostCSCORE_IPO* is also measured over the IPO year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 4-1

Table 4-6: The Regression Analysis of *PreCSCORE_IPO* and the Probability of Issuing a SEO

	Dependent Variable					
Independent Variable	**SEO_1**	**SEO_2**	**SEO_3**	**SEO_4**	**SEO_5**	**SEO_ Frequent**
PreCSCORE_IPO$_i$	-0.295	-0.084	-0.104	-0.085	-0.105	0.007
	(-1.311)	(-0.607)	(-0.789)	(-0.673)	(-0.854)	(0.045)
Cash$_{i,t-1}$	-1.246**	-0.274	-0.259	-0.318	-0.352	-0.244
	(-2.483)	(-0.788)	(-0.845)	(-1.082)	(-1.226)	(-0.706)
Lev$_{i,t-1}$	0.239	0.107	0.073	0.026	0.056	0.035
	(1.248)	(0.688)	(0.521)	(0.191)	(0.413)	(0.220)
AFTRET$_{i,t}$	1.120	0.444	0.219	0.262	0.006	0.322
	(1.275)	(1.473)	(0.758)	(0.963)	(0.024)	(0.921)
Age$_{i,t}$	0.256	0.145	0.058	0.025	0.050	0.249
	(0.860)	(0.801)	(0.339)	(0.151)	(0.312)	(1.209)
IPO_Underpricing$_{i,t}$	-0.860	-0.336*	-0.310*	-0.330*	-0.378**	-0.402
	(-1.340)	(-1.723)	(-1.709)	(-1.956)	(-2.276)	(-1.298)
IPO_Underwriter$_{i,t}$	0.054	0.099**	0.098***	0.102***	0.080**	0.026
	(0.495)	(2.327)	(2.650)	(2.879)	(2.333)	(0.656)
Tobin's $q_{i,t}$	0.059	0.018	0.009	0.001	0.019	0.011
	(1.356)	(0.809)	(0.437)	(0.071)	(0.974)	(0.438)
Constant	-2.779***	-1.878***	-1.598***	-1.437***	-1.214***	-1.701***
	(-2.651)	(-4.368)	(-3.983)	(-3.690)	(-3.218)	(-3.920)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
χ^2	35.652***	57.378***	69.950***	68.752***	66.549***	64.190***
Pseudo_R^2	15.3%	10.1%	9.8%	9.4%	9.3%	13.8%
Obs	683	683	683	683	683	683

This table reports the results of regression analysis testing the association between the *PreCSCORE_IPO* and the probability of issuing a SEO within one to five years subsequent to the IPO. The dependent variable is a binary variable *SEO_n* (where n=1 to 5) that is one if the IPO firm issued a SEO within *n* years subsequent to the IPO and otherwise zero. *SEO_Frequent* is also a binary indicator that is one if the IPO firm issued a SEO more than once within five years subsequent to the IPO and otherwise zero. The accounting variables used (*Cash* and *Lev*) in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-7: The Regression Analysis of *PostCSCORE_IPO* and the Probability of Issuing a SEO

	Dependent Variable				
Independent Variable	***SEO_2***	***SEO_3***	***SEO_4***	***SEO_5***	***SEO_ Frequent***
PostCSCORE_IPO$_i$	-0.703***	-0.854***	-0.853***	-0.803***	-0.530***
	(-4.282)	(-5.562)	(-5.891)	(-5.756)	(-2.980)
Cash$_{i,t}$	-0.497***	-0.315*	-0.180	-0.188	-0.194
	(-2.701)	(-1.869)	(-1.111)	(-1.203)	(-0.907)
Lev$_{i,t}$	0.182	0.355*	0.363**	0.299*	0.546**
	(0.928)	(1.921)	(2.007)	(1.679)	(2.499)
AFTRET$_{i,t}$	0.241	0.137	0.055	-0.038	-0.099
	(1.167)	(0.711)	(0.295)	(-0.204)	(-0.385)
Age$_{i,t}$	-0.042	-0.094	-0.146	-0.099	0.032
	(-0.426)	(-1.024)	(-1.642)	(-1.134)	(0.270)
IPO_Underpricing$_{i,t}$	-0.337**	-0.395**	-0.473***	-0.497***	-0.357
	(-2.163)	(-2.566)	(-3.224)	(-3.559)	(-1.494)
IPO_Underwriter$_{i,t}$	0.035*	0.045***	0.059***	0.062***	0.027
	(1.841)	(2.597)	(3.470)	(3.758)	(1.211)
Tobin's q$_{i,t}$	0.030*	0.023	0.011	0.018	0.006
	(1.848)	(1.483)	(0.693)	(1.201)	(0.258)
Constant	-0.838***	-0.691***	-0.588***	-0.616***	-1.520***
	(-3.800)	(-3.368)	(-2.995)	(-3.218)	(-5.687)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
χ^2	86.999***	119.666***	132.249***	140.112***	105.013***
Pseudo_R^2	5.5%	6.9%	7.3%	7.5%	9.6%
Obs	1888	1888	1888	1888	1888

This table reports the results of regression analysis testing the association between the *PostCSCORE_IPO* and the probability of issuing a SEO within two to five years subsequent to the IPO. The dependent variable is a binary indicator *SEO_n* (where n=2 to 5) that is one if the IPO firm issued a SEO within *n* years subsequent to the IPO and otherwise zero. *SEO_Frequent* is also a binary variable that is one if the IPO firm issued a SEO more than once within five years subsequent to the IPO and otherwise zero. The accounting variables used (*Cash* and *Lev*) in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-8: The Regression Analysis of *PreCSCORE_IPO* and the Probability of Divestment

	Dependent Variable				
Independent Variable	**Div_1**	**Div_2**	**Div_3**	**Div_4**	**Div_5**
$PreCSCORE\_IPO_i$	-0.298	-0.211	-0.103	-0.119	-0.084
	(-1.162)	(-1.221)	(-0.706)	(-0.852)	(-0.600)
$Cash_{i,t-1}$	-0.109	0.152	0.268	0.299	0.438
	(-0.337)	(0.484)	(0.955)	(1.100)	(1.637)
$Lev_{i,t-1}$	-0.076	-0.074	-0.043	-0.107	-0.126
	(-0.337)	(-0.423)	(-0.274)	(-0.691)	(-0.854)
$AFTRET_{i,t}$	0.456	-0.382	-0.397	-0.404	-0.388
	(1.084)	(-1.182)	(-1.373)	(-1.435)	(-1.384)
$Age_{i,t}$	-0.045	-0.454**	-0.495***	-0.530***	-0.534***
	(-0.149)	(-2.089)	(-2.578)	(-2.870)	(-2.963)
$IPO\_Underpricing_{i,t}$	-0.294	-0.232	-0.180	-0.216	-0.244
	(-0.893)	(-1.040)	(-1.058)	(-1.303)	(-1.560)
$IPO\_Underwriter_{i,t}$	0.032	0.063	0.067*	0.065*	0.064*
	(0.521)	(1.466)	(1.714)	(1.730)	(1.825)
Tobin's $q_{i,t}$	0.038*	0.003	-0.009	-0.009	0.001
	(1.648)	(0.112)	(-0.433)	(-0.456)	(0.058)
Constant	-1.623**	-1.097**	-0.995**	-0.760*	-0.734**
	(-2.498)	(-2.511)	(-2.445)	(-1.957)	(-1.985)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
χ^2	15.285	24.603**	18.300	22.594*	27.185**
$Pseudo\_R^2$	4.6%	4.9%	3.4%	3.8%	4.1%
Obs	683	683	683	683	683

This table reports the results of regression analysis testing the association between the *PreCSCORE_IPO* and the probability of divestment within one to five years subsequent to the IPO. The dependent variable is a binary variable *Div_n* (where n=1 to 5) that is one if the IPO firm had a divesture within *n* years subsequent to the IPO and otherwise zero. The accounting variables used (*Cash* and *Lev*) in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-9: The Regression Analysis of *PostCSCORE_IPO* and the Probability of Divestment

	Dependent Variable			
Independent Variable	**Div_2**	**Div_3**	**Div_4**	**Div_5**
PostCSCORE_IPO$_i$	-1.476***	-0.582	-0.736**	-0.904**
	(-2.595)	(-1.577)	(-2.052)	(-2.553)
Cash$_{i,t}$	0.846*	0.461	0.244	0.023
	(1.856)	(1.265)	(0.706)	(0.069)
Lev$_{i,t}$	0.305	-0.054	-0.258	-0.227
	(0.569)	(-0.119)	(-0.559)	(-0.522)
AFTRET$_{i,t}$	0.645	-0.391	-0.562	-0.519
	(0.999)	(-0.699)	(-1.102)	(-1.063)
Age$_{i,t}$	-0.042	-0.130	-0.262	-0.422*
	(-0.120)	(-0.513)	(-1.109)	(-1.825)
IPO_Underpricing$_{i,t}$	-0.374	-0.473	-0.653	-0.859*
	(-0.554)	(-1.126)	(-1.432)	(-1.893)
IPO_Underwriter$_{i,t}$	-0.117**	-0.056	-0.038	-0.021
	(-2.550)	(-1.378)	(-0.944)	(-0.521)
Tobin's q$_{i,t}$	0.014	0.037	0.039	0.051*
	(0.312)	(1.087)	(1.201)	(1.654)
Constant	-0.312	-0.657	-0.337	-0.107
	(-0.524)	(-1.426)	(-0.739)	(-0.237)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
χ^2	23.457**	10.579	11.843	17.344*
Pseudo_R^2	10.3%	3.8%	4.2%	5.5%
Obs	1888	1888	1888	1888

This table reports the results of regression analysis testing the association between the *PostCSCORE_IPO* and the probability of divestment within two to five years subsequent to the IPO. The dependent variable is a binary variable *Div_n* (where n=2 to 5) that is one if the IPO firm had a divesture within *n* years subsequent to the IPO and otherwise zero. The accounting variables used (*Cash* and *Lev*) in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. Description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-10: IPO Firms' Accounting Conservatism and the SEO Announcement Returns

Panel A. *PreCSCORE_IPO* and SEO Announcement CAR			
Quartile	*PreCSCORE_IPO*	CAR (-1, 1)	*obs*
Q1	1.62	-3.57%	*78*
Q2	0.98	-4.84%	*78*
Q3	0.65	-3.87%	*78*
Q4	0.32	-3.86%	*79*
All		-4.04%	*313*

Panel B. *PostCSCORE_IPO* and SEO Announcement CAR			
Quartile	*PostCSCORE_IPO*	CAR (-1, 1)	*obs*
Q1	0.97	-3.61%	*108*
Q2	0.59	-2.81%	*108*
Q3	0.48	-3.47%	*108*
Q4	0.34	-2.69%	*109*
All		-3.15%	*433*

Panel C. *AnnCSCORE_SEO* and SEO Announcement CAR			
Quartile	*AnnCSCORE_SEO*	CAR (-1, 1)	*obs*
Q1	1.02	-4.45%	*103*
Q2	0.62	-3.49%	*103*
Q3	0.48	-2.95%	*103*
Q4	0.31	-2.16%	*104*
All		-3.26%	*413*

A description of each variable is provided in Table 4-1. CAR (-1,1) is the three day market-adjusted cumulative abnormal stock returns measured in days -1 through +1 around the SEO announcement. *PreCSCORE_IPO* is CSCORE measured in the pre-IPO year. *PostCSCORE_IPO* is CSCORE measured in the IPO year. *AnnCSCORE_SEO* is CSCORE measured in the year prior to the first SEO announcement. CRSP value-weighted index returns are used as the mark returns. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-11: Pearson Correlation Matrix for the Regression Analysis of SEO Announcement Returns

	PreCSCORE_ IPO$_i$	***PostCSCORE _IPO$_i$***	***AnnCSCORE_ SEO$_i$***	***Volatility_ Ann$_{i,t}$***	***Runup$_{i,t}$***	***Mrunup$_{i,t}$***	***SEO_Underwriter$_{i,t}$***	***Time_IPO$_{i,t}$***	***Relsize$_{i,t}$***
PreCSCORE _IPO$_i$									
PostCSCORE _IPO$_i$	0.422***								
AnnCSCORE _SEO$_i$	0.114	0.516***							
Volatility _Ann$_{i,t}$	0.051	0.153***	0.295***						
Runup$_{i,t}$	-0.059	0.030	0.139***	0.426***					
Mrunup$_{i,t}$	-0.060	-0.063	-0.120***	-0.046	0.298***				
SEO_Underwriter$_{i,t}$	-0.031	-0.006	0.017	-0.094**	0.027	0.070			
Time_IPO$_{i,t}$	0.053	0.068	0.159***	0.105**	0.093**	-0.025	-0.062		
Relsize$_{i,t}$	-0.085	-0.076*	0.062	0.133***	0.197***	0.064	0.025	0.057	
IPO_Underpricing$_{i,t}$	0.043*	0.254***	0.131***	0.180***	0.016	0.058	0.049	-0.020	0.121***

A description of each variable is provided in Table 4-1. All continuous variables are winsorized at the 1st and 99th percentiles. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%.

Table 4-12: Regression Analysis Examining the Association between *CSCOREs* and SEO Announcement Returns

Independent Variable	Dependent Variable: CAR(-1,1)		
	Model 1	**Model 2**	**Model 3**
PreCSCORE_IPO$_i$	0.023**		
	(2.244)		
PostCSCORE_IPO$_i$		0.005	
		(0.335)	
AnnCSCORE_SEO$_i$			0.008
			(0.676)
Volatility_Ann$_{i,t}$	-0.048	-0.312	-0.229
	(-0.219)	(-1.302)	(-0.926)
Runup$_{i,t}$	-0.026***	-0.016**	-0.021***
	(-3.242)	(-2.172)	(-2.929)
Mrunup$_{i,t}$	0.222***	0.130**	0.206***
	(3.535)	(2.269)	(3.388)
SEO_Underwriter$_{i,t}$	-0.001	0.001	-0.001
	(-0.455)	(0.410)	(-0.611)
Time_IPO$_{i,t}$	0.014	0.007	0.002
	(1.405)	(0.588)	(0.127)
Relsize$_{i,t}$	0.004	-0.001	-0.001
	(1.127)	(-0.543)	(-0.443)
Avr_Underpricing$_{i,t}$	-0.039**	0.003	0.010
	(-2.240)	(0.216)	(0.617)
IMR$_i$	-0.140**	0.025	-0.016
	(-2.143)	(0.239)	(-0.205)
Constant	-0.006	-0.072	-0.025
	(-0.125)	(-0.939)	(-0.355)
Year Dummies	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*
F-Stats	2.689***	1.746**	2.091***
Adj. R^2	13.1%	6.1%	8.0%
Obs	284	416	377

This table reports the results of regression analysis testing the association between the *PreCSCORE_IPO*, *PostCSCORE_IPO* and *AnnCSCORE_SEO* and the SEO announcement returns. The dependent variable is *CAR(-1,1)*: the SEO announcement returns measured as the three-day market (CRSP value-weighted index) adjusted cumulative abnormal stock returns measured in days -1 through +1 around the SEO announcement. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-13: Regression Analysis Examining the Association between *CSCOREs* and SEO Announcement Returns with the Effect of Information Asymmetry

	Panel A. *CSCORE* in the pre-IPO year		Panel B. *CSCORE* in the IPO year		Panel C. *CSCORE* in the pre-SEO year	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
PreCSCORE_IPO$_i$	0.030***	0.028**				
	(2.677)	(2.528)				
PostCSCORE_IPO$_i$			0.002	0.005		
			(0.082)	(0.187)		
AnnCSCORE_SEO$_i$					0.007	0.010
					(0.387)	(0.542)
DBidAsk_Ann$_{i,t}$	0.014		0.008		0.006	
	(0.923)		(0.536)		(0.389)	
DVolatility_Ann$_{i,t}$		-0.004		0.001		0.004
		(-0.293)		(0.093)		(0.231)
PreCSCORE_IPO$_i$ **DBidAsk_Ann*$_{i,t}$	-0.020					
	(-1.451)					
PreCSCORE_IPO$_i$ **DVolatility_Ann*$_{i,t}$		-0.012				
		(-0.897)				
PostCSCORE_IPO$_i$ **DBidAsk_Ann*$_{i,t}$			-0.011			
			(-0.448)			
PostCSCORE_IPO$_i$ **DVolatility_Ann*$_{i,t}$				-0.011		
				(-0.467)		
AnnCSCORE_SEO$_i$ **DBidAsk_Ann*$_{i,t}$					-0.013	
					(-0.592)	
AnnCSCORE_SEO$_i$ **DVolatility_Ann*$_{i,t}$						-0.016
						(-0.690)
Runup$_{i,t}$	-0.019***	-0.016**	-0.021***	-0.019***	-0.019***	-0.018***
	(-2.900)	(-2.368)	(-3.519)	(-3.136)	(-2.789)	(-2.650)
Mrunup$_{i,t}$	0.162***	0.157***	0.141***	0.137***	0.194***	0.194***
	(3.075)	(2.986)	(2.729)	(2.650)	(3.115)	(3.146)
SEO_Underwriter$_{i,t}$	-0.002	-0.002	0.001	0.001	0.000	0.001
	(-1.000)	(-1.133)	(0.439)	(0.326)	(0.251)	(0.293)
Time_IPO$_{i,t}$	0.014	0.013	0.012	0.012	0.001	0.000
	(1.536)	(1.512)	(1.046)	(1.000)	(0.030)	(0.017)
Relsize$_{i,t}$	0.000	0.001	-0.001	-0.001	0.001	0.001
	(0.078)	(0.354)	(-0.650)	(-0.621)	(0.470)	(0.462)
IPO_Underpricing$_{i,t}$	-0.018**	-0.016*	-0.033*	-0.031	-0.034*	-0.033*
	(-2.082)	(-1.810)	(-1.679)	(-1.564)	(-1.743)	(-1.747)
IMR$_i$	-0.157**	-0.151**	0.062	0.060	0.023	0.033
	(-2.480)	(-2.407)	(0.521)	(0.510)	(0.242)	(0.347)
Constant	0.007	0.010	-0.115	-0.111	-0.063	-0.070
	(0.162)	(0.221)	(-1.368)	(-1.324)	(-0.764)	(-0.841)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

Table 4-13
(continued)

	Panel A. *CSCORE* in the pre-IPO year		Panel B. *CSCORE* in the IPO year		Panel C. *CSCORE* in the pre-SEO year	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	2.481***	2.619***	2.143***	2.177***	2.072***	2.121***
Adj. R^2	11.6%	12.2%	7.9%	8.0%	8.7%	8.9%
Obs	284	284	416	416	377	377

This table reports the results of regression analysis testing the association between *CSCOREs* and the SEO announcement returns with the effect of information asymmetry. The dependent variable is *CAR (-1,1)*: the SEO announcement returns measured as the three-day market (CRSP value-weighted index) adjusted cumulative abnormal stock returns measured in days -1 through +1 around the SEO announcement. Panel A provides the results for the *PreCSCORE_IPO*, Panel B for the *PostCSCORE_IPO* and Panel C for the *AnnCSCORE_SEO* analysis. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-14: Pearson Correlation Matrix for the Regression Analysis of SEO Underpricing

	$SEO\_Underpricing_{i,t}$	$PreCSCORE\_IPO_i$	$PostCSCORE\_IPO_i$	$IssCSCORE\_SEO_i$	$Volatility\_Issue_{i,t}$	$CAR\_6months_{i,t}$	$SEO\_Underwriter_{i,t}$	$Relsize_{i,t}$	$AVR\_Underpricing_{i,t}$	$NYSE_{i,t}$
$SEO\_Underpricing_{i,t}$										
$PreCSCORE\_IPO_i$	0.031									
$PostCSCORE\_IPOi$	0.081*	0.422***								
$IssCSCORE\_SEO_i$	0.036	0.098	0.482***							
$Volatility\_Issue_{i,t}$	0.086*	0.020	0.143***	0.318***						
$CAR\_6months_{i,t}$	0.054	0.015	0.063	0.120**	0.354***					
$SEO\_Underwriter_{i,t}$	-0.115**	-0.036	-0.006	0.0122	-0.082*	0.050				
$Relsize_{i,t}$	-0.024	-0.078	-0.076*	0.067	0.169***	0.210***	0.025			
$AVR\_Underpricing_{i,t}$	0.004	-0.155***	-0.076*	0.184***	0.251***	0.045	0.066	0.203***		
$NYSE_{i,t}$	-0.076*	-0.220***	-0.173***	-0.1022**	-0.279***	-0.081*	0.130***	-0.139***	0.049	
$MV\_SEO_{i,t}$	-0.134***	-0.067	0.047	0.123**	-0.007	0.146***	0.459***	0.143***	0.159***	0.334**

