ESSAYS ON THE IMPACT OF REGULATORY CHANGES

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A Thesis

in

John Molson School of Business

Presented in Partial Fulfillment of the Requirements

For the Degree of

Doctor of Philosophy at

Concordia University

Montreal, Quebec, Canada

March 2013

CONCORDIA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

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Entitled: **Essays on the Impact of Regulatory Changes**

and submitted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY (Business Administration)

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ABSTRACT

ESSAYS ON THE IMPACT OF REGULATORY CHANGES

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In the first essay, we study the information content of Form 4 filings under the stricter disclosure regulations introduced by the Sarbanes-Oxley Act (SOX) of 2002, by examining the abnormal returns around the filing date. Our results show that for both the purchase and sale samples, the information content of the filings has improved significantly between the pre- and post- SOX periods. We also find that progressive regulatory changes and the increased uncertainty in the market in recent years as a result of the credit crunch in 2008 have made insider transactions more informative. Our results also show that the rank of the insider (CEO, CFO, etc.) has the most influence in explaining the abnormal returns. Finally, in cross-sectional tests, we find that the information content of the filings is stronger for firms with more information asymmetry. Overall, we report that the more timely filing requirement introduced by SOX has been beneficial for investors, particularly for firms with higher levels of information asymmetry.

In the second essay, we examine the effects of the Sarbanes-Oxley Act (SOX) of 2002 on the short and long-run performance of corporate acquisitions. Using a large sample of tender offers between 1996 and 2009, we find that the proportion of value maximizing acquisitions increased after the passage of SOX. The price run-up and the intensity of insider trading prior to the announcement in the target firms have substantially decreased after the Act. Using industry and matched firm portfolios, we also find that both the operating performance and buy-and-hold abnormal returns over the three and five year post-acquisition period improved significantly after SOX.

In the final essay, we examine the effects of Ontario Bill-198 (CSOX-2003), the strictest corporate law in Canada. Despite some drawbacks, we find the Act has added significant value contrary to many practitioners' beliefs. Using a large sample of Canadian tender offers between 1996 and 2009, we find that both target and acquirer shareholders experience higher abnormal returns closer to announcement dates in the post CSOX period. Using industry adjusted portfolio, we also find that the long term post-acquisition operating performances for the acquiring firms have significantly improved in the post-Act period. Overall, our results suggest that CSOX has an incremental positive impact on Canadian acquisition activity.

ACKNOWLEDGEMENTS

I would like to first extend my gratitude to my supervisor Dr. Harjeet Bhabra. I would not be where I am without his patience, tireless guidance and invaluable advices. He has turned me from a doctoral student to an academician. He has trained me to be a researcher, a teacher, above all, a better human being. As doctoral students, we go through ups and downs during our tenure, and he was always there for me. Without his support, guidance, and encouragement, I could not have finished this dissertation.

I would also like to thank my committee members Dr. Sandra Betton and Dr. Adolfo DeMotta, for their guidance and invaluable feedbacks on earlier drafts of this thesis. I would additionally like to thank Yaxuan Qi, Fred Davis, Rahul Ravi, and Scott Linn for their valuable comments on earlier version of the thesis. Their critical comments have greatly contributed to the quality of the final version.

Special thanks go to my long time office mate Ali Boloorforoosh. He is a great friend, and above all a great motivation for me. He has been always a helpful friend, both socially and intellectually.

My long-term debt is to my wife, Habiba Zaman. She not only motivated me to work harder to finish my thesis but also provided research assistance on data formulation. She always supported me during the down times, and helped me climb the mountain of finishing a doctoral dissertation.

Finally, this section will not be fulfilled if I do not mention the name of the person who motivated me to undertake doctoral education, and he is Dr. Dilip Shome of Virginia Tech.

All remaining errors in this thesis are, of course, solely my responsibility.

DEDICATION

To Didi (my maternal grandmother, a school teacher herself) who taught me 'ABCD' and encouraged me all my life to study hard, and get the highest degree in the discipline.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1 - Introduction

We know the century old saying that "prevention is better than cure", but unfortunately that is not the path that politicians would like to follow in Washington. The collapse of Enron Corp. and WorldCom Inc. in the early 2000s not only resulted in the loss of billions of dollars for investors but also eroded their confidence in the efficacy of existing market regulations. In the immediate aftermath of these major financial disasters, the United States Congress passed the Sarbanes-Oxley Act (SOX) in 2002. By any measure, SOX has been one of the most comprehensive regulatory changes in the United States since the 1930s. Its many criticisms notwithstanding, SOX has introduced sweeping reforms in corporate governance, reporting standards and disclosure requirements.

This dissertation is organized in the form of three-essay format. The first essay studies how has the information content of insider trading transactions changed under the stricter disclosure regulations introduced by the Sarbanes-Oxley Act (SOX) in 2002. The results show that under the new regime, insider trades have become more informative. Among the various factors, the rank of the insider appears to be the consistent and single most important factor in explaining the market's response to such trades. This paper also finds that SOX was particularly beneficial for firms with higher levels of information asymmetry.

The second essay builds on the findings in the first paper. It examines the impact of SOX on corporate acquisition activity. In addition to tightening disclosure requirements and introducing new standards in corporate governance, SOX substantially increased both the civil and criminal penalties for corporate wrongdoings. Using a large sample of tender

offers, the study finds that there is a shift in the motive for acquisitions in the post Act period and it indicates a move towards proportionately more value maximizing acquisitions. Acquirers in the post Act period display significantly superior post-acquisition performance compared to the pre Act period and in striking contrast to the wide spread post-acquisition underperformance reported in the literature. These results offer a new perspective on the impact of regulatory changes on corporate behavior.

The final essay examines the impact of Canadian Bill 198 (Canadian version of SOX) on Canadian acquisitions. Unlike the strong results reported for US acquirers, this study finds mixed results on the impact of regulations in Canada.

The remainder of the thesis is organized as follows: chapter 2 introduces the first essay entitled, "Regulatory Changes, Market Conditions and the Information Content of Insider Trades"; chapter 3 discusses the second essay entitled, "The Effect of Sarbanes-Oxley Act on Corporate Acquisition"; chapter 4 describes the final essay entitled, "Impact of Canadian SOX from an Acquisition Perspective"; and finally chapter 5 concludes the thesis.

Chapter 2 - Regulatory Changes, Market Conditions and the Information Content of Insider Trades

2.1 Introduction

The collapse of Enron Corp. and WorldCom Inc. in the early 2000s not only resulted in the loss of billions of dollars for investors but also eroded their confidence in the efficacy of existing market regulations. In the immediate aftermath of these major financial disasters, the United States Congress passed the Sarbanes-Oxley Act[1] (SOX) in 2002. By any measure, SOX has been one of the most comprehensive regulatory changes in the United States since the 1930s. Its many criticisms notwithstanding, SOX has introduced sweeping reforms in corporate governance, reporting standards and disclosure requirements. Among other things, SOX made it mandatory for companies to submit insider trade (purchase or sale) information with the Security Exchange Commission (SEC) within two business days of the transaction date. This was a substantial improvement from the earlier stipulation which required companies to inform the SEC within ten days after the close of the calendar month in which the transaction occurred; this could potentially result in a delay of up to 40 days. Clearly, one of the main purposes for the more timely disclosure was to improve the information environment for investors. This paper studies the information content of Form 4 (the form) filings under the more

[1] The Act included provisions to promote independent auditing, increase executive responsibility of financial reporting, and improved internal control system. SOX addresses the issue of insider trading in section 403, which amends section 16(b) of the Securities Exchange Act of 1934 by requiring insiders to report their trades on Form 4 to the Securities and Exchange Commission (SEC) within two business days after the insider trade takes place. Section 403 of SOX requires insiders' trades to be filed on a much timelier basis (as of August 29, 2002; the Act was passed on July 30, 2002) and mandates electronic filing (as of June 30, 2003).

timely disclosure regime introduced by Section 403 of SOX and addresses the following questions: Do insider filings after the passage of SOX convey more information to the market than before? If so, is it a function of the rank of the insider? Are the filings more informative for investors in general or is the more timely disclosure particularly beneficial for firms with higher levels of information asymmetry to begin with? How has the subsequent credit crunch of 2008 affected information in insider trades?

Extant research shows that corporate insider trades are associated with subsequent stock returns (Lakonishok and Lee, 2001; Rozeff and Zaman, 1988; Seyhun, 1986), suggesting that insiders[2] act on private information.[3] As electronic filings became mandatory after June 30, 2003, with a stricter reporting deadline of two days, we expect the information content of stock prices around the filing date to increase after SOX. Stock returns and trading volume have been used in the empirical literature in the past (e.g. Brochet, 2010) to measure information content of insider trades.

Our paper examines the abnormal stock returns over a two day period beginning with the day of the filing. We compare the pre- and post- SOX data for both purchase and sale samples and find evidence in favor of the hypothesis that the information content of filing has increased after SOX. Additionally, we also find that the information content of insider filings significantly improved between the pre Regulation Fair Disclosure

[2] In most of the studies, "insiders" are defined as directors, officers, and beneficial owners of more than 10%, who are subject to the filing requirements with the SEC.

[3] Xu (2008) analyzes Insider Trading Sanctions Act of 1984 which has substantially increased penalties for illegal insider trading; the evidence suggests that ITSA effectively reduced informed insider trading. In addition to addressing issues related to corporate governance and timely disclosure, SOX has also imposed stricter penalties and given more power to SEC to go after the wrongdoers.

(RegFD) and post- SOX period, and between the pre- credit crunch and post- credit crunch of 2008.

We also examine the impact of firm size, trade size, rank of the executives[4] and delay of filing in cross-sectional regressions to analyze their impact on the information content. We could not find any evidence in the literature linking the impact of an insider's trade with his / her rank in the organization. Existing literature predominantly focuses on top executives' transactions. Seyhun and Bradley (1997) analyzed transactions by top executives of the companies that filed for bankruptcies but they do not provide any evidence of the rank of the insider and its impact on the stock price. We report statistically significant evidence supporting the hypothesis that the higher the rank of the insider, the greater the influence he / she exerts on the abnormal return around filing for both pre- and post- SOX samples.

Reburn (1994), Givoly and Palmon (1985) and Seyhun (1986) have all reported an inverse relation between firm size and market reaction to insider transactions. Chiang and Venkatesh (1988) have documented a positive relation between insider holdings and information asymmetry. We find that the smaller the market capitalization, the higher (lower) the return around insider purchases (sales), although the results are not statistically significant.

Since filings have become more frequent in the post- SOX period, a direct comparison of the filings between the pre- and post-SOX period could lead to spurious

[4] Rank1 represents top executives like Chairman, CEO, President, COO, and CFO and the rest are Rank2.

conclusions. Previously, insiders could get away with monthly filings whereas now they have to file within two business days. This by itself might create discrepancies in the magnitude of the impact. We use the average trade size for the pre-SOX period to mitigate this problem. We also analyzed the transactions in the pre-SOX period with only a two day filing delay and compared it with those of the post-SOX period and observed no significant difference between the two samples. Thus, trades that were being expeditiously filed prior to SOX already were more informative and indicate that quick filing has a significant impact on accelerating the information content of the filing. We also replicated the analysis by restricting the post-SOX samples to the companies that were in the pre-SOX sample and do not find any significant deviation from our original findings.

Historically, it has been observed that the SEC has increased its enforcement following a market crisis.[5] For example, the number of litigations filed in the post 1987-crash period increased significantly. The increased enforcement at that time had a positive impact on the confidence of the investors. The recent 2008 credit crunch offers another opportunity to examine how a market crisis affects the information content of stock prices. We compared the transactions before and after the credit crunch[6] and found that the information content has improved further after 2008.

[5] In fact, SEC was itself created after the market crash in the 1930's.

[6] In this case pre credit crunch transactions were post SOX and the post credit crunch transaction were also post SOX. We decided to take only post SOX data for the pre-crunch so that we can extract the impact of just the credit crunch.

Finally, we divide our sample into firms that have higher and lower levels of information asymmetry based on commonly used proxies. We find that the expeditious filing requirement was beneficial for investors in firms with higher information asymmetry to begin with.

The remainder of the paper is organized as follows: section 2.2 provides a survey of existing work on the insider trading disclosure regulation and on the existing theoretical and empirical literature; section 2.3 describes the data and research methodology; section 2.4 discusses the sample and the empirical results; section 2.5 concludes the study.

2.2 Regulations, Insider Trades and Stock Price Effects

2.2.1 Regulating Insider Trading in the United States

The SEC regulates insider trading in the United States. Directors, officers, and principal stockholders (with a stake of 10% or more) have to report most changes in their beneficial ownership to the SEC. Until the passage of SOX, reporting requirements were defined by section 16(b) of the Securities Exchange Act of 1934, and consisted of filing Form 4 with the SEC within ten days after the close of the calendar month during which the transaction had occurred. This could mean a delay of up to 40 days. Section 403 of SOX amends this provision as of August 29, 2002 by requiring insiders to file their Form 4's with the SEC within two business days of the transaction date. Moreover, the new regulations made electronic filings mandatory starting from June 30, 2003.

2.2.2 Impact of Regulations on Insider Trading

We expect to observe strong evidence in favor of a comprehensive regulation like SOX. Syed et al. (1989) report that insider trading is associated with abnormal returns. Huddart et al. (2001) show that public disclosure of insider trades accelerate price discovery compared to the no-disclosure benchmark model of Kyle (1985). Empirically, the association between insider trades and future returns documented throughout decades of observed corporate insider trading suggests that the average insider trading is a potential signal to investors about firm value. As long as the disclosure does not occur until after the news that insiders were trading upon, the filing may have information content; that is, it may affect a stock's demand and supply and its equilibrium price.

Brochet (2010) analyzes top management insider transactions from 1997 to 2006 and finds that abnormal returns and trading volumes around insider purchase filings have significantly increased in the post SOX period. He finds evidence that information content of insider filings have increased after the passage of SOX. Fidrmuc et al. (2006) find that disclosures of insider trades in the UK elicit average returns that are of greater economic significance (mean five-day abnormal returns of 1.65% for purchases and -0.49% for sales). Information about insider transactions by UK directors and officers is required to be publicly available within six business days following the trades. There have been counter arguments to the impact of regulations as well. Rozeff and Zaman (1998) conclude that insider trading is not as harmful as it is portrayed. They did not find evidence that corporate officers actually earned profits on their private information.

Among all insider transactions in corporate mergers between 1975 and 1995, Lakonishok and Lee (2001) find statistically but not economically significant mean market-adjusted returns over a five-day window starting on the filing date, irrespective of book-to-market ratio and size (about 0.13% for purchases and -0.23% for sales). Aboody and Lev (2000) find more positive (negative) raw returns and higher trading volumes following filings of insider purchases (sales) in firms with R&D activity versus other firms, but the returns remain low on average.

Assuming that insiders trade on their private information to the same extent in the UK as in the US, the difference between the result in Lakonishok and Lee (2001) and Fidrmuc et al. (2006) suggests that disclosure timeliness affects the information content of insider-trade filings. As SOX has enhanced the timeliness of insider trade filing, Form 4 filings after SOX should be more informative than before.

Since SOX was enacted to mitigate corporate wrongdoings and insider trading (on private information), insiders should be less prone to engage in optimistic trading because of increased scrutiny by the investors, media, and regulators. Prior studies show that across countries, prosecution of illegal insider trading is associated with a decrease in country-level cost of equity (Bhattacharya and Daouk, 2002), and countries with stricter insider-trading regulation exhibit greater diffusion in equity ownership, liquidity, and the extent to which stock prices are informative. Recent research provides evidence suggesting that managers' incentives and opportunities to engage in opportunistic behavior have decreased after SOX. For example, stock return pattern around option grants are less favorable to managers after SOX (Heron and Lie, 2007; Narayanan and

Seyhun, 2006a). Brochet (2010) also finds that the tendency for insiders to trade ahead of bad news has significantly declined in the post SOX period. Based on these evidences, while both purchases and sales are expected to be more informative after SOX, we expect the information asymmetry linked to insider sales to have decreased more than that of insider purchases.

2.2.3 Factors Affecting the Impact of Insider Transactions

It has been well-documented that firm size has an influence on the impact of insider transactions. Givoly and Palmon (1985) and Seyhun (1986) report that insiders of smaller firms earn larger abnormal returns than insiders of larger firms. Chiang and Venkatesh (1988) have documented a positive relation between insider holdings and information asymmetry.[7] Extant research, therefore, suggests that the timelier filing requirement introduced by SOX should affect firms with varying levels of information asymmetry differently.

Stock returns, trading volume and trade size have been commonly used to study the information content of filings (Brochet, 2010). As demonstrated by Karpoff (1986), Kim and Verrechia (1991) and Dontoh and Ronen (1993), information content is measured not only in terms of stock returns but also in terms of trading volumes, in conjunction with the information environment around the disclosure. Toutkoushian (1996) has examined the determinants of the excess returns that could be earned by outsiders from replicating insider transactions. He demonstrates that one of the factors

[7] Petersen and Rajan (1994) report greater information asymmetry between smaller firms and their investors.

that influence excess return is the size of insider transaction. While most of the authors use absolute trade volume as proxy for trade size, Brochet (2010) uses trade volume scaled by total shares outstanding. We use the average transaction amount associated with a specific filing date scaled by market capitalization on that date as a proxy for the trade size. In line with the existing literature, we assume that trade size has an impact on abnormal returns around filing. Our study shows that the information content of the filing contributed by 'trade size' increased in the post-SOX period. We find that the larger the trade size, the more positive (negative) is the abnormal return around insider purchase (sale) filing.

Seyhun and Bradley (1997) analyze insider trading by firms filing for bankruptcy. Their sample includes all insiders. They also analyze the top executives subsample but do not examine the relation between insider rank and abnormal return around filing. Carpenter and Remmers (2001) examine if insiders use private information to time the exercises of their executive stock options. They divide the insider sample into four subsamples based on the rank of the executives. However, they only focus on executive options and the motivation of the insider in exercising them. They report statistically significant negative post-exercise[8] stock price performance for the top management subsample. Carpenter and Remmers (2001) is one of the few papers that employ

[8] Before May 1991, insiders had to hold the stock acquired through option exercise for 6 months. Carpenter and Remmers (2001) found little evidence of the use of inside information to time exercises since the removal of the holding restriction in May 1991. When insiders are free to sell the acquired shares immediately, the use of private information should manifest itself as negative abnormal stock price performance following option exercise. However, only in the subsample of exercises by top managers at small firms, a tiny fraction of the full sample, do they find significantly negative post-exercise stock price performance. Otherwise, they found no evidence of exercising on inside information in the post-1991 regulatory regime.

executive ranking in an extensive manner but their analysis is limited to executive option exercises only and not all insider transactions. Yermack (1997) studies option grants and concludes that boards of directors, possibly under influence from Chief Executive Officers, time grants to top managers so that they precede positive stock price performance. Seyhun (1998) documents positive (negative) abnormal return after executive purchase (sell) and also reports the abnormal return to be higher for top management. Again, these results (Seyhun, 1998) are based on executive option exercises only. In this study, we extensively analyze the impact of insider ranking on the abnormal returns around Form 4 filings.