A description of each variable is provided in Table 4-1. All continuous variables are winsorized at the 1st and 99th percentiles. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%

Table 4-15: Regression Analysis Examining the Association between the *CSCOREs* and SEO Underpricing

Independent Variable	Dependent Variable: *SEO_Underpricing*		
	Model 1	**Model 2**	**Model 3**
PreCSCORE_IPO$_i$	-0.018***		
	(-2.616)		
PostCSCORE_IPOi		0.016	
		(1.540)	
IssCSCORE_SEOi			0.005
			(0.700)
Volatility_Issue$_{i,t}$	-0.068	0.050	0.242
	(-0.432)	(0.293)	(1.464)
CAR_6months$_{i,t}$	0.007*	0.003	-0.003
	(1.690)	(0.722)	(-1.017)
SEO_Underwriter$_{i,t}$	-0.003	-0.002	-0.002
	(-1.392)	(-1.248)	(-1.309)
Relsize$_{i,t}$	0.001	0.000	0.001
	(0.331)	(0.151)	(0.495)
AVR_Underpricing$_{i,t}$	-0.011	0.011	0.016
	(-1.228)	(0.991)	(1.315)
NYSE$_{i,t}$	-0.011**	-0.001	0.003
	(-2.057)	(-0.268)	(0.574)
MV_SEO$_{i,t}$	0.002	-0.005*	-0.005**
	(1.024)	(-1.889)	(-2.117)
IMR$_i$	0.123***	-0.031	0.001
	(2.697)	(-0.503)	(0.022)
Constant	-0.036	0.144**	0.131**
	(-0.657)	(2.535)	(2.407)
Year Dummies	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*
F-Stats	2.475***	2.103***	2.821***
Adj. R^2	12.7%	9.5%	11.0%
Obs	313	411	361

This Table reports the results of regression analysis testing the association between the *PreCSCORE_IPO*, *PostCSCORE_IPO* and *IssCSCORE_SEO* and SEO underpricing. The dependent variable is the *SEO_Underpricing* measured as the closing price on the SEO offer day minus the offer price divided by the offer price. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-16: Regression Analysis Examining the Association between *CSCOREs* and SEO Underpricing with the Effect of Information Asymmetry

	Panel A. *CSCORE* in the pre-IPO year		Panel B. *CSCORE* in the IPO year		Panel C. *CSCORE* in the pre-SEO year	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
PreCSCORE_IPO$_i$	-0.015**	-0.014**				
	(-1.982)	(-2.027)				
PostCSCORE_IPO$_i$			0.024	0.025		
			(1.488)	(1.559)		
IssCSCORE_IPO$_i$					0.006	0.005
					(0.707)	(0.583)
DVolatility_Issue$_{i,t}$	0.003		0.006		0.003	
	(0.329)		(0.629)		(0.375)	
DBidAsk_Issue$_{i,t}$		0.018*		0.009		0.004
		(1.799)		(0.805)		(0.420)
PreCSCORE_IPO$_i$ **DVolatility_Issue*$_{i,t}$	-0.007					
	(-0.886)					
PreCSCORE_IPO$_i$ **DBidAsk_Issue*$_{i,t}$		-0.009				
		(-1.104)				
PostCSCORE_IPO$_i$ **DVolatility_Issue*$_{i,t}$			-0.011			
			(-0.704)			
PostCSCORE_IPO$_i$ **DBidAsk_Issue*$_{i,t}$				-0.012		
				(-0.752)		
IssCSCORE_SEO$_i$ **DVolatility_Issue*$_{i,t}$					0.002	
					(0.161)	
IssCSCORE_SEO$_i$ **DBidAsk_Issue*$_{i,t}$						0.003
						(0.218)
CAR_6months$_{i,t}$	0.007*	0.006	0.003	0.003	-0.003	-0.003
	(1.812)	(1.473)	(0.852)	(0.880)	(-0.846)	(-0.914)
SEO_Underwriter$_{i,t}$	-0.003	-0.003	-0.002	-0.002*	-0.002	-0.002
	(-1.393)	(-1.219)	(-1.242)	(-1.822)	(-1.298)	(-1.262)
Avr_Underpricing$_{i,t}$	-0.012	-0.016*	0.012	0.011	0.018	0.018
	(-1.478)	(-1.921)	(1.072)	(1.026)	(1.505)	(1.564)
NYSE$_{i,t}$	-0.011*	-0.007	-0.001	-0.001	0.001	0.002
	(-1.917)	(-1.286)	(-0.284)	(-0.161)	(0.265)	(0.397)
MV_SEO$_{i,t}$	0.002	0.003	-0.005*	-0.005*	-0.005**	-0.005**
	(0.880)	(1.476)	(-1.918)	(-1.938)	(-1.994)	(-2.004)
IMR$_i$	0.123***	0.120***	-0.035	-0.036	0.002	0.007
	(2.724)	(2.711)	(-0.549)	(-0.546)	(0.034)	(0.118)
Constant	-0.034	-0.064	0.145**	0.144**	0.129**	0.126**
	(-0.624)	(-1.193)	(2.527)	(2.324)	(2.374)	(2.323)
F-Stats	2.321***	2.464***	1.991**	2.616***	2.684***	2.883***
Adj. R^2	12.9%	13.7%	9.6%	9.6%	10.6%	10.7%

Table 4-16
(continued)

Obs	313	313	411	411	361	361

This table reports the results of regression analysis testing the association between *CSCOREs* and SEO underpricing with the effect of information asymmetry. The dependent variable is the *SEO_Underpricing* measured as the closing price on the SEO offer day minus the offer price divided by the offer price. Panel A provides the results for the *PreCSCORE_IPO*, Panel B for the *PostCSCORE_IPO* and Panel C for the *IssCSCORE_IPO* analysis. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-17: Quartile Portfolio Returns based on *PreCSCORE_IPO*, *PostCSCORE_IPO* and *IssCSCORE_SEO*

Panel A. *PreCSCORE_IPO* and Long-Term Stock Return Performance after SEO								
		BHAR			**CAR**			
	PreCSCORE_IPO	**1 Year**	**2 Years**	**3 Years**	**1 Year**	**2 Years**	**3 Years**	*obs*
Q1	1.57	-6.00%	-5.75%	-4.99%	-3.14%	0.24%	4.98%	*51*
Q2	0.91	-10.72%	-29.09%	-30.47%	-15.80%	-21.68%	-15.35%	*51*
Q3	0.64	-1.74%	-5.82%	-18.67%	-6.36%	-8.10%	2.68%	*50*
Q4	0.33	-2.86%	-18.19%	-37.98%	-3.81%	-9.78%	-23.20%	*50*
Mean		-5.36%	-14.74%	-22.98%	-7.30%	-9.84%	-7.70%	*202*
Panel B. *PostCSCORE_IPO* and Long-Term Stock Return Performance after SEO								
		BHAR			**CAR**			
	PostCSCORE_IPO	**1 Year**	**2 Years**	**3 Years**	**1 Year**	**2 Years**	**3 Years**	*obs*
Q1	0.95	2.93%	-6.46%	-16.07%	-1.79%	-11.90%	-7.29%	*82*
Q2	0.58	-9.66%	-20.06%	-28.32%	-5.80%	-9.98%	-11.14%	*81*
Q3	0.46	-12.01%	-27.85%	-46.95%	-10.65%	-11.53%	-14.28%	*81*
Q4	0.34	-5.06%	-30.62%	-42.88%	-6.63%	-12.85%	-14.02%	*81*
Mean		-5.92%	-21.20%	-33.50%	-6.20%	-11.56%	-11.67%	*325*
Panel C. *IssCSCORE_SEO* and Long-Term Stock Return Performance after SEO								
		BHAR			**CAR**			
	IssCSCORE_SEO	**1 Year**	**2 Years**	**3 Years**	**1 Year**	**2 Years**	**3 Years**	*obs*
Q1	1.07	-3.49%	-5.46%	-8.39%	0.41%	5.55%	7.54%	*71*
Q2	0.65	-14.26%	-46.73%	-61.23%	-16.88%	-37.20%	-38.41%	*71*
Q3	0.49	-0.25%	-22.17%	-36.48%	-4.93%	-13.28%	-14.99%	*71*
Q4	0.32	-2.94%	-19.81%	-36.19%	-0.08%	-5.27%	-4.69%	*71*
Mean		-5.24%	-23.54%	-35.57%	-5.37%	-12.55%	-12.64%	*284*

Sample firms are sorted into quartile portfolios based on their *PreCSCORE_IPO* (Panel A), *PostCSCORE_IPO* (Panel B) and *IssCSCORE_SEO* (Panel C). Q1 is the most conservative reporting portfolio and Q4 is the least conservative reporting portfolio. Portfolio returns are calculated based on the average monthly buy and hold (BHAR) and cumulative abnormal returns (CAR) for a holding period of one, two and three years from the SEO issue month, excluding the returns on the first trading day and are adjusted for the monthly CRSP value-weighted index returns. All return variables are winsorized at 1st and 99th percentile.

Table 4-18: Pearson Correlation Matrix for the Regression Analysis for *CSCOREs* and Long-Term Stock Returns after the SEO

	PreCSCORE_IPO$_i$	***PostCSCORE_IPO$_i$***	***IssCSCORE_SEO$_i$***	***Age$_{i,t}$***	***SEO_Underpricing$_{i,t}$***	***MV_SEO$_{i,t}$***	***Asset_growth$_{i,t}$***	***R&D$_{i,t}$***
PreCSCORE_IPO$_i$								
PostCSCORE_IPO$_i$	0.422***							
IssCSCORE_SEO$_i$	0.098	0.482***						
Age$_{i,t}$	-0.135***	-0.163***	-0.088*					
SEO_Underpricing$_{i,t}$	0.028	0.077*	0.005	-0.023				
MV_SEO$_{i,t}$	-0.086	0.014	0.119**	0.148***	-0.120***			
Asset_growth$_{i,t}$	0.023	0.061	0.003	-0.098**	-0.107**	0.031		
R&D$_{i,t}$	0.154**	0.057	0.146**	-0.278***	0.084	-0.050	-0.134**	
Cash_SEO$_{i,t}$	0.097*	0.134***	0.100**	-0.320***	0.059	-0.012	0.251***	0.506***

A description of each variable is provided in Table 4-1. All continuous variables are winsorized at the 1st and 99th percentiles. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%.

Table 4-19: Regression Analysis Examining the Association between *PreCSCORE_IPO* and SEO Long-Term Stock Returns

	Panel A. BHAR			Panel B. CAR			Panel C. Fama-French BHAR			Panel D. Fama-French CAR		
Independent variable	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**
PreCSCORE_IPO$_i$	0.545**	0.564***	0.348**	0.367	0.595***	0.346	0.549**	0.513**	0.261*	0.368*	0.566**	0.295
	(2.139)	(2.773)	(2.488)	(1.627)	(2.675)	(1.286)	(2.236)	(2.509)	(1.940)	(1.703)	(2.556)	(1.157)
Age$_{i,t}$	-0.442	-0.112	0.049	-0.088	0.048	0.134	-0.517	-0.162	-0.008	-0.150	-0.002	0.075
	(-1.373)	(-0.415)	(0.233)	(-0.317)	(0.148)	(0.393)	(-1.649)	(-0.603)	(-0.041)	(-0.538)	(-0.005)	(0.230)
SEO_Underpricing$_{i,t}$	0.455	0.740	1.054	2.110	3.297*	3.155	0.350	0.188	0.488	1.835	2.841	2.583
	(0.325)	(0.586)	(0.893)	(1.475)	(1.799)	(1.228)	(0.255)	(0.137)	(0.449)	(1.385)	(1.517)	(1.085)
MV_SEO$_{i,t}$	-0.017	-0.191**	-0.053	-0.101	-0.262**	-0.024	-0.047	-0.167*	-0.030	-0.127	-0.236**	0.011
	(-0.123)	(-2.179)	(-0.651)	(-0.993)	(-2.543)	(-0.200)	(-0.349)	(-1.828)	(-0.366)	(-1.255)	(-2.300)	(0.096)
Asset_growth$_{i,t}$	-0.092**	-0.083**	-0.070**	-0.060	-0.053	-0.017	-0.083**	-0.074**	-0.058*	-0.054	-0.047	-0.008
	(-2.570)	(-2.490)	(-2.143)	(-1.509)	(-1.311)	(-0.334)	(-2.304)	(-2.144)	(-1.757)	(-1.311)	(-1.146)	(-0.168)
R&D$_{i,t}$	0.047	-0.459	-0.434	-0.128	-0.194	0.371	-0.085	-0.384	-0.309	-0.194	-0.096	0.519
	(0.054)	(-0.899)	(-1.124)	(-0.191)	(-0.295)	(0.573)	(-0.099)	(-0.772)	(-0.828)	(-0.297)	(-0.145)	(0.844)
Cash_SEO$_{i,t}$	-0.402	-0.293	-0.025	-0.244	-0.419	-0.371	-0.462	-0.302	0.016	-0.276	-0.414	-0.316
	(-1.041)	(-0.871)	(-0.086)	(-0.678)	(-1.024)	(-0.807)	(-1.234)	(-0.895)	(0.052)	(-0.789)	(-1.034)	(-0.702)
IMR$_i$	-5.108**	-4.554**	-1.703	-3.042*	-4.442**	-1.954	-4.931**	-3.815*	-0.717	-2.904*	-3.950**	-1.302
	(-2.220)	(-2.096)	(-1.423)	(-1.863)	(-2.354)	(-0.940)	(-2.209)	(-1.714)	(-0.616)	(-1.827)	(-2.081)	(-0.640)
Constant	3.320	5.699**	1.474	3.371	6.787**	1.107	3.898	4.948*	0.626	3.861*	6.100**	0.196
	(1.101)	(2.147)	(0.767)	(1.478)	(2.587)	(0.374)	(1.313)	(1.789)	(0.317)	(1.713)	(2.310)	(0.068)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	1.787*	3.100***	28.500***	1.357	3.841***	14.608***	1.179	2.063**	1.829*	0.959	1.995**	3.436***
Adj. R^2	16.5%	16.7%	17.8%	8.6%	14.3%	7.1%	15.2%	13.3%	11.9%	7.7%	11.7%	4.9%
Obs	113	113	113	113	113	113	113	113	113	113	113	113

This table reports the results of regression analysis testing the association between *PreCSCORE_IPO* and the long-term stock returns after the SEO. The dependent variable is the market-adjusted stock returns for the holding period of one to three years from the SEO issue month, excluding the returns on the first trading day. In Panel A, the stock returns are measured as the buy-and-hold returns adjusted for the monthly CRSP value-weighted index returns. In Panel B, the stock returns are measured as the cumulative returns adjusted for the monthly CRSP value-weighted index returns. In Panel C, the stock returns are measured as the buy-and-hold returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. In Panel D, the stock returns are measured as the cumulative stock returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-20: Regression Analysis Examining the Association between *PostCSCORE_IPO* and SEO Long-Term Stock Returns

	Panel A. BHAR			Panel B. CAR			Panel C. Fama-French BHAR			Panel D. Fama-French CAR		
Independent variable	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**
PostCSCORE_IPO$_i$	-0.065	0.155	0.210	0.053	-0.208	-0.127	-0.061	0.205	0.282	0.047	-0.169	-0.124
	(-0.160)	(0.381)	(0.564)	(0.185)	(-0.594)	(-0.314)	(-0.154)	(0.517)	(0.826)	(0.176)	(-0.495)	(-0.331)
Age$_{i,t}$	-0.421*	-0.056	-0.103	-0.265*	-0.089	-0.100	-0.385*	-0.055	-0.064	-0.210	-0.067	-0.093
	(-1.898)	(-0.266)	(-0.537)	(-1.694)	(-0.378)	(-0.387)	(-1.776)	(-0.254)	(-0.339)	(-1.396)	(-0.271)	(-0.364)
SEO_Underpricing$_{i,t}$	-0.394	-1.245	-0.178	0.566	0.107	1.002	-0.905	-1.436	-0.451	0.068	-0.295	0.756
	(-0.289)	(-1.036)	(-0.141)	(0.528)	(0.071)	(0.536)	(-0.700)	(-1.149)	(-0.361)	(0.066)	(-0.187)	(0.411)
MV_SEO$_{i,t}$	0.113*	0.122*	0.233***	0.083	0.134	0.302***	0.076	0.053	0.124*	0.050	0.094	0.252***
	(1.673)	(1.785)	(3.192)	(1.433)	(1.528)	(3.091)	(1.131)	(0.751)	(1.710)	(0.837)	(1.028)	(2.771)
Asset_growth$_{i,t}$	-0.039	-0.055	-0.057*	-0.026	-0.031	-0.050	-0.037	-0.066*	-0.055*	-0.024	-0.038	-0.057
	(-1.374)	(-1.582)	(-1.730)	(-1.037)	(-0.840)	(-1.128)	(-1.356)	(-1.751)	(-1.769)	(-0.963)	(-0.957)	(-1.314)
R&D$_{i,t}$	-0.437	-0.509	-0.602*	-0.580**	-0.628	-0.682	-0.429	-0.528*	-0.480	-0.547*	-0.684	-0.663
	(-1.490)	(-1.613)	(-1.887)	(-1.996)	(-1.319)	(-1.230)	(-1.455)	(-1.791)	(-1.501)	(-1.791)	(-1.393)	(-1.215)
Cash_SEO$_{i,t}$	-0.063	0.328	0.362	-0.019	0.284	0.399	-0.058	0.338	0.315	0.006	0.311	0.425
	(-0.219)	(1.179)	(1.364)	(-0.091)	(1.133)	(1.369)	(-0.212)	(1.209)	(1.202)	(0.029)	(1.247)	(1.503)
IMR$_i$	0.290	-0.900	-1.000	-0.302	1.310	0.301	0.653	-1.146	-0.765	-0.075	1.313	1.108
	(0.104)	(-0.378)	(-0.454)	(-0.166)	(0.549)	(0.110)	(0.243)	(-0.486)	(-0.353)	(-0.043)	(0.555)	(0.424)
Constant	-1.619	-1.740	-3.731*	-1.003	-3.043	-5.371*	-1.178	-0.315	-1.967	-0.591	-2.344	-4.985*
	(-0.750)	(-0.807)	(-1.904)	(-0.604)	(-1.199)	(-1.951)	(-0.554)	(-0.147)	(-1.010)	(-0.353)	(-0.916)	(-1.945)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	4.002***	4.925***	5.389***	3.411***	2.505***	3.004***	1.727*	1.697*	1.528	1.447	1.032	1.554
Adj. R^2	9.2%	14.5%	19.4%	10.9%	10.1%	14.5%	6.7%	8.3%	7.2%	7.1%	5.6%	8.1%
Obs	187	187	187	187	187	187	187	187	187	187	187	187

This table reports the results of regression analysis testing the association between *PostCSCORE_IPO* and the long-term stock returns after the SEO. The dependent variable is the market-adjusted stock returns for the holding period of one to three years from the SEO issue month excluding the returns on the first trading day. In Panel A, the stock returns are measured as the buy-and-hold returns adjusted for the monthly CRSP value-weighted index returns. In Panel B, the stock returns are measured as the cumulative returns adjusted for the monthly CRSP value-weighted index returns. In Panel C, the stock returns are measured as the buy-and-hold returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. In Panel D, the stock returns are measured as the cumulative stock returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 4-21: Regression Analysis Examining the Association between *IssCSCORE_SEO* and SEO Long-Term Stock Returns

	Panel A. BHAR			Panel B. CAR			Panel C. Fama-French BHAR			Panel D. Fama-French CAR		
Independent variable	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**	**1 year**	**2 years**	**3 years**
IssCSCORE_SEO$_i$	-0.466*	-0.506**	-0.429*	-0.278	-0.387	-0.574*	-0.372	-0.372	-0.321	-0.203	-0.255	-0.389
	(-1.957)	(-2.077)	(-1.897)	(-1.490)	(-1.495)	(-1.911)	(-1.592)	(-1.530)	(-1.427)	(-1.064)	(-0.984)	(-1.332)
Age$_{i,t}$	-0.430*	-0.064	-0.109	-0.270*	-0.098	-0.113	-0.392*	-0.060	-0.068	-0.213	-0.074	-0.103
	(-1.943)	(-0.305)	(-0.568)	(-1.729)	(-0.418)	(-0.434)	(-1.816)	(-0.276)	(-0.354)	(-1.425)	(-0.297)	(-0.403)
SEO_Underpricing$_{i,t}$	-0.505	-1.452	-0.385	0.465	0.075	0.884	-0.989	-1.625	-0.655	-0.010	-0.303	0.699
	(-0.348)	(-1.214)	(-0.308)	(0.429)	(0.050)	(0.473)	(-0.716)	(-1.296)	(-0.526)	(-0.009)	(-0.190)	(0.378)
MV_SEO$_{i,t}$	0.138*	0.158**	0.267***	0.102*	0.149*	0.332***	0.096	0.083	0.154**	0.064	0.103	0.273***
	(1.967)	(2.252)	(3.621)	(1.744)	(1.810)	(3.591)	(1.362)	(1.141)	(2.111)	(1.062)	(1.182)	(3.131)
Asset_growth$_{i,t}$	-0.040	-0.061*	-0.064*	-0.029	-0.029	-0.050	-0.037	-0.072*	-0.062*	-0.026	-0.036	-0.057
	(-1.373)	(-1.725)	(-1.844)	(-1.117)	(-0.812)	(-1.137)	(-1.328)	(-1.882)	(-1.922)	(-1.026)	(-0.944)	(-1.345)
R&D$_{i,t}$	-0.398	-0.475	-0.575*	-0.560**	-0.589	-0.632	-0.398	-0.506*	-0.465	-0.533*	-0.657	-0.629
	(-1.417)	(-1.571)	(-1.870)	(-1.989)	(-1.261)	(-1.177)	(-1.384)	(-1.776)	(-1.505)	(-1.772)	(-1.353)	(-1.175)
Cash_SEO$_{i,t}$	-0.074	0.369	0.414	-0.004	0.240	0.376	-0.069	0.388	0.383	0.019	0.275	0.404
	(-0.256)	(1.399)	(1.568)	(-0.020)	(0.966)	(1.265)	(-0.252)	(1.481)	(1.490)	(0.095)	(1.121)	(1.415)
IMR$_i$	1.140	1.074	1.042	0.632	1.300	1.131	1.290	0.733	1.346	0.649	1.157	1.502
	(0.630)	(0.627)	(0.646)	(0.528)	(0.848)	(0.646)	(0.724)	(0.435)	(0.844)	(0.553)	(0.757)	(0.884)
Constant	-2.340	-3.221*	-5.231***	-1.717	-3.168	-6.114***	-1.726	-1.687	-3.477**	-1.140	-2.327	-5.409***
	(-1.436)	(-1.787)	(-3.170)	(-1.276)	(-1.557)	(-2.866)	(-1.050)	(-0.932)	(-2.100)	(-0.814)	(-1.115)	(-2.665)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	3.783***	4.476***	5.200***	3.405***	2.532***	3.278***	1.696*	1.566	1.421	1.505	1.076	1.722*
Adj. R^2	10.6%	16.2%	20.5%	12.0%	11.1%	16.3%	7.6%	9.1%	7.7%	7.7%	6.0%	9.0%
Obs	187	187	187	187	187	187	187	187	187	187	187	187

This table reports the results of regression analysis testing the association between *IssCSCORE_SEO* and the long-term stock returns after the SEO. The dependent variable is the market-adjusted stock returns for the holding period of one to three years from the SEO issue month excluding the returns on the first trading day. In Panel A, the stock returns are measured as the buy-and-hold returns adjusted for the monthly CRSP value-weighted index returns. In Panel B, the stock returns are measured as the cumulative returns adjusted for the monthly CRSP value-weighted index returns. In Panel C, the stock returns are measured as the buy-and-hold returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. In Panel D, the stock returns are measured as the cumulative stock returns adjusted for the monthly Fama-French size and market-to-book 5x5 portfolio returns. A description of each variable is provided in Table 4-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Chapter Five

Accounting Conservatism and the Post-IPO Status of IPO Issuers

5.1 Introduction

Chapter 4 investigated: (i) the association between IPO conservatism and the probability of issuers' next equity financing within five years of the IPO; and (ii) the effect of issuers' conservatism on the degree of SEO underpricing, announcement returns and long-term stock return performance. This chapter examines the association between IPO conservatism and the longevity and post-issue M&A activities of IPO issuers. Accordingly, this chapter investigates the following research questions:

- Do IPO issuers adopting a higher degree of conservatism survive longer in the stock market?
- Are IPO issuers adopting a higher degree of conservatism more likely to be a take-over target soon after their IPO?
- Among the IPO issuers that remain listed in the stock market, are those adopting a higher degree of conservatism more likely to acquire another entity and experience higher acquisition announcement returns?

The remainder of this chapter is organized as follows. Section 5.2 develops the conceptual framework and hypotheses. Section 5.3 provides the research methodology designed to empirically test the hypotheses. Section 5.4 describes the sample and presents the descriptive statistics. Section 5.5 reports the empirical results and Section 5.6 provides the summary and concluding remarks.

5.2 Conceptual Framework and Hypotheses Development

5.2.1 Accounting Conservatism and the Survival Rates of IPO Firms

Previous studies document that a large number of IPO firms fail to survive in the long-term. For example, Jain and Kini (1999) report that 14% of their IPO sample that was compiled for the period 1977 – 1990 were delisted within five years after the IPO due to performance failure. Fama and French (2004) also suggest that the average percentage of IPO firms delisted within ten years is 32% for 1973 – 1991. Further, Jain and Kini (2008) track firms that went IPO during the period 1980 – 1997 and report that 29% of their sample was delisted until the end of 2002. In particular, Fama and French (2004) argue that there is a dramatic decline in the survival rates of newly listed firms due to poor performance. Jain and Kini (1999) suggest that such high failure rates of IPOs are caused by firms going public due to a significant drop in their growth prospects. They argue that entrepreneurs seek to divest their holdings through an IPO prior to failure when they see their growth prospects levelling off. Thus, these firms experience subsequent declines in performance after the IPO and consequently fail to survive in the stock market.

Demers and Joos (2007) argue that there is potentially a heightened role for accounting information in the prediction of IPO failures as there is greater uncertainty associated with the valuation of IPO firms in the absence of public trading history. Thus, earnings information may be an important means of predicting the longevity of IPO firms. Accordingly, IPO issuers may signal the quality and value of their firms via their accounting earnings information as the true firm value is not observed by the public (see Li *et al.* 2006). The extant literature on accounting conservatism suggests that early

recognition of bad news in the financial statements under conservatism is an important attribute of financial reporting that improves earnings quality (Ball & Shivakumar 2005; Dechow et al. 2009). Managers have more incentive to recognize the effects of good news than bad news, in particular when there is high information asymmetry (see LaFond & Watts 2008). However, conservatism reduces information asymmetry between insiders and outside investors by curbing managers' opportunistic behavior through timely recognition of losses, alleviating earnings overstatements and improving the verifiability of accounting information (LaFond & Watts 2008).

Kim and Zhang (2010) provide evidence that a greater extent of conservatism in financial reporting significantly reduces the likelihood of a firm experiencing future stock price crashes. They argue that conservative accounting limits the incentive and ability of managers to withhold and accumulate adverse private information from outside investors, leading to a lower future crash likelihood for conservative firms. Biddle *et al.* (2012) also argue that conservatism ameliorates operating cash flow (OCF) insufficiency and shortfalls by reducing payouts for compensation, dividends, interest and taxes. This is because conservatism lowers earnings and net assets reported in the financial statements and firms' contracting terms are often based on accounting numbers. As a result, Biddle *et al.* (2011) suggest that reporting conservatism enhances cash flows for firms and reduces bankruptcy risk as better-informed investors and trading partners provide more favorable financing and contracting terms for more conservative firms.

High quality IPO firms with solid earnings streams and growth prospects may adopt a higher degree of conservatism to build stock market credibility by providing outside

investors with higher quality earnings information. However, low quality IPO firms may not have the same incentives to adopt a high degree of conservatism at the IPO year. Rather, they have greater incentives to manage earnings upward in the IPO process in order to receive higher cash proceeds than the true value of their offerings and to maintain a high market price soon after their IPO. In fact, Li *et al.* (2006) find that low quality IPO firms with weak fundamentals engage in aggressive earnings management in the IPO process and subsequently experience higher delisting risk. As a result, this may suggest that firms adopting a higher degree of conservatism, forgoing managerial incentives to report positive financial results around the IPO, face less risk of failure and survive longer in the stock market. Thus, this chapter investigates whether the extent of conservatism adopted by IPO issuers can predict the longevity of IPO firms in the stock market.

5.2.2 Accounting Conservatism and Acquisition Likelihood of IPO Firms

Previous studies document that many public firms are delisted as they are acquired soon after their IPO (e.g., Jain & Kini 1999; Audretsch & Lehmann 2007). In particular, Reuer and Shen (2003) suggest that IPO and M&A markets are not independent as newly public firms show a higher propensity of being acquired. Audretsch and Lehmann (2007) also document that firms sell soon after the IPO because bidders often choose to acquire public targets rather than private targets when acquiring young firms to engage in inter-industry transactions. For instance, Mikkelson *et al.* (1997) report that 24% of the U.S. sample firms that went IPO during 1980-1983 are acquired or go private within five years of the IPO, suggesting that many IPO delistings occur due to take-overs. Other studies such as Jain and Kini (1999) and Jain and Kini (2008)

investigate IPO mergers for a longer sample period and find similar results, namely that 17% of IPO sample firms are acquired within five years after the IPO for 1977-1990 and 37% for 1980-1997.

Prior research suggests that the underperformance of IPOs is due to the merger of high quality firms because acquisitions of high quality IPO firms decrease the number of high value firms that remain listed in the stock market, reducing the average long-term performance of IPOs (Lewis *et al.* 2000; Sentis 2009). For example, Bhabra and Pettway (2003) find that merged IPO firms significantly outperform their matched firms by size, industry and book-to-market ratio and that firms delisted due to performance failure show extreme underperformance. They suggest that better performing IPO firms become acquisition targets for their future growth opportunity while IPO firms with poor performance fail to survive in the stock market. Similarly, Li *et al*. (2006) provide evidence that merged or acquired IPO firms have stronger fundamentals and a higher value compared to the failed firms since acquirers differentiate and recognize the quality of their acquisition targets.

Literature on conservatism (e.g., LaFond & Watts 2008; Khan & Watts 2009) suggests that investors demand a high degree of conservatism in a high information asymmetry environment as they are more concerned about the likelihood of losses not being incorporated into earnings. In particular, studies suggest that when there is high information asymmetry, there is a greater demand for conservatism. Jain and Kini (1999) argue that one of the most popular motives for going public is to obtain a market value to facilitate the sale of the firm through a reduction in ownership or an immediate acquisition. Consequently, IPO firms pursuing a merger soon after their IPO may adopt

a higher degree of conservatism in order to reduce information asymmetry about the true value of the firm and to signal their quality to potential acquirers. Thus, this chapter investigates whether IPO firms adopting a higher degree of conservatism have a higher probability of being acquired subsequent to the IPO.

5.3 Research Methodology

5.3.1 Cox Proportional Hazard Model

This chapter utilizes the Cox proportional hazard model (Cox 1972) to examine the association between IPO firm's conservatism and occurrence of post-issue failure. Hazard function $h_{ij}(t)$, can be written as the following:

$$H(t) = H_0(t) \text{ x } exp(\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_k X_k) \quad (1)$$

where $H_0(t)$ is the baseline hazard function for time *t*, X_1 ... X_k are a vector of explanatory variables for firm *i* across time *t* and β_1 ... β_k are a vector of slope coefficients to be estimated. By dividing both sides of equation (1) by $H_0(t)$ and taking logarithms, the hazard ratio (HR) can be defined as:

$$\ln\left(\frac{H(t)}{H_0(t)}\right) = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_k X_k \quad (2)$$

The following Cox proportional hazards model is employed to test the association between *CSCORE* and the probability of post-issue failure:

$$\ln\left(\frac{H(t)}{H_0(t)}\right) = \beta 1 CSCORE_t + \beta 2 RE_t + \beta 3 Age_t + \beta 4 VC_t + \beta 5 Lev_t + \beta 6 salesg_t$$
$$+ \beta 7 MTB_t + \beta 8 VOL_t + \beta 9 MV_t + \beta 10 OCF_t + \beta 11 Auditor_t + \beta 12 RD_t$$
$$+ \beta 13 Underwriter_t \quad (3)$$

A description of each variable is provided in Table 5-1. All accounting variables used in the regression analysis are measured in the same period in which *CSCORE* is measured for consistency. For example, all accounting variables used in the regression in which *CSCORE* is measured in the pre-IPO year will also be measured in the pre-IPO year.

[Insert Table 5-1 here]

Following previous research which suggests that the majority of IPO delistings occur within five years from the IPO date (e.g., Jain & Kini 1999; Harjoto & Turetsky 2006), this chapter adopts the duration of five years from the IPO date. The dependent variable is the logarithm of the hazards ratio and the hazard is calculated as the number of months from the IPO month to the failure month or 60 months (5 years), whichever is earlier for each IPO firm. A statistically significant and negative β_1 will imply that the degree of conservatism is negatively associated with the likelihood of failure, while a positive β_1 means that the degree of conservatism has a positive association with the likelihood of failure.

Most IPO studies provide evidence that IPO characteristics and firm-specific attributes affect the chance of IPO survival (e.g., Hensler *et al.* 1997; Jain & Kini 1999; Harjoto

& Turetsky 2006; Li *et al.* 2006; Demers & Joos 2007). Firms with a higher level of retained earnings tend to be more mature and established firms (see DeAngelo *et al.* 2010). Thus, IPO firms with higher retained earnings may survive longer in the market compared to those with earnings deficits. Accordingly, retained earnings (*RE*) are included as one of the independent variables in the regression. Ritter (1991) reports that older and larger firms show a better stock return performance than younger and smaller firms, suggesting that firm size and age are proxies for risk of IPO firms. In support of Ritter (1991), Hensler *et al.* (1997) find that the survival time for IPOs increases with age and size. Accordingly, the market value of the IPO firm (*MV)* and firm age (*Age*) are also included as control variables.

The reputation of IPO underwriters (*Underwriter*) and the engagement of venture capitalists (*VC*) are also included as independent variables following Jain and Kini (1999). Specifically, Jain and Kini (1999) suggest that IPOs underwritten by more prestigious banks will have a higher probability of survival due to the post-issue monitoring services provided by the bank. They also argue that if more prestigious investment banks select higher quality IPO firms, IPOs associated with more prestigious investment banks will have a higher survival rate. Further, they suggest that VC-backed IPO firms have an increased probability of survival because VCs actively monitor managers through their participation on the board of directors. However, they also point out that venture capitalists may seek out buyers for the IPO firms to cash out of their position in the IPO firm.

Following previous studies (e.g., Altman 1968; Ohlson 1980) suggesting that the financial condition of a firm is a strong predictor for the probability of bankruptcy, the

leverage ratio (*Lev*) and net operating cash flow (*OCF*) are included as control variables. The regression model also includes sales growth (*salesg*), engagement of one of the Big Six auditors (*Auditor*) and research and development expenditures (*RD*), motivated by Demers and Joos (2007). Demers and Joos (2007) suggest that firms that are more established in their product markets are expected to be less risky and to have a higher survival rate than firms that have yet to produce substantial revenues which can be proxied by sales growth. They also argue that IPO firms associated with more prestigious auditors are less risky and are therefore less likely to fail since higher quality firms employ higher quality auditors to signal their quality to the market at the time of their IPO. Furthermore, Demers and Joos (2007) suggest that firms that are at a more advanced stage of research and are spending more heavily on R&D at the time of IPO are less likely to fail. Stock return volatility (*VOL*) and the market-to-book ratio (*MTB*) are also included in the regression as control variables to proxy for risk and growth opportunities (see Jain & Kini 1999; Jain & Kini 2008; Golubov *et al.* 2012).

5.3.2 Multinomial Logit Regression Model

Previous studies show that many public firms are acquired soon after their IPO, suggesting that a large portion of IPO delistings do not only occur due to performance failure, but also due to M&A activity (e.g., Jain & Kini 1999; Harjoto & Turetsky 2006; Audretsch & Lehmann 2007). This makes it difficult to establish the association between *CSCORE* and the longevity of IPO firms since the IPOs that are delisted due to M&As have not necessarily gone out of the market, and thus need to be differentiated from those delisted due to involuntary delistings. Also, one of the objectives of this thesis is to examine whether IPO firms adopting higher conservatism are more likely to

be acquired soon after their IPO. Consequently, multinomial logit regression models are employed to test the association between *CSCORE* and the three post-issue status of IPO firms: survivors, merged and involuntary delistings simultaneously.

Consistent with the Cox proportional hazard model, the multinomial logit regressions also use five year post-IPO-window (e.g., Mikkelson *et al.* 1997; Jain & Kini 1999; Bhabra & Pettway 2003). The dependent variables represent the post-issue status of IPO firms and are prepared based on the CRSP delistings code. Following Demers and Joos (2007), firms that are assigned with a delisting code between 400 and 600,[23] except for 501, 502, 503 and 573,[24] within five years of their IPO are defined as involuntary delistings due to performance failure and have the code *N* (non-survivors). Firms with a delisting code between 200 and 300 are defined as delistings due to M&As and are assigned the code *M* (merged IPOs). These firms are cross-checked against the SDC data base and their M&A announcement dates are obtained from the SDC. The remaining IPO sample firms are assigned the code *S* (survivors). All the independent variables are the same as those adopted in equation (3).

The outcome of survivors (*S*) is chosen as the base and is assigned 0, merged (*M*) and involuntarily delisted (*N*) firms are assigned 1 and 2, respectively. The multinomial logit models are as follows:

$$\ln\frac{\Pr(Y_i=\mathrm{M})}{\Pr(Y_i=\mathrm{S})} = \ln\frac{\Pr(Y_i=1)}{\Pr(Y_i=0)} = \beta_1.\mathrm{X_i} \qquad (4)$$

[23] A delisting code between 400 and 500 is assigned to liquidate firms. A delisting code between 500 and 600 is assigned to those that are delisted from the stock exchange for unfavorable reasons, such as a price drop below acceptable level, insufficient capital or assets, bankruptcy or insolvency, failure to register under the Securities Act, failure to meet equity requirements, not meeting exchange's financial guidelines for continued listing, for protection of investors and the public interest, and corporate governance violation.

[24] The delisting codes of 501, 502 and 503 denote exchange switches, while the delisting code 573 denotes going private.

$$\ln\frac{\Pr(Y_i=\mathrm{N})}{\Pr(Y_i=\mathrm{S})} = \ln\frac{\Pr(Y_i=2)}{\Pr(Y_i=0)} = \beta_2.X_i \quad (5)$$

where X_i is a vector of measured attributes for firm i and β is a vector of unknown parameters.

Both sides of equation (4) and (5) are exponentiated and solved for the probabilities:

$$\Pr(Y_i=1) = \Pr(Yi=0)\cdot e^{\beta_1 X_i} \quad (6)$$

$$\Pr(Y_i=2) = \Pr(Yi=0)\cdot e^{\beta_2 X_i} \quad (7)$$

The sum of all probabilities (survivors=0, merged=1 and involuntary delistings=2) must be equal to one: $\Pr(Yi=0) + \Pr(Yi=0)\cdot e^{\beta_1 X_i} + \Pr(Yi=0)\cdot e^{\beta_2 X_i} = 1$

Both sides are divided by Pr (Yi=0), thus:

$$1 + e^{\beta_1 X_i} + e^{\beta_2 X_i} = \frac{1}{\Pr\,(Yi=0)}$$

$$\Pr(Yi=0) = \frac{1}{1 + e^{\beta 1 X_i} + e^{\beta 2 X_i}} = \frac{1}{1+\sum_{j=1}^{2} e^{\beta_j X_i}} \quad (8)$$

To obtain the probability of being merged (M, the case 1), equation (8) is substituted into equation (6) as follows:

$$\Pr(Y_i=1) = \Pr\,(Yi=0)\cdot e^{\beta_1 X_i} = \frac{e^{\beta_1 X_i}}{1+\sum_{j=1}^{2} e^{\beta_j X_i}}. \quad (9)$$

Similarly, the probability of being involuntarily delisted (N, the case 2) is obtained by substituting equation (8) into equation (7) as follows:

$$\Pr(Y_i=2) = \Pr\,(Yi=0)\cdot e^{\beta_2 X_i} = \frac{e^{\beta_2 X_i}}{1+\sum_{j=1}^{2} e^{\beta_j X_i}} \quad (10)$$

5.4 Sample Data and Descriptive Statistics

The sample firms consist of 2,356 U.S firms that went IPO during the period 1990 to 2005.[25] This chapter examines the sample firms' post-IPO status for five years after the IPO and thus the sample period covers 1990 to 2010. However, 18 firms are excluded from the sample because 15 firms are not listed in the CRSP database and three firms have a delisting code of 573 and 333.[26] As a result, the final sample of this chapter consists of 2,338 IPO firms. Table 5-2 provides the post-issue status of IPO sample firms. Within one year of the IPO, four firms went through involuntary delistings and twenty seven firms were acquired. The number of firms delisted due to M&As and involuntary delistings starts increasing significantly from two years of the IPO. For example, the number of firms that are delisted due to M&As and involuntary delistings increases from 27 to 197 and 4 to 77, respectively from one to two years of the IPO. From two to three years of the IPO, there is another 100% (from 197 to 394) and 117% (77 to 167) increase in the number of merged and involuntary delistings, respectively. However, the delisting rates start decreasing from four years of the IPO. By the end of the sample period of 5 years of the IPO, 58.8% IPO firms still survive in the stock market, 28.9% are merged and 12.3% have been involuntarily delisted.