2.2.4 SOX and the Information Content of Insider Trades

Not all insider trades are equally informative. One should expect the market reaction to insider trade filings to be more informative if the trades are from a higher ranking officer. Lakonishok and Lee (2001) study the impact of insider rankings but their sample uses only pre- SOX data. Yermack (1997) and Carpenter and Remmers (2001) examine the affect of insider rankings but in the context of executive stock option related transactions. Brochet (2010) examines both pre- and post- SOX periods but focuses only on top executives. We classify insiders into top management and other insiders, where top management (Chief Executive Officer, President, Chairman of the Board, Chief Operating Officer, Chief Financial Officer) are classified as 'Rank1 Officer' and the rest as 'Rank2 Officer'. Our results show that the rank of the insider has a significant effect on stock prices around the filing date for both pre- and post- SOX periods, with the effect more pronounced in the post- SOX period.

Conceivably, the greatest impact of a comprehensive regulation like SOX should be for firms that already have higher levels of information asymmetry, *ceteris paribus*. The stricter and timelier disclosure requirements and the substantial governance compliance requirements introduced by SOX should help alleviate the information disadvantage to investors in such firms in particular. In this paper, we systematically analyze the information content of insider trades for firms with varying levels of information asymmetry. A number of information asymmetry measures have been used in the literature such as Book-to-Market (B/M) and Firm Size (Lakonishok and Lee, 2001), spending on R&D (Aboody and Lev, 2000) and return volatility, R&D expenditure, and accounting quality (Bae et al., 2011). In addition, a higher proportion of intangible assets have also been found to be associated with more information asymmetry. In general, it is well documented that smaller high growth firms have more information asymmetry compared to larger mature firms. We use B/M, spending on R&D and the proportion of intangible assets as proxies for information asymmetry to investigate if the announcement period returns around insider transaction announcements in the pre- and post- SOX periods systematically vary. We find evidence consistent with the hypothesis that insider transactions have become more informative in the post- SOX period for high information asymmetry firms.

We also examine how the changes in the risk of the financial markets in the post-SOX period affected the information content of Form 4 filings. The credit crunch following the large scale failures of major financial institutions in recent years further increased the uncertainty and risk for investors. Our study finds that the increased

uncertainty in the post credit crunch period have made insider filings more informative compared to the pre credit crunch but post- SOX period.

2.3. Data and Methodology

2.3.1 Data Selection and Sample Description

The sample for this study was obtained from EDGAR Online. The pre-SOX sample covers all insider transactions from January 1, 1996 to August 29, 2002 while the post-SOX period is from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on stock returns on CRSP. Our final sample consists of 41,603 unique transactions for the post-SOX period and 2,182 for the pre-SOX period. No other restrictions are enforced other than the one regarding CRSP missing data issue. The lower number for pre-SOX transactions is reasonable as companies typically filed once a month only, whereas SOX now requires them to file within two business days.

We also test for Regulation Fair Disclosure (RegFD) which was passed on October 2000. Since this regulation brought an added layer of fairness to the market, it boosted investor confidence and is expected to have enhanced the information content of insider filings. Sundar (2002) reports that Regulation FD has a greater impact for firms with high information asymmetry characteristics. In addition, investor confidence is significantly affected by market conditions. The severe credit crunch following the large scale failures of financial institutions after the recent recession has increased the uncertainty for the investors. We also examine if the information content of insider trades increased after the credit crunch.

[Table 2-1 here]

Table 2-1 presents the descriptive statistics of the sample. Both the means and medians display significant differences between the pre and post SOX periods for all variables for both the purchase and the sales samples. The mean and median market capitalization in the post SOX period is significantly larger than the pre-SOX period. Likewise, the mean and median trade size is significantly different between the two periods. For both the purchase and sales samples, we find that in the pre- SOX period the average delay between the trade date and the filing date is a whole calendar month. This time lag could potentially be substantially disadvantageous to investors, particularly for firms with larger levels of information asymmetry. The expeditious filing requirement introduced by SOX has reduced both the incentive for insiders to trade on private information as well as minimized the information disadvantage for investor.

2.3.2 Variable Definitions

The sample includes both transaction and filing dates. In line with the existing literature (e.g. Cheng et al, 2007; Cohen, 2005 etc.) this study uses the filing date to be the date of interest. As insider transactions become public on filing date, any information content of the filing should be captured by the stock market reaction around this date.

We include a rank variable to denote the rank of the executive involved in the insider transaction. Carpenter and Remmers (2001) and Yermack (1997) have both used executive ranking to some extent but these studies restrict their analysis to executive stock options. We classify the Chief Executive Officer (CEO), President, Chairman of

the Board, Chief Financial Officer (CFO) and Chief Operating Officer (COO) as Rank1 officer and all other executives as Rank2 officer. A dummy variable labeled *Insider Rank*, whose value equals to one if the transaction is executed by a 'Rank 1' officer and zero otherwise, is employed in the cross sectional regression analysis.

The size of the insider trade can have an important bearing on the stock price response on the filing date. Karpoff (1986), Dontoh and Ronen (1993) and Brochet (2010) have all used some variation of trading volume as an identifying factor of information content. We use the average trade size (*TradeSize*) for both pre and post periods in our analyses.

Transaction size has also been found to be related to firm size. Seyhun (1986) divides his sample into five subsamples based on market capitalization (less than $25 million; between $25 million and $50 million; between $50 million and $250 million; between $250 million and $1 billion; more than $1 billion etc.). Similarly, Lakonishok and Lee (2001) divide their sample into three subsamples, namely, small, medium, and large cap firms. They further divide their data into deciles and then make a 3-4-3 split for small, medium, and large cap samples respectively. We split the sample along the median when we run a comparison between small and large cap firms. We use market capitalization, *MktCap,* as an independent variable in the cross sectional regression analysis.

The time lag between the transaction date and the filing date, *Delay*, can also affect the market's response to the filing. On the one hand, longer gaps between the two dates can result in stock prices deviating significantly from their equilibrium prices as

the information related to trade itself would not be incorporated in the price. Thus, the filing event should be more informative. On the other hand, a longer gap can also result in smaller price reaction on the filing date if the information related to the trade leaks prior to the filing. We hypothesize a negative relation between *Delay* and the stock price response around the filing.

Based on previous literature, we use Market-to-Book ratio, Intangible Asset, and R&D expenditure as proxies for information asymmetry. Market-to-Book is measured as total market capitalization to book value of equity, R&D expenditure is scaled by total sales and Intangible Asset is scaled to total assets. As independent variables for the information asymmetry tests, we use Market-to-Book, MktCap, 'InsiderRank' dummy, and Dividend Yield.

2.3.3 Cross-Sectional Analyses

The following cross-sectional regression is used to test the relation between the abnormal returns around filing dates and determinants of the Form 4 filings:

$$CAR_{0,1} = \beta_0 + \beta_1 * InsiderRank + \beta_2 * TradeSize + \beta_3 * Delay + \beta_4 * MktCap + \beta_5 * R\&D + \beta_6 * (TradeSize * InsiderRank) + \beta_7 * (MktCap * InsiderRank) \quad [2.1]$$

The dependent variable, $CAR_{0,1}$, is the two day market adjusted cumulative abnormal return around the filing date, which is classified as day 0. Independent variables are as defined in section 2.3.2.

To examine how the level of information asymmetry affects the abnormal returns around the filing announcement date, we follow the methodology described in the Bae et al. (2011). In all regressions, we partition the sample into subsamples based on three information asymmetry measures: Market-to-Book, Intangible Assets, and R&D. High information asymmetry firms are ones with the Market-to-Book ratio, intangible assets, and R&D expenditures above the median value. The basic regression model is as follows:

$$CAR_{0,1} = \beta_0 + \beta_1 * Market\text{-}to\text{-}Book + \beta_2 * MktCap + \beta_3 * InsiderRank + \beta_4 * Dividend\ Yield \quad [2.2]$$

We use *Dividend Yield* as an additional control variable for information asymmetry. Extant literature (Khang and King[9], 2006; Li and Zhao[10], 2008 etc.) shows that high dividend yield firms typically have lower levels of information asymmetry, all else being equal.

[9] They find that firms with higher dividend yield not only have lower information asymmetry but also the insiders earn lower returns from their trades.

[10] They find that firms with higher information asymmetry are less likely to pay dividends or pay smaller amounts.

2.4. Empirical Results

2.4.1 Abnormal Returns around the Filing Date

We begin first by analyzing the market model abnormal returns around the filing date that are computed using the event study methodology as described in Patell (1976). The CRSP value-weighted index is used as the market portfolio in the market model where the model parameters are computed using an estimation period from t = -380 to t= -127 where t=0 is the filing date.

[Table 2-2 here]

The event study results for insider purchases and sales from both the pre and post SOX periods are reported in Table 2-2. The mean two day CAR for the pre- SOX period is 0.32% and significant at the 10% level and 1.13% for post- SOX and significant at the 5%; the difference between pre- and post- SOX is significant at the 10% level. This suggests that the filings have become more informative in the post- SOX period, consistent with the findings in Brochet (2010). Fidrmuc et al. (2006) also find evidence that swifter disclosure law in the United Kingdom improved the information content of the filings. The prompt filing required by SOX has had a similar effect.

We also report abnormal returns for different windows around the filing date. A positive abnormal return pattern emerges a week before the actual filing in the pre- SOX period and these returns are more prominent than the post- SOX abnormal returns for the same period. For example, we find that the returns for the window (-10, -2) are much higher in the pre period, possibly driven by information leakage due to the longer delay

between transactions and filings. No evidence of information leakage is found for the post SOX period.

Panel B reports the results for insider sales transactions. Overall the results are less significant compared to the purchase sample. The abnormal returns ($CAR_{0,1}$) around the filing dates are slightly more negative for the post- SOX than pre- SOX period, but the difference between the two periods is not statistically significant. The pre SOX cumulative abnormal return is -0.19%, significant at 10% level, while the post SOX return is -0.54% and significant at 5% level, with the difference not statistically significant. Similar results are found for the other windows around the filing date. Overall, the results in Table 2-2 show that insider transactions have become more informative in the post- SOX period.

[Table 2-3 here]

We further investigate how the delay in the filing in the pre- SOX period affected the abnormal returns since insiders had as much as forty calendar days before the transactions had to be reported. Table 2-3 reports the results around filing for different delay lengths for the pre- SOX period for both the purchase and sale samples in Panels A and B, respectively. For both samples we observe that the number of filings increased with the delay whereas the magnitude of the abnormal return was lower with longer delays.

In Panel A, for the purchase sample, more than 85 percent of the filings had a delay of 10 days or more and nearly 52 percent of the filings had a delay of 20 days or

more. For the two days (-1,0), the CARs are 0.11% for filings of delays of at least 20 days and these are significant at the 5% level. As the delay shortens, the magnitude of the CARs increases. However, the statistical significance disappears. Similar results are observed for the event windows (0,+1) and (-1,+1). In Panel B, for the sales sample, the results follow a similar pattern. Ninety percent of the filings have a delay of 10 days or more and nearly 58 percent of the filings are delayed by 20 days or more. Once again the abnormal returns are smaller in magnitude and statistically significant for delays of 10 days or more and the magnitude increases but the significance disappears as the delay shortens.

Longer delays in reporting the transaction increase the likelihood that information about the trade may be known prior to the actual filing. If this is true, it can explain the smaller magnitudes of the abnormal returns for longer delays for both the purchase and sales samples. However, the insignificant but larger abnormal returns for shorter delays still pose a puzzle. It is quite possible that lack of significance is because of the reduced sample size. It is also, however, possible that firms with shorter delays have less information asymmetry and insider trades are less informative compared to firms with longer delays. We investigated this conjecture further by examining the proxies of information asymmetry for firms with longer and shorter delays. In unreported results, we find that firms with delays less than 10 days have significantly less R&D expenditures, proportionately less intangible assets and lower market-to-book ratios of equity compared to firms with delays of 20 days or more. Our evidence suggests that firms with larger levels of information asymmetry were more likely to delay reporting insider trades and investors in these firms are the ones who would benefit the most from

the expeditious reporting requirement introduced by SOX. We investigate this further in our cross-sectional analysis.

2.4.2 Impact of Regulation Fair Disclosure (Reg FD)

Regulation Fair Disclosure [Reg FD] was passed in October 2000. This regulation was intended to reduce the information asymmetry between small and institutional investors. It was credited to have fundamentally changed the way corporations communicate with investors. Even though it was not as extensive as SOX, one would still expect Reg FD to have an impact on the information content of insider filings. Regulation FD aided the dissemination of information in a fair manner and helped reduce the information asymmetry.

[Table 2-4 here]

We divide our pre SOX sample into two subsamples; pre Reg FD and post Reg FD. Pre Reg FD covers all transactions from January 1, 1996 to September 30, 2000, while post Reg FD subsample covers transactions from October 1, 2000 to August 29, 2002. The results are reported in Table 2-4.

Panel A reports the results pertinent to the insider purchase filings. For the (0,+1) window, the pre Reg FD cumulative abnormal return is 0.26% (significant at 10% level) while the post Reg FD CAR is 0.52% (significant at 10% level). Similar results are obtained for the other two windows. Reg FD thus had a positive impact on the information content of insider filings. Xu (2008) finds similar results for ITSA.

To isolate the impact of Reg FD, we compare the pre Reg FD and post SOX subsamples. The pre Reg FD CAR of 0.26% and the post-SOX CAR of 1.13% for the (0, +1) window are statistically significantly different at the 1% level. The differences for the (-1,0) and (-1,+1) windows are also statistically significant at the 5% and 1% levels, respectively.

Results for the sales sample are presented in Panel B. There is no significant difference between the pre Reg FD and post Reg FD periods, although the magnitude in the post Reg FD period is larger. Once again, however, after isolating the impact of Reg FD, we find the abnormal return of -0.12% for the pre Reg FD period and -0.54% for the post-SOX period are statistically significantly different at the 10% level. Similar results are obtained for the (-1,+1) window. It appears that progressive layers of regulations starting in 2000 have had a positive impact in reducing information asymmetry for investors as reflected in the stronger market response to insider trading transactions.

2.4.3 Impact of the Credit Crunch of 2008

The economy in the United States started to slow down in 2007. By 2008, the economy was officially in a recession with increased market volatility and uncertainty for investors. Bear markets present an added challenge for investors. For e.g., the post 1987 market crash saw an increase in the number of SEC initiated litigations. The credit crunch of 2008 was more severe and far more widespread than the market crash of 1987, with many commentators, market participants and academics comparing it to the great depression of the 1930s. Given the increased uncertainty and volatility in the market, we expect Form 4 filings to be more informative in the post-credit crunch period.

We divide our post- SOX sample into two subsamples; pre-credit crunch period from August 30, 2002 to December 31, 2007 and post-credit crunch period from January 1, 2008 to December 31, 2009. Results are reported in Panels A and B of Table 2-4 for the purchase and sales samples, respectively.

For the purchases sample in Panel A, we find that the two day cumulative abnormal return ($CAR_{0,1}$) before the credit crunch is 0.82% while it is 1.74% after the credit crunch. The difference is statistically significant at the 5% level. Similar results are reported for the other two windows. Likewise, for the sales sample in Panel B, the return is more negative for the post credit crunch period (-0.97%) compared to the pre-credit crunch period (-0.46%) for days (0,+1) and the difference is significant at the 5% level. Results for both the purchases and sales samples show that insider trades are strongly affected by the prevailing uncertainty in the economic environment.

Taken together, the empirical results reported in Tables 2-3 and 2-4 show a strong positive association between information asymmetry and the information conveyed by insider trading transactions. Progressive regulatory changes have improved the disclosure requirements for transactions by insiders. These changes have been more beneficial for investors in an environment of greater uncertainty and firms with larger information asymmetry problems. We next investigate the impact of information asymmetry further using cross-sectional analysis.

2.4.4 Cross Sectional Tests

We next examine the factors that affect the announcement period returns around insider filing. The dependent variable in the regressions is the two-day abnormal return ($CAR_{0,1}$) around the announcement date. The results are reported in Table 2-5.

[Table 2-5 here]

Panel A reports the regression results for both pre and post SOX purchase transactions. We divide the pre- SOX sample into the pre Reg FD and post Reg FD periods and the post- SOX sample onto the pre-credit crunch and post-credit crunch periods. The executive ranking dummy *InsiderRank* is statistically significant for both the pre- and post-SOX samples at the 5% level consistently, except for the pre Reg FD period where it is significant at the 10% level. As one would expect, the rank of the insider has a significant impact on the information conveyed to the market at the time of filing. The finding is consistent with Carpenter et al. (2001) and Yermack (1997), who have used executive ranking in the context of executive stock options only, and Brochet (2010), who analyzes information content of insider filings but mainly focuses on top executives' transactions. For the pre- SOX period, *Delay* is negative and significant consistently, with the result more pronounced for the pre Reg FD period, while *R&D* is positive and significant for the post Reg FD period. The negative relation with *Delay* is consistent with Fidrmuc et al. (2006) who note that shorter filing delays increase abnormal return around filing. Bae et al. (2011) report that firms with higher R&D expenditure have higher information asymmetry. The significant positive coefficient for the R&D variable implies that higher R&D firms have higher impact on the two day

abnormal return around filing, suggesting insider trades are more informative for firms with higher information asymmetry. *TradeSize* is not significant in any of the regressions for the pre- SOX sample. However, we do find that larger trades by higher ranked insiders have a negative relation with the abnormal returns around the filing. For the post- SOX period, we find that for both the pre and post credit crunch periods, *InsiderRank, TradeSize* and *R&D* are positive and significant, and larger trades by higher ranked insiders result in larger abnormal returns around the announcement of the filing. Overall, the pre- SOX sample provides significant coefficients for *InsiderRank*, *Delay* and *R&D* while for the post SOX sample coefficients are significant for *InsiderRank*, *TradeSize* and *R&D*. Evidence in Panel A consistently shows that ranking of the corporate officer is an important determinant of the information content of the transaction. For the post-SOX period, we also find that larger trades by senior officers are more informative. However, for the pre-SOX period, the delay in filing has a moderating effect on the information content of trades by senior officers. The regression results for the purchase sample consistently display a positive relation between information asymmetry and the information content of the filing.[11]

Panel B reports the regression results for insider sales. Overall, the results for *InsiderRank* and *R&D* are consistent with those reported for the purchase sample. For the pre Reg FD period, *Delay* is positive and significant while *TradeSize* is negative and marginally significant as well. Sales transactions by senior officers and those in firms

[11] We also estimated other models separately with only *InsiderRank*, with *InsiderRank, TradeSize* and *Delay*, and with *InsiderRank, R&D* and *MktCap*. The results from these models are consistent with the full model results reported in Table 5. These results are not reported for brevity but are available from the authors upon request.

with larger information asymmetry convey more negative news to the market around the filing date. For the pre- SOX period, the results are stronger for the pre Reg FD period while for the post- SOX sample; they are stronger for the post credit crunch period. The evidence reported in Panel B once again suggests that the degree of information asymmetry remains an important factor in explaining the stock price response around the filing date.

[Table 2-6 here]

We next partition our pre- and post- SOX sample into firms with high and low levels of information asymmetry. Three different proxies are used to measure information asymmetry: market-to-book value of equity, proportion of intangible assets and spending on R&D. The evidence so far strongly shows a positive relation between the level of information asymmetry and the information content of filings. Partitioning the sample in this fashion will allow us to determine if SOX was incrementally more beneficial for firms with larger information asymmetry to begin with. Our approach is similar to that of Bae et al. (2011) who examine the forecasting power of hedge funds for stocks with high and low information asymmetry. The dependent variable is again the two-day abnormal return around the filing date ($CAR_{0,1}$). In addition to the variables used earlier, we include *Dividend Yield* as an additional control variable for information asymmetry. The results are reported in Table 2-6.

Panel A shows the results for the purchase sample. Focusing first on firms with low information asymmetry in the pre-SOX period, we find that none of the variables are significant in most of the regressions, including the rank of the insider. The only

exception is *MktCap* in one regression that is marginally significant. For firms with high information asymmetry in the pre-SOX period, the coefficient on *InsiderRank* is consistently positive and significant. In addition, there is some evidence that dividend yield and firm size are negatively related and Market-to-Book is positively related to the announcement period returns. Thus, even before SOX was enacted, trades were considered valuable news events only for firms with higher levels of information problems. Turning now to the post-SOX sample, we once again find that none of the variables are significant for low information asymmetry firms. The only exception is insider rank that is positive and marginally significant in one regression. For firms with high information asymmetry on the other hand, *InsiderRank* is consistently positively significant at the 1% level, *MktCap* is negative and significant at the 5% level, market-to-book ratio is positive and significant at the 5% level and dividend yield is negative and marginally significant. The results for the post-SOX period for the high information asymmetry firms are stronger compared to similar firms from the pre-SOX period. The evidence in Panel A shows that the prompt filing requirements mandated by SOX improved the information environment for investors in firms with greater uncertainty. These results are consistent with Sundar (2002) who analyzes another pro-investor regulation (Regulation Fair Disclosure) and finds that it has a greater impact on the firms with higher information asymmetry.

Panel B reports the results for the sales sample. Once again for both the pre- and post-SOX periods, we do not find significant results for firms with low information asymmetry, except the rank of the insider, which is negative and marginally significant in three out of the six regressions. For firms with high information asymmetry, on the other

hand, *InsiderRank* is consistently negative and significant at least at the 5% level. In addition, the coefficient on market-to-book is consistently negative and significant with the significance level stronger for the post-period compared to the pre period. The evidence again shows that firms with higher levels of information asymmetry and trades by senior officers experience larger declines in stock returns around the filing date.

The evidence in Table 2-6 suggests that the expeditious filing requirement of insider trades introduced by SOX had a differing impact on firms. In general, trades by senior officers are more informative now than they were previously and the information content of timelier filing is more relevant for firms with higher levels of information asymmetry.

2.4.5 Robustness Tests

We conducted several robustness checks to ensure that our results were not sample specific. These results are not reported here for brevity but are available from the authors upon request.

We compared the post SOX transactions with pre SOX transactions that were filed within two business days and found no significant difference between the abnormal returns of the two samples. It appears, therefore, the delay in the filing before the Act had a significant impact on the information content and the expedited filing required by the SOX had a major impact to improve the information content.

We replicated all of our analysis by restricting the post-SOX sample to the companies that are in the pre-SOX sample, and do not find any significant deviation from

our original findings. We also replicated the entire analysis by including S&P 500 firms only, and our results remained qualitatively unchanged.

We also used some alternate definitions of some of the variables. For e.g., we computed *TradeSize* using three different measures: average shares traded to common shares outstanding, average shares traded to annual common shares traded, and average transaction amount to total assets. For the information asymmetry tests, we also used P/E in place of market-to-book ratio. The results remained qualitative similar with these alternate measures.

Finally, for the event study comparisons between the pre- and post SOX samples, we analyzed subsamples of transactions only by rank1 officers, only by rank2 officers, only by small cap firms, only by large cap firms, only small trade size, only large trade size, only value firms, and only growth firms. Our results qualitatively did not change.

2.5. Conclusions

This paper analyzes the information content of insider filings for the 1996 to 2009 period. Under the SOX provisions introduced in 2002, corporations have to file insider transactions with the SEC within two business days of the trade whereas previously they could wait up to 40 days. This is a significant regulatory improvement aimed at enhancing transparency and reducing information asymmetry between firm insiders and investors.

We find that the timely filing requirement has improved the information content of the filings. We report significantly larger abnormal returns around the filing date in the

post- SOX period compared to the pre- SOX period. Our results also show that progressive regulatory changes have had a positive impact on the information content of the filings. For example, the abnormal returns are consistently larger in magnitude for both the purchase and sales samples from the pre Regulation FD period to the post- SOX period. In addition, we also find that the increased uncertainty in the market after the credit crunch of 2008 have made filings of insider transactions even more informative.

In cross-sectional tests, we find that the rank of the insider is an important determinant in the information conveyed by the filing. For both the purchase and sales samples, we report that trades by higher ranked insiders are accompanied by larger abnormal returns. In addition, firms with more information asymmetry and larger trades convey more information in general. Finally, our results show that while the information environment has improved for investors in the post- SOX period overall, insider filings are particularly important for firms with larger levels of information asymmetry to begin with.

The many criticisms of SOX notwithstanding, our paper shows that the timely filing requirement of insider trades have been beneficial for investors.

Chapter 3 - The Effect of Sarbanes-Oxley Act on Corporate Acquisition

3.1 Introduction

The Sarbanes-Oxley Act (SOX)[12] of 2002 is by far the most comprehensive regulation enacted in the United States in the post-war period. From better governance to more transparency in corporate disclosure to timelier reporting of trading activity, SOX addresses a wide range of issues. For e.g., insider transactions are now required to be reported within two trading days compared to as many as forty calendar days prior to the Act. Better and timelier disclosure has no doubt improved the information environment and improved transparency for investors.

In this paper we examine what impact the Act has had on corporate acquisition. Specifically, we address the following issues: 1) the stricter disclosure requirements for security transactions introduced by SOX is expected to reduce the incentive for insiders to trade on private information. Consequently, we expect the announcement effects for acquisitions to be stronger in the post Act period together with less price run up for targets prior to the announcement. We investigate if acquisition announcements have become more informative in the post SOX period. 2) A reduced incentive to transact on private information is also likely to affect the motives for acquisitions. Shareholder wealth maximization rather than agency may drive acquisition decisions since the

[12] The Act included provisions to promote independent auditing, increase executive responsibility of financial reporting, and improved internal control system. SOX addresses the issue of insider trading in section 403, which amends section 16(b) of the Exchange Act of 1934 by requiring insiders to report their trades on Form 4 to the Securities and Exchange Commission (SEC) within two business days after the insider trade takes place. Section 403 of SOX requires insiders' trades to be filed on a much timelier basis (as of August 29, 2002; the Act was passed on July 30, 2002) and mandates electronic filing (as of June 30, 2003)

opportunities to benefit from private information have diminished for insiders in the post Act period. We, therefore, expect to see an increase in the proportion of synergy driven acquisitions in the post SOX period. If this is indeed true, in turn it should on average lead to better post-acquisition performance, or at least less underperformance, for acquiring firms.

Empirical evidence abounds with respect to insider trading around major corporate announcements (Karpoff and Lee, 1991; Damodaran and Liu, 1993; and Keown and Pinkerton, 1981). As long as the benefits of insider trading outweigh the costs of getting litigated by the Securities and Exchange Commission (SEC), it is conceivable that insiders would have the incentive to engage in transactions based on private information[13].SOX was enacted in the United States in the aftermath of large scale corporate scandals in the early 2000s. Some of the principal goals of the statute were to reduce the information asymmetry between investors and firm insiders, improve corporate governance and oversight, and bring investor confidence back. To achieve these goals, SOX incorporated stricter civil and criminal penalties. These penalties, along with an increased rate of litigation by SEC since the passage of the Act, have markedly reduced the incentives for corporate insiders from informed insider trading.

There is considerable empirical evidence on pre-bid price run up in target firms' stock. Keown and Pinkerton (1981) propose that price run-ups are driven by insider trading and insiders profit from the time of their transactions until the information

[13] Xu (2008) shows that stricter regulations deter insiders from trading on private information by analyzing the effects of Insider Trading Sanctions Act of 1984 (ITSA), the first federal level trading statute since 1934 with added penalties for illegal insider trading. Her results show that pre-announcement insider trading frequency as well as abnormal return decreased significantly after the passage of ITSA.

becomes publicly available. Prior to SOX, the reporting requirements for insider trades could result in a delay of as many as forty calendar days before the data on insider transactions were publicly available. SOX reduced this delay to two business days[14]. This expedited filing requirement is likely to reduce pre-announcement insider net purchases of target shares as well as price run ups[15] in the post SOX period. This in turn should make the announcement itself more informative as well.

Also, the vast body of empirical research on corporate acquisitions has examined synergy, agency, and hubris as possible motives for acquisitions. Berkovitch and Narayanan (1993) report that value maximizing (synergy) takeovers occur because of economic gains that result by merging the resources of the two firms, and agency driven takeovers occur because they enhance the acquirer managements' welfare at the expense of their shareholders. With less incentive to act on private information, the more transparent environment in the post-SOX period is likely to see more value maximizing or synergy driven acquisitions.

Another well-documented phenomenon in the literature is the post-acquisition underperformance of acquiring firms. It is largely believed to be due to managerial over-optimism, agency or managerial hubris (Agrawal et al., 1992; Loughran and Vijh,

[14] The early filing requirement has not only improved the information content of the filings (Brochet, 2010) but also reduced information asymmetry in general (Bhabra and Hossain, 2012).

[15] Xu (2008) reports that price-run-up for target firms has decreased after the passage of ITSA. Since SOX imposes even more severe penalties and has stricter reporting requirements compared to ITSA, we expect price run-ups to decrease further in the post SOX period.

1997)[16]. If indeed it is true that synergy driven acquisitions proportionately increased in the post Act period, we expect the long-run underperformance following acquisitions to decrease, regardless of whether it is a diversified or same industry transaction.

In this paper, we examine the impact of SOX on several aspects of an acquisition —pre-bid price run-up, announcement period wealth affects, takeover motive, and post acquisition long term performance. Using a large sample of completed tender offers between 1996 and 2009, we find that proportionately there were more synergy-driven acquisitions in the post-SOX period, smaller price run ups prior to the announcement as well as significantly larger positive abnormal returns to target firm shareholders around the announcement date. Our results also show that acquiring firm shareholders earn significant positive abnormal returns around the announcement in the post-SOX period compared to the negative returns observed in the pre-SOX period. In the long-term, we find that both the operating performance and the buy-and-hold abnormal returns over the three and five years after the acquisition, adjusted for industry and matched firm portfolios, are significantly better in the post-SOX period compared to the pre-SOX period.

The remainder of the paper is organized as follows: section 3.2 provides a survey of existing work on the insider trading disclosure regulation related to information theory and mergers and acquisitions, and the existing theoretical and empirical literature; section 3.3 describes the data and research methodology; section 3.4 discusses the sample and the

[16] Laeven and Levine (2007) reports that there is a diversification discount for financial conglomerates. Morck, Shleifer and Vishny (1990), Hoechle et al (2012) etc. have also acknowledged the presence of diversification discount.

empirical results; section 3.5 describes the robustness tests; and section 3.6 concludes the study.

3.2 Literature Review

3.2.1 Regulations, insider trading and acquisitions

The Securities and Exchange Commission (SEC) is the principal authority on insider trading related issues in the United States. Insiders are defined as corporate executives, board of directors, and the block holders (with ownership of 10% or more) by the SEC. The Sarbanes-Oxley Act of 2002 is undoubtedly the most comprehensive regulation passed by the US Congress in the post war era. One of the main attributes of the Act is that it mandates insiders to report their transactions with the company within two business days whereas previously they could wait as long as forty calendar days. The Act also made electronic filings mandatory starting from June 30, 2003. It also increased the penalties for insider trading. Under 'Title IX' of the law[17], the maximum penalty increased from a five-year prison term to twenty years while the monetary penalties increased ten folds in some instances.

Agrawal and Jaffe (1995)[18], Xu (2008)[19], and Jorion et al (2005)[20] find evidence in favor of the positive impacts of the short-swing rule (section 16b of the Securities

[17] TITLE IX—WHITE-COLLAR CRIME PENALTY ENHANCEMENTS

[18] They examine the premerger trading by top management of target firms from 1941 to 1961 and find that managers' purchases drop significantly before the announcement due to the short-swing rule [section 16b of the Securities Exchange Act, 1934].

Exchange Act, 1934), the Insider Trading Sanctions Act of 1984, and Regulation Fair Disclosure of 2000, respectively. A comprehensive law like SOX is likely to further deter insider trading based on private information. The information advantage of insider trading have no doubt diminished due to the expedited filing requirements of SOX, thus increasing the information content of the filing itself (Brochet, 2010)[21]. More timely disclosure and reduced information asymmetry make corporate announcements more informative. In our context, acquisition announcements are, thus expected to be more informative and less preceded by price run ups in the post-SOX period.

3.2.2 Information leakage and market anticipation hypotheses

Insider trading[22] around merger activities[23] in the respective firms has long been of interest to financial economists. Keown and Pinkerton (1981) find that information

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[19]She analyzes the effects of Insider Trading Sanctions Act of 1984 (ITSA), the first federal level trading statute since 1934 with added penalties for illegal insider trading, and reports that insider trading frequency decreased significantly upon the passage of the Act. She examines pre-merger-announcement insider trading behavior of target firms between 1979 and 1989 and finds a significant decline in net purchases. She also observes that price run up before merger announcement declined after the passage of ITSA and concludes that ITSA effectively reduced informed insider trading.

[20] They analyze the impact of Regulation FD (2000) on credit ratings. They analyze the impact of credit rating changes on stock price for t=-26 months to t=26 months where t=0 is when the regulation was enacted. They find the information effect is higher in the post Regulation FD period.

[21] Bhabra and Hossain (2012) analyze insider trades by all the officers between 1996 and 2009 and find ranking of the officers and timeliness of filings to be the two most dominant factors contributing to the enhancement of the informativeness of the filings.

[22]Huddart et al (2001) show that public disclosure of insider trades accelerate price discovery compared to the no-disclosure benchmark model of Kyle (1985). Rozeff and Zaman (1998) report that insider trading is not as harmful as it is portrayed.

[23]Among all insider transactions in corporate mergers in 1975-1995, Lakonishok and Lee (2001) find statistically but not economically significant mean market-adjusted returns over a five-day window starting on filing date, irrespective of book-to-market ratio and size (about 0.13% for purchases and -0.23% for sales).

leakage takes place before the merger announcement and so does insider trading as well. But they also show that semi-strong form of market efficiency still holds as the market reaction to new public information is complete by the day after the announcement. Meulbroek (1992) reports that about half of the pre-bid price run-up observed before acquisitions occurs on insider trading days. Schwert (1996) states that run-up is an added cost to the bidder which means that the longer persistent run up will decrease the net present value of the transaction to the acquiring shareholders.

The market anticipation hypothesis contends that investors use a number of publicly available information sources to decipher important events prior to public announcement, with share prices impacted to reflect updated beliefs (e.g., Jensen and Ruback, 1983). The establishment of a large share position in a firm or the publication of takeover rumors (Jarrell and Poulsen, 1989) can also signal impending takeovers. Jabbour et al. (2000) find that abnormal stock price performance at the early stage prior to the acquisition announcement is due to actual trading by corporate insiders; however, the run-up immediately preceding the takeover announcement appears to be due to market anticipation about an impending bid for the target.

The expedited filing requirements in the post SOX period have diminished the motivation to trade around the announcement date. In addition, the stricter penalties (Title IX of SOX) provide further deterrence for insiders to act on private information. Both factors are expected to contribute to a reduced pre bid price run up as well as a stronger stock price response around the announcement date.

3.2.3 Motives for acquisitions

Berkovitch and Narayanan (1993) examine three different motives for takeovers: synergy or value maximizing takeovers, agency driven takeovers, and hubris driven takeovers. They use a sample of 330 tender offers between 1963 and 1988. The synergy or value maximizing takeovers are described as ones where management works in the best interest of the shareholders i.e. they merge with another firm in a positive NPV transaction. They report that in these types of transactions, the gains to the target, the acquirer, and total gain are all positive and are positively correlated with each other. On the other hand, an agency driven[24] merger is one where the acquirer's management executes the transaction in their own best interest at the expense of the stockholders of their firm. These transactions are characterized as ones where the total and target gains are inversely related and target and acquirer gains are inversely related as well. Finally, hubris driven acquisitions occur where managers make mistakes in evaluating target firms. In this instance target and total gains do not have any correlation whereas target and acquirer gains have a negative correlation. For our study, we primarily focus on agency driven and value maximizing transactions.

[24] Malatesta (1983) analyzes 336 completed mergers between 1969 and 1974 and finds that mergers are mainly motivated by agency which benefits only the target firms. By analyzing sample of 326 acquisitions between 1975 and 1987, Morck, Shleifer, and Vishny (1990) find that managerial objective might be a contributing factor in reducing bidding firm values.

As opportunities for informed insider trading has diminished due to early filing requirement and stricter penalties[25], the safest way for the management to make money is to invest in positive NPV value-maximizing acquisitions. As such, we expect to see an increase in the proportion of synergy driven acquisitions after SOX.

3.2.4 Governance, information asymmetry and acquisitions

The Sarbanes-Oxley Act (SOX) introduced some of the most sweeping changes in governance structures of publicly owned corporations. Although some researchers argue that a "one-size-fits-all" model of governance cannot work, there is increasing evidence that good governance practices affect firm value. Using a 'Governance Index'[26] or G-Index, Gompers, Ishii, and Metrick (2003) show that firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, lower capital expenditure, and fewer corporate acquisitions.

Chhaochharia and Grinstein (2007) find that enactment of SOX had a significant impact on firm value; they report that firms that were less compliant with the corporate governance rules prior to SOX showed greater improvement in firm value after SOX, compared to their more compliant counterparts. This implies that we are likely to observe

[25] By comparing stock price responses around takeover announcements between a relatively stronger (1989–1991) and a relatively weaker (1982–1984) regulatory regime, Boardman et al. (1998) find evidence that insiders associated with acquiring firms sought fewer but more profitable takeovers after the effective tightening of regulation, possibly to compensate them for the reduction in the profit opportunities from illegal insider trading.

[26]Bebchuk et al. (2009) using a similar but more compact index find similar results. Bhagat and Bolton (2008) find that in addition to the indices used by Gompers et al (2003) and Bebchuk et al (2009), stock ownership of board members and CEO-Chair separation are significantly positively correlated with better future performance. Brown and Caylor (2006) develop a new index which includes two external and five internal corporate governance measures and show that there is a significant relation between their index and firm performance.

the performance gap[27] between the governance compliant and non-compliant firms to reduce in the post SOX regime.

3.2.5 Our hypotheses

The effect of SOX on corporate acquisition activity could manifest in a number of ways. First, we expect to find a decline in pre-acquisition insider trading activities after the passage of SOX. The information advantage is no longer there for insiders as SOX makes expedited filing mandatory. In addition, the risk of getting litigated (and if convicted, the penalty), is much higher than before. Consequently, we are likely to observe lower price run ups after SOX. Acquisition announcements in the post-SOX period should, therefore, be more informative. Second, with a focus on good governance practices and a more transparent disclosure environment, we expect a decline in acquisitions motivated by agency considerations while an increase in the number of acquisitions with synergy being the primary motive. Finally, if SOX is successful in initiating more synergy-driven acquisitions, we expect the post SOX acquiring firms to perform better post-acquisition than their pre SOX counterparts—at a minimum we expect less underperformance from post SOX acquirers.

[27] Hoechle et al (2012) analyze a large sample of firms between 1996 and 2005 and find that corporate governance is associated with less value destruction. Their findings signify that diversification discount could be lowered by implementing better corporate governance.