[Insert Table 5-2 here]

Table 5-3 provides the descriptive statistics of the variables used in the regression analysis. The sample firms are divided into three groups: survivors, merged and involuntary delisted depending on their post-IPO status within five years of their IPO.

[25] See Section 3.4 of the thesis for details of the IPO sampling process.
[26] CRSP delisting code of 333 is assigned to firms delisted due to the issue being exchanged primarily for cash and 573 to those gone private.

The mean and median of each variable are compared among these three groups. Panel A provides the mean analysis and Panel B the median analysis. The survivors report the largest mean and median *Pre_CSCORE*. The merged firms have higher *Pre_CSCORE* than the firms that are involuntarily delisted, but the difference is not statistically significant. For *Post_CSCORE*, the firms that are involuntarily delisted show a higher mean and median than the survivors, but the difference is statistically significant only for the median. The merged firms score the lowest mean and median *Post_CSCORE*.

[Insert Table 5-3 here]

Firms which are involuntarily delisted within five years of their IPO report the highest level of leverage (*Lev*) and the smallest amount of operating cash flow (*OCF*) both in the pre-IPO and IPO year. The surviving IPOs show the highest mean and median *Cash* both in the pre-IPO and IPO year. The mean and median retained earnings (*RE*) is negative across all the three groups, both in the pre- and IPO year, reflecting the fact that IPO sample firms tend to be young growth firms that incur larger amounts of expenditures on different investment projects such as R&D activities. Firms that are involuntarily delisted have smaller *RE* than both survivors and merged IPOs but only in the IPO year. The merged firms incur the largest amount of R&D expenditures (*RD*) in the IPO year, but the difference is statistically significant only for the median.

For other variables such as price to earnings per share (*PE*), the market-to-book ratio (*MTB*) and the market value of the firm (*MV*), the surviving IPOs report the highest mean and median, while the involuntary delisted firms record the lowest. The involuntary delisted firms also experience the highest stock market volatility (*VOL*) and

the survivors report the smallest. For the IPO characteristic variables, the firms that are involuntarily delisted within five years of their IPO show a lower degree of IPO underpricing (*Underpricing*), engage underwriters with lower reputation measures (*Underwriter*) and are younger (*Age*). Also, involuntarily delisted issuers have a smaller number of firms that employ one of the Big Six auditors (*Auditor*) and that are backed by VC (*VC*) relative to the surviving and merged IPO firms.

5.5 Empirical Analysis

5.5.1 Conservatism and the Post-Issus Status of IPO Firms: Delisting Rates and the Probability of Becoming a Target

Table 5-4 reports the correlation matrix of the variables used in the regression analysis testing the association between *Pre_CSCORE* and the longevity of IPO firms.[27] Table 5-5 provides the correlation matrix for the *Post_CSCORE* regression analysis. As shown in both Table 5-4 and 5-5, *Underwriter* is positively correlated with *MV* and *Auditor* at 65% and 39% respectively, indicating that the sample IPO firms associated with more reputable underwriters tend to have a higher market value and employ one of the Big Six auditors. In Table 5-4, *OCF* and *RD* are negatively correlated at 61%. This result is somewhat expected as the firms that invest heavily in R&D activities may have less operating cash available in that fiscal year. However, the negative correlation becomes smaller to 38% in the IPO year as provided in Table 5-5. The correlation between *VOL* and *Post_CSCORE* is also relatively high at 52%. To ensure that the variables that are relatively highly correlated with each other do not distort the regression models, the *Pre_CSCORE* analysis regressions are rerun without *MV* and

[27] Each variable used in the regression model is tested for VIF. The results are provided in Appendix V of the thesis and indicate no sign of multicollinearity.

Underwriter and the *Post_CSCORE* regressions without *Underwriter*. The results do not qualitatively change.

[Insert Table 5-4 here]

[Insert Table 5-5 here]

Table 5-6 provides the results for the Cox proportional hazards analysis. Panel A reports the results for the *Pre_CSCORE* analysis and Panel B for the *Post_CSCORE* analysis. Panel A-1 and B-1 tabulate the results for the hazard analysis five years after the IPO, Panel A-2 and B-2 four years after the IPO and Panel A-3 and B-3 three years after the IPO. The coefficient on *Pre_CSCORE* in Panel A are all negative and statistically significant at 1% - 5%, indicating that the IPO firms adopting higher conservatism in the pre-IPO year are less likely to fail within five years of their IPO and their survival times are longer. However, as reported in Panel B, the coefficients on *Post_CSCORE* are not statistically significant in any regressions.

The coefficients on *Age* are negative across all regressions, indicating that older IPO firms have less risk of failure consistent with Ritter (1991). However, the coefficient remains statistically significant, mainly in the *Post_CSCORE* analysis. Consistent with predictions, the coefficients on *Lev* are positive and the coefficients on *OCF* are negative and they are both statistically significant in all regressions. These results indicate that the IPO firms with higher leverage and smaller amounts of operating cash available are more likely to have higher failure risk within five years of their IPO. The coefficients on *VOL* are also positive and statistically significant at 1% in all

regressions, suggesting that the IPO firms experiencing higher after-market stock return volatility have higher risk of failure within five years of the IPO. The coefficients on *MV* are negative and statistically significant in all regressions, suggesting that the higher the market value of an issuer, the lower the risk of failure. The coefficients on *MTB* are negative, showing that the IPO firms with higher growth opportunities tend to have a lower risk of failure and survive longer in the stock market after the IPO. However, the coefficients tend to remain statistically significant only in the *Post_CSCORE* analysis.

[Insert Table 5-6 here]

Table 5-7 and 5-8 provide the multinomial logit regressions results. Panel A reports the results for the post-IPO status of five years, Panel B four years and Panel C three years. In Table 5-7, the coefficients on *Pre_CSCORE* are negative and statistically significant in $Log_e(P_N/P_S)$ regressions (except for Panel C), indicating that the involuntarily delisted IPOs adopted a significantly lower degree of conservatism in the pre-IPO year compared to surviving IPOs. This result supports the previous findings reported in Table 5-6 that IPO firms adopting higher conservatism in the pre-IPO year show higher longevity in the post-issue market. Biddle *et al.* (2011) also investigate the association between conservatism and bankruptcy risk. However, they find that conservatism is negatively associated only with bankruptcy risk measures, but not with the probability that firms actually file for bankruptcy. They argue that there are reduced incentives for conservatism as firms enter into actual bankruptcy and conservatism does not have a significant effect on the probability of bankruptcy filings by creditors. They suggest that when firms face actual bankruptcy, bad news is already revealed and the early

recognition of further bad news is unhelpful in reducing information asymmetries (Biddle *et al.* 2011). However, IPO firms have a relatively shorter history of listing and operation in the market and do not have much public information available for investors. Consequently, earnings information plays a more important role in the IPO setting and the earnings reported under a more conservative policy reduce information asymmetries, helping IPO firms survive longer in the stock market.

In the $Log_e(P_M/P_N)$ regressions, the coefficients on *Pre_CSCORE* are positive and statistically significant at 1% - 5%, suggesting that firms that are merged within five years of their IPO report more conservatively in the pre-IPO year relative to the firms that are involuntarily delisted. However, the coefficients on *Pre_CSCORE* in the $Log_e(P_M/P_S)$ regressions are not statistically significant, indicating that there is no statistically significant difference in the degree of conservatism adopted by IPO survivors and those that are merged within five years of their IPO. Taken together, these results suggest that the firms adopting higher conservatism prior to going public are more likely to survive longer in the post-issue stock market and have a higher probability of being merged within five years of their IPO compared to those involuntarily delisted from the stock exchange.

[Insert Table 5-7 here]

As reported in Table 5-8, the coefficients on *Post_CSCORE* are not statistically significant in any regressions, indicating that the extent of conservatism adopted in the IPO year is not significantly associated with the post-issue status of IPO firms. For brevity, the results for the control variables are discussed only for those that yield

consistent results across Table 5-7 and 5-8. The coefficients on *Age* are negative and statistically significant in all $Log_e(P_N/P_S)$ regressions, indicating that firms that are involuntarily delisted are younger than the surviving IPOs. The coefficients on *MTB* are also negative and statistically significant in all $Log_e(P_M/P_S)$ regressions (except for Table 5-8 Panel C), suggesting that merged IPOs are more likely to have a lower market-to-book ratio in the IPO year compared to the IPO survivors. The coefficients on *VOL* in all $Log_e(P_N/P_S)$ and $Log_e(P_M/P_S)$ regressions are positive and statistically significant (except for Table 5-7 Panel C), but negative in all $Log_e(P_M/P_N)$ regressions. Taken together, these results suggest that involuntarily delisted IPOs are more likely to experience higher stock return volatility in the IPO year compared to the surviving and the merged IPO firms and that the merged IPO firms show higher stock return volatility than the surviving IPOs.

The coefficients on *OCF* are negative and statistically significant in all $Log_e(P_N/P_S)$ regressions and positive in $Log_e(P_M/P_N)$ regressions (except for Table 5-7 Panel B and C). This result suggests that IPO firms that are involuntarily delisted have smaller amounts of operating cash available, both in the pre-IPO and IPO year, compared to the surviving IPOs. The merged IPOs also tend to have more operating cash available in both fiscal years compared to the involuntarily delisted IPOs.

[Insert Table 5-8]

5.5.2 Additional Tests: IPO Conservatism and the Probability of Corporate Acquisitions and Acquisition Profitability

5.5.2.1 Conservatism and Post-IPO Acquisitions Activity

Previous studies suggest that acquisitions play an important role in the growth of newly public firms and one of the most important motives for an IPO is to facilitate post-IPO M&A activity as a bidder (Brau & Fawcett 2006; Celikyurt *et al.* 2010). Celikyurt *et al.* (2010) argue that an IPO benefits the firm by providing an infusion of capital including cash and publicly traded stock which can be used as currency for subsequent M&A activity and by reducing the uncertainty associated with the valuation of the firm. Further, Hovakimian and Hutton (2010) suggest that having publicly traded stock provides stock returns that provide information that is not otherwise available to managers. By using this information, managers can more accurately assess the profitability of the firms' investment opportunities, in particular, the value of their future acquisitions.

Hsieh *et al.* (2011) suggest that an IPO reduces valuation uncertainty which can lead to suboptimal M&A policy and reduce the firm value, allowing the firm to pursue a more efficient acquisition strategy. Accordingly, they find that pre-IPO valuation uncertainty is negatively associated with the likelihood of an acquisition within five years of the IPO and is positively associated with time spans between IPOs and subsequent acquisitions. The previous results from Table 5-6, 5-7 and 5-8 suggest that the higher the level of conservatism adopted by firms prior to going public, the higher the level of longevity in the stock market. Accordingly, this result may indicate that IPO firms reporting more conservatively survive longer in the stock market because their primary

motive for going public is to facilitate their future acquisitions. In other words, IPO firms which go public for their future acquisitions adopt a higher degree of conservatism to reduce the pre-IPO valuation uncertainty in order to achieve more profitable post-issue acquisitions.

Francis and Martin (2010) find that acquirers adopting a higher degree of conservatism experience larger acquisition announcement returns. They argue that conservative accounting deters managers from over-investing in negative net present value projects, since poor performing acquisitions will soon turn out to be bad investments due to the timely loss recognition enforced under conservative accounting. Accordingly, this may indicate that IPO firms adopting higher conservatism gain higher announcement returns for the acquisitions they make soon after their IPO. Consequently, this thesis further investigates whether IPO issuers adopting higher conservatism are more likely to acquire another firm within five years of the IPO and experience higher announcement returns for their acquisitions.

5.5.2.2 Research Design for the Analysis of Post-IPO Acquisitions Activity

Equation (11) represents the probit regression model which tests the association between *CSCORE* and the acquisition probability and is as follows:

$$\begin{aligned} Acquisition_{i,t} = {} & \alpha_0 + \beta_1 CSCORE_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 OCF_{i,t} \\ & + \beta_5 C\&I\ rate_{i,t} + \beta_6 Return_{i,t} + \beta_7 WC_{i,t} + \beta_8 MTB_{i,t} \\ & + \beta_9 PE_{i,t} + \varepsilon_i \end{aligned} \tag{11}$$

A description of each variable in the regression model is provided in Table 5-1. The dependent variable *Acquisition* is a binary indicator that takes the value of one if an IPO

firm acquires another firm within five years subsequent to the IPO and otherwise zero. Accounting variables used in the regression where *CSCORE* is measured in the pre-IPO year are also obtained in the pre-IPO year so that all accounting variables in the regression are measured over the same period. The independent variables are motivated by Hsieh *et al.* (2011).[28] The variables include various IPO firm characteristics such as the size of the firm (*Size*), leverage ratio (*Lev*), net operating cash flow (*OCF*), abnormal stock returns in the IPO year (*Return*), non-cash working capital (*WC*), the market-to-book ratio (*MTB*) and P/E ratio (*PE*). The regression also includes the spread between the average Commercial and Industrial loan rate and the Fed rate (C*&I rate*) that proxy for the costs of funding.

Equation (12) tests whether IPO issuers adopting higher conservatism experience higher announcement returns for acquisitions made within five years of their IPO.

$$\begin{aligned} CAR_{i,t} = {} & \alpha_0 + \beta_1 CSCORE_i + \beta_2 MV_{i,t} + \beta_3 Tobins'q_{i,t} + \beta_4 Lev\_acq_{i,t} + \beta_5 FCF_{i,t} \\ & + \beta_6 Runnup_{i,t} + \beta_7 Rel\_size_{i,t} + \beta_8 All\_cashC_{i,t} + \beta_9 Stock_{i,t} + \beta_{10} Private_{i,t} \\ & + \beta_{11} Diversify_{i,t} + \beta_{12} Hightech_{i,t} + \varepsilon_i \end{aligned} \tag{12}$$

The dependent variable is *CAR* measured as three day cumulative abnormal returns where the event day is the acquisition announcement date and the CRSP value-weighted returns are used as the market return. Consistent with the previous Section, *CAR* is measured only for the IPO firms that acquire another firm within five years of their IPO. The independent variables used in the regression model are motivated by Masulis *et al.* (2007) and the description of each variable is provided in Table 5-1. The regression

[28] The variable, *Deregulation*, a binary indicator that equals one in the year following an industry deregulation event and otherwise zero based on Harford (2005), is not included in the regression model. The sample firms of this thesis cover the firms that went IPO from 1990-2005. However, Harford's (2005) sample period only covers up to 1999.

model controls for bidder characteristics: (1) the size of the IPO firm (*MV*), (2) Tobins'q (*Tobins'q*), (3) leverage ratio (*Lev_acq*), (4) free cash flow (*FCF*), and (5) pre-announcement stock price runup (*Runup*). The model also controls for the deal characteristics: (6) relative deal size (*Rel_size*), (7) method of payment; whether the payment is made only by cash (*All_cash*) or partially stock financed (*Stock*), (8) the target status; whether the target is a private firm (*Private*), and (9) industry relatedness of the acquisition that indicates whether the acquisition is a diversifying acquisition or not (*Diversify*), and (10) whether the bidder and the target are both from high-tech industries (*Hightech*).

5.5.2.3 Empirical Analysis of Post-IPO Acquisitions Activity

5.5.2.3.1 Descriptive Statistics

Table 5-9 provides the descriptive statistics of IPO issuers making acquisitions within five years of their IPO. Panel A reports the number of IPO firms going for acquisitions within one to five years of their IPO. Out of 2,307 IPO firms that survive for at least one year, 116 firms make corporate acquisitions. The number of IPO acquirers increases every year and 339 firms, which represents 25% of the surviving IPOs, make acquisitions within five years of their IPO. Panel B tabulates the distribution of acquirers by their IPO year. The firms that went IPO in 1996 record the largest number of IPOs that make acquisitions within five years of their IPO. These firms take, on average, 584 days to acquire another firm after their IPO. In general, there are a larger number of IPO firms making acquisitions in the 1990s compared to the 2000s. In particular, out of the sample IPO firms that went public in 2001, only one issuer made an acquisition in five years of the IPO. There are still a small number of 2002 and 2003

IPO issuers that make acquisitions after the IPO. This is consistent with research by Celikyurt *et al.* (2010) and Hovakimian and Hutton (2010), providing evidence of a significant decrease in the number of acquisitions by IPO firms in 2001 after the collapse of the internet bubble. Such a phenomenon is also documented in the non-IPO setting (see Moeller *et al.* 2004, 2005). The number of acquirers starts increasing again from 2004. It is also noted that it takes 779 days on average for IPO issuers to make their first corporate acquisition after the IPO.

[Insert Table 5-9 here]

Table 5-10 presents the descriptive statistics of the variables used in the regression analysis testing the association between *CSCORE* and the probability and profitability of the IPO firms' acquisitions activity. Panel A and B provide the pre-IPO and IPO year variables respectively and Panel C reports the acquisition announcement year variables. As shown in Table 5-10, only 101 firms have *Pre_CSCORE* available, while *Post_CSCORE* is measured for 329 firms out of 339 firms. In Panel B, the mean and median of sample firms' IPO year abnormal return (*Return*) is -0.2%, suggesting that the IPO firms going for acquisitions tend to underperform the market on average in the IPO year.

In panel C, the mean and median *CAR* are 2.8% and 1.6% respectively, indicating that the IPO issuers acquiring another firm within five years of their IPO experience, on average, positive abnormal announcement returns. Such positive *CAR* results are relatively higher than that reported by previous studies. For example, Moeller *et al.* (2004) documents the average bidder's abnormal return across acquisitions between

1980 and 2001 as 1.1%, and Masulis *et al.* (2007) report 0.215% and 0.105% of mean and median abnormal returns for the period 1990 to 2003. A more recent study by Humphery-Jenner and Powell (2014) also finds that the average acquirers' abnormal returns are 1.31% based on the market-adjusted model for the period 1996 to 2008. Although it is not reported in Table 5-10 for brevity, there are 70 firms that made acquisition only by cash. In addition, there are only 13 firms that acquired private targets. This is consistent with research by Hovakimian and Hutton (2010), suggesting that IPO firms tend to pursue public targets that are larger, more liquid and have higher valuation multiples. There are 211 issuers that made diversifying acquisitions, consistent with the view that one important motivation for going public is to achieve expansion by acquiring targets in different sectors (Celikyurt *et al.* 2010; Hovakimian & Hutton 2010).

[Insert Table 5-10 here]

5.5.2.3.2 IPO Conservatism and the Probability of Acquiring Another Firm

Table 5-11 and 5-12 report the correlation matrix[29] for the variables used in the regression analysis. Table 5-11 provides the results for the *Pre_CSCORE* analysis and Table 5-12 for the *Post_CSCORE* analysis. As shown in Table 5-11, the correlation between *Pre_CSCORE* and *C&I rate* is relatively higher at 41%, indicating that when the C&I loan rates are higher, IPO firms tend to adopt higher conservatism. All other independent variables are not significantly correlated with each other.

[29] Each variable in the model is tested for VIF. The results are provided in Appendix IV of the thesis and indicate no sign of multicollinearity.