3.3 Data and Methodology

3.3.1 Data selection and sample description

Our sample consists of 910 successful tender offers from January 1, 1996 through December 31, 2009 drawn from the SDC Platinum database. We only collected tender offers where the deal value was greater than or equal to $50 million. The insider trading data was collected from EDGAR for the same time period. The pre-SOX sample covers the period from January 1, 1996 to August 29, 2002 while the post-SOX period is from August 30, 2002 onwards. We exclude firms with insufficient or no data on stock returns on CRSP.

[Table 3-1 here]

Table 3-1 presents a detailed breakdown of the number of successful tender offers for each of the 14 years. There were 656 acquisitions in the pre-SOX period with an average of 98 acquisitions per year and 254 acquisitions for the post-SOX period with an average of 35 acquisitions per year. The higher numbers in the pre period could be attributed to the economic boom in the '90s whereas the 2000's has seen a systematic slow down of the economy, and therefore, a decrease in the merger and acquisition activity[28].

[Table 3-2 here]

[28]Rhodes-Kropf and Viswanathan (2004) discusses the hike in merger activities in the '90s as well

Table 3-2 provides some summary statistics about the acquiring and target firms, and the deals, for both the pre and post SOX periods. Variable definitions are provided in Appendix 1. Several points are worth mentioning. Firm sizes for both target and acquiring firms have increased in the post SOX period. Also, the acquirers have lower leverage and Tobin's q in the post SOX time period. In addition, relative deal sizes are lower, premiums have increased, and as hypothesized, there are more synergy driven acquisitions in the post SOX period.

3.3.2 Methodology

3.3.2.1Tests for price-run up and announcement effects for target shareholders

If SOX was successful in diminishing the information gap between corporate insiders and investors and if it was successful in deterring the executives from placing informed insider trades, we should observe a decrease in the price run up in the target firms leading up to the announcement in the post SOX period[29].

First, we compare the cumulative abnormal returns (CAR) between the pre and post SOX target firms around the announcement date. We calculate CAR [-60, t] where t= -60 to +30 days, and t = 0 is the announcement date. Next, using the standard event study approach, we analyze the stock return behavior of the target firms around the announcement dates [t = -60 to t = +30 days]. We use different windows around the announcement date to get a clearer idea about the price run up and information leakage.

[29] Xu (2008) finds a similar trend after the passage of the Insider Trading Sanctions Act of 1984. Jorion et al (2005) also finds that information content of credit ratings improved after Regulation FD of 2000.

Next, we run cross sectional tests for the full sample. Our dependent variable is cumulative abnormal return around announcement date, $CAR_{-1, +1}$. We analyze[30] affects of target firm characteristics and deal characteristics on the dependant variable. Four different models are employed: (i) the first model uses a 'SOX' dummy variable (equals to one if the announcement date was after August 29, 2002, and zero otherwise); (ii) the second model uses the 'SOX' dummy along with operating income growth rate, firm size, leverage, operating performance, and Tobin's q; (iii) the third model uses the 'SOX' dummy and premium, relative deal size, hostile (dummy), cash (dummy), and diversification (dummy); and (iv) the last model uses all the variables.

$$CAR_{-1, +1} = \beta_0 + \beta_1 * SOX + \beta_2 * \text{Operating income growth rate} + \beta_3 * \text{Firm size} + \beta_4 * \text{Leverage} + \beta_5 * \text{Operating performance} + \beta_6 * \text{Tobin's } q + \beta_7 * \text{Premium} + \beta_8 * \text{Relative deal size} + \beta_9 * \text{Hostile} + \beta_{10} * \text{Cash} + \beta_{11} * \text{Diversification} + \varepsilon \quad [3.1]$$

3.3.2.2. Tests for announcement effects for acquirer shareholders

As noted previously, better alignment of management and shareholders' interests in the post SOX period is likely to result in more synergy driven acquisitions. We compare the CAR [-60, t] between the pre and post SOX acquiring firms around the announcement date where t = -60 to +30 days, and t = 0 is the announcement date.

[30]Target firm characteristics variables we used are *operating income growth rate* (operating income is measured by earnings before interest, tax, depreciation, and amortization (EBITDA) scaled by total assets; operating income growth rate is the average growth between years t=-3 and t=-1, for the target), *firm size* (log of book value of total assets), *leverage* (long term debt scaled by total assets), *operating performance* (earnings before interest, tax, depreciation, and amortization (EBITDA) scaled by total assets), and *Tobin's q* (market value of assets over book value of assets). The deal characteristics variable we used are *premium*, *relative deal size* (transaction value reported in SDC platinum database scaled by acquirer market value), *hostile dummy* (one if the deal is reported as hostile in SDC platinum or zero otherwise), *cash dummy* (one if the deal is purely cash financed or zero otherwise), and *diversification dummy* (one if the target and the acquirer have different 4-digit SIC codes and zero otherwise which is consistent with Morck, Shleifer, and Vishny, 1990).

Next, we run cross sectional tests for the full sample using eq [3.1][31] but this time the firm characteristics variables represent the acquirers.

3.3.2.3. Tests for agency versus value maximizing acquisitions

We classify acquisitions either as synergy driven or agency driven using the approach in Berkovitch and Narayanan (1993). They not only provide the simplest definition of the three types[32] of mergers but also describe a very neat methodology to identify them based on correlations between target, acquirer, and total gains[33].Based on the simplest definition, if the total, target, and acquirer gains are all positive then it is classified as a value-maximizing (synergy) merger, else it is an agency-driven merger. They also use the correlation between target gain and total gain and the correlation between target gain and acquirer gain as predictors of agency or synergy driven acquisitions.

Berkovitch and Narayanan (1993) suggest that the agency motive is more likely to persist in mergers with negative total gain. They argue that target and total gains would be positively related in the positive total gain sample because of synergy motive, and negatively related in the negative total gain sample because of agency motive. We check

[31] Only exception is we do not use the control 'premium' for acquirer tests.

[32]Berkovitch and Narayanan (1993) describe synergy-driven, agency-driven, and hubris as the three types of mergers.

[33]They calculate the cumulative abnormal return around the announcement date for both target and acquirer firms. Market model estimates for each firm are calculated using a maximum of 255 trading days of daily returns data beginning 127 days before the announcement of the first tender bid. Target gain is calculated by multiplying the CAR by the market value of target's equity as of the end of six trading days prior to first announcement for the target minus the value of target shares held by the acquirer before the announcement. Likewise, the acquirer gain is calculated by multiplying the CAR by the market value of acquiring firm as of the end of six trading days prior to the first announcement made by the acquiring firm. The total gain is the sum of the target and acquirer gains.

the correlation between target and total gains, and target and acquirer gains—for both pre and post SOX periods—for the full sample as well as the positive total gain only and negative total gain only subsamples.

$$Target\ Gain = \alpha + \beta\,(Total\ Gain) + \varepsilon \qquad [3.2]$$

$$Target\ Gain = \alpha + \beta\,(Acquirer\ Gain) + \varepsilon \qquad [3.3]$$

Here, β estimates the correlation between target and total gains for equation [3.2], and the correlation between target and acquirer gains for equation [3.3]. α is expressed in millions of dollars. If β is positive in equation [3.2] for the positive total gain subsample, it suggests that synergy is the primary motive for this subsample; if it is negative for the negative total gain subsample, it suggests that agency is the main motive for that subsample. The larger the magnitude of β, the stronger will be the case for synergy or agency depending on the subsample in question. For example, larger positive β for the positive gain subsample means stronger evidence for synergy. Both hubris and agency hypotheses imply a negative β for equation [3.3], i.e. a negative correlation between target and acquirer gains.

3.3.2.4. Post acquisition performance

Post acquisition underperformance of acquiring firms has been well documented in the literature (Loughran and Vijh, 1997 for e.g.)[34]. If SOX resulted in proportionately more synergy driven acquisitions, these transactions are likely to improve shareholder wealth gains in the long run or at least at a minimum *less* underperformance. We examine

[34] Agrawal et al. (1992) analyze a large sample of mergers and tender offers between 1955 and 1987 and find that acquiring firm shareholders suffer a loss of about 10% over the five year post-merger period.

both the post acquisition operating and stock return performances using the well-established methodologies in this area.

Operating performance is measured as the return on assets (ROA) and return on sales (ROS)[35]. We analyzed the ratios for a six-year period starting from the year of the announcement to five years after the acquisition. Tests are conducted using both industry and matched-firm benchmark portfolios. We also use the Buy-and-Hold Abnormal Return (BHAR)[36] approach to test for abnormal stock return performance in the long-run. We have used industry (2-digit SIC matching), book-to-market and firm size as our matching criteria.

We run some cross sectional tests for our operating performance measures. Following and expanding from Heron and Lie (2002) we use the following model[37]:

$$P_i = \beta_0 + \beta_1 * SOX\ (dummy) + \beta_2 * [Assets\ (target) / (Assets\ (target + acquirer))] + \beta_3 * M\text{-}B\ (acquirer) + \beta_4 * M\text{-}B\ (target) + \beta_5 * Same\ Industry\ (dummy) + \beta 6 * Delay + \varepsilon \qquad [3.4]$$

[35] Barber and Lyon (1996) also use ROA and ROS as operating performance measures.ROA is the ratio of operating income scaled by total assets where operating income is measured as earnings before interest, taxes, depreciation and amortization (EBITDA). Likewise, ROS is measured as the ratio of operating income (EBITDA) scaled by sales revenue.

[36] As per Mitchell and Stafford (2000), BHAR would represent the abnormal returns from holding a long position in the event firms and a short position on the matching firms, vis-à-vis the difference between long positions in event and matched firms where event firms could be matched based on some firm characteristics. An alternate approach is the *Jensen's alpha approach*, also known as calendar time portfolio approach. Since this approach weights observations equally across time rather than firms, Kothari and Warner (2004) and Loughran and Ritter (2000) argue against using the Jensen's alpha approach as it is more biased towards finding results consistent with market efficiency.

[37] The independent variables are: SOX dummy (equals to one if the announcement date was after August 29, 2002, and zero otherwise), ratio of targets assets to target and acquirer combined assets (assets are book value of assets and at time t=-1), market-to-book for acquirer (at t=-1), market-to-book for target (at t=-1), same industry dummy (equals to one if 4-digit SIC matches, MSV 1990), and a delay variable (the time lag between the first announcement of a bid and the final acquisition of the target).

Here P_i represents the operating performance measures namely average 3-year ROA, average 5-year ROA, average 3-year ROS, and average 5-year ROS.

For all the performance tests, we analyze the full sample, and the same and different industry sub-samples for both the pre and post SOX periods.

3.4 Empirical Results

3.4.1 Evidence on price run up and announcement effects on target shareholders

We begin first by examining the price run up and insider trading activity around the announcement of the acquisition. Cumulative abnormal returns and net insider purchases starting at t= -60 days are examined.

[Figures 3-1 and 3-2 here]

Figure 3-1 shows that the pre-announcement abnormal returns decreased significantly in the post SOX period. These abnormal returns are more concentrated closer to the announcement date compared to the pre-SOX period. For the pre-SOX sample, there is a clear upward drift in the returns several days prior to the announcement. Figure 3-2 shows that the net insider purchase trades scaled by total market value of the target firms gain momentum from about 20 days before the announcement for the pre-SOX period while the same shift appears right before the announcement for the post-SOX period[38]. The evidence in Figures 3-1 and 3-2 provides

[38] These results are similar to Xu (2008) who examined the effect of ITSA. ITSA was a big step towards fairness followed by Regulation Fair Disclosure in 2000 and finally SOX in 2002. The ideal situation would to have no leakage at all before the announcement. We still observe a trace of run up in the post SOX sample which could be attributed to the market anticipation hypothesis.

strong support for the positive impact that SOX has had on reducing information asymmetry and the incentive of insiders to trade on private information by mandating a timelier filing of trades. The announcements appear to be less anticipated than before and clearly more informative compared to the pre-SOX period.

[Table 3-3 here]

Table 3-3 reports the results for the different event windows around the announcement date. The CARs around the announcement date ($CAR_{0,+1}$, $CAR_{-1,+1}$ etc.) are larger in the post-SOX period while the pre announcement CARs ($CAR_{-60,-30}$, $CAR_{-30,-10}$, $CAR_{-10,-5}$ etc.) are significantly higher in the pre SOX period. The statute has clearly improved the information environment for investors. For example, the two-day announcement $CAR_{0,+1}$ is higher in the post-SOX period by 10.75% with a significance level of 1%.The relative importance of price run ups has also significantly reduced in the post period(from 22.78% to 7.22%) and the difference is significant at the 1% level. The loss of relevance of pre announcement return reinforces our earlier finding that information leakage has indeed reduced in the post SOX period.

[Table 3-4 here]

The results for the cross-sectional analysis with the target abnormal returns ($CAR_{-1,+1}$) as the dependent variable are reported in Table 3-4. Independent variables include SOX (dummy); target characteristics such as operating income growth rate, firm size, leverage, operating performance, and Tobin's q; and deal characteristics such as relative deal size, Hostile (dummy), Cash (dummy), and Diversification (dummy). The

significant positive coefficients for the SOX dummy across the four models robustly show that target shareholder returns have improved in the post period. We also find statistically significant evidence that shareholders of smaller target firms gain more in the post SOX period.

3.4.2 Evidence on announcement effects on acquirer shareholders

Next, we analyze the impact of the announcement on acquirer shareholders by considering the cumulative abnormal returns for a period starting at t= -60 to t= +30.

[Figure 3-3 here]

Figure 3-3 shows a clear upward drift in the cumulative abnormal returns for the post SOX acquirers which are in striking contrast to the downward drift for pre SOX acquirers. This provides early evidence that acquisitions in the post Act period are predominantly value maximizing. Our hypothesis that SOX improved the information environment for investors through better and timelier disclosure and reduced the incentive of management to act on private information is substantiated by the evidence in Figure 3-3. This in turn supports the findings by Boardman et al. (1998) that insiders associated with acquiring firms sought fewer but more profitable takeovers after the effective tightening of regulation, possibly to compensate them for the reduction in the profit opportunities from illegal insider trading.

[Table 3-5 here]

Table 3-5 reports the event study results for acquiring firms. With the CARs around the announcement date significantly larger in the post Act period, once again the evidence clearly points in the direction of proportionately more wealth creating acquisitions in the post SOX period. For example, the $CAR_{-1,+1}$ is -1.06% and 0.29% (both statistically significant) for the pre and post periods respectively, and the difference between the two is statistically significant at the 5 percent level. Similar results are obtained for the median CAR values for the same window as well. The evidence in Table 3-5 further corroborates the trend observed in Figure 3-3.

[Table 3-6 here]

The results for the cross-sectional analysis with the acquirer abnormal returns ($CAR_{-1,+1}$) as the dependent variable are reported in Table 3-6. Independent variables include SOX (dummy), acquirer characteristics such as operating income growth rate, firm size, leverage, operating performance, and Tobin's q, and deal characteristics such as relative deal size, Hostile (dummy), Cash (dummy), and Diversification (dummy). The significant positive coefficients for the SOX dummy across the four models robustly show that acquirer shareholder returns have improved in the post period. We also find statistically significant evidence that shareholders of smaller and high growth acquiring firms gain more in the post SOX period. None of the deal characteristics, however, are significant.

The results thus far strongly suggest that post SOX acquisitions are value maximizing transactions for shareholders.

3.4.3 Evidence on agency versus synergy acquisitions

We next turn to directly examining the acquisition motives. Berkovitch and Narayanan (1993) define synergy driven mergers as positive NPV transactions i.e. the total gain as well as target and acquirer gains are positive. Following this simple definition, we find[39] that 44% of the pre SOX transactions are synergy driven whereas 54% of the post SOX ones are synergy driven. With diminished incentives for profiting on private information, fewer transactions in the post Act period are motivated by agency considerations. The majority of the acquisition deals appear to be positive NPV transactions.

[Table 3-7 here]

Table 3-7 reports the results for regression equations [3.3] and [3.4], for the entire sample, and the positive and negative gain subsamples. Results for both the pre and post SOX periods are presented. We find that the correlation estimate for target and total gain (β) is positive for the entire sample and the positive total gain subsample, and negative for the negative total gain subsample. All the βs are statistically significant. These characteristics are true for both pre and post SOX datasets and are consistent with the findings in Berkovitch and Narayanan (1993). For the positive total gain subsample, β is 0.0154 for pre SOX and it is 0.295 for post SOX sample, both with statistical significance. The higher magnitude of β for the post SOX sample signifies a stronger presence of synergy. Synergy also dominates in the full sample for both pre (β =0.004)

[39]Refer to Synergy (dummy) on Table 3-2 (Summary Statistics)

and post SOX (β =0.154) periods with the post SOX sample again having a higher magnitude for the correlation factor (β), implying more dominance of synergy driven acquisitions.

We also present results based on equation [3.4] which analyzes the correlation between target and acquirer gains. Once again results for the full sample and the positive and negative gain subsamples, for both pre and post SOX periods are presented. The estimates of β are only significant for the negative gain subsamples for pre (β =-0.016) and post SOX periods (β =-0.036). Based on these results, we cannot exclude the presence of hubris from the negative subsample and the full sample, but the positive subsample in the post period shows presence of synergy motive (β=0.014) but with no statistical significance.

In summary, we find consistent evidence that synergy and value creation have become increasingly important in acquisition decisions after SOX. We cannot rule out the presence of hubris or agency from the transactions but at a minimum, we can state that synergy driven acquisitions have certainly increased in the post SOX period. The Act appears to have achieved its intended objectives of minimizing agency conflicts between managers and shareholders through ensuring better governance practices and timely disclosure of insider trades, among other things.

3.4.4 Evidence on post acquisition performance

If indeed more acquisitions after SOX are motivated by shareholder wealth maximization considerations, we should observe better long-term performance, or at least

less underperformance, for acquiring firms after the Act. In this section, we provide the results for both the long-run post-acquisition operating as well as stock return performance. Both industry-adjusted and matched-firm adjusted benchmarks are employed in these tests.

[Table 3-8 and 3-9 here]

Table 3-8 presents the results of the industry and matched firm adjusted post-acquisition operating performance analysis for the acquiring firms. Matched non-event firms are selected based on industry (2-digit SIC), book-to-market, and size. Here we report return on assets (ROA) as our measure for operating performance. We will introduce return on sales (ROS) as a second measure in later tables. Results are reported for the full sample for each regime (pre- and post- SOX). We report pre- and post- SOX post-acquisition ROA as well as the difference in performances between the two regimes. We find that long term post-acquisition performances for acquirers after SOX are superior compared to their pre-SOX counterparts. For example, the average *five-year* post-acquisition industry and matched firm adjusted ROA for post SOX regime are *significantly higher* by 1.22% and 1.61% respectively.

Diversification discount is well-documented in the merger literature (Morck, Schleifer and Vishny, 1990; Laeven and Levine, 2007; Hoechle et al, 2012). Therefore, we repeat these tests for same industry and different industry subsamples. The results are qualitatively the same for both subsamples—post SOX post-acquisition performances for acquirers are better compared to the pre SOX period for both the subsamples. Results for the subsamples are available from the authors upon request.

Table 3-9 reports the cross-sectional analysis with the long term performance measures (Average 3-year and 5-year ROA's) as the dependent variables. Independent variables include SOX dummy, ratio of targets assets to target and acquirer combined assets, market-to-book for acquirer, market-to-book for target, same industry dummy, and a delay variable. The significant positive coefficients for the SOX dummy for all four models indicate that long term post-acquisition operating performance (ROA) of the acquirers has improved in the post SOX period. Consistent with Heron and Lie (2002), we also report that operating performance improves when firms with high growth opportunities acquire firms with low growth opportunities. It is to be noted that the same industry dummy has a significant positive coefficient meaning acquirers who buy targets within their own industry show better post-acquisition performance. These results are consistent with the literature that investigates focus versus diversification (vis-à-vis conglomerate) mergers (e.g. Rajan, Servaes and Zingales, 2000; Comment and Jarrell, 1995 etc.)