[Insert Table 5-11 here]

[Insert Table 5-12 here]

Table 5-13 (Panel A) provides the probit regression results. The coefficient on *Pre_CSCORE* in model 1 is 0.409 and is statistically significant at 1%, suggesting that firms adopting higher conservatism prior to going public are more likely to acquire another firm within five years of their IPO. However, the coefficient on *Post_CSCORE* is not statistically significant. Panel B provides the duration analysis using the Cox Proportional Hazard model. The dependent variable (*time_to_acquire*) is the logarithm of the number of months taken from the IPO month to either the acquisition announcement month or 60 months, whichever is earlier for each IPO firm. Thus, the dependent variable is the logarithm of the hazard ratio in this model specification in which the hazard is defined as the probability of making acquisitions. Hence, positive coefficients indicate that the acquisition is more likely to occur and the time to acquisition is shorter (see Jain & Kini 2008). As shown in Panel B[30] of Table 5-13, the coefficient on *Pre_CSCORE* is positive and statistically significant at 5%, suggesting that firms adopting higher conservatism prior to going public are more likely to make acquisitions within five years of their IPO. This also suggests that, the higher the conservatism adopted by IPO issuers in the pre-IPO year, the less the time that it takes to make the first acquisitions after the IPO. The coefficient on *Post_CSCORE* is not statistically significant, consistent with Panel A results.

[30] The hazard ratios are not presented in the table for brevity.

The coefficients on *Size* in all regression models are positive and statistically significant at 1% - 5%, indicating that the larger the IPO firm, the higher the probability that an acquisition will occur within five years of the IPO. This result also suggests that larger size IPOs tend to make acquisitions sooner than smaller IPOs. The coefficient on *Lev* is negative and statistically significant in model 1 and 3, indicating that IPO firms with higher leverage in the pre-IPO year are less likely to make acquisitions within five years of the IPO. However, the coefficient on *Lev* is statistically significant and positive in model 2 and 4 (the *Post_CSCORE* analysis). This result is not consistent with Hsieh *et al.* (2011) that higher leverage is negatively associated with the probability of acquiring other entities. However, this result could indicate that IPO issuers that have higher leverage in the IPO year tend to borrow to make an acquisition within five years of their IPO.

The coefficient on *OCF* is positive, showing that firms with larger amounts of operating cash available tend to make acquisitions within five years of their IPO. However, the coefficient remains statistically significant (1%) only in the *Post_CSCORE* analysis. Consistent with previous studies (e.g., Harford 2005; Hsieh *et al.* 2011), the coefficients on *C&I rate* are negative and statistically significant at 1% in the *Pre_CSCORE* analysis, supporting the view that the C&I rate spread is a proxy for the costs of funding and ease of financing and as a result a decrease in the rate of spread leads to an increase in acquisition activity. The coefficients on *MTB* are positive and statistically significant in all regressions (except for model 1), indicating that the larger the market-to-book ratio, the higher the probability that an acquisition would occur within five years of the IPO.

[Insert Table 5-13 here]

5.5.2.3.3 IPO Conservatism and Acquisition Profitability

Table 5-14 provides the correlation matrix[31] for the variables used in the regression analysis testing the association between *CSCORE* and acquisition profitability. All variables in the regression model are not highly correlated with each other as they are all below 30%.

[Insert Table 5-14 here]

Table 5-15 provides the regression results. The coefficient on *Pre_CSCORE* is positive and statistically significant at 10%, providing weak evidence that firms adopting higher conservatism prior to going public gain higher announcement returns for their acquisitions made within five years of their IPO. However, the coefficient on *Post_CSCORE* in Table 5-15 is positive and statistically significant at 5%, indicating that IPO issuers adopting higher conservatism in the IPO year gain higher announcement returns for their acquisitions.

Taken together, the results suggest that IPO issuers reporting more conservatively make better post-issue corporate acquisitions. Francis and Martin (2010) suggest that conservatism leads to more profitable acquisition decisions, in particular when there is high information asymmetry as timely loss recognition under conservatism can help prevent managers from undertaking value-destroying acquisitions out of self-interest. Thus, this result lends support to Francis and Martin (2010) by providing empirical evidence that IPO issuers adopting a higher degree of conservatism make more

[31]The VIF for each regression variable is provided in Appendix V of the thesis. The results indicate no sign of multicollinearity.

profitable acquisitions after IPO. In particular, the result has important implications in that the reporting conservatism of IPO issuers conveys important information for their acquisition activities in the post-issue market.

The coefficient on *Stock* is negative and statistically significant at 5% (only in model 1), consistent with Masulis *et al.* (2007) that acquirers experience significantly negative abnormal returns when they pay for their acquisitions with stock. The coefficient on *Diversify* is also negative and statistically significant at 5% (only in model 2), supporting the view that diversifying acquisitions tend to destroy shareholder value because managers can acquire unrelated assets that potentially benefit their self-interests rather than acquire those that can reduce the firm risk (Masulis *et al.* 2007). Also, consistent with Masulis *et al.* (2007), the coefficient on *Hightech* is negative and statistically significant at 5% (only in model 2), indicating that the acquisition profitability is lower when technology firms are merged as it is more difficult for them to integrate smoothly due to the complexities associated with human capital and intellectual property.

[Insert Table 5-15 here]

5.6 Summary and Conclusions

This chapter investigates whether IPO firms adopting a higher degree of conservatism show higher survival rates and whether the extent of conservatism adopted by IPOs delisted due to M&As significantly differs from that of firms delisted due to involuntary delistings. Further, this chapter investigates whether surviving IPOs which adopt higher conservatism make acquisitions of other entities within five years of their IPO and whether these firms experience higher acquisition announcement returns.

The results suggest that firms adopting a higher degree of conservatism prior to going public face less risk of failure and survive longer in the stock market. Moreover, among the IPO firms delisted from the stock market soon after the IPO, the issuers delisted due to M&As adopt a higher degree of conservatism prior to going public compared to those delisted due to involuntary delistings. However, the degree of conservatism adopted by IPO survivors in the pre-IPO year does not significantly differ from that of IPO issuers delisted due to M&As, after controlling for other known factors that have an effect on the probability of being merged. Conservatism measured in the IPO year is not significantly associated with the longevity of IPO issuers.

This chapter investigates whether the IPO survivors adopting a higher degree of conservatism are more likely to make acquisitions soon after their IPO. The results suggest that the extent of conservatism adopted by IPO issuers prior to going public is significantly and positively associated with the probability of making acquisitions within five years of the IPO. Further, this chapter also provides evidence that, the higher the conservatism adopted by IPO issuers in the pre-IPO year, the less the time

that it takes to make their first acquisition after the IPO. Consistent with the longevity analysis, the conservatism measured in the IPO-year is not significantly associated with the probability of making acquisitions by IPO issuers.

This chapter also examines whether IPO firms adopting a higher degree of conservatism experience significantly higher announcement returns for their acquisitions made within five years of the IPO. The results suggest that both the pre-IPO and IPO year conservatism are significantly and positively associated with the abnormal announcement returns. However, the pre-IPO year conservatism analysis does not yield strong statistical results, lending only weak support for the positive association between pre-IPO year conservatism and acquisition profitability.

Taken together, the results for this chapter suggest that IPO firms adopting higher conservatism prior to going public offer a superior investment for investors because they are less likely to fail soon after the IPO. Finally, these firms are also more likely to achieve substantial growth through value enhancing acquisitions soon after their IPO.

The next chapter provides the summary and conclusion of this thesis. It also discusses the implications and contributions of this thesis.

5.7 Tables

Table 5-1: Variable Description

Variable	Description
***Pre_CSCORE*$_i$**	*CSCORE* measured in the pre-IPO year.
***Post_CSCORE*$_i$**	*CSCORE* measured in the IPO year.
***Age*$_{i,t}$**	Log of firm age in in year *t* where year *t* is the IPO year.
***All_cash*$_{i,t}$**	Dummy variable that is one for purely cash-financed deals and zero otherwise.
***Auditor*$_{i,t}$**	A dummy variable that equals one if the auditor is one of the Big 6 auditors and otherwise zero.
***CAR*$_{i,t}$**	Three-day market-adjusted cumulative abnormal stock returns measured in days -1 through +1 where day 0 is the acquisition announcement date and the market return is the CRSP value weighted index returns.
***C&I rate*$_{i,t}$**	Commercial and Industrial loan rates obtained from <http://www.federalreserve.gov/releases/e2/e2chart.htm>.
***Diversify*$_{i,t}$**	Dummy variable that is one if acquirer and target do not share a two-digit industry and otherwise zero.
***Hightech*$_{i,t}$**	Dummy variable that is one if acquirer and target are both from high-tech industries as defined in the SDC and otherwise zero.
***FCF*$_{i,t}$**	Free cash flow measured as operating income before depreciation minus interest expenses minus income taxes minus capital expenditures, scaled by beginning total assets in year *t* where year *t* is the acquisition announcement year.
***Lev*$_{i,t}$**	Total debts divided by beginning total assets in year *t* where year *t* is the IPO year.
***Lev_acq*$_{i,t}$**	Total debts divided by beginning total assets in year *t* where year *t* is the acquisition announcement year.
***MTB*$_{i,t}$**	Market-to-book ratio in year *t* where year *t* is the IPO year.
***MV*$_{i,t}$**	The natural logarithm of the market value of a firm at IPO.
***OCF*$_{i,t}$**	Net Operating Cash flow divided by beginning total assets in year *t* where year *t* is the IPO year.
***PE*$_{i,t}$**	Market value of equity per share divided by earnings per share in year *t* where year *t* is the IPO year.
***Private*$_{i,t}$**	Dummy variable that is one for private targets and otherwise zero.
***RD*$_{i,t}$**	Research and Development expenditure divided by beginning total assets in year *t* where year *t* is the IPO year.
***RE*$_{i,t}$**	Retained earnings divided by beginning total assets in year *t* where year *t* is the IPO year.
***Rel_size*$_{i,t}$**	Deal value (from the SDC) over bidder market value of equity.
***Return*$_{i,t}$**	Average of returns net of CRSP value-weighted returns of firms in the IPO firm industry in the IPO year.
***Runup*$_{i,t}$**	Acquirer's buy-and-hold abnormal returns (BHAR) during the period from180 to11 days prior to the announcement where the market index is the CRSP value-weighted returns.
***Salesg*$_{i,t}$**	Changes in sales revenue in year *t* where year *t* is the IPO year.
***Size*$_{i,t}$**	The natural logarithm of the total assets of a firm at IPO in year *t* where year *t* is the IPO year.
***Stock*$_{i,t}$**	Dummy variable that is one for deals at least partially stock-financed and otherwise zero.
***Time_to_acquire*$_{i,t}$**	Log of the number of months taken between the IPO and acquisition announcement date or 60 months whichever is earlier.

Table 5-1
(continued)

Variable	Description
Tobin's $q_{i,t}$	Tobin's q measured as total assets minus book value of equity plus market value of equity divided by total assets in year *t* where year *t* is the acquisition announcement year.
Underpricing$_{i,t}$	Closing price on the IPO offer day minus the offer price divided by the offer price.
Underwriter$_{i,t}$	IPO's underwriter's reputation measures from the Jay Ritter's website <http://bear.warrington.ufl.edu/ritter/ipodata.htm>.
VC$_{i,t}$	A dummy variable that equals one if an IPO is backed by VC and otherwise zero.
VOL$_{i,t}$	Stock return volatility in year *t* where year *t* is the IPO year.
WC$_{i,t}$	Non-cash working capital defined as net working capital minus cash and cash equivalents divided by total assets in year *t* where year *t* is the IPO year.

Table 5-2: Post-IPO Status of IPO Firms

Post-IPO Status within *n* years of the IPO					
No of Firms (cumulative)	***1* year**	***2* years**	***3* years**	***4* years**	***5* years**
Survivors	*2307*	*2064*	*1777*	*1566*	*1375*
Merged	*27*	*197*	*394*	*543*	*675*
Involuntary delistings	*4*	*77*	*167*	*229*	*288*
Total	*2338*	*2338*	*2338*	*2338*	*2338*

This table provides the number of IPO firms that survive, are merged, and are involuntarily delisted due to performance failure within one to five years of the IPO.

Table 5-3: Descriptive Statistics

Panel A. Mean and Differences in Mean for Each Variable							
Variable	**Survivors**	**Merged**	**Delisted**	***obs***	**Survivors - Delisted**	**Survivors - Merged**	**Merged - Delisted**
Panel A_1. Pre-IPO Year							
Pre_CSCORE	0.972	0.906	0.875	*837*	0.098**	0.066*	0.031
Lev	0.646	0.650	0.734	*809*	-0.088**	-0.004	-0.084**
RD	0.243	0.277	0.285	*550*	-0.042	-0.034	-0.008
RE	-0.695	-0.865	-0.867	*842*	0.172	0.170*	0.002
OCF	-0.050	-0.135	-0.200	*819*	0.150***	0.086***	0.064
Salesg	1.434	1.562	1.526	*765*	-0.091	-0.128	0.036
Panel A_2. IPO Year							
Post_CSCORE	0.680	0.649	0.702	*2277*	-0.022	0.031**	-0.053***
Lev	0.304	0.291	0.353	*2198*	-0.049***	0.013	-0.062***
RD	0.093	0.099	0.082	*1504*	0.011	-0.006	0.017**
RE	-0.193	-0.226	-0.329	*0.77*	0.136***	0.033	0.103***
OCF	0.014	-0.018	-0.113	*2228*	0.127***	0.032***	0.095***
Salesg	1.100	1.195	1.188	*2138*	-0.088	-0.096	0.007
PE	20.888	15.357	9.476	*2205*	11.412***	5.531*	5.881
VOL	0.044	0.047	0.052	*2231*	-0.008***	-0.004***	-0.005***
MTB	4.934	4.921	4.680	*2229*	0.253	0.012	0.241
MV	8.276	8.196	7.950	*2235*	0.326***	0.081***	0.245***
Panel A_3. IPO Characteristics							
Underpricing	0.224	0.232	0.176	*2234*	0.048**	-0.008***	0.056***
Underwriter	7.596	7.466	6.079	*2016*	1.517***	0.129***	1.387***
Age	1.011	0.970	0.902	*1998*	0.109***	0.041***	0.068***
Auditor	0.955	0.952	0.841	*2277*	0.114***	0.003***	0.111***
VC	0.503	0.562	0.395	*2277*	0.108***	-0.059***	0.167***
Panel B. Median and Differences in Median for Each Variable							
Variable	**Survivors**	**Merged**	**Delisted**		**Survivors - Delisted**	**Survivors - Merged**	**Merged - Delisted**
Panel B_1. Pre-IPO Year							
Pre_CSCORE	0.898	0.793	0.773	*837*	0.126*	0.105	0.020
Lev	0.593	0.621	0.730	*809*	-0.137***	-0.028	-0.109***
RD	0.172	0.207	0.127	*550*	0.045**	-0.035*	0.080***
RE	-0.158	-0.353	-0.305	*842*	0.147*	0.195**	-0.048
OCF	0.060	0.008	-0.069	*819*	0.128***	0.051***	0.077***
Salesg	0.322	0.494	0.521	*765*	-0.199	-0.172***	-0.028
Panel B_2. IPO Year							
Post_CSCORE	0.576	0.538	0.613	*2277*	-0.037**	0.038**	-0.075***
Lev	0.255	0.232	0.304	*2198*	-0.049***	0.024	-0.072***
RD	0.071	0.081	0.043	*1504*	0.028**	-0.011*	0.039***
RE	-0.019	-0.059	-0.155	*0.77*	0.136***	0.040**	0.096***
OCF	0.050	0.021	-0.075	*2228*	0.125***	0.028***	0.097***
Salesg	0.427	0.478	0.434	*2138*	-0.007	-0.051**	0.044*
PE	15.909	12.821	-1.007	*2205*	16.916***	3.089**	13.828***
VOL	0.039	0.042	0.047	*2231*	-0.008***	-0.003***	-0.004***
MTB	3.532	3.465	3.242	*2229*	0.291**	0.067	0.223*
MV	8.269	8.162	7.886	*2235*	0.383***	0.107***	0.276***

Table 5-3
(continued)

Panel B_3. IPO Characteristics							
Variable	**Survivors**	**Merged**	**Delisted**		**Survivors - Delisted**	**Survivors - Merged**	**Merged - Delisted**
Underpricing	0.125	0.118	0.071	*2234*	0.054***	0.007	0.047***
Underwriter	8.000	8.000	7.000	*2016*	1.000***	0.000***	1.000***
Age	1.000	0.954	0.903	*1998*	0.097***	0.046**	0.051***
Auditor	1.000	1.000	1.000	*2277*	0.000***	0.000	0.000***
VC	1.000	1.000	0.000	*2277*	1.000***	0.000***	1.000***

All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1. Panel A provides the mean of each variable for IPO survivors, IPOs that are merged and IPOs that are involuntarily delisted respectively and compares the difference in mean across different groups. Panel B provides the median analysis.

Table 5-4: Pearson Correlation Matrix for Regression Analysis Testing the Association between *Pre_CSCORE* and IPO Longevity

	Pre_CSCORE_t	$RE_{i,t-1}$	$Age_{i,t}$	$Under\text{-}writer_{i,t}$	$VC_{i,t}$	$Lev_{i,t-1}$	$Salesg_{i,t-1}$	$MTB_{i,t}$	$VOL_{i,t}$	$MV\_IPO_{i,t}$	$OCF_{i,t-1}$	$Auditor_{i,t}$
$RE_{i,t-1}$	-0.199***											
$Age_{i,t}$	-0.105***	0.202***										
$Under\text{-}writer_{i,t}$	-0.008	0.032	0.136***									
$VC_{i,t}$	0.221***	-0.377***	-0.187***	0.235***								
$Lev_{i,t-1}$	0.065*	-0.075**	0.082***	-0.155***	-0.157***							
$Salesg_{i,t-1}$	0.079**	-0.114***	-0.284***	0.082**	0.218***	-0.130***						
$MTB_{i,t}$	-0.045	-0.080**	-0.085***	0.107***	0.098***	0.105***	0.204***					
$VOL_{i,t}$	0.240***	-0.209***	-0.260***	-0.020	0.249***	-0.037*	0.264***	0.188***				
$MV\_IPO_{i,t}$	0.082**	-0.003	0.045**	0.653***	0.143***	-0.099***	0.082**	0.266***	0.145***			
$OCF_{i,t-1}$	-0.170***	0.626***	0.270***	0.048**	-0.268***	-0.053**	-0.315***	-0.145***	-0.361***	-0.030		
$Auditor_{i,,t}$	-0.055	-0.001	0.053**	0.388***	0.207***	-0.094***	0.057	0.059***	-0.016	0.266***	-0.010	
$RD_{i,t-1}$	0.179***	-0.587***	-0.233***	0.012	0.305***	0.011	0.140***	0.164***	0.221***	0.023	-0.613***	0.061**

The accounting variables used for the *Pre_CSCORE* regression analysis are obtained from the pre-IPO fiscal year since *Pre_CSCORE* is also measured over the pre-IPO year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1.

Table 5-5: Pearson Correlation Matrix for Regression Analysis Testing the Association between *Post_CSCORE* and IPO Longevity

	$Post\_CSCORE_t$	$RE_{i,t}$	$Age_{i,t}$	$Under\text{-}writer_{i,t}$	$VC_{i,t}$	$Lev_{i,t}$	$Salesg_{i,t}$	$MTB_{i,t}$	$VOL_{i,t}$	$MV\_IPO_{i,t}$	$OCF_{i,t}$	$Auditor_{i,t}$
$RE_{i,t}$	-0.180***											
$Age_{i,t}$	-0.150***	0.183***										
$Under\text{-}writer_{i,t}$	0.027	0.055**	0.136***									
$VC_{i,t}$	0.108***	-0.264***	-0.187***	0.235***								
$Lev_{i,t}$	-0.044**	0.079***	0.265***	0.020	-0.302***							
$Salesg_{i,t}$	0.241***	-0.135***	-0.278***	0.084***	0.187***	-0.164***						
$MTB_{i,t}$	0.210***	-0.110***	-0.085***	0.107***	0.098***	0.040*	0.150***					
$VOL_{i,t}$	0.520***	-0.262***	-0.260***	-0.020	0.249***	-0.276***	0.277***	0.188***				
$MV\_IPO_{i,t}$	0.228***	0.001	0.045**	0.653***	0.143***	0.002	0.175***	0.266***	0.145***			
$OCF_{i,t}$	-0.249***	0.596***	0.286***	0.210***	-0.174***	0.148***	-0.262***	-0.055***	-0.366***	0.126***		
$Auditor_{i,,t}$	-0.043**	0.037*	0.053**	0.388***	0.207***	-0.027	0.053**	0.059***	-0.016	0.266***	0.085***	
$RD_{i,t}$	0.070***	-0.483***	-0.180***	0.056**	0.314***	-0.254***	0.113***	0.080***	0.131***	-0.010	-0.379***	0.074***

The accounting variables used for the *Post_CSCORE* regression analysis are obtained from the IPO fiscal year since *Post_CSCORE* is also measured over the IPO fiscal year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1.