We conclude from the post-acquisition ROA analysis that acquiring firms' post-acquisition performance has significantly improved in the post SOX period. These firms might be underperforming their industries in a few instances but the magnitude of underperformance has declined in the post SOX period. Moreover, acquiring firms outperformed their matched counterparts in the post-SOX period in the five years after the acquisition. This improvement could be credited to a higher proportion of synergy-driven acquisitions that is apparent in the post SOX subsample. The regulation put in place by the SOX regime appears to be working towards aligning the interests of the acquirers' management and shareholders.

[Tables 3-10 and 3-11 here]

Following Barber and Lyon (1996) we use return on sales (ROS) as a second measure for operating performance for robustness. Table 3-10 reports the post acquisition industry and matched-firm adjusted ROS for pre- and post- SOX samples. The results are qualitatively similar to that of ROA. Post SOX sample outperformed their pre SOX counterparts for both industry and matched firm adjusted cases. For example, average five year industry and matched firm adjusted ROS for post-SOX sample were higher by 2.07% and 3.46% respectively (both with 5% significance). Table 3-11 reports the cross-sectional analysis and the results are qualitatively similar to what we report for the ROA in Table 3-9.

[Table 3-12 here]

We further investigate the post acquisition performance by computing the Buy-and-Hold Abnormal Returns (BHAR) for the acquiring firms. Table 3-12 reports the stock return performance for the three and five year time periods after the acquisition. We find the results consistent with the operating performance analysis in the previous section. Acquiring firms in the post-SOX period consistently performed better than their pre SOX counterparts in the long term performance tests (three-year and five-year). For the full sample, and same and different industry subsamples, pre SOX acquirers underperformed their matched counterparts whereas post-SOX acquirers outperformed their matched counterparts. For the full sample, pre-SOX firms underperformed their matched firms by 18.12% (3-year) and 18.20% (5-year) whereas post-SOX firms outperformed their matched firms by 9.25% (3-year) and 2.29% (5-year). For robustness

check, we divided our sample into quartiles based on relative deal size. We consistently find that post SOX subsamples outperform the pre SOX ones for each quartile. Both panels in table 3-9 also show that the post SOX acquirers performed better irrespective of whether the acquisition was within the same industry or across two different industry segments. In fact, the stronger results for the same industry acquisitions provide further evidence of synergy having become increasingly important as a motive for the acquisition.

Our results show that the overall post-acquisition performance of the acquiring firms has improved after the passage of SOX. These results are in contrast to the widely documented findings that acquiring firms do poorly compared to their industry matched peers. The results of long-term performance further reinforce our previous findings that synergy has become an increasingly important motive for acquiring firm managements after SOX. Although agency and hubris driven acquisitions have not disappeared, our evidence clearly indicates that the better information environment and better incentive alignment of management and shareholders after SOX have resulted in significant wealth gains for acquiring firm shareholders.

3.5 Robustness Checks

We conducted several robustness checks to ensure that our results were not sample specific. These results are not reported here for brevity but are available from the authors upon request.

3.5.1 Regulation Fair Disclosure of 2000

Regulation Fair Disclosure (or Regulation FD) passed in October 2000 was believed to have reduced the information asymmetry between individual and institutional investors. This regulation basically revolutionized how corporate information is disseminated. Jorion et al. (2005) analyze the impact of Regulation FD and find that the information effect is higher in the post Regulation FD period. For robustness check, we only included the post Regulation FD sample as our pre SOX sample and compared it with the post SOX sample. Our results remained qualitatively unchanged.

3.5.2 IT Bubble of the last Millennium

Our pre SOX sample is no doubt influenced by the large number of acquisitions during the tech bubble in the late 1990's. Rhodes-Kropf and Viswanathan (2004) discuss the hike in merger activities in 1999 and 2000. We therefore excluded acquisitions from years 1999 and 2000 and repeated the analyses. Our overall short run and long run results qualitatively remained unchanged.

3.5.3. Credit Crunch

By the end of 2007, the U.S. economy was officially in a recession. The post SOX sample could well have been influenced by the recession year transactions. Hence, we repeated our analyses after excluding tender offers from years 2008 and 2009. Again, our results did not change qualitatively.

3.5.4 Sample year 1997

The relative deal size for the sample year 1997 (see Table 3-1) was much higher than the rest of the sample years. As a robustness check, we excluded transactions from 1997 and repeated the analyses. Our results continue to hold.

3.5.5 All Events

For a comprehensive robustness check for macro events, we excluded years 1999 and 2000 from the pre SOX sample, and years 2008 and 2009 from our post SOX sample. Our results still hold.

3.5.6 Transaction Size

It is prominent in M&A literature that relative deal size is around 30% in most cases. We have excluded any transaction that has relative deal size greater than 30% and repeated our analyses and our results continue to hold.

3.6. Conclusions

The Sarbanes-Oxley Act of 2002 is a comprehensive legislation covering a broad spectrum of areas such as accounting standards, corporate governance, corporate disclosure and reporting of financial transactions. It has vastly increased the civil and criminal penalties for corporate wrongdoers and has given the SEC more tools than ever to bring the culprits to justice.

Our study analyzes the impact of SOX on corporate acquisition activities using a large sample of completed tender offers between 1996 and 2009. We find that the passage of SOX has contributed to reducing informed insider trading around acquisition announcements. By analyzing abnormal returns around the announcement date, we find that SOX had a dampening effect on information leakage around these events. The event study results for target firms show that the price run up and the relative importance of price run up have significantly decreased after the enactment of SOX. An upward shift in abnormal returns around the announcement for acquirers appears to indicate greater investor confidence in acquisition decisions.

Our results also show that the proportion of synergy driven acquisitions have proportionately increased since the passage of SOX. Our evidence on post acquisition performance is consistent with this hypothesis. We examine both the operating performance as well as the buy-and-hold abnormal stock returns over the five years after the acquisition and consistently find that post acquisition has improved in the post SOX period. These results are robust to the benchmark used (industry-adjusted and matched-firm based approaches). In large part, we believe that this is the result of the greater thrust of the statute on better corporate governance practices, more transparency in reporting corporate information and more timely disclosure of financial transactions by insiders.

Although SOX has been criticized as being overly zealous in its compliance requirements, our paper suggests that it has been effective in improving the overall information environment in which firms operate. Specifically with respect to corporate

acquisition activity, we find that investors have benefitted since the statute has diminished the incentives for agency driven acquisitions and increased the incentives for managers to pursue transactions that maximize shareholder wealth.

Chapter 4 - Impact of Canadian SOX from an Acquisition Perspective

4.1. Introduction

United States Congress enacted the Sarbanes-Oxley Act[40] (2002) in the aftermath of large scale corporate scandals in the turn of the century. This was the strictest law in the post war era. In order to create level playing field for the cross-listed Canadian firms and to boost investor confidence in the north of the border, Canada soon followed suit. Ontario Bill 198 (CSOX) [41] was passed in spring of 2003 by the Ontario legislature. This is one of the most comprehensive securities regulations passed in Canada. Though the Act had its flaws[42], it covered a broad array of areas like accounting standards, transparency, corporate governance etc.

In this paper, we analyze the impact of CSOX on Canadian acquisition. As the Act has introduced sweeping reform in corporate governance and significantly increased penalties for corporate wrongdoings, we expect the announcement effects for acquisitions to be stronger in the post Act period. This is likely to result in less price run up for target

[40] This Act included provisions to promote independent auditing, increase executive responsibility of financial reporting, and improved internal control system. The Act was passed in July 30, 2002 and enacted on August 29, 2002. It has given enormous power to the Securities and Exchange Commission (SEC) to punish the wrongdoers. One of the most important provisions was to make insider trade filing mandatory within two business days.

[41] This Act is also known as CSOX or Canadian SOX. The full title is "An Act to implement Budget measures and other initiatives of the Government", aka "Budget Measure Act". The Act received Royal Assent on December 9, 2002 and went into effect on April 7, 2003.

[42] The Act did not address the insider trading filing delay requirement. It remained unchanged at 10 calendar days whereas SOX in the US mandated a two business day filing requirement. But despite this flaw, we expect CSOX to have a positive impact on corporate acquisition activities in Canada considering other sweeping changes introduced by the Act.

shares around the announcement. Secondly, if the law was successful in bridging the gap between management and shareholders then shareholders are expected to show more confidence on the acquisition activities undertaken by the management. This in turn is likely to result in higher returns for acquirer shareholders around announcements. Finally, if the management is working in the best interests of the shareholders, if they are making good acquisition decisions, then we should observe better post acquisition performance by the acquirers, if not, then at least less underperformance.

Pre bid price run up in target firms is a commonly discussed phenomenon (Keown and Pinkerton, 1981). Empirical evidence is in plenty regarding insider trading around major corporate announcements (Karpoff and Lee, 1991; Damodaran and Liu, 1993; and Keown and Pinkerton, 1981). As long as the benefits outweigh the costs of getting punished, the insiders will engage in transactions based on private information[43]. As CSOX has introduced stricter penalties for corporate wrongdoings, we expect it to significantly reduce the incentives for corporate insiders to trade on private information.

Empirical research on corporate acquisitions has examined synergy, agency, and hubris as possible motives for acquisitions. Berkovitch and Narayanan (1993) introduce a simple methodology to identify the type of acquisition. They report that synergy driven acquisitions are undertaken for economic gains, agency driven ones are executed to profit the management, and hubris driven ones are mainly honest mistakes with no economic gains. As the Act has imposed more transparency, as it has reduced the incentive to trade

[43] Xu (2008) analyzes the Insider Trading Sanctions Act of 1984 and shows that stricter regulations prevent insiders from trading on private information. Her results show that pre announcement abnormal returns decreased after the passage of Insider Trading Sanctions Act of 1984.

on private information, as it is more likely to reduce the gap between management and shareholders' interests, we are likely to observe a stronger influence of synergy on acquisition activities.

Also, it has been well-documented in the literature that acquiring firms underperform in the post acquisition period (Agrawal et al., 1992; Loughran and Vijh, 1997). Empirical evidence abounds with respect to diversification discount (Laeven and Levine, 2007; Morck, Shleifer and Vishny, 1990; Hoechle et al, 2012). If CSOX was successful in aligning the interests of all the stakeholders then management would undertake good acquisition transactions and would most likely do a better job operating them in the post acquisition period. Therefore, we expect to see improvement in post acquisition operating performance or at minimum less underperformance.

In this paper, we examine the impact of CSOX on pre bid price run up, abnormal returns around announcements for targets and acquirers, takeover motive, and post acquisition operating performance for acquirers. Using a large Canadian sample of successful tender offers between 1996 and 2009, we find the following: (1) pre bid price run up situation is almost unchanged; the inaction in reducing the delay between insider trades and filing by CSOX most likely has contributed to this phenomenon; (2) abnormal returns for targets close to announcement dates are higher in the post CSOX period; (3) abnormal returns for acquirers for the same period are also higher post CSOX but when we control for deal and firm characteristics, the results do not hold; the Act most likely does not provide significant added benefit for the acquirer shareholders; (4) though the proportion of synergy driven acquisitions has not increased, the impact of synergy is

higher in the post CSOX transactions showing that the quality of transactions has improved; and finally, (5) the post acquisition operating performance has improved in the post CSOX period.

The remainder of the paper is organized as follows: section 4.2 discusses the existing theoretical and empirical literature; section 4.3 describes the data and research methodology; section 4.4 discusses the sample and the empirical results; and section 4.5 concludes the study.

4.2. Literature Review

4.2.1 Ontario Bill 198, "C-SOX"

The United States Congress passed the Sarbanes-Oxley Act (SOX) in the summer of 2002, and it went into effect on August 29, 2002. This was the strictest regulation passed in the post war era. The SOX enforced number of sweeping reforms to ensure accountability, fairness, and transparency in corporate deals as well as improved corporate governance. It gave more power to the Security Exchange Commission (SEC) by introducing harsher civil and criminal penalties for wrongdoers. In order to ensure fairness to the cross-listed Canadian firms and to enhance investor confidence, Canada soon followed suit. In Canada, each province implements its own security regulations. Our focus is the province of Ontario as the Toronto Stock Exchange (TSE) is situated under its jurisdiction and therefore, majority of the companies in Canada fall under Ontario regulations.

Immediately after SOX was enacted in the United States, Ontario government proposed Bill 198 (C-SOX) titled "An Act to implement Budget measures and other initiatives of the Government", also known as the "Budget Measure Act". Following SOX, C-SOX introduced several sweeping changes to Ontario security laws to ensure better corporate governance and to bring more transparency to corporate deals and trades. The Act went into full effect on April 7, 2003 although it received Royal Assent on December 9, 2002. Like SOX, C-SOX has increased civil and criminal penalties for corporate wrongdoers. One of the striking differences between SOX and C-SOX is insider trade filing delay requirement—while SOX requires insiders to file within two business days, C-SOX did not change the existing Canadian rule of filing within 10 calendar days[44]. As C-SOX has increased the penalties for corporate wrongdoings, it should deter informed insider trading[45]. Though the ten calendar day provision in Canada is still better than the pre-SOX situation in the United States[46], it could still be an issue.

4.2.2 Price run-up, information leakage and market anticipation

Significant price run-up and insider trades for target shares around acquisition announcement dates have been well-documented in the literature (Keown and Pinkerton, 1981). Motivation for trade around acquisitions should be diminished in the post C-SOX period as a result of the enhanced penalties introduced by the Act.

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[44] Ontario Securities Commission finally changed the filing requirements to 5 calendar days starting on November 1, 2010

[45] Bhabra and Hossain (2012) analyze insider trades by corporate officers between 1996 and 2009 and find that SOX has been able to improve informativeness of insider filings. They find timelier filing requirement of SOX to be one of the contributing factors to this improvement.

[46] The Sarbanes-Oxley Act (SOX) of 2002 mandated a two business day filing delay requirement which is a drastic change from a previous allowable delay of up to 40 calendar days.

Keown and Pinkerton (1981) find that information leakage and insider trading take place before the announcement date. But they also state that semi-strong form efficiency hold and therefore all the market reaction is realized by the day after the announcement.

The market anticipation hypothesis contends that investors use a number of publicly available information sources to decipher important events prior to public announcement, with share prices impacted to reflect updated beliefs (e.g., Jensen and Ruback, 1983). The establishment of a large share position in a firm (Jarrell and Poulsen, 1989), the publication of takeover rumors (Jarrell and Poulsen, 1989), or the passage of merger-related banking regulation (Becher, 2009) can also signal impending takeovers.

4.2.3 Motives for Acquisitions

Three different types of acquisitions are discussed by Berkovitch and Narayanan (1993), namely synergy, agency, and hubris driven acquisitions. By analyzing 330 tender offers between 1963 and 1988, they conclude that synergy driven takeovers are those where target, acquirer, and total gains are all positive and are positively correlated with each other; agency driven acquisitions are defined by a negative correlation between target and total gains, and target and acquirer gains; hubris is defined by management mistakes where target and total gains have no correlation whereas target and acquirer

gains have negative correlation. In this paper, we mainly focus on synergy or value maximizing, and agency driven transactions[47].

As stricter regulation like CSOX is most likely to decrease[48] benefits from insider trading, the best way for management to make money is to engage in synergy driven acquisitions. This could mean an increase in value maximizing transactions resulting in a better post-acquisition performance. Diversification discount is well-documented in the literature (Laeven and Levine, 2007 e.g.). Since we are likely to note a better alignment between management and shareholder interests, we expect to see a decline in diversification transactions.

4.2.4 Canadian Sample

As Canadian firms receive a preferential treatment in US Stock exchanges, it was important that the Canadian tighten up their house following the passage of SOX[49]. It was also needed in order to ensure a level playing ground for the cross-listed Canadian firms who were already required to comply with the Sarbanes-Oxley Act in the United States. The shareholder structure within the corporations is also different in Canada—about one fifth of Canadian companies listed under TSX have a controlling shareholder; Canadians firms are also known for issuing restricted or subordinated voting share which is a rarity in the US. As Canadian regulators and legislators have often times followed suit of their

[47] Malatesta (1983) analyzes 336 completed mergers between 1969 and 1974 and reports that mergers are primarily agency motivated and that these transactions only benefit target shareholders.

[48] Boardman et al (1998) reports that insiders associated with acquiring firms sought fewer but more profitable takeovers after the effective tightening of regulations.

[49] "CANADIAN RESPONSE TO THE U.S. SARBANES-OXLEY ACT OF 2002: NEW DIRECTIONS FOR CORPORATE GOVERNANCE", by Tara Gray, Economic Division, October 4, 2005

southern neighbors, it is famously known that the Canadian regulators are much softer on enforcing their security laws. Critics of C-SOX opposed the US way of regulating and argued that a principle-based regulatory environment should be more appropriate for Canada as it will prevent executives to look for "loopholes" like their neighbors in the south.

4.2.5 Hypothesis

The effect of C-SOX could be observed in various ways. Though the *unchanged* insider filing requirement of ten days could be troublesome, the increased penalties enforced by the Act will most likely deter the insiders from trading on private information. First, we expect the pre bid price run-ups to decline in the post C-SOX period since the penalties for informed insider trading has increased significantly. Second, as the Act has tightened up the loose ends on corporate governance and imposed more penalties for insider wrongdoings, we are more likely to observe less opportunistic trades around acquisition announcements resulting in the announcements events to be more informative for both targets and acquirers. Third, we expect synergy driven acquisitions to go up as C-SOX has enforced better corporate governance and more transparency. Finally, if C-SOX is successful in generating more value-maximizing acquisitions, if the better corporate governance measures work to mitigate agency problems, we will most likely observe the acquiring firms to show better operating performance post-acquisition, or at minimum *less underperformance*.

4.3. Data and Methodology

4.3.1 Data selection and sample description

Our sample consists of successful Canadian tender offers collected from SDC Platinum database covering dates from January 1, 1996 through December 31, 2009. The data consists of transactions where both target and acquirer are Canadian. Since C-SOX was enacted by Ontario legislature, and only covers companies that are listed on TSX, the sample includes TSX listed targets and acquirers only. Our sample consists of 238 completed Canadian tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and have stock returns and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively; (3) no cross-listed companies were included since they will be impacted by the US-SOX anyways. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards.

[Table 4-1 here]

Table 4-1 provides a detailed breakdown of the number of completed tender offers between 1996 and 2009. There were a total of 159 transactions in the pre CSOX period for a time span of little over 8 years; on the other hand 79 acquisitions were completed in the post CSOX period covering about 6 years. It is to be noted that same industry acquisitions have also increased in the post CSOX period (49.7% for pre CSOX v. 62% for post CSOX). A particular hike in acquisitions in the late ’90s could be

attributed to the economic boom during that period. Rhodes-Kropf and Viswanathan (2004) mentions the hike in merger activities in the late 1990s.

[Table 4-2 here]

This table provides some summary statistics about the acquiring and target firms, and the deals. The definition of the variables is provided in Appendix 2. We would like to mention some key points—both acquirer and targets carry higher leverage, and better operating performance; in addition, premiums have increased, no significant change in synergy driven acquisitions, and there are less diversification transactions in the post C-SOX era.

4.3.2 Methodology

4.3.2.1 Tests for pre bid price run up and announcement effects for target shareholders

Pre bid price run ups in target firms have been observed throughout the history of mergers and acquisitions (Keown and Pinkerton, 1981; Bhabra and Hossain, 2012). Using standard event study methodology, we analyze the cumulative abnormal returns (CAR) of target firms around announcement dates, starting from t=-60 days to t=30 days, for both pre- and post- CSOX samples. We use different event windows within this time frame to get a clearer picture of the price run ups and information leakage in the target firms.

Next, we undertake some cross-sectional regression analysis where cumulative abnormal return around announcement date, $CAR_{-1,+1}$ is the dependent variable. We

control for a CSOX dummy (equals to one if the announcement date was after April 6, 2003, and zero otherwise), some target firm characteristics[50] like firm size, leverage, and free cash flow, and some deal characteristics[51] like relative deal size, premium, 'Hostile' dummy, and 'Cash' dummy.

$$CAR_{-1,+1} = \beta_0 + \beta_1 * C\ SOX + \beta_2 * Firm\ size + \beta_3 * Leverage + \beta_4 * Free\ cash\ flow + \beta_5 * Relative\ deal\ size + \beta_6 * Premium + \beta_7 * Hostile + \beta_8 * Cash + \varepsilon \quad [4.1]$$

4.3.2.2 Tests for announcement effects for acquirer shareholders

As we are expecting CSOX to be better able to align management and shareholders' interests, the management will most likely engage in more synergy driven transactions. If the investors are confident that the management is working in their best interest, we should observe an increase in cumulative abnormal return (CAR) for acquirer shareholders around the announcement dates. Using similar event study and cross-sectional analysis as discussed in the previous section for targets, we test the impact of announcements for acquirer shareholders. The cross sectional equation remains the same as eq [4.1]; only exception is that we do not control for the premium.

4.3.2.3 Tests for synergy versus agency driven acquisitions

We use the Berkovitch and Narayanan (1993) methodology to identify synergy and agency driven transactions. Based on their simpler definition if the target, acquirer, and total gains are all positive then the corresponding transaction is a synergy driven one

[50] *Firm size* (log of total assets), *leverage* (long term debt scaled by total assets), and *free cash flow* (EBITDA scaled by total assets)

[51] *Deal size* (transaction value scaled by acquirer's market value), *premium* (as reported on SDC platinum), *'Hostile' dummy* (equals to one if the deal was flagged as hostile in SDC Platinum), and payment method dummy *'Cash'* (equals to one if the deal was an all cash transaction)

or else it is agency driven. In a more robust method, they classify the transactions little differently—if target, acquirer, and total gains are all positive and have positive correlation between each other then it is synergy driven transaction; for agency driven acquisitions target and total gain and target and acquirer gain are all negatively correlated. They insist that agency motive is more prevalent in acquisitions with negative total gain whereas synergy is more common for positive total gain transactions. Following their methodology, we check the correlation between target and total gain, and target and acquirer gain, for both the positive and negative gain subsamples as well as for the full sample.

$$Target\ Gain = \alpha + \beta\ (Total\ Gain) \qquad [4.2]$$

$$Target\ Gain = \alpha + \beta\ (Acquirer\ Gain) \qquad [4.3]$$

Here β is the correlation coefficient for each equation. The higher the magnitude of β, the stronger the presence of synergy or agency motive depending on the sample. For example, if we are analyzing a positive total gain subsample then higher value of β for equation [4.2] would mean a stronger presence of synergy and vice versa.

4.3.2.4 Post acquisition operating performance

It has been well-documented in the literature that acquiring firms underperform in the post-acquisition period (Agrawal et al, 1992; Loughran and Vijh, 1997 etc.). If CSOX has resulted in a better alignment of management and shareholders' interests, if that results in more synergy driven transactions then we will most likely observe a better performance by the acquiring firms in the post acquisition period, if not then at least less underperformance. Following Barber and Lyon (1996) we use Return on Assets (ROA)

and Return on Sales (ROS) as operating performance measures. ROA is operating income scaled by total assets where operating income equals earnings before interest, tax, depreciation and amortization (EBITDA). Similarly, ROS is operating income scaled by sales. We conduct all the ratio analysis on an industry-adjusted basis.

Following and expanding from Heron and Lie (2002) we run some cross sectional tests for the ROA and ROS measures[52]:

$$P_i = \beta_0 + \beta_1 * CSOX\ (dummy) + \beta_2 * [Assets\ (target) / (Assets\ (target + acquirer))] + \beta_3 * M\text{-}B\ (acquirer) + \beta_4 * M\text{-}B\ (target) + \beta_5 * Same\ Industry\ (dummy) + \beta 6 * Delay + \varepsilon \quad [4.4]$$

Here P_i represents the operating performance measures namely average 3-year ROA, average 5-year ROA, average 3-year ROS, and average 5-year ROS.

4.4. Empirical Results

4.4.1 Evidence on pre bid price run up and announcement effects on target shareholders

We first examine pre bid price run up around the acquisition announcement dates. We calculate the cumulative abnormal returns (CAR) from t = -60 days to t = +30 days where t=0 is the announcement date.

[Figure 4-1 and Table 4-3 go here]

[52] The independent variables are: CSOX dummy (equals to one if the announcement date was after April 6, 2003, and zero otherwise), ratio of targets assets to target and acquirer combined assets (assets are book value of assets and at time t=-1), market-to-book for acquirer (at t=-1), market-to-book for target (at t=-1), same industry dummy (equals to one if 4-digit SIC matches, MSV 1990), and a delay variable (the time lag between the first announcement of a bid and the final acquisition of the target).

Figure 4-1 shows that the pre announcement abnormal returns are lower in the post CSOX period for the most part but the upward drift starts around the same time period before the announcement for both pre and post CSOX regimes. It appears that the tightening of regulations has some impact on the information leakage front but the lack of action on timelier filing requirement is apparent through the continuing pre announcement upward drift in the post CSOX period. Table 4-3 reports the event study results for different windows around the acquisition announcement dates. Our results show that the Act clearly made some improvements. The CARs around announcement dates, e.g. $CAR_{0,+1}$, $CAR_{-1,+1}$, $CAR_{-1,0}$, and $CAR_{-5,0}$ are all significantly higher for the post CSOX period. For example, the two day announcement $CAR_{0,+1}$ is 7.87% higher with 1% significance for the post CSOX period.

[Table 4-4 here]

Table 4-4 presents the cross sectional results with $CAR_{-1,+1}$ as the dependent variable. We find that the CSOX dummy is positive across all four models with statistical significance which means that the target shareholders returns have improved in the post CSOX period. These results are consistent with our event study findings. The higher returns around announcement in the post CSOX period indicate that the Act was able to have a positive impact in reducing information leakage around announcements. At the same time, it is also true that the inaction in reducing the delay between insider trades and filing by CSOX most likely has contributed to the lack of improvement in earlier pre announcement jump in CARs apparent in Figure 4-1.

4.4.2 Evidence on announcement effects on acquirer shareholders

Next, we analyze the impact of acquisition announcements on acquirer shareholders by examining the CARs around announcements [from t = -60 days to t = +30 days where t=0 is the announcement date].

[Figure 4-2 and Table 4-5 here]

Figure 4-2 shows a clear upward drift for both pre and post CSOX shareholder returns before announcement. Even though the magnitude is smaller than what we find for targets, the CARs around announcement dates, e.g. $CAR_{0,+1}$, $CAR_{-1,+1}$, $CAR_{-1,0}$, and $CAR_{-5,0}$ are all significantly higher for the post CSOX period. For example, the two day announcement $CAR_{0,+1}$ is 0.17% higher with 5% significance for the post CSOX period. These results show that investors are showing more confidence on the acquisition activities undertaken by the management. Even though the results are not as striking as Bhabra and Hossain (2012) which analyze the impact of SOX on US acquisition activities, they show traces of improvement. This implies that CSOX was able to align stakeholder interests even though it lacked timelier filing requirement like its American counterpart. In order to be fair to CSOX, we should not expect a drastic impact like that of SOX in the United States because there the delay came down from 40 calendar days to two business days whereas in Canada the delay requirement was 10 calendar days to begin with—had CSOX addressed the delay issue, it would not have brought in the striking improvement like in the US sample as reported in Bhabra and Hossain (2012).

[Table 4-6 here]

Next, we report the results from the cross sectional analysis with $CAR_{-1,+1}$ as the dependent variable. We use almost the same sets of controls as we do for the target return analysis, i.e. CSOX dummy and some firm (firm size, leverage, and free cash flow) and deal characteristics (relative deal size, hostile dummy, and cash dummy) variables. The CSOX dummy is positive and significant for Model I, but when we control for other factors in Models II to Model IV, it does not show any statistical significance. Therefore, we cannot conclude that the Act actually had a significant positive impact on acquirer shareholders.

In conclusion of this section, we can say that the event study results show some trace of improvements in the post CSOX period but the results do not hold once we control for other firm and deal characteristics. In summary, the Act most likely does not provide as much significant added benefit for acquirers as it did for targets.

4.4.3 Evidence on agency versus synergy acquisitions

Following Berkovitch and Narayanan (1993), we analyze the acquisition motives for the transactions. We do not find any significant change in synergy driven acquisitions[53] while considering the simplest definition of acquisition motive. The slight majority of transactions still appear to be agency driven.

[Table 4-7 here]

[53] Referring to the synergy variable on Table 4-2, there is no difference between the pre and post CSOX periods.

Table 4-7 reports the correlations between target and total gains, and target and acquirer gains, for full sample, and positive and negative total gain subsamples. We find that correlation between target and total gains are positive for full sample and positive total gain subsample and that it is true for both pre and post CSOX periods. This signifies that synergy is dominant within those two samples. We also find that the magnitudes of correlation (β) are higher for the post CSOX period (β=0.043 and β=0.66 for pre and post CSOX full sample respectively). A higher magnitude of the correlation factor signifies more dominance of synergy (BN 1993). We observe similar stronger presence for the post CSOX sample within the positive total gain subsample as well. We also present correlations between target and acquirer gains, none of which are statistically significant. We cannot exclude the possibility of the presence of hubris from our sample.

In summary, we find that the presence of synergy is apparently more dominant in the post CSOX sample. This could be a result of more better-quality vis-à-vis value maximizing acquisitions undertaken by the management; or this could also be an outcome of a decline in diversification or conglomerate transactions. As we cannot rule out the presence of hubris or agency from the sample, at minimum we can assert that CSOX has provided some improvement in bridging the gap between shareholder and management interests. This improvement could be attributed to better governance and stricter penalties imposed by the Act. It is our opinion that a better outcome could have achieved had CSOX included provisions for timelier filing requirement like SOX in the United States.

4.4.4 Evidence on post acquisition operating performance

Post acquisition underperformance is a widely noted phenomenon in finance literature. If CSOX was successful in motivating management to work in the best interests of the shareholders, we will most likely observe an improvement in the post acquisition operating performance of the acquiring firms or at least less underperformance.

[Table 4-8 here]

Table 4-8 reports the post acquisition long term operating performance for the acquiring firms. We present industry adjusted return on assets (ROA) for a total of six year time period starting from the year of the acquisition. We find that both the pre and post CSOX sample underperform their respective industries over three and five year periods but the post CSOX sample shows less underperformance compared to its pre CSOX counterpart. For example, average three year ROA is higher for the post CSOX sample by 1.7% with 5% significance; the average five year ratio shows similar trend. It has been well-known that firms that acquire other firms for the purpose of diversification show poor post acquisition performance (MSV, 1990; Laeven and Levine, 2007; Hoechle et al, 2012). Therefore, we repeat all the performance tests for same and different industry subsample and the results do not change qualitatively. We also repeat all these performance tests using ROS (return on sales). The results are qualitatively same as the ROA ones. We do not report those for brevity. Results will be provided from the author upon request.

Panel B reports the cross-sectional analysis with long term industry adjusted ROA as the dependent variables. We control for CSOX dummy, ratio of targets assets to target and acquirer combined assets, market-to-book for acquirer, market-to-book for target, same industry dummy, and a delay variable. It is to be noted that the CSOX dummy is positive and significant for both models meaning long term post-acquisition operating performance (ROA) of the acquirers has improved in the post CSOX period. Again, we ran the same tests for ROS measures and the results were qualitatively similar. Hence we do not report them for brevity.

We conclude from this section that acquiring firms' operating performances have improved in the post CSOX period. Although they might be underperforming their respective industries but the magnitude of underperformance has significantly dropped. As mentioned earlier, we do not find any change in the proportion of synergy driven acquisitions between the two regimes; but we do find that the post CSOX sample experienced less diversification transactions. This could direct towards a better alignment of stakeholders' interests which could very well be an outcome of implementation of stricter penalties and good governance by CSOX.

4.4.5 Robustness checks

IT bubble in the last millennium is a commonly known phenomenon. Rhodes-Kropf and Viswanathan (2004) discusses the hike in merger activities in 1999 and 2000. We exclude those years from our sample and run all the tests. The results did not change qualitatively. For our operating performance test, we analyze ROA and ROS for the post

acquisition period for the same and different industry subsample and the results still hold qualitatively.

4.5. Concluding Remarks

Ontario Bill 198 or CSOX of 2003 is a reactionary Act to the Sarbanes-Oxley Act of 2002 of the United States. This Act covered a broad array of corporate regulations covering accounting standards, corporate governance, and financial disclosures. As Canada was known for lighter civil and rarely any criminal penalties for corporate wrongdoings, this Act is a complete turnaround from that. Though this Act has many good provisions, we find that the lack of timelier filing requirement for insider trades is a significant drawback. In fairness to CSOX, the existing Canadian requirement of 10 calendar days is much better than pre-SOX requirement of up to 40 calendar days in the United States, and therefore a tightening of delay requirement to two business days in Canada probably would not have produced a striking improvement as reported in Bhabra and Hossain (2012) for the US sample.

In this study we analyze Canadian successful tender offers between 1996 and 2009 where the target and acquirers are both Canadian and TSX listed. Our results show that CSOX has contributed incrementally in the area of corporate acquisitions. The event study results for the target firms show that the Act was able to marginally reduce information leakage. At the same time, it is also true that the inaction in reducing the delay between insider trades and filing by CSOX most likely has contributed to the persisting earlier pre announcement jump. Similarly, higher cumulative abnormal returns

for acquirer shareholders around announcements show that investors are showing more confidence on the acquisition activities undertaken by the management.

Though we do not find any significant change in the proportion of synergy driven acquisitions between the two regimes, the post CSOX acquiring firms demonstrate less post-acquisition underperformance. This implies that the improvement in performance is most likely the result of better alignment of management and shareholders' interests through implementation of stricter penalties and good governance.

Finally, before CSOX was enacted, both the academic and practitioner worlds were divided on the question of its necessity. We also find that the results are definitely not as strong as Bhabra and Hossain (2012) that find stronger evidence in favor of the Sarbanes-Oxley Act; but at minimum the results imply that CSOX was the right move in the right direction proved by incremental improvement found in some of the results. We strongly believe that a timelier filing requirement like SOX would have done a better job. As Ontario Securities Commission finally changed the filing requirements to five calendar days on November 1, 2010, we believe that will bring added benefit to CSOX, and most likely we will see stronger results as a consequence. For future work, it will be interesting to examine how big of an impact the governance measures had on the acquisition activity. We also think that the compensation structure for the executives will be more aligned to the shareholders interest. It has been reported in the literature that companies that allocate higher equity based compensation fair well in corporate acquisitions (Datta, Iskandar-Datta, Raman, 2001). It will be really interesting to see if there was a greater shift towards equity based compensation after the enactment of CSOX

and if the gap between post acquisition performance of low and high equity based compensation companies has narrowed or not.

Chapter 5 – Major Findings, Implications, and Directions for Future Research

The Sarbanes-Oxley Act (2002) was the strictest corporate regulations passed in the history of the United States. The Act was passed to regain the confidence of the investors by implementing tighter corporate governance, financial and accounting provisions. This is a significant regulatory improvement aimed at enhancing transparency and reducing information asymmetry between insiders and investors. The Act created a level playing field for all. Regulation Fair Disclosure of 2000 was a first step in the right direction and SOX of 2002 brought the diverse changes needed to ensure greater transparency.

In the first essay, we analyzed if the information content of insider trading transactions changed under the stricter disclosure regulations introduced by SOX. We find that information content of these filings indeed improved in the post SOX period and firms with more information asymmetry and larger trades convey more information in general. We also find that the rank of the insider is an important determinant in the information conveyed by the filing. Our results show that while the information environment has improved for investors in the post- SOX period overall, insider filings are particularly important for firms with larger levels of information asymmetry to begin with. These findings are very important as they show that SOX has successfully brought down the information gap between firms and investors and created a more transparent environment.

In the second essay, we examine the impact of SOX on mainly three facets of corporate acquisitions, namely pre-announcement price run up in target companies, motivation for acquisitions, and post-acquisition long-term performance. We find that the pre-announcement price run ups in target firms have decreased. This is major findings as it reinforces the argument that SOX has brought greater transparency to the market. As there is more transparency, we observe less information leakage and therefore, smaller run ups. We still cannot ignore the presence of market anticipation but at least SOX has put some control on information leakage. Finally, we not only find that synergy has a stronger presence in the post SOX period but also observe better post-acquisition long term performance in the post SOX sample. These results are significant as they direct to a better alignment of shareholder and management interests—this was one of the main goals of the Sarbanes-Oxley Act. This vouches for the stricter corporate governance measures put in place by the Act.

The final essay basically replicates the analysis of the second essay with a Canadian perspective. Ontario Bill 198 or CSOX of 2003 is a reactionary Act to the Sarbanes-Oxley Act of 2002 of the United States. We find that target shareholders were slightly benefited, and synergy had a stronger presence after CSOX but the acquiring shareholders did not rip a short term benefits. However, we find that the acquiring firms in the post CSOX sample were showing better long term post-acquisition performance than their pre CSOX counterparts. We conclude that the Canadian SOX might not be as strict as the US-SOX, but it definitely is the right step in the right direction contrary to the beliefs of many Canadian practitioners and some academicians.

For future work, it will be interesting to examine how big of an impact the governance measures had on the insider trading filings or on corporate acquisitions. Another interesting area could be analyzing the compensation structure of the corporations. We think that the compensation structure for the executives will be more aligned to the shareholders interest. It has been reported in the literature that companies that allocate higher equity based compensation fair well in corporate acquisitions (Datta et al. 2001). It will be really interesting to see if there was a greater shift towards equity based compensation after the enactment of SOX in USA or CSOX in Canada or if the gap between post acquisition performance of low and high equity based compensation companies has narrowed or not.

APPENDIX 1 – Variable Definition for Chapter 3

This appendix provides detailed definitions of all the variables used in the tables in chapter 3.