Table 5-6: Cox Proportional Hazards Model for IPO Longevity Analysis

	Panel A. Pre_CSCORE						Panel B. Post_CSCORE					
	Panel A-1. 5 years after IPO		Panel A-2. 4 years after IPO		Panel A-3. 3 years after IPO		Panel B-1. 5 years after IPO		Panel B-2. 4 years after IPO		Panel B-3. 3 years after IPO	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Pre_ CSCORE$_i$	-0.924***	-0.830***	-0.795**	-0.721***	-0.734**	-0.667***						
	(-2.685)	(-3.330)	(-2.480)	(-3.132)	(-2.302)	(-2.950)						
Post_ CSCORE$_i$							-0.075	-0.005	0.174	0.222	0.163	0.198
							(-0.259)	(-0.019)	(0.630)	(0.845)	(0.591)	(0.751)
RE$_{i,t-1}$	0.104	0.279	0.137	0.348**	0.146	0.356**						
	(0.522)	(1.625)	(0.702)	(2.081)	(0.752)	(2.208)						
RE$_{i,t}$							-0.085	-0.079	-0.065	-0.060	-0.038	-0.034
							(-0.523)	(-0.484)	(-0.405)	(-0.375)	(-0.253)	(-0.228)
Lev$_{i,t-1}$	0.733**	1.150***	0.770**	1.175***	0.834**	1.205***						
	(2.009)	(4.434)	(2.224)	(4.579)	(2.450)	(4.940)						
Lev$_{i,t}$							1.720***	1.681***	1.605***	1.572***	1.500***	1.478***
							(4.527)	(4.412)	(4.448)	(4.368)	(4.384)	(4.345)
Salesg$_{i,t-1}$	-0.046	-0.032	-0.038	-0.028	-0.033	-0.027						
	(-0.983)	(-0.886)	(-0.875)	(-0.830)	(-0.793)	(-0.810)						
Salesg$_{i,t}$							-0.001	0.000	-0.012	-0.011	-0.001	-0.000
							(-0.019)	(0.013)	(-0.307)	(-0.282)	(-0.019)	(-0.004)
OCF$_{i,t-1}$	-1.555***	-1.318***	-1.463***	-1.343***	-1.416***	-1.303***						
	(-3.013)	(-3.348)	(-2.999)	(-3.615)	(-2.967)	(-3.602)						
OCF$_{i,t}$							-2.665***	-2.688***	-2.590***	-2.611***	-2.601***	-2.619***
							(-5.501)	(-5.456)	(-5.788)	(-5.767)	(-5.903)	(-5.883)
RD$_{i,t-1}$	-0.781		-0.723		-0.799							
	(-0.985)		(-0.957)		(-1.007)							
RD$_{i,t}$							-3.185***	-3.279***	-3.187***	-3.266***	-3.441***	-3.507***
							(-3.062)	(-3.166)	(-3.231)	(-3.338)	(-3.563)	(-3.679)

Table 5-6
(continued)

	Panel A. Pre_CSCORE						Panel B. Post_CSCORE					
	Panel A-1. 5 years after IPO		Panel A-2. 4 years after IPO		Panel A-3. 3 years after IPO		Panel B-1. 5 years after IPO		Panel B-2. 4 years after IPO		Panel B-3. 3 years after IPO	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
$Age_{i,t}$	-0.198	-0.524*	-0.186	-0.448*	-0.097	-0.405	-0.432*	-0.465**	-0.449**	-0.477**	-0.376*	-0.397*
	(-0.379)	(-1.834)	(-0.373)	(-1.671)	(-0.200)	(-1.523)	(-1.889)	(-2.057)	(-2.101)	(-2.270)	(-1.780)	(-1.917)
$VC_{i,t}$	-0.253	-0.416*	-0.287	-0.346	-0.210	-0.296	0.036	-0.009	0.015	-0.017	0.059	0.038
	(-0.742)	(-1.663)	(-0.896)	(-1.489)	(-0.670)	(-1.290)	(0.203)	(-0.056)	(0.087)	(-0.102)	(0.362)	(0.242)
$MTB_{i,t}$	-0.025	-0.042*	-0.025	-0.039*	-0.022	-0.036*	-0.051**	-0.049**	-0.048**	-0.046**	-0.041**	-0.040**
	(-0.766)	(-1.729)	(-0.832)	(-1.711)	(-0.738)	(-1.662)	(-2.452)	(-2.385)	(-2.369)	(-2.316)	(-2.181)	(-2.143)
$VOL_{i,t}$	24.133***	20.763***	24.851***	21.126***	24.554***	20.438***	19.544***	19.509***	20.481***	20.410***	19.784***	19.763***
	(4.012)	(4.589)	(4.233)	(4.962)	(4.211)	(4.919)	(4.767)	(4.753)	(5.156)	(5.138)	(5.023)	(5.020)
$MV_{i,t}$	-0.828**		-0.740*		-0.833**		-0.665***	-0.835***	-0.524**	-0.644***	-0.613***	-0.698***
	(-2.039)		(-1.912)		(-2.163)		(-2.668)	(-4.228)	(-2.238)	(-3.546)	(-2.667)	(-3.953)
$Auditor_{i,t}$	-0.573	-0.881***	-0.432	-0.924***	-0.497	-0.943***	-0.343	-0.373	-0.340	-0.361	-0.371	-0.390
	(-1.052)	(-2.951)	(-0.794)	(-3.241)	(-0.963)	(-3.526)	(-1.272)	(-1.373)	(-1.391)	(-1.469)	(-1.557)	(-1.643)
$Under\text{-}writer_{i,t}$	-0.085		-0.071		-0.056		-0.050		-0.035		-0.025	
	(-1.077)		(-0.919)		(-0.735)		(-1.179)		(-0.879)		(-0.632)	
χ^2	78.254***	84.760***	78.571***	92.482***	77.367***	94.754***	225.204***	211.958***	223.696***	214.337***	218.049***	213.469***
Log Likelihood	-314.872	-659.854	-334.503	-696.845	-339.185	-707.368	-1229.778	-1230.470	-1299.518	-1299.859	-1319.547	-1319.719
Obs	434	671	434	671	434	671	1120	1120	1120	1120	1120	1120

This table provides the results for the Cox proportional hazard regression model testing the association between *CSCORE* and the risk of failure. Panel A reports the results for the *Pre_CSCORE* analysis and Panel B for the *Post_CSCORE* analysis. The dependent variable in Panel A-1 and B-1 is the logarithm of the hazards ratio measured as the number of months from the IPO month to the failure month or 60 months (five years), whichever is earlier for each IPO firm. The dependent variable in Panel A-2 and B-2 is the logarithm of the hazards ratio measured as the number of months from the IPO month to the failure month or 48 months (four years), whichever is earlier for each IPO firm. The dependent variable in Panel A-3 and B-3 is the logarithm of the hazards ratio measured as the number of months from the IPO month to the failure month or 36 months (three years), whichever is earlier for each IPO firm. All accounting variables used in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 5-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 5-7: Multinomial Logit Regressions Testing the Association between *Pre_CSCORE* and Post-IPO Status of IPO Issuers

	Panel A. 5 years after IPO dependent variable			Panel B. 4 years after IPO dependent variable			Panel C. 3 years after IPO dependent variable		
Independent Variables	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**
Pre_CSCORE$_i$	0.130	-1.033**	1.163***	0.053	-0.993**	1.047**	0.292	-0.700	0.992**
	(0.626)	(-2.569)	(2.883)	(0.242)	(-2.301)	(2.347)	(1.206)	(-1.481)	(1.996)
Deficit$_{i,t-1}$	-0.103	-0.001	-0.102	0.009	-0.020	0.029	0.019	0.032	-0.013
	(-1.025)	(-0.005)	(-0.610)	(0.082)	(-0.116)	(0.149)	(0.150)	(0.184)	(-0.062)
Age$_{i,t}$	-0.244	-1.064**	0.820	-0.250	-1.667***	1.417**	-0.027	-1.223*	1.196
	(-0.680)	(-2.087)	(1.515)	(-0.624)	(-3.111)	(2.337)	(-0.064)	(-1.885)	(1.644)
Underwriter$_{i,t}$	-0.049	-0.112	0.062	-0.014	-0.111	0.097	0.052	-0.177	0.229
	(-0.642)	(-0.986)	(0.529)	(-0.162)	(-0.962)	(0.741)	(0.517)	(-1.567)	(1.595)
VC$_{i,t}$	-0.131	-0.637	0.506	-0.103	-0.901*	0.798*	-0.056	-0.517	0.461
	(-0.546)	(-1.540)	(1.186)	(-0.405)	(-1.920)	(1.661)	(-0.208)	(-1.062)	(0.889)
Lev$_{i,t-1}$	0.278	0.636	-0.358	0.129	0.474	-0.345	0.266	0.560	-0.294
	(1.039)	(1.420)	(-0.764)	(0.468)	(0.997)	(-0.672)	(0.915)	(1.056)	(-0.506)
Salesg$_{i,t-1}$	0.019	0.005	0.014	0.019	-0.010	0.029	0.014	0.014	-0.000
	(0.926)	(0.134)	(0.365)	(0.921)	(-0.212)	(0.620)	(0.641)	(0.301)	(-0.004)
MTB$_{i,t}$	-0.050***	-0.021	-0.028	-0.049***	-0.011	-0.038	-0.041**	-0.043	0.002
	(-2.994)	(-0.640)	(-0.823)	(-2.727)	(-0.326)	(-1.096)	(-2.210)	(-1.135)	(0.054)
VOL$_{i,t}$	7.768*	27.377***	-19.609**	8.614*	33.049***	-24.435***	8.020	35.390***	-27.371***
	(1.669)	(3.725)	(-2.560)	(1.759)	(4.248)	(-2.929)	(1.508)	(4.012)	(-2.827)
MV$_{i,t}$	0.181	-0.617	0.798*	0.269	-0.386	0.655	0.105	-0.952*	1.057*
	(0.664)	(-1.405)	(1.726)	(0.935)	(-0.801)	(1.250)	(0.320)	(-1.673)	(1.645)
OCF$_{i,t-1}$	-0.120	-1.354***	1.234**	-0.437	-1.255**	0.818	-0.406	-1.154**	0.748
	(-0.325)	(-2.614)	(2.194)	(-1.093)	(-2.274)	(1.277)	(-0.911)	(-1.994)	(1.049)
Auditor$_{i,t}$	-0.503	-1.037	0.534	-0.483	-0.813	0.330	-0.827	-0.024	-0.804
	(-0.844)	(-1.531)	(0.796)	(-0.790)	(-1.110)	(0.426)	(-1.363)	(-0.032)	(-0.995)

Table 5-7
(continued)

	Panel A. 5 years after IPO dependent variable			Panel B. 4 years after IPO dependent variable			Panel C. 3 years after IPO dependent variable		
Independent Variables	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**
$RD_{i,t-1}$	-0.102	-1.049	0.948	-0.010	-1.234	1.224	0.191	-1.024	1.215
	(-0.229)	(-1.022)	(0.914)	(-0.022)	(-0.939)	(0.903)	(0.388)	(-0.661)	(0.752)
Constant	-1.592	5.515*	-7.106**	-2.828	3.401	-6.229	-2.694	6.490	-9.185*
	(-0.742)	(1.686)	(-2.115)	(-1.261)	(0.936)	(-1.596)	(-1.063)	(1.557)	(-1.955)
χ^2	77.199***			85.091***			92.443***		
Pseudo_R^2	9.0%			9.7%			10.5%		
Obs	517			517			517		

This table provides the results for the multinomial logit regression model testing the association between *Pre_CSCORE* and the probability of survival, failure and being merged within five years of the IPO. *S* represents survivors, *M* merged and *N* involuntarily delisted. Panel A reports the results for IPO issuers that survive, are merged and involuntarily delisted within five years of the IPO and Panel B and C report the results for four and three years of the IPO, respectively. All accounting variables used in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 5-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 5-8: Multinomial Logit Regressions Testing the Association between *Post_CSCORE* and Post-IPO Status of IPO

	Panel A. 5 years after IPO dependent variable			Panel B. 4 years after IPO dependent variable			Panel C. 3 years after IPO dependent variable		
Independent Variables	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**
Post_CSCORE$_i$	-0.089	0.217	-0.305	-0.138	0.118	-0.256	0.065	0.004	0.061
	(-0.389)	(0.589)	(-0.817)	(-0.569)	(0.302)	(-0.621)	(0.238)	(0.009)	(0.120)
Deficit$_{i,t}$	-0.147	-0.284	0.137	-0.078	-0.115	0.037	-0.049	-0.047	-0.002
	(-0.942)	(-1.349)	(0.653)	(-0.493)	(-0.495)	(0.147)	(-0.285)	(-0.194)	(-0.008)
Age$_{i,t}$	-0.571***	-0.949***	0.378	-0.515**	-1.151***	0.636*	-0.435*	-1.079***	0.644
	(-2.851)	(-3.056)	(1.180)	(-2.385)	(-3.407)	(1.745)	(-1.807)	(-2.880)	(1.552)
Underwriter$_{i,t}$	0.008	-0.098*	0.106*	0.069	-0.047	0.116	0.067	-0.043	0.109
	(0.176)	(-1.725)	(1.709)	(1.338)	(-0.779)	(1.609)	(1.138)	(-0.633)	(1.312)
VC$_{i,t}$	0.139	-0.313	0.452*	0.196	-0.261	0.457	0.396**	-0.186	0.582*
	(0.885)	(-1.267)	(1.770)	(1.173)	(-0.975)	(1.604)	(2.115)	(-0.624)	(1.775)
Lev$_{i,t}$	1.183***	2.110***	-0.927*	1.001***	2.364***	-1.363***	1.202***	2.456***	-1.255**
	(3.335)	(4.418)	(-1.949)	(2.719)	(4.824)	(-2.613)	(3.017)	(4.850)	(-2.181)
Salesg$_{i,t}$	-0.004	-0.036	0.032	0.007	-0.053	0.061	0.009	-0.076	0.085
	(-0.215)	(-0.840)	(0.761)	(0.379)	(-1.104)	(1.245)	(0.419)	(-1.515)	(1.616)
MTB$_{i,t}$	-0.022**	-0.037	0.015	-0.023**	-0.041*	0.018	-0.020	-0.064**	0.044
	(-2.076)	(-1.641)	(0.677)	(-2.065)	(-1.774)	(0.754)	(-1.629)	(-2.383)	(1.563)
VOL$_{i,t}$	11.386***	24.745***	-13.359**	13.672***	30.506***	-16.835***	12.794***	34.645***	-21.851***
	(2.878)	(4.730)	(-2.510)	(3.301)	(5.753)	(-2.919)	(2.762)	(5.712)	(-3.162)
MV$_{i,t}$	0.218	-0.197	0.415	0.149	0.003	0.146	0.048	-0.286	0.334
	(1.231)	(-0.702)	(1.407)	(0.782)	(0.010)	(0.435)	(0.225)	(-0.832)	(0.868)
OCF$_{i,t}$	-0.650	-3.524***	2.874***	-0.433	-3.467***	3.034***	-0.252	-3.986***	3.735***
	(-1.372)	(-5.004)	(4.329)	(-0.898)	(-4.794)	(4.082)	(-0.485)	(-5.043)	(4.434)
Auditor$_{i,t}$	0.135	-0.407	0.542	0.127	-0.562	0.689	0.009	-0.589	0.598
	(0.354)	(-1.110)	(1.317)	(0.309)	(-1.439)	(1.436)	(0.019)	(-1.512)	(1.127)

Table 5-8
(continued)

	Panel A. 5 years after IPO dependent variable			Panel B. 4 years after IPO dependent variable			Panel C. 3 years after IPO dependent variable		
Independent Variables	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**	**$Log_e(P_M/P_S)$**	**$Log_e(P_N/P_S)$**	**$Log_e(P_M/P_N)$**
$RD_{i,t}$	-0.071	-2.987**	2.917**	-0.277	-2.377*	2.100	-0.861	-2.206	1.345
	(-0.089)	(-2.305)	(2.260)	(-0.333)	(-1.745)	(1.472)	(-0.940)	(-1.581)	(0.883)
Constant	-2.998**	0.025	-3.023	-3.344**	-2.404	-0.940	-3.197**	-0.856	-2.341
	(-2.361)	(0.012)	(-1.464)	(-2.466)	(-1.097)	(-0.400)	(-2.105)	(-0.348)	(-0.862)
χ^2	224.070***			228.015***			206.101***		
Pseudo_R^2	10.8%			10.9%			12.8%		
Obs	1278			1278			1278		

This table provides the results for the multinomial logit regression model testing the association between *Post_CSCORE* and the probability of survival, failure and being merged within five years of the IPO. *S* represents survivors, *M* merged and *N* involuntarily delisted. Panel A reports the results for IPO issuers that survive, are merged and involuntarily delisted within five years of the IPO and Panel B and C report the results for four and three years of the IPO, respectively. All accounting variables used in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency. A description of each variable is provided in Table 5-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 5-9: IPO Firms Making Acquisitions within Five Years of the IPO

Panel A. Acquisition within *n* years after IPO					
	1 year	2 years	3 years	4 years	5 years
No. of acquirers (cumulative)	116	186	248	299	339
percentage	*5%*	*7%*	*14%*	*19%*	*25%*
No. of Surviving IPOs	2307	2604	1777	1566	1375

Panel B. Yearly distribution of IPO firms' acquisitions		
IPO year	No of firms	Average time to acquire (No of days)
1990	12	638
1991	18	699
1992	33	1127
1993	33	805
1994	26	810
1995	32	798
1996	51	584
1997	31	451
1998	21	784
1999	23	623
2000	17	796
2001	1	1827
2002	4	566
2003	4	599
2004	14	703
2005	19	660
Total	339	

Sample firms consist of U.S. firms that went IPO during the period of 1990 – 2005. This chapter follows the IPOs that survived for five years at least after their IPO and thus the sample period covers 1990-2010. Panel A reports the number of IPO survivors that make acquisitions within five years of the IPO. Panel B provides the distribution of IPO acquirers by their IPO year.

Table 5-10: Descriptive Statistics

	Mean	Median	Stdev	5th percent	95 percent	*Obs*
Panel A. Pre-IPO Year Variable						
Pre_CSCORE	0.877	0.757	0.468	0.264	1.748	*101*
Size	17.459	17.326	1.704	14.802	20.590	339
Lev	0.672	0.651	0.320	0.203	1.168	*329*
OCF	-0.001	0.072	0.314	-0.641	0.324	*333*
WC	-0.027	0.018	0.315	-0.511	0.366	*309*
Panel B. IPO Year Variable						
Post_CSCORE	0.620	0.527	0.304	0.288	1.228	*329*
Size	18.422	18.352	1.301	16.472	20.975	*339*
Lev	0.352	0.312	0.213	0.079	0.788	*332*
OCF	0.024	0.050	0.140	-0.246	0.204	*334*
WC	0.497	0.202	1.526	-1.252	3.482	*302*
MV	8.250	8.224	0.515	7.378	9.061	*339*
MTB	5.880	3.366	9.742	1.329	17.591	*339*
PE	18.570	16.360	59.307	-59.239	112.898	*332*
Return	-0.002	-0.002	0.022	-0.036	0.038	*303*
Panel C. Acquisition Announcement Year Variable						
CAR	0.028	0.016	0.088	-0.088	0.199	*289*
C&I rate	0.019	0.019	0.002	0.016	0.024	*339*
Time_to_acquire	1.222	1.333	0.427	0.336	1.761	*339*
Tobin's q	2.637	1.896	2.392	0.915	6.747	*293*
Lev_acq	0.225	0.174	0.220	0.000	0.631	*293*
FCF	-0.032	0.028	0.175	-0.366	0.125	*293*
Runup	0.006	-0.032	0.416	-0.596	0.748	*305*
Rel_size	0.236	0.073	0.817	0.003	0.807	*213*
All_cash	0.206	0.000	0.405	0.000	1.000	*339*
Stock	0.065	0.000	0.247	0.000	1.000	*339*
Private	0.045	0.000	0.208	0.000	0.000	*287*
Diversify	0.664	1.000	0.473	0.000	1.000	*318*
Hightech	0.563	1.000	0.497	0.000	1.000	*318*

The variables provided in this table are used in the additional regression analysis testing the association between *CSCORE* and the probability of acquisition and the acquisition profitability. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1. Panel A presents the descriptive statistics of the pre-IPO year variables, Panel B the IPO year variables and Panel C the acquisition announcement year variables.