Variable	Definition
Acquirer gain	Following Berkovitch and Narayanan (1993), the acquirer gain is calculated by multiplying the cumulative abnormal return by the market value of acquiring firm as of the end of six trading days prior to the first announcement made by the acquiring firm.
Cash (dummy)	One if the deal is purely cash financed or zero otherwise
Delay	The time lag between the first announcement of a bid and the final acquisition of the target
Different industry	The 4-digit SIC for target and acquirer are not same
Diversification (dummy)	One if the target and the acquirer have different 4-digit SIC codes and zero otherwise
Firm size	Log (book value of total assets)
Hostile (dummy)	One if the deal is reported as hostile in SDC platinum or zero otherwise
Leverage	Long term debt scaled by total assets
Matched firm	Event firm matched with a non-event firm based on 2-digit SIC, B-M, and size
Operating income growth rate	Operating income is measured by earnings before interest, tax, depreciation, and amortization (EBITDA) scaled by total assets. Operating income growth rate is the average growth between years t=-3 and t=-1, for the acquirer.
Operating performance	Earnings before interest, tax, depreciation, and amortization (EBITDA) scaled by total assets. Operating performance presented in Table 2 is for year t = -1.
Premium	Percent premium paid to target based on the price on the day before the announcement
Relative deal size	Transaction value reported in SDC platinum database scaled by acquirer market value
Sales	Year ending sales figure reported in Compustat for t=-1 year
Same industry	The 4-digit SIC for target and acquirer are same
SOX (dummy)	One if the announcement date was after August 29, 2002, and zero otherwise

Synergy (dummy)	One if both target and acquirer gains are positive and zero otherwise
Target gain	Following Berkovitch and Narayanan (1993), target gain is calculated by multiplying the cumulative abnormal return around announcement by the market value of target's equity as of the end of six trading days prior to first announcement for the target minus the value of target shares held by the acquirer before the announcement.
Tobin's q	Market value of assets (total book value of assets minus book value of equity plus market value of equity) over book value of assets
Total gain	We use the Berkovitch and Narayanan (1993) method to calculate the target and acquirer gains. The total gain is the sum of the target and acquirer gains.
Transaction value	As reported in SDC platinum database

APPENDIX 2 – Variable Definition for Chapter 4

This appendix provides detailed definitions of all the variables used in the tables in chapter 4.

Variable	Definition
Acquirer gain	Following Berkovitch and Narayanan (1993), the acquirer gain is calculated by multiplying the cumulative abnormal return by the market value of acquiring firm as of the end of six trading days prior to the first announcement made by the acquiring firm.
Cash (dummy)	One if the deal is purely cash financed or zero otherwise
CSOX (dummy)	One if the announcement date was after April 6, 2003, and zero otherwise
Delay	The time lag between the first announcement of a bid and the final acquisition of the target
Diversification (dummy)	One if the target and the acquirer have different 4-digit SIC codes and zero otherwise, MSV (1990)
Firm size	Log (book value of total assets)
Hostile (dummy)	One if the deal is reported as hostile in SDC platinum or zero otherwise
Leverage	Long term debt scaled by total assets
Operating performance (ROA)	Earnings before interest, tax, depreciation, and amortization (EBITDA) scaled by total assets. Operating performance presented in Table 2 is for year t = -1.
Premium	Percent premium paid to target based on the price on the day before the announcement
Relative deal size	Transaction value reported in SDC platinum database scaled by acquirer market value
Sales	Year ending sales figure reported in Compustat for t=-1 year
Synergy (dummy)	One if both target and acquirer gains are positive and zero otherwise
Target gain	Following Berkovitch and Narayanan (1993), target gain is calculated by multiplying the cumulative abnormal return around announcement by the market value of target's equity as of the end of six trading days prior to first announcement for the target minus the value of target shares held by the acquirer before the announcement.

Total gain	We use the Berkovitch and Narayanan (1993) method to calculate the target and acquirer gains. The total gain is the sum of the target and acquirer gains.
Transaction value	As reported in SDC platinum database

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TABLES and FIGURES

Table 2-1 Descriptive Statistics

This table reports some descriptive statistics about our sample. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. TradeSize is the ratio of transaction amount to market cap on the day of the filing. Transaction amount represents average dollar amount tied to each of the filing. Dividend Yield equals cash dividend to price ratio. Market-to-Book equals the ratio of market value of equity to book value of equity. Market cap equals the market capitalization of the company on the day of the filing. R&D equals the R&D expenditure scaled by net sales. ROA is latest return on assets available through Compustat.

Panel A: Purchase Sample

Variable	N		MEAN			MEDIAN		
	Pre SOX	Post SOX	Pre SOX	Post SOX	p-value for difference	Pre SOX	Post SOX	p-value for diff.
Trade Size	743	4,483	0.0728%	0.0170%	<0.01	0.0023%	0.0010%	<0.01
Transaction Amount	743	4,483	490,022	492,733	<0.01	63,558	65,064	<0.01
Delay	743	4,483	29	1.63	<0.01	21	1	<0.01

Panel B: Sales Sample

Variable	N		MEAN			MEDIAN		
	Pre SOX	Post SOX	Pre SOX	Post SOX	p-value for difference	Pre SOX	Post SOX	p-value for diff.
Trade Size	1,439	37,121	0.1752%	0.0193%	<0.01	0.0337%	0.0058%	<0.01
Transaction Amount	1,439	37,121	9,679,576	1,892,463	<0.01	591,823	132,895	<0.01
Delay	1,439	37,121	30	2.1	<0.01	24	2	<0.01

Panel C: Full Sample

Variable	N		MEAN			MEDIAN		
	Pre SOX	Post SOX	Pre SOX	Post SOX	p-value for difference	Pre SOX	Post SOX	p-value for diff.
DivYld (%)	2,182	41,604	0.48	0.44	<0.01	0.25	0.21	<0.01
Market-to-Book	2,182	41,604	2.36	2.47	<0.01	2.84	2.95	<0.01
ROA (%)	2,182	41,604	11.08	10.69	<0.01	19.12	18.60	<0.01
R&D (%)	2,182	41,604	1.26	1.21	<0.01	1.55	1.50	<0.01
Market Cap Million $	2,182	41,604	12,160	25,591	<0.01	3,986	9,506	<0.01

Panel D: Monthly Transaction Details

This panel reports the month by month transaction detail for both pre and post SOX period. We report purchase, sales and combination of the two types as well. First, we converted all the transaction amounts to 1996 dollar using consumer price index. Then we calculated the aggregate monthly transaction amounts for both pre and post SOX samples (for purchase, sales subsamples as well as for all transactions). We then normalized this aggregate number by dividing it by the entire amount for each regime (pre and post SOX). For example, for the month of January for the pre SOX purchase sample, we first converted all the January transactions to 1996 dollar amount, and then we summed them up and divided the amount by total purchase transaction amount for the entire pre SOX period. Therefore, we report the monthly transactions as percentage amounts.

	Purchase		Sales		ALL	
	Pre SOX	Post SOX	Pre SOX	Post SOX	Pre SOX	Post SOX
Jan	7.02%	8.24%	0.81%	4.03%	1.15%	4.40%
Feb	9.60%	33.95%	3.41%	5.82%	3.76%	8.32%
Mar	4.21%	0.96%	5.56%	5.91%	5.49%	5.47%
Apr	6.34%	5.72%	0.82%	6.56%	1.13%	6.49%
May	4.45%	4.83%	4.89%	3.79%	4.87%	3.88%
Jun	2.36%	0.51%	6.64%	3.51%	6.40%	3.24%
Jul	4.54%	0.66%	62.30%	41.32%	59.08%	37.71%
Aug	6.28%	3.03%	2.28%	5.03%	2.50%	4.85%
Sep	4.78%	6.34%	4.70%	3.67%	4.70%	3.91%
Oct	31.41%	26.18%	3.18%	6.51%	4.76%	8.26%
Nov	7.17%	0.73%	3.27%	6.75%	3.49%	6.22%
Dec	11.84%	8.85%	2.14%	7.10%	2.68%	7.25%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 2-2 Abnormal Returns around the Filing Date, Pre – vs. Post- SOX

This table reports the mean cumulative abnormal returns around the filing dates. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. Returns are market adjusted returns. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively; t-stat for the test for the difference of mean values between the pre and post SOX periods are also reported; a rank test was also done for non-parametric tests, and z-stat has been reported for differences in median returns. Panel A reports results for the purchase sample and Panel B reports results for the sales sample. For robustness, we have included the pre-electronic filing era data and our results were qualitatively similar. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results.

Panel A: Purchase Sample[54]

Window	N		MEAN			MEDIAN		
	Pre SOX	Post SOX	Pre SOX (%)	Post SOX (%)	t-stat for diff.	Pre SOX (%)	Post SOX (%)	z-stat for diff.
(-40,-10)	743	4,483	1.13*	-0.07	-1.53	0.85*	0.00	-1.01
(-10, -2)	743	4,483	0.54*	0.09	-1.61	0.32*	0.01	-1.81*
(-5, -2)	743	4,483	0.29*	0.05	-0.98	0.18	0.00	-0.98
(-1, 0)	743	4,483	0.23*	0.35**	1.89*	0.12*	0.29***	2.23**
(0, +1)	743	4,483	0.32*	1.13**	2.06**	0.17**	1.01***	3.76***
(-1, +1)	743	4,483	0.39**	1.24***	3.49***	0.23*	1.07***	2.78***
(+2, +5)	743	4,483	0.94	0.93	0.00	0.54	0.51	-0.75
(+2, +10)	743	4,483	1.16*	1.00	-1.01	0.87*	0.63	1.51

[54] For our comparison event studies between pre- and post SOX samples, we have analyzed subsamples of transactions only by rank1 officers, only by rank2 officers, only by small cap firms, only by large cap firms, only small trade size, only large trade size, only value firms, only growth firms, and our results qualitatively did not change. We did not provide the results for brevity, but will be provided upon request. For the pre SOX sample the cumulative abnormal return (CAR) between the transaction and filing dates is 1.17% with 5% significance.

TABLE 2-2 (continued) Abnormal Returns around the Filing Date, Pre vs. Post- SOX

Panel B: Sales Sample[55]

Window	N		MEAN			MEDIAN		
	Pre SOX	Post SOX	Pre SOX (%)	Post SOX (%)	t-stat for diff.	Pre SOX (%)	Post SOX (%)	z-stat for diff.
(-40,-10)	1,439	37,121	-0.29	0.03	0.67	-0.26	-0.01	0.97
(-10, -2)	1,439	37,121	-0.14	0.11	1.76*	-0.18*	0.03	1.38
(-5, -2)	1,439	37,121	-0.08	0.06	0.98	-0.13	0.00*	1.51
(-1, 0)	1,439	37,121	0.01*	-0.10	-1.01	-0.07*	-0.18	-1.17
(0, +1)	1,439	37,121	-0.19*	-0.54*	-1.28	-0.21*	-0.57*	-1.97**
(-1, +1)	1,439	37,121	-0.20*	-0.58*	-1.61*	-0.19**	-0.59**	-2.03**
(+2, +5)	1,439	37,121	-0.43	-0.44	0.00	-0.47	-0.51	-0.19
(+2, +10)	1,439	37,121	-0.50	-0.42	0.75	-0.46	-0.47	0.00

[55] For our comparison event studies between pre- and post SOX samples, we have analyzed subsamples of transactions only by rank1 officers, only by rank2 officers, only by small cap firms, only by large cap firms, only small trade size, only large trade size, only value firms, only growth firms, and our results qualitatively did not change. We did not provide the results for brevity, but will be provided upon request. For the pre SOX sample the cumulative abnormal return (CAR) between the transaction and filing dates is -0.47% with 10% significance.

Table 2-3 Impact of Delay & SOX

This table reports the mean cumulative abnormal returns around the filing dates for all the transactions made by all the officers in the Pre-SOX period. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. The pre SOX subsample has been split based on different reporting delays; this would help us to identify the impact of 'variation in filing delays' on the informativeness of the filings. As one of the fundamental changes proposed by SOX is to ensure timelier filing, the impact of different filing delays is of great importance to us. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. Panel A reports the results for the Purchase sample and Panel B reports the results for the Sale sample.

Panel A: Purchase Sample

DELAY	N	CAR [-1, 0]	CAR [0, +1]	CAR [-1, +1]
More than 20 days	384	0.11**	0.09**	0.14**
Less than 20 days but more than 10 days	251	0.31*	0.47**	0.54*
Less than 10 days but more than 5 days	79	0.40*	0.67*	0.80*
Less than 5 days but more than 2 days	14	0.65	0.98	1.17
Less than or equal to 2 days	15	0.66	1.23	1.44
Post SOX	4,483	0.35**	1.13**	1.24***

Panel B: Sales Sample

DELAY	N	CAR [-1, 0]	CAR [0, +1]	CAR [-1, +1]
More than 20 days	830	0.03*	-0.14***	-0.14**
Less than 20 days but more than 10 days	461	-0.01**	-0.21**	-0.23**
Less than 10 days but more than 5 days	126	-0.06	-0.37	-0.39
Less than 5 days but more than 2 days	13	-0.08	-0.45	-0.48
Less than or equal to 2 days	9	-0.11	-0.68	-0.73
Post SOX	37,121	-0.10	-0.54*	-0.58*

Table 2-4 Impact of Regulatory and Market Condition Changes

This table reports the mean cumulative abnormal returns around the filing dates. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. Regulation FD was passed in October 2000. It has been documented that this Act has brought fairness to information dissemination. Then the most comprehensive Act to date, SOX was passed in July 2002. We believe that each of this Act has brought an incremental fairness to information dissemination. The great credit crunch is the most significant macroeconomic event encompassing our sample period. We wanted to test for the impact of this event on the informativeness of the filings. Therefore, we ran comparisons between pre- and post RegulationFD, pre- and post Credit Crunch, and pre RegulationFD and post SOX. The results shown here are outcomes of a comparison between pre- and post Regulation Fair Disclosure; and a comparison between pre- and post Credit Crunch of 2008. We also report a comparison between pre Reg FD and post SOX period. Pre Reg FD transactions represent dates from January 1, 1996 to September 30, 2000 and post Reg FD from October 1, 2000 to August 29, 2002. Pre credit crunch transactions represents dates from August 30, 2002 to December 31, 2007, and post credit crunch from January 1, 2008 to December 31, 2009. The sample includes insider transactions by all the officers of the companies. Panel A reports returns for insider purchases and Panel B reports returns for insider sales. Returns are market adjusted returns calculated by eventus. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively; t-stat for the test for the difference of mean values between the periods are also reported. For robustness check, we have also compared post RegulationFD v. post SOX, post RegulationFD v. pre credit crunch and found that the results were qualitatively similar, i.e., SOX has clearly provided incremental contribution to RegulationFD. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results. Panel A reports the results for the Purchase sample and Panel B reports the results for the Sale sample. All CARs are in %.

Panel A: Purchase Sample

Period of Interest	N	CAR [-1,0]	CAR [0,+1]	CAR [-1,+1]
Pre Reg FD	574	0.19*	0.26*	0.32*
Post Reg FD	169	0.37	0.52*	0.63**
Post Reg FD - Pre Reg FD		0.18	0.26*	0.31*
Pre Crunch	2,964	0.26**	0.82**	0.89**
Post Crunch	1,519	0.53**	1.74**	1.91***
Post Crunch - Pre Crunch		0.27**	0.92**	1.02***
Post SOX	4,483	0.35**	1.13**	1.24***
Post SOX - Pre Reg FD		0.16**	0.87***	0.92***

TABLE 2-4 (continued) Impact of Regulatory and Market Condition Changes

Panel B: Sales Sample

Period of Interest	N	CAR [-1,0]	CAR [0,+1]	CAR [-1,+1]
Pre Reg FD	1,126	0.02	-0.12*	-0.12*
Post Reg FD	313	-0.03*	-0.42	-0.44
Post Reg FD - Pre Reg FD		-0.05	-0.30	-0.32
Pre Crunch	31,152	-0.08	-0.46*	-0.49*
Post Crunch	5,969	-0.18*	-0.97**	-1.04**
Post Crunch - Pre Crunch		-0.10	-0.51**	-0.55**
Post SOX	37,121	-0.10	-0.54*	-0.58*
Post SOX - Pre Reg FD		-0.12	-0.42*	-0.46*

Table 2-5 Cross-sectional Analysis: Regulatory & Market Condition Changes

Panel A: Purchase Sample

This panel reports regression results for purchase sample in which two day abnormal return ($CAR_{0,1}$) around insider filing is the dependent variable. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. The sample here includes purchase transactions filed by all the officers from January 1, 1996 to December 31, 2009. Pre Reg FD transactions represent dates from January 1, 1996 to September 30, 2000 and post Reg FD from October 1, 2000 to August 29, 2002. Pre credit crunch transactions represents dates from August 30, 2002 to December 31, 2007, and post credit crunch from January 1, 2008 to December 31, 2009. The sample includes insider transactions by all the officers of the companies. For this cross sectional analysis we control for InsiderRank (a dummy variable which equals to one if the officer is Chairman, Vice Chairman, CEO, COO, CFO, or President), TradeSize (average transaction amount scaled by market cap on the day of the filing), MktCap (log of the market cap on the day of the filing), Delay (the time lag between the transaction and filing dates), and R&D (R&D expenditure scaled by sales). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively; t-stat are reported within parenthesis. For robustness, we have included the pre-electronic filing era data and our results were qualitatively similar. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results.

Variables	PRE SOX (1996 - 2002)			POST SOX (2002 - 2009)		
	Pre Reg FD	Post Reg FD	All Pre SOX	Pre Crunch	Post Crunch	All Post SOX
InsiderRank	0.0116* (1.94)	0.0219** (2.11)	0.0194** (1.99)	0.0301** (2.32)	0.0672** (2.17)	0.0550** (2.03)
TradeSize	0.0000 (0.69)	0.0010 (1.51)	0.0002 (0.68)	0.0698* (1.89)	0.1978*** (2.78)	0.2697** (2.01)
Delay	-0.0019*** (-3.89)	-0.0001* (-1.71)	-0.0006** (-2.18)	-0.0000 (-1.58)	-0.0000 (-0.27)	-0.0000 (-1.41)
MktCap	-0.0010* (-1.65)	-0.0001 (-0.11)	-0.0000 (-0.05)	-0.0001 (-0.67)	-0.0000 (-0.31)	-0.0002 (-0.28)
R&D	0.0011 (1.23)	0.0030** (2.09)	0.0043* (1.71)	0.0056** (1.98)	0.0137* (1.78)	0.0231** (1.96)
TradeSize * InsiderRank	-0.0000 (-1.01)	-0.0008* (-1.94)	-0.0001* (-1.78)	0.0001 (1.58)	0.0010* (1.94)	0.0003* (1.79)
MktCap * InsiderRank	-0.0010 (-1.01)	-0.0000 (-0.79)	-0.0000 (-0.31)	-0.0001 (-0.01)	-0.0000 (-0.39)	-0.0000 (-0.09)
N	574	169	743	2,964	1,519	4,483
R-square	0.076	0.061	0.068	0.053	0.103	0.112

TABLE 2-5 (continued) Cross-sectional Analysis: Regulatory & Market Condition Changes

Panel B: Sales Sample

This panel reports regression results for sale sample in which two day abnormal return ($CAR_{0,1}$) around insider filing is the dependent variable. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. The sample here includes purchase transactions filed by all the officers from January 1, 1996 to December 31, 2009. Pre Reg FD transactions represent dates from January 1, 1996 to September 30, 2000 and post Reg FD from October 1, 2000 to August 29, 2002. Pre credit crunch transactions represents dates from August 30, 2002 to December 31, 2007, and post credit crunch from January 1, 2008 to December 31, 2009. The sample includes all insider transactions by all the officers of the companies. For this cross sectional analysis we control for InsiderRank (a dummy variable which equals to one if the officer is Chairman, Vice Chairman, CEO, COO, CFO, or President), TradeSize (average transaction amount scaled by market cap on the day of the filing), MktCap (log of the market cap on the day of the filing), Delay (the time lag between the transaction and filing dates), and R&D (R&D expenditure scaled by sales). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively; t-stat are reported within parenthesis. For robustness, we have included the pre-electronic filing era data and our results were qualitatively similar. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results.