Table 5-11: Pearson Correlation Matrix for Regression Analysis Testing the Association between *Pre_CSCORE* and the Probability of Acquisition

	Pre_CSCORE_i	$C\&I\ rate_{i,t}$	$Return_{i,t}$	$WC_{i,t}$	$Lev_{i,t-1}$	$MTB_{i,t}$	$PE_{i,t}$	$OCF_{i,t-1}$
$C\&I\ rate_{i,t}$	0.410***							
$Return_{i,t}$	-0.130***	0.023						
$WC_{i,t}$	-0.169***	-0.045**	0.025					
$Lev_{i,t-1}$	0.065*	-0.048**	0.018	-0.010				
$MTB_{i,t}$	-0.020	0.017	0.019	-0.014	0.074***			
$PE_{i,t}$	-0.042	-0.032	0.047**	0.061***	-0.011	-0.020		
$OCF_{i,t-1}$	-0.170***	-0.032	0.020	0.136***	-0.053**	-0.068***	0.211***	
$Size_{i,t-1}$	-0.202***	0.239***	0.038*	0.337***	-0.021	-0.044**	0.023	0.361***

The accounting variables used for the *Pre_CSCORE* regression analysis are obtained from the pre-IPO fiscal year since *Pre_CSCORE* is also measured over the pre-IPO year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1.

Table 5-12: Pearson Correlation Matrix for Regression Analysis Testing the Association between *Post_CSCORE* and the Probability of Acquisition

	$Post\_CSCORE_i$	$C\&I\ rate_{i,t}$	$Return_{i,t}$	$WC_{i,t}$	$Lev_{i,t}$	$MTB_{i,t}$	$PE_{i,t}$	$OCF_{i,t}$
$C\&I\ rate_{i,t}$	0.243***							
$Return_{i,t}$	-0.037*	0.023						
$WC_{i,t}$	-0.196***	-0.045**	0.025					
$Lev_{i,t}$	-0.044**	-0.001	0.009	0.193***				
$MTB_{i,t}$	0.117***	0.017	0.019	-0.014	0.074***			
$PE_{i,t}$	-0.103***	-0.032	0.047**	0.061***	-0.004	-0.020		
$OCF_{i,t}$	-0.249***	0.045**	0.086***	0.107***	0.148***	-0.048**	0.188***	
$Size_{i,t}$	0.043**	0.264***	0.057***	0.254***	0.361***	-0.005	-0.005	0.304***

The accounting variables used for the *Post_CSCORE* regression analysis are obtained from the IPO fiscal year since *Post_CSCORE* is also measured over the IPO year. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1.

Table 5-13: Probit and Duration Regression Analysis Testing the Association between *CSCORE* and the Probability of Making Acquisitions within Five Years of the IPO

Panel A. Probit Model				Panel B. Cox Proportional Hazard Model		
	Model 1	**Model 2**			**Model 3**	**Model 4**
Pre_CSCORE$_i$	0.409***			***Pre_CSCORE$_i$***	0.576**	
	(2.621)				(2.368)	
Post_CSCORE$_i$		-0.198		***Post_CSCORE$_i$***		-0.260
		(-1.408)				(-1.115)
Size$_{i,t-1}$	0.143**			***Size$_{i,t-1}$***	0.240**	
	(2.520)				(2.533)	
Size$_{i,t}$		0.116***		***Size$_{i,t}$***		0.206***
		(2.702)				(2.860)
Lev$_{i,t-1}$	-0.313*			***Lev$_{i,t-1}$***	-0.523*	
	(-1.862)				(-1.708)	
Lev$_{i,t}$		0.324*		***Lev$_{i,t}$***		0.547*
		(1.691)				(1.719)
OCF$_{i,t-1}$	0.085			***OCF$_{i,t-1}$***	0.150	
	(0.448)				(0.415)	
OCF$_{i,t}$		1.216***		***OCF$_{i,t}$***		2.050***
		(4.811)				(4.563)
C&I rate$_{i,t}$	-86.387***	-19.579		***C&I rate$_{i,t}$***	-136.789***	-41.448
	(-2.829)	(-1.152)			(-2.617)	(-1.444)
Return$_{i,t}$	3.674	1.302		***Return$_{i,t}$***	5.599	1.509
	(1.497)	(0.800)			(1.314)	(0.540)
WC$_{i,t}$	0.032	-0.022		***WC$_{i,t}$***	0.038	-0.038
	(0.812)	(-0.796)			(0.604)	(-0.925)
MTB$_{i,t}$	0.003	0.012**		***MTB$_{i,t}$***	0.004*	0.018**
	(1.483)	(2.117)			(1.794)	(2.117)
PE$_{i,t}$	-0.000	-0.000		***PE$_{i,t}$***	0.000	-0.000
	(-0.035)	(-0.250)			(0.019)	(-0.132)
Constant	-2.162**	-2.776***				
	(-2.181)	(-3.869)				
χ^2	22.022***	65.073***		χ^2	25.363***	66.165***
Pseudo_R^2	4.0%	4.3%		***Log Likelihood***	-461.88	-1757.21
Obs	619	1656		***Obs***	619	1656

This table reports the regression results testing the association between *CSCORE* and the probability of acquisitions. Panel A provides the results for the probit regression model in which the dependent variable is *Acquisition* that equals one if the IPO firm makes acquisitions within five years of the IPO and otherwise zero. Panel B provides the results for the Cox Proportional hazard model. The dependent variable is the logarithm of the hazards ratio measured as the number of months from the IPO month to the acquisition announcement month or 60 months (five years), whichever is earlier for each IPO firm. All accounting variables used in the regression analysis are measured in the same period in which the conservatism (*CSCORE*) is measured for consistency .A description of each variable is provided in Table 5-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 5-14: Pearson Correlation Matrix for Regression Analysis Testing the Association between *CSCORE* and Acquisition Profitability

	Post_ CSCORE$_i$	***Tobin's q$_{i,t}$***	***Lev_acq$_{i,t}$***	***FCF$_{i,t}$***	***Runup$_{i,t}$***	***Rel_size$_{i,t}$***	***All_cash$_{i,t}$***	***Stock$_{i,t}$***	***Private$_{i,t}$***	***Diversify$_{i,t}$***	***Hightech$_{i,t}$***	***Pre_ CSCORE$_i$***
Tobin's q$_{i,t}$	-0.034											
Lev_acq$_{i,t}$	0.053	-0.218***										
FCF$_{i,t}$	-0.245***	0.066	-0.017									
Runup$_{i,t}$	-0.087*	0.377***	0.008	0.172***								
Rel_size$_{i,t}$	0.071	-0.120**	0.168***	-0.046	-0.096*							
All_cash$_{i,t}$	-0.036*	-0.022	-0.037	0.086*	0.012	-0.118**						
Stock$_{i,t}$	0.017	0.232***	-0.121***	-0.054	0.054	0.034	-0.025					
Private$_{i,t}$	0.010	0.018	-0.064	0.078	-0.017	0.036	0.060	-0.009				
Diversify$_{i,t}$	0.044	0.041	0.089**	-0.008	0.053	0.035	-0.008	-0.119***	0.005			
Hightech$_{i,t}$	0.225***	0.278***	-0.273***	-0.114**	-0.066	0.021	0.046	0.125***	0.024	-0.043		
Pre_ CSCORE$_i$	0.416***	0.041	-0.009	-0.184**	-0.114	0.203**	0.051	0.033	0.016	0.149**	0.290***	
MV$_{i,t}$	0.223***	0.103**	0.046	-0.074*	0.008	0.016	0.040*	0.007	0.019	0.104**	0.121***	0.067*

*** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles. A description of each variable is provided in Table 5-1.

Table 5-15. Regression Analysis Testing the Association between *CSCORE* and Acquisition Profitability

	Model 1	Model 2
Pre_CSCORE$_i$	0.029*	
	(1.715)	
Post_CSCORE$_i$		0.033**
		(2.072)
MV$_{i,t}$	-0.019	0.004
	(-1.315)	(0.394)
Tobin's q$_{i,t}$	0.001	-0.003
	(0.200)	(-1.249)
Lev_acq$_{i,t}$	-0.014	-0.015
	(-0.344)	(-0.638)
FCF$_{i,t}$	-0.026	0.027
	(-0.630)	(0.889)
Runup$_{i,t}$	-0.032	-0.012
	(-1.429)	(-0.885)
Rel_size$_{i,t}$	-0.002	0.002
	(-0.362)	(0.282)
All_cash$_{i,t}$	-0.024	-0.011
	(-1.467)	(-0.965)
Stock$_{i,t}$	-0.137**	-0.024
	(-2.567)	(-1.064)
Private$_{i,t}$	-0.005	-0.005
	(-0.066)	(-0.199)
Diversify$_{i,t}$	-0.005	-0.025**
	(-0.338)	(-2.269)
Hightech$_{i,t}$	-0.029	-0.023**
	(-1.493)	(-1.970)
Constant	0.203	0.018
	(1.660)	(0.214)
F-Stats	1.644*	1.886**
Adj. R^2	8.4%	3.7%
Obs	85	280

This table reports the regression results testing the association between *CSCORE* and the acquisition profitability. The dependent variable is three-day cumulative abnormal stock returns calculated using the CRSP value-weighted return as the market index .A description of each variable is provided in Table 5-1. *** indicates significance at 1%. **indicates significance at 5%. * indicates significance at 10%. All continuous variables are winsorized at the 1st and 99th percentiles.

Chapter Six

Conclusion

6.1 Summary of Findings

This thesis investigates whether IPO firms adopt a high degree of conservatism in response to investors' demand for high quality earnings and whether these firms subsequently experience stock market benefits in the post-issue market. The accounting literature suggests that conservative reporting policy can mitigate managerial opportunistic behavior by enforcing timely recognition of expected losses, thereby reducing information asymmetries between managers and outside investors (e.g., Watts 2002; LaFond & Watts 2008). This thesis hypothesizes that the benefits of conservatism should be more evident for IPO firms as there is inherently high information asymmetry in the IPO market due to the lack of publicly available information for outside investors. As a result, accounting information plays an important role in providing investors with information regarding a firm's past and expected future performance. Thus, the IPO environment provides an important research setting to investigate whether firms adopt a higher degree of conservatism in response to information asymmetry and whether the firms adopting higher conservatism experience various stock market benefits by providing investors with higher quality earning information.

Based on a large sample of U.S. common stock initial offerings during the period 1990 to 2010, this thesis investigates the extent to which accounting conservatism adopted by IPO firms significantly affects: (1) IPO underpricing and long-term stock return

performance, (2) the probability of seasoned equity issue (SEO) in the post-IPO market and the costs associated with the SEO, and (3) the longevity of IPO firms.

Chapter 3 examines changes in conservatism of IPO issuers and provides evidence that the conservatism measured in the pre-IPO year is significantly higher than that measured in the post-IPO periods. In addition, IPO issuers' conservatism is significantly higher than that of non-IPO performance matched firms both in the pre- and IPO year, suggesting that IPO firms adopt a more conservative reporting policy, on average, in response to high information asymmetry. Further, the results of Chapter 3 suggest that issuers' pre-IPO year conservatism is significantly and negatively associated with the degree of underpricing. However, this negative association holds only for issuers with high information asymmetry, suggesting that the benefit of adopting higher conservatism, namely a lower indirect cost of issuing the IPO, appears to exist only for issuers suffering from high information asymmetry. Moreover, this result also indicates that the extent to which conservatism affects IPO underpricing also depends on the level of information asymmetry a firm is exposed to.

An analysis of IPO stock return performance is also provided in Chapter 3. When firms are divided into four groups depending on the extent of their conservatism measured in the pre-IPO and IPO year, *Conservative to Conservative*, *Conservative to Aggressive*, *Aggressive to Conservative* and *Aggressive to Aggressive*, the result suggests that firms reporting less conservatively in the pre-IPO year, but more conservatively in the IPO year (*Aggressive to Conservative* group) perform significantly better in the stock market over five years of return windows. This result is consistent across alternative return measurements. This thesis hypothesized that firms adopting a higher degree of

conservatism would show better stock return performance as investors reward firms providing higher quality accounting information, forgoing managerial incentives associated with reporting higher earnings when there is higher information asymmetry. However, the result indicates that issuers adopting higher conservatism in the pre-IPO year do not perform well in the post-issue stock market, while those reporting more conservatively in the IPO year outperform those with lower conservatism. This result may indicate that IPO firms adopt a higher degree of conservatism for different reporting incentives in the pre-IPO year. For instance, firms expecting poor performance in the after-market may adopt a higher degree of conservatism prior to going public to protect themselves from potential litigation after the issue. In such cases, equity investors would not necessarily reward these firms for adopting higher conservatism.

Chapter 4 investigates whether IPO firms adopting a higher degree of conservatism are more likely to reissue equity soon after their IPO on more favorable terms. The result suggests that issuers adopting a higher degree of conservatism are less likely to reissue equity within five years of the IPO. This finding suggests that these issuers do not have short-term cash needs after their IPO. To test whether issuers with higher conservatism are less likely to raise cash again soon after their IPO, this chapter also investigates the association between conservatism and the probability of divesting assets. The results indicate that conservatism is not significantly associated with the divestiture probability, supporting the view that IPO firms adopting higher conservatism do not have short-term cash needs soon after their IPO. Findings of this chapter also suggest that the pre-IPO year conservatism is significantly and positively associated with the SEO announcement returns, showing that firms adopting a higher degree of conservatism

prior to going public experience less negative announcement returns for their next seasoned equity financing within five years of their IPO. However, conservatism measured in the IPO year and the year prior to the SEO announcement are not significantly associated with SEO announcement returns.

Chapter 4 also examines whether issuers' conservatism is significantly associated with SEO underpricing. The result indicates that the pre-IPO year conservatism is significantly and negatively associated with the degree of SEO underpricing. Further, the analysis of post-SEO stock return performance provides weak evidence that firms adopting a higher degree of conservatism in the pre-IPO year tend to perform better in the post-SEO market. Finally, chapter 4 investigates whether the positive effect of IPO issuers' conservatism on SEO announcement returns and SEO underpricing significantly changes depending on issuers' level of information asymmetry. The results indicate that information asymmetry does not significantly affect these associations. Taken together, the results of Chapter 4 suggest that issuers adopting a higher degree of conservatism prior to going public raise their next equity finance on more favorable terms soon after their IPO and issuers experience such benefits regardless of the extent of the information asymmetry.

Chapter 5 provides the longevity analysis of IPO firms. The results from the Cox Proportional Hazard model indicate that firms adopting a higher degree of conservatism in the pre-IPO year face less risk of failure and survive longer in the stock market. Multinomial logit regressions are also employed to examine whether IPO issuers' conservatism can predict the probability of getting delisted due to involuntary delistings or being a takeover target within five years of their IPO. The results indicate that the

surviving IPO issuers are more likely to adopt higher conservatism in the pre-IPO year relative to those that are involuntarily delisted. Additionally, firms who are delisted as a takeover target are more likely to adopt a higher degree of conservatism in the pre-IPO year relative to those that are involuntarily delisted. However, IPO year conservatism fails to predict survival rates. Chapter 5 also investigates whether firms adopting a higher degree of conservatism are more likely to acquire another entity within five years of their IPO. The results suggest that firms adopting a higher degree of conservatism in the pre-IPO year are more likely to acquire another firm and gain higher acquisition announcement returns within five years of their IPO. This finding could indicate that firms adopting a higher degree of conservatism in the pre-IPO year demonstrate higher survival rates as a large portion of these firms choose to go public to make efficient acquisitions as a public firm in the post-IPO market.

Prior research on IPOs suggests that firms have a specific motive for going public (see Jain & Kini 1999). One potential explanation as to why firms go public is that firms with high growth prospects go public to finance investments and to achieve expansion by acquiring other entities (Brau & Fawcett 2006; Celikyurt *et al.* 2010). Another potential explanation for going public is that entrepreneurs who see performance declines in their investments seek to divest their holdings through an IPO prior to failure (see Jain & Kini 1999). Accordingly, studies on IPO failure report that about one third of IPO firms, on average, are delisted within five years of their IPO (e.g., Fama and French 2004; Jain & Kini 2008, 1999). However, previous studies also document that 17% to 37% of their IPO sample firms are delisted as they are acquired within five years of their IPO (e.g., Audretsch & Lehmann 2007; Jain & Kini 2008, 1999; Mikkelson *et al.* 1997). As a consequence, if an issuer has one of the aforementioned

motives for its public offering decision, it is more likely to be able to predict its post-IPO outcome prior to going public. IPOs involve raising capital from outside investors for a firm which was previously private (Jog & McConomy 2003). Consequently, IPO issuers with good earnings potential and growth prospects will recognize the importance of their long-term prospects in the stock market and thus have more incentive to provide higher quality earnings to credibly signal their credentials to the IPO market prior to going public. This can suggest that the pre-IPO earnings information provided by issuers can convey important information about the quality of an IPO. Consistent with this argument, the evidence of this thesis suggests that issuers providing higher quality earnings information by adopting a more conservative reporting policy in the pre-IPO year survive longer in the stock market, and issue their seasoned equity offerings and acquire another entity after their IPO on more favorable terms. In conclusion, the findings of this thesis support the view that pre-IPO accounting information has direct relevance in predicting the post-IPO status and performance of the issuing firm.

6.2. Contribution and Implications

This thesis makes a significant contribution to the literature on accounting conservatism by providing empirical evidence that firms adopting a higher degree of conservatism experience various benefits that capital markets offer in response to less uncertainty and less information asymmetry. These findings also have an important implication for accounting standard setters, policy makers and regulators associated with the IPO market by suggesting that accounting conservatism can contribute to resolving information asymmetry problems in the IPO market.

The majority of past research studying the stock return performance of IPO firms, notably Teoh *et al.* (1998a), has attributed the significant underperformance of IPO firms to earnings management. However, more recent studies suggest that IPO firms do not engage in earnings management. In fact, Ball and Shivakumar (2008) find evidence that U.K. firms report earnings more conservatively before they go public due to higher monitoring by different parties, such as auditors, boards, analysts, rating agencies, the press and litigants. Venkataraman *et al.* (2008) also find that pre-IPO accruals tend to be negative and less than IPO year accruals. These studies call into question the validity of discretionary accrual estimates used to measure earnings management by IPO firms. Consequently, this thesis supports the view of Ball and Shivakumar (2008) and Venkataraman *et al.* (2008) by providing further evidence that U.S. IPO issuers report earnings more conservatively, on average, prior to going public. In particular, the results of this thesis suggest that IPO issuers choose to adopt a more conservative reporting policy in response to high information asymmetry, despite there being greater incentives associated with reporting higher earnings before they go public.

The results of this thesis also suggest that IPO firms adopting a higher degree of conservatism prior to going public experience various stock market benefits, such as lower IPO underpricing, less negative SEO announcement returns, lower SEO underpricing, higher survival rates and more profitable acquisitions. These findings all indicate that the stock market benefits of adopting a higher degree of conservatism prior to going public are long-term benefits that do not disappear soon after the IPO. Conservative reporting policy is costly because managers have incentives to report positive financial results to increase their compensation and enhance their reputations for their job security. In particular, for IPO firms, managers have greater incentives to

opportunistically manage earnings upward prior to going public to positively affect offer price. However, this thesis provides empirical evidence that IPO firms adopting a higher degree of conservatism, forgoing managerial incentives associated with reporting better financial results, gain various long-term stock market benefits. Consequently, this thesis suggests that benefits associated with adopting a more conservative policy prior to going public significantly outweigh the costs associated with reporting reduced earnings under conservatism.

The FASB removed conservatism as a qualitative characteristic of financial reporting in 2010 because they argue that conservatism is inconsistent with neutrality. Contrary to the view of the FASB and the IASB that conservatism biases accounting numbers and compromises financial reporting quality, the findings of this thesis suggest that conservatism reduces information asymmetry by providing outside investors with higher quality accounting information, thereby enabling firms to gain various stock market benefits in the IPO market. Accordingly, this thesis suggests that in the absence of conservatism, information quality of financial statements may be jeopardized in the IPO environment, leading to higher information asymmetry between firm insiders and outside investors. Thus, this thesis raises the alarm in support of the proponents of conservatism who urge that accounting standard setters and policy makers may need to consider the costs of avoiding conservatism, especially when investors have significantly less information available to them than do the managers of firms.

6.3. Potential Limitations

Givoly *et al.* (2007) advise that when measuring conservatism, a single measure of conservatism should not be used. They argue that conservative reporting is driven by the firm's overall reporting system and using one measure of conservatism leads to only focusing on one of many different features. As a result, this will not provide an accurate assessment of the overall degree of conservatism exhibited by the reporting entity. Therefore, they suggest that multiple measures of conservatism should be used to fully capture the overall reporting conservatism of the firm. However, due to the lack of market data available for IPO firms, in particular in the pre-IPO fiscal year, as discussed in Section 3.3.1 of the thesis, this thesis employs a single measure of accounting conservatism based on the modified Ball and Shivakumar's (2005) asymmetric accruals to cash-flow measure. However, unlike Basu's (1997) asymmetric timeliness of earnings measure that has recently been criticized in terms of its construct validity and econometric properties (see Dietrich *et al.* 2007; Givoly *et al.* 2007), no study has yet reported potential estimation error for the Ball and Shivakumar's (2005) measure. Furthermore, potential estimation issues associated with a single measure of conservatism is inherent in any conservatism research being conducted in the setting where the market data is not readily available, such as private and IPO firms.

This thesis also recognizes that it cannot be ruled out that the alternative explanation that *CSCOREs* estimated in this thesis may proxy for other important factors than conservatism such as governance mechanisms that may have a direct effect on IPO firms and lead to better post-IPO outcomes.

6.4. Suggestions for Further Research

Future research could investigate the association between conservatism and earnings management. It is often mistakenly thought that conservatism and earnings management have a mirror effect. For instance, one may expect that firms reporting earnings aggressively using high levels of discretionary accruals may be considered to be adopting a less conservative policy. However, the association between conservatism and earnings management represents an empirical question because firms adopting a low degree of conservatism are not necessarily managing earnings. Similarly, firms managing earnings downward via big bath charges are not necessarily adopting a conservative accounting policy. Previous studies document that conservatism and earnings management are different reporting attributes and need to be discriminated (see Givoly & Hayn 2000; Watts 2002). This is because discretionary accruals used to manipulate earnings upward or downward have to be reversed out in the near future, while conservatism is a firm characteristic that is fixed over a fairly long period of time. In particular, as discussed above, prior research on earnings management and conservatism provides different empirical results on IPO studies. For instance, the earnings management literature suggests that IPO firms manage their earnings upward to positively affect their initial price (e.g., Teoh *et al.* 1998a; Teoh *et al.* 1998c). However, the conservatism research literature provides evidence that firms report their earnings more conservatively prior to going public (see Ball & Shivakumar 2008; Venkataraman *et al.* 2008). Therefore, it would be interesting to examine how the extent of conservatism is associated with earnings management and whether conservatism reduces the probability of earnings management.

Future research could also investigate whether conservatism achieves efficient contracting that provides optimal compensation for managers, aligning managerial incentives with those of shareholders. Conservatism affects accounting measures used in management compensation and employment contracts. Prior research suggests that conservatism improves contracting efficiencies by enforcing more stringent rules required for potentially favorable information that can cause positive bias to management compensation (see e.g., Ahmed *et al.* 2002; Watts 2002). Specifically, firms can prevent over-payments to managers and improve the efficiency of managerial compensation by adopting a more conservative reporting policy that reduces the reported amounts of net assets and earnings. However, no study thus far has examined whether conservatism also results in management compensation contracting that provides sufficient incentives for management. Reducing potential over-payment for managers does not solely guarantee efficient compensation for contracting purposes. Thus, future research could investigate whether conservatism leads to optimal compensation that can achieve efficient contracting for managers.

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Appendix I

Measure of Accounting Conservatism by Khan and Watts (2009)

Basu's (1997) asymmetric timeliness measure is as follows;

$$X_i = \alpha_0 + \alpha_1 D_i + \beta_1 R_i + \beta_2 D_i * R_i + e_i \quad (1)$$

where X_i is earnings, R_i is stock returns, D_i is a dummy variable equal to one when $R<0$ and equal to zero otherwise, and e_i is the residual.

Khan and Watts (2009) modify Basu's model to estimate a firm-year measure of conservatism. They assume that the asymmetric timeliness of gains versus losses is a linear function of firm-specific characteristics each year: firm size (*size*), the market-to-book ratio (*MTB*) and firm leverage (*Lev*). Accordingly, three variables are incorporated into Basu's (1997) regression model to estimate the conservatism expected for a given level of *size*, *MTB* and *Lev*. The following equation is Khan and Watts's annual cross-sectional regression model:

$$X_i = \alpha_0 + \alpha_1 D_i + R_i (\mu_1 + \mu_2 size_i + \mu_3 MTB_i + \mu_4 Lev_i) + D_i * R_i (\lambda_1 + \lambda_2 size_i + \lambda_3 MTB_i + \lambda_4 Lev_i) + (\delta_1 size_i + \delta_2 MTB_i + \delta_3 Lev_i + \delta_4 Di * size_i + \delta_5 D_i * MTB_i + \delta_6 D_i * Lev_i) + e_i \quad (2)$$

Appendix II

Variance Inflation Factor Analysis for the Regressions Provided in Chapter 3

Appendix II-I: Variance Inflation Factor for the Regression Examining Changes in *CSCORE*

Variable	VIF
$Size_{i,t-1}$	1.87
$Underwriter_i$	1.52
Age_i	1.32
$RE_{i,t-1}$	1.30
$Volatility_i$	1.28
$Lev_{i,t-1}$	1.19
$Auditor_i$	1.18
$Inv\_cycle_{i,t-1}$	1.13
MTB_i	1.07
VC_Rep_i	1.01
Mean VIF	1.29

A description of each variable is provided in Table 3-2.

Appendix II-II: Variance Inflation Factor for the Regression Testing the Effect of Conservatism on IPO Underpricing

Variable	VIF
$Offersize_i$	1.71
$Underwriter_i$	1.69
Age_i	1.29
$Volatility_i$	1.29
$Auditor_i$	1.24
$Nasdaq_i$	1.23
$ROA_{i,t-1}$	1.22
$Lev_{i,t-1}$	1.12
Pre_CSCORE_i	1.11
$Integer_i$	1.08
VC_Rep_i	1.02
Mean VIF	1.27

A description of each variable is provided in Table 3-2.

Appendix II-III: Variance Inflation Factor for the Return Regressions with *Pre_CSCORE* and *Post_CSCORE*

Panel A. *Pre_CSCORE* Model		**Panel B. *Post_CSCORE* Model**	
Variable	VIF	Variable	VIF
Pre_CSCORE_i	1.14	$Post\_CSCORE_i$	1.42
$Cash_{i,\ t-1}$	1.73	$Cash_{i,\ t}$	1.89
$RD_{i,\ t-1}$	1.58	$RD_{i,\ t}$	1.66
$Underwriter_{\mathrm{i}}$	1.29	$Underwriter_{\mathrm{i}}$	1.33
Age_i	1.22	Age_i	1.19
$\Delta Assets_{i,\ t-1}$	1.20	$\Delta Assets_{i,\ t}$	1.38
$Underpricing_{\mathrm{i}}$	1.11	$Underpricing_{\mathrm{i}}$	1.07
Mean VIF	1.26	Mean VIF	1.33

A description of each variable is provided in Table 3-2.

Appendix III

Regression Analysis Testing the Effect of Conservatism on IPO Underpricing

	Firms with High Information Asymmetry				Firms with Low Information Asymmetry			
	Volatility		Bid-Ask		Volatility		Bid-Ask	
Independent Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Pre_CSCORE$_i$	-0.155**	-0.156**	-0.162***	-0.162***	-0.006	-0.006	-0.007	-0.008
	(-2.385)	(-2.397)	(-2.635)	(-2.637)	(-0.440)	(-0.439)	(-0.515)	(-0.565)
Integer$_{i,t}$	-0.123***	-0.127***	-0.119***	-0.120***	0.009	0.009	-0.010	-0.010
	(-3.007)	(-3.070)	(-2.870)	(-2.888)	(0.602)	(0.604)	(-0.619)	(-0.637)
Offersize$_{i,t}$	0.180***	0.188***	0.190***	0.192***	0.029**	0.028***	0.028**	0.031***
	(3.403)	(4.094)	(3.480)	(4.040)	(2.517)	(3.023)	(2.416)	(3.075)
Age$_{i,t}$	-0.227**	-0.228**	-0.199**	-0.200**	-0.038**	-0.038**	-0.049***	-0.049***
	(-2.503)	(-2.530)	(-2.115)	(-2.136)	(-2.242)	(-2.245)	(-2.906)	(-2.878)
Lev$_{i,t-1}$	-0.124	-0.128*	-0.136*	-0.137*	0.011	0.011	0.023	0.022
	(-1.613)	(-1.677)	(-1.738)	(-1.776)	(0.486)	(0.495)	(1.074)	(1.032)
ROA$_{i,t-1}$	0.005	0.005	-0.003	-0.003	0.006	0.006	0.026	0.027
	(0.117)	(0.112)	(-0.063)	(-0.065)	(0.221)	(0.218)	(0.995)	(1.047)
Nasdaq$_{i,t}$	0.011	0.014	-0.054	-0.053	0.052***	0.052***	0.047***	0.048***
	(0.147)	(0.182)	(-0.575)	(-0.567)	(3.251)	(3.266)	(2.879)	(2.925)
Volatility$_{i,t}$	6.257***	6.259***	6.287***	6.288***	3.320***	3.318***	2.759***	2.766***
	(4.207)	(4.212)	(4.370)	(4.379)	(4.411)	(4.390)	(3.702)	(3.704)
Underwriter$_{i,t}$	0.007		0.002		-0.000		0.004	
	(0.423)		(0.125)		(-0.070)		(0.831)	
VC_Rep$_{i,t}$	-0.324	-0.329	-0.360	-0.362	0.195**	0.195**	0.201**	0.202**
	(-1.088)	(-1.121)	(-1.230)	(-1.253)	(2.326)	(2.324)	(2.353)	(2.423)
Auditor$_{i,t}$	0.006	0.018	0.079	0.082	0.039*	0.039	-0.035	-0.029
	(0.069)	(0.215)	(0.879)	(0.958)	(1.685)	(1.606)	(-1.025)	(-0.852)
Constant	-2.788***	-2.876***	-2.922***	-2.949***	-0.522***	-0.518***	-0.444**	-0.485***
	(-3.407)	(-3.898)	(-3.480)	(-3.892)	(-2.884)	(-3.172)	(-2.374)	(-2.702)
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Industry Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
F-Stats	8.885***	9.144***	7.782***	8.352***	3.876***	4.052***	2.899***	3.125***
Adj. R^2	23.6%	23.6%	24.0%	24.0%	15.0%	15.0%	13.2%	13.1%
Obs	449	449	447	447	361	361	363	363

The dependent variable *Underpricing* is measured as the first day closing price divided by the final offer price, minus 1. Sample firms are divided into high and low information asymmetry groups based on the stock return volatility and bid-ask spread measured over the entire IPO fiscal year. A description of independent variables is provided in Table 3-2. *** indicates significance at 1%. ** indicates significance at 5%. * indicates significance at 10%.

Appendix IV

Variance Inflation Factor Analysis for the Regressions Provided in Chapter 4

Appendix IV-I: Variance Inflation Factor for Regression Analysis of *PreCSCORE_IPO* and the Probability of Issuing a SEO

Variable	VIF
$PreCSCORE\_IPO_i$	1.76
$Cash_{i,t-1}$	1.53
$IPO\_Underpricing_i$	1.45
$Tobin's\ q_{i,t}$	1.38
$Age_{i,t}$	1.26
$Lev_{i,t-1}$	1.24
$IPO20\_stock_i$	1.18
$IPO\_Underwriter_i$	1.18
Mean VIF	1.32

A description of each variable is provided in Table 4-1.

Appendix IV-II: Variance Inflation Factor for Regression Analysis of *PostCSCORE_IPO* and the Probability of Issuing a SEO

Variable	VIF
$PostCSCORE\_IPO_i$	1.72
$Tobin's\ q_{i,t}$	1.58
$Lev_{i,t}$	1.44
$IPO\_Underpricing_i$	1.41
$Cash_{i,t}$	1.40
$IPO20\_stock_i$	1.24
$Age_{i,t}$	1.18
$IPO\_Underwriter_i$	1.08
Mean VIF	1.28

A description of each variable is provided in Table 4-1.

Appendix IV-III: Variance Inflation Factor for *PreCSCORE_IPO* and SEO Announcement Returns Regression

Variable	VIF
$PreCSCORE\_IPO_i$	1.07
$Volatility\_Ann_i$	1.70
$Runup_i$	1.51
$IPO\_Underpricing_i$	1.51
$Relsize_i$	1.34
$Mrunup_i$	1.20
$Time\_IPO_i$	1.18
$SEO\_Underwriter_i$	1.16
Mean VIF	1.23

A description of each variable is provided in Table 4-1.

Appendix IV-IV: Variance Inflation Factor for *PostCSCORE_IPO* and SEO Announcement Returns Regression

Variable	VIF
$PostCSCORE\_IPO_i$	1.13
$Volatility\_Ann_i$	1.50
$Runup_i$	1.48
$Mrunup_i$	1.21
$IPO\_Underpricing_i$	1.14
$Relsize_i$	1.11
$SEO\_Underwriter_i$	1.06
$Time\_IPO_i$	1.04
Mean VIF	1.17

A description of each variable is provided in Table 4-1.

Appendix IV-V: Variance Inflation Factor for *AnnCSCORE_SEO* and SEO Announcement Returns Regression

Variable	VIF
$AnnCSCORE\_SEO_i$	1.19
$Volatility\_Ann_i$	1.41
$Runup_i$	1.41
$IPO\_Underpricing_i$	1.10
$Relsize_i$	1.06
$Mrunup_i$	1.19
$Time\_IPO_i$	1.05
$SEO\_Underwriter_i$	1.02
Mean VIF	1.18

A description of each variable is provided in Table 4-1.

Appendix IV-VI: Variance Inflation Factor for *PreCSCORE_IPO* and SEO Underpricing Regression

Variable	VIF
PreCSCORE_IPO$_i$	1.15
Volatility_Issue$_i$	1.90
Relsize$_i$	1.58
AVR_Underpricing$_i$	1.57
MV_SEO$_i$	1.50
NYSE$_i$	1.48
CAR_6months$_i$	1.30
SEO_Underwriter$_i$	1.23
Mean VIF	1.30

A description of each variable is provided in Table 4-1.

Appendix IV-VII: Variance Inflation Factor for *PostCSCORE_IPO* and SEO Underpricing Regression

Variable	VIF
PostCSCORE_IPOi	1.19
Volatility_Issue$_i$	1.41
Relsize$_i$	1.21
AVR_Underpricing$_i$	1.24
MV_SEO$_i$	1.69
NYSE$_i$	1.37
CAR_6months$_i$	1.26
SEO_Underwriter$_i$	1.30
Mean VIF	1.25

A description of each variable is provided in Table 4-1.

Appendix IV-VIII: Variance Inflation Factor for *IssCSCORE_SEO* and SEO Underpricing Regression

Variable	VIF
IssCSCORE_SEO$_i$	1.16
Volatility_Issue$_i$	1.49
Relsize$_i$	1.12
AVR_Underpricing$_i$	1.15
MV_SEO$_i$	1.59
NYSE$_i$	1.32
CAR_6months$_i$	1.24
SEO_Underwriter$_i$	1.34
Mean VIF	1.28

A description of each variable is provided in Table 4-1.

Appendix IV-IX: Variance Inflation Factor for *PreCSCORE_IPO* and SEO Long-term Stock Returns Regression

Variable	VIF
$PreCSCORE\_IPO_i$	1.10
$Cash\_SEO_i$	1.72
$R\&D_i$	1.60
Age_i	1.54
$Asset\_growth_i$	1.30
MV_SEO_i	1.16
$SEO\_Underpricing_i$	1.06
Mean VIF	1.31

A description of each variable is provided in Table 4-1

Appendix IV- X: Variance Inflation Factor for *PostCSCORE_IPO* and SEO Long-term Stock Returns Regression

Variable	VIF
$PostCSCORE\_IPO_i$	1.12
$Cash\_SEO_i$	1.72
$R\&D_i$	1.63
Age_i	1.26
$Asset\_growth_i$	1.22
MV_SEO_i	1.12
$SEO\_Underpricing_i$	1.04
Mean VIF	1.27

A description of each variable is provided in Table 4-1

Appendix IV-XI: Variance Inflation Factor for *IssCSCORE_SEO* and SEO Long-term Stock Returns Regression

Variable	VIF
$IssCSCORE\_SEO_i$	1.06
$Cash\_SEO_i$	1.52
$R\&D_i$	1.38
Age_i	1.23
$Asset\_growth_i$	1.17
MV_SEO_i	1.09
$SEO\_Underpricing_i$	1.01
Mean VIF	1.21

A description of each variable is provided in Table 4-1.

Appendix V

Variance Inflation Factor Analysis for the Regressions Provided in Chapter 5

Appendix V-I: Variance Inflation Factor Analysis for the Regressions Testing the Association between Conservatism and the Longevity of IPOs

Panel A. *Pre_CSCORE* analysis			**Panel B. *Post_CSCORE* analysis**	
Variable	**VIF**		**Variable**	**VIF**
Pre_CSCORE_i	1.24		$Post\_CSCORE_i$	1.58
$Cash_{i,t-1}$	1.83		$Cash_{i,t}$	1.56
$Salesg_{i,t-1}$	1.24		$Salesg_{i,t}$	1.22
$Lev_{i,t-1}$	1.20		$Lev_{i,t}$	1.29
$RE_{i,t-1}$	1.52		$RE_{i,t}$	1.48
$RD_{i,t-1}$	1.55		$RD_{i,t}$	1.35
Age_i	1.29		Age_i	1.27
MV_i	1.62		MV_i	2.15
MTB_i	1.18		MTB_i	1.18
VOL_i	1.35		VOL_i	1.65
$Underwriter_i$	1.51		$Underwriter_i$	1.91
VC_i	1.45		VC_i	1.43
$Auditor_i$	1.08		$Auditor_i$	1.12
Mean VIF	1.39		**Mean VIF**	1.48

A description of each variable is provided in Table 5-1.

Appendix V-II: Variance Inflation Factor Analysis for the Regressions Testing the Association between Conservatism and the Acquisition probability

Panel A. *Pre_CSCORE* analysis			Panel B. *Post_CSCORE* analysis	
Variable	**VIF**		**Variable**	**VIF**
Pre_CSCORE_t	1.46		$Post\_CSCORE_i$	1.25
$Size_{i,t-1}$	1.65		$Size_{i,t}$	1.42
$Lev_{i,t-1}$	1.09		$Lev_{i,t}$	1.15
$Cash_{i,t-1}$	1.27		$Cash_{i,t}$	1.25
$C\&I\ rate_i$	1.49		$C\&I\ rate_i$	1.14
WC_i	1.23		WC_i	1.17
PE_i	1.04		PE_i	1.05
$Return_i$	1.06		$Return_i$	1.02
MTB_i	1.03		MTB_i	1.03
Mean VIF	1.26		**Mean VIF**	1.17

A description of each variable is provided in Table 5-1.

Appendix V-III: Variance Inflation Factor Analysis for the Regressions Testing the Association between Conservatism and Acquisition Announcement Returns

Panel A. *Pre_CSCORE* analysis			Panel B. *Post_CSCORE* analysis	
Variable	**VIF**		**Variable**	**VIF**
Pre_CSCORE_i	1.37		$Post\_CSCORE_i$	1.15
MV_i	1.09		MV_i	1.12
$Tobin's\ q_i$	1.45		$Tobin's\ q_i$	1.48
Lev_acq_i	1.45		Lev_acq_i	1.19
FCF_i	1.20		FCF_i	1.08
$Runup_i$	1.40		$Runup_i$	1.25
Rel_size_i	1.28		Rel_size_i	1.08
All_cash_i	1.20		All_cash_i	1.08
$Stock_i$	1.21		$Stock_i$	1.12
$Private_i$	1.07		$Private_i$	1.01
$Diversify_i$	1.11		$Diversify_i$	1.05
$Hightech_i$	1.61		$Hightech_i$	1.28
Mean VIF	1.29		**Mean VIF**	1.16

A description of each variable is provided in Table 5-1.