Variables	PRE SOX (1996 - 2002)			POST SOX (2002 - 2009)		
	Pre Reg FD	Post Reg FD	All Pre SOX	Pre Crunch	Post Crunch	All Post SOX
InsiderRank	-0.0037* (-1.81)	-0.0178* (-1.71)	-0.0056* (-1.66)	-0.0171** (-2.01)	-0.0231*** (-3.89)	-0.0134*** (-2.81)
TradeSize	-0.0163* (-1.65)	-0.0010 (-0.31)	-0.0900 (-0.36)	-0.0178 (-0.09)	-0.2787 (-0.01)	-0.2696 (-0.02)
Delay	0.0107** (1.99)	0.0001 (0.98)	0.0002* (1.74)	0.0011 (0.64)	0.0001 (1.34)	0.0003 (1.01)
MktCap	0.0001 (1.11)	0.0000 (0.78)	0.0000 (0.46)	0.0001 (1.34)	0.0000 (0.03)	0.0000 (0.76)
R&D	-0.0008* (-1.83)	-0.0030* (-1.77)	-0.0014* (-1.71)	-0.0001 (-1.61)	-0.0009** (-2.21)	-0.0003* (-1.83)
TradeSize * InsiderRank	-0.0043 (-1.57)	-0.0003 (-0.12)	-0.0519 (-0.05)	-0.0089 (-1.06)	-0.0001 (-0.03)	-0.0757 (-0.56)
MktCap * InsiderRank	0.0001 (0.99)	0.0000 (0.01)	0.0000 (0.44)	0.0000 (0.67)	0.0000 (0.89)	0.0000 (0.94)
N	1,126	313	1,439	31,152	5,969	37,121
R-square	0.078	0.011	0.089	0.109	0.057	0.115

Table 2-6 Information Asymmetry Test: Regression results

Panel A: Purchase Sample[56]

This panel reports regression results for purchase sample in which two day abnormal return ($CAR_{0,1}$) around insider filing is controlled for firm characteristics for the subsamples partitioned by the degree of information asymmetry. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. The sample here includes purchase transactions filed by all the officers from January 1, 1996 to December 31, 2009. The measures for information asymmetry are: Market-to-Book, Intangible Asset (scaled by total assets), and R&D expense (scaled by sales). In each of the regressions, we define firms with top half of each of the information asymmetry measures as high and the bottom half as low. Firms with High Market-to-Book, High Intangible Assets, and High R&D expenditures are the ones with high information asymmetry. The firm characteristics controls are Market-to-Book (market value of equity to book value of equity), MktCap (log of market cap on the day of the filing), InsiderRank (a dummy which equals to one if the officer is Chairman, Vice Chairman, CEO, COO, CFO or President and zero otherwise), and Dividend Yield (cash dividend to price ratio). The numbers in the parenthesis are the t-stat; ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness, we have included the pre-electronic filing era data and our results were qualitatively similar. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results.

Independent Variables	Market-to-Book				Intangible Assets				R&D			
	Pre Sox [N = 743]		Post Sox [N = 4,483]		Pre Sox [N = 743]		Post Sox [N = 4,483]		Pre Sox [N = 743]		Post Sox [N = 4,483]	
	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Market-to-Book	-	-	-	-	0.001 (1.03)	0.004** (1.97)	0.003 (1.37)	0.005*** (3.01)	0.002* (1.72)	0.006** (1.98)	0.004 (1.13)	0.011*** (2.46)
MktCap	-0.001 (-0.78)	-0.004 (-1.05)	-0.000 (-1.06)	-0.005 (-1.17)	-0.001 (-0.91)	-0.003 (-1.58)	-0.000 (-1.08)	-0.005*** (-2.38)	-0.001 (-0.70)	-0.003* (-1.87)	-0.000 (-1.59)	-0.007** (-2.03)
InsiderRank	0.006 (1.08)	0.019** (1.96)	0.030* (1.74)	0.078*** (4.17)	0.001 (1.23)	0.020*** (2.38)	0.015 (1.37)	0.036*** (4.17)	0.013 (1.17)	0.021* (1.69)	0.030 (1.61)	0.046*** (2.94)
Dividend Yield	-0.001 (-0.65)	-0.014* (-1.87)	-0.043 (-1.51)	-0.049* (-1.88)	-0.076 (-1.34)	-0.025 (-0.98)	-0.029 (-0.99)	-0.017* (-1.83)	-0.027 (-0.65)	-0.017 (-0.87)	-0.000 (-1.07)	-0.002 (-1.46)
R-square	0.062	0.093	0.084	0.112	0.053	0.065	0.082	0.097	0.076	0.097	0.113	0.173

[56] As Post SOX filings were more frequent than the pre SOX period, as robustness check we only picked filings for each company with a minimum gap of 90 days. This filter resulted in 2,360 purchase and 3,641 sales transactions. We then ran the information asymmetry regressions for purchase and sales samples and the results were qualitatively similar to the ones reported above.

TABLE 2-6 (continued) Information Asymmetry Test: Regression results

Panel B: Sales Sample[57]

This panel reports regression results for sales sample in which two day abnormal return ($CAR_{0,1}$) around insider filing is controlled for firm characteristics for the subsamples partitioned by the degree of information asymmetry. The sample for this study consists of all the insider transactions from January 1, 1996 to December 31, 2009. The transactions were collected from EDGAR. Pre SOX transactions represent dates from January 1, 1996 to August 29, 2002, and post SOX from August 30, 2002 to December 31, 2009. We exclude firms with insufficient or no data on CRSP. The sample here includes sales transactions filed by all the officers from January 1, 1996 to December 31, 2009. The measures for information asymmetry are: Market-to-Book, Intangible Asset (scaled by total assets), and R&D expense (scaled by sales). In each of the regressions, we define firms with top half of each of the information asymmetry measures as high and the bottom half as low. Firms with High Market-to-Book, High Intangible Assets, and High R&D expenditures are the ones with high information asymmetry. The firm characteristics controls are Market-to-Book (market value of equity to book value of equity), MktCap (log of market cap on the day of the filing), InsiderRank (a dummy which equals to one if the officer is Chairman, Vice Chairman, CEO, COO, CFO or President and zero otherwise), and Dividend Yield (cash dividend to price ratio). The numbers in the parenthesis are the t-stat; ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness, we have included the pre-electronic filing era data and our results were qualitatively similar. We have also done this study with matching firms (we matched to make sure pre- and post SOX sample had same firms) but again the results were qualitatively same. In the final robustness check, we have only included firms that were on S&P 500 and found qualitatively similar results.

Independent Variables	Market-to-Book				Intangible Assets				R&D			
	Pre Sox [N = 1,439]		Post Sox [N = 37,121]		Pre Sox [N = 1,439]		Post Sox [N = 37,121]		Pre Sox [N = 1,439]		Post Sox [N = 37,121]	
	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Market-to-Book	-	-	-	-	-0.002 (-1.09)	-0.007** (-1.97)	-0.005 (-1.35)	-0.011*** (-3.18)	-0.001 (-0.67)	-0.006* (-1.89)	-0.007 (-1.28)	-0.010*** (-4.13)
MktCap	0.0000 (0.57)	0.003 (0.87)	0.000 (0.69)	0.001 (1.04)	-0.000 (-1.26)	0.001 (1.09)	0.001 (0.89)	0.002* (1.67)	0.000 (1.11)	0.001 (0.59)	0.000 (0.98)	0.002 (1.57)
InsiderRank	-0.0001 (-1.07)	-0.006** (-1.98)	-0.003* (1.67)	-0.007*** (-2.69)	-0.001* (-1.67)	-0.004** (2.03)	-0.009 (-0.97)	-0.019*** (-4.17)	-0.002* (-1.87)	-0.005** (-2.15)	-0.006 (-1.27)	-0.085** (-2.19)
Dividend Yield	0.0000 (0.79)	0.003 (1.01)	0.019 (1.17)	0.026* (1.67)	0.001 (1.17)	0.002 (1.19)	0.017 (1.47)	0.023** (2.07)	0.000 (1.18)	0.002 (0.76)	0.017 (1.47)	0.023 (1.61)
R-square	0.043	0.056	0.09	0.086	0.065	0.056	0.091	0.133	0.061	0.089	0.132	0.169

[57] As Post SOX filings were more frequent than the pre SOX period, as robustness check we only picked filings for each company with a minimum gap of 90 days. This filter resulted in 2,360 purchase and 3,641 sales transactions. We then ran the information asymmetry regressions for purchase and sales samples and the results were qualitatively similar to the ones reported above.

Table 3-1 Sample Description by Year and Diversification

The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. If the acquirer and target have same 4-digit SIC[58] then they are considered within the same industry or else they are considered to be in different industry. Relative deal size is measured as Transaction Value reported in SDC scaled by the Market Value of the acquirer.

Year	Total Deals	Different Industry	Same Industry	Relative Deal Size	No. of Transactions with Relative Deal Size > 30%
1996	65	46	19	33.88%	22
1997	105	85	20	103.89%	42
1998	100	74	26	42.13%	29
1999	148	112	36	26.28%	33
2000	139	107	32	90.34%	19
2001	64	37	27	22.35%	14
2002	42	30	12	34.09%	4
2003	28	16	12	21.68%	5
2004	18	14	4	18.27%	7
2005	30	21	9	9.09%	3
2006	22	18	4	16.30%	7
2007	62	47	15	10.83%	4
2008	47	30	17	16.36%	10
2009	40	27	13	9.89%	3
Total	**910**	**664**	**246**	**43.99%**	**202**

[58] Morck, Shleifer, and Vishny (1990) report that if targets and acquirer share same 4-digit SIC then they are in the same industry or else they are in different industry.

Table 3-2 Summary Statistics

This table provides some summary statistics about the acquiring and target firms, and the deals. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The definitions of the variables have been provided in Appendix I.***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

	PRE SOX (N = 656)		POST SOX (N = 254)		POST - PRE	
VARIABLES	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
ACQUIRER CHARACTERISTICS						
Firm Size (Log of book value of assets)	3.51	3.48	3.70	3.59	0.19**	0.11**
Tobin's q	2.72	2.07	2.60	2.05	-0.12**	-0.02**
Leverage	0.70	0.66	0.55	0.53	-0.15***	-0.13**
Operating Performance (EBITDA/TA)	0.16	0.16	0.16	0.15	0.00	-0.01
Sales ($ millions)	10292.94	3197.24	13965.74	3921.10	3672.80**	723.86**
TARGET CHARACTERISTICS						
Firm Size (Log of book value of assets)	2.37	2.30	2.53	2.45	0.16***	0.15**
Tobin's q	1.86	1.57	2.29	1.86	0.43***	0.29***
Leverage	0.51	0.46	0.47	0.38	-0.04**	-0.08**
Operating Performance (EBITDA/TA)	0.03	0.09	0.01	0.08	-0.02*	-0.01*
Sales ($ millions)	205.48	121.54	199.90	102.42	-5.58*	-19.12*
DEAL CHARACTERISTICS						
Transaction Value ($ millions)	233.30	147.54	227.24	120.64	-6.06	-26.90*
Relative Deal Size	0.54	0.11	0.15	0.09	-0.39***	-0.02*
Delay (in days)	77.32	57.00	79.34	51.00	2.02	-6.00
Hostile (dummy)	0.03	0.00	0.02	0.00	-0.01	0.00
Cash (dummy)	0.60	1.00	0.52	1.00	-0.073*	0.00*
Diversification (dummy)	0.74	1.00	0.70	1.00	-0.04***	0.00***
Premium (%)	36.24	28.78	45.26	31.24	9.02***	2.46***
Synergy (dummy)	0.44	0.00	0.54	1.00	0.10**	1.00**

Figure 3-1 Cumulative Abnormal Return (CARs) for Targets around the Announcement Date

This figure represents the CARs around acquisition announcements for target firms. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The solid line represents pre-SOX sample period returns and the dotted line represents the post SOX period.

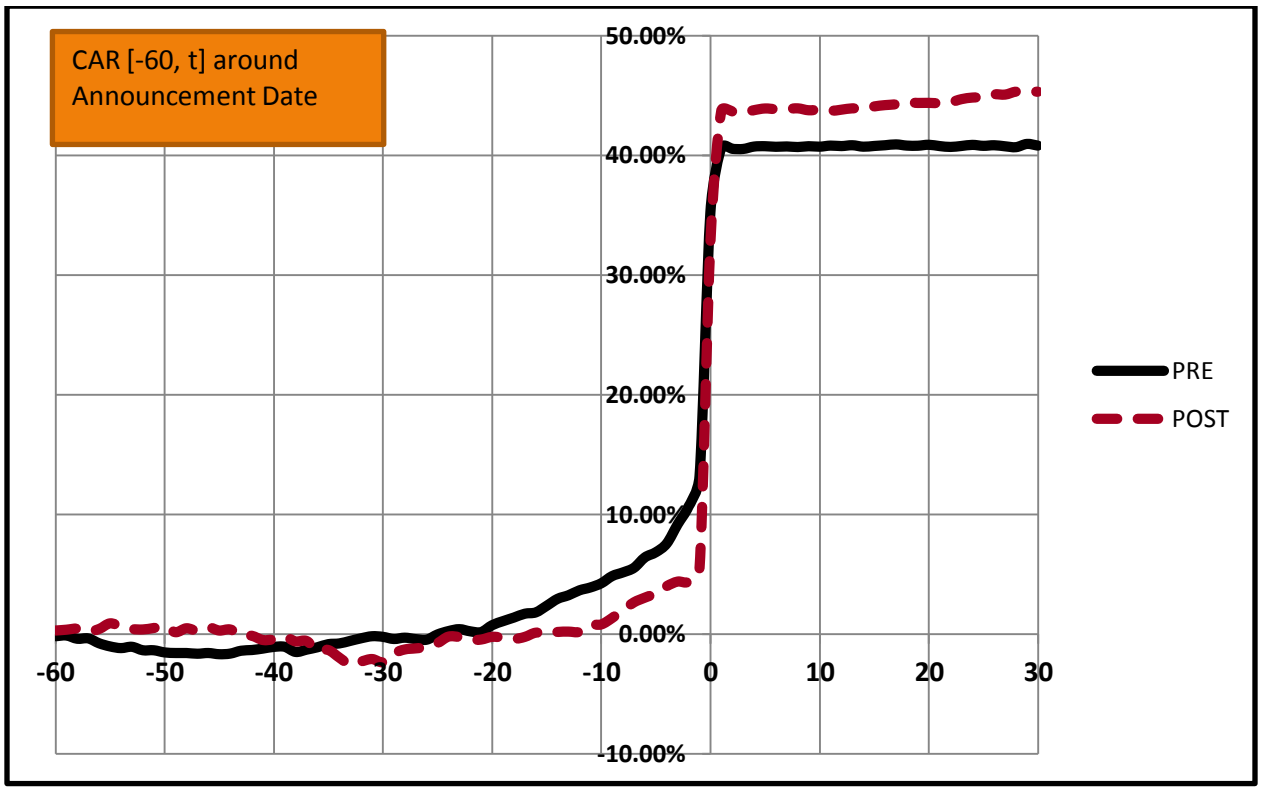

Figure 3-2 Net Purchase in Target Firms around the Announcement Date

This figure represents the net purchase in target firms scaled by market value around acquisition announcement date. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. The insider trading data was collected from EDGAR for the aforementioned time period. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The solid line represents pre-SOX sample period trades and the dotted line represents the post SOX period.

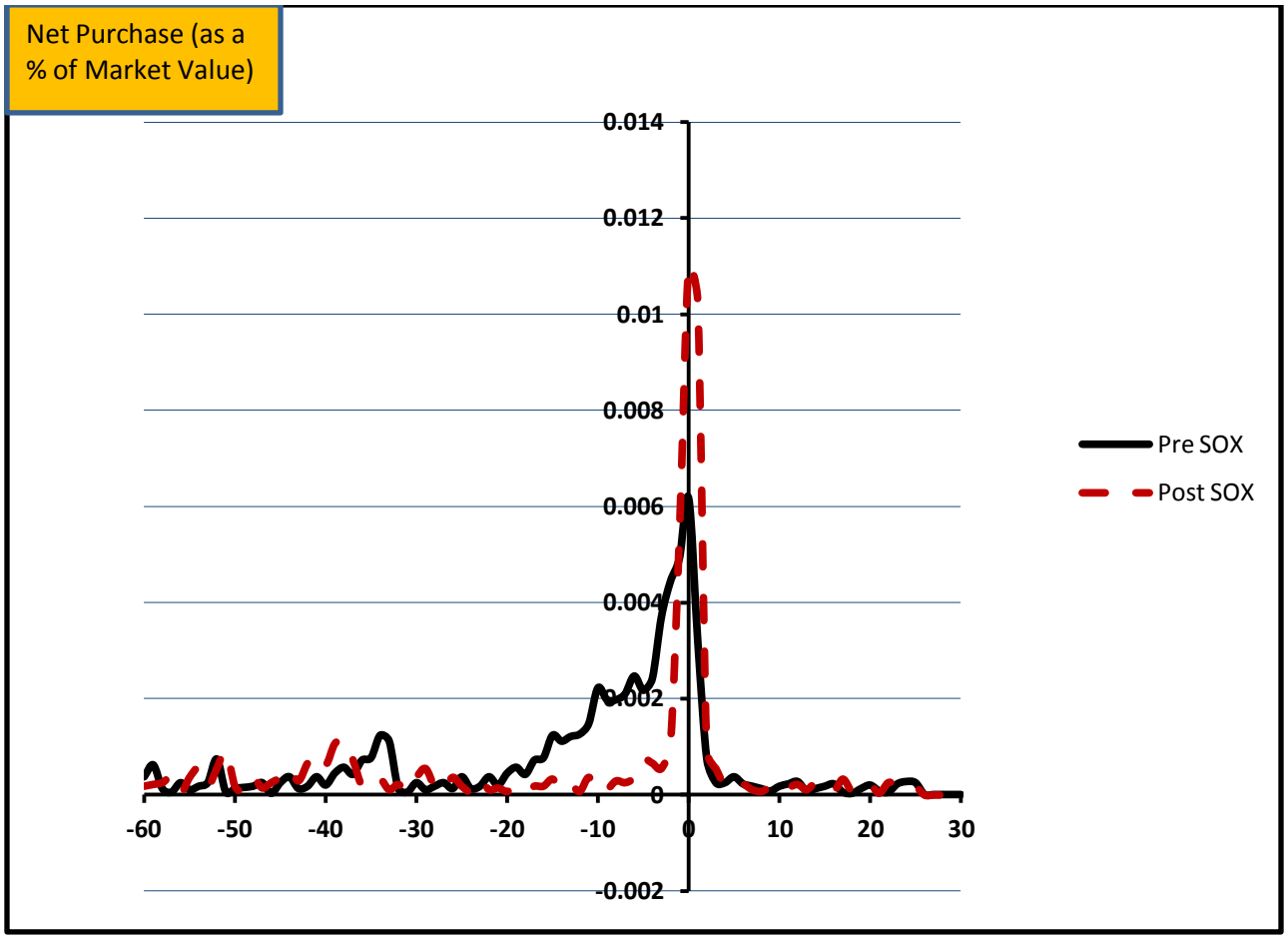

Table 3-3 Cumulative Abnormal Return (CARs) for Targets around the Announcement Date

This table reports the abnormal returns around acquisition announcement dates for both pre and post SOX periods. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. We report different windows around the acquisition announcement date, starting from t=-60 to t=+30 days, where t=0 is the announcement date. Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we compared post RegulationFD v. post SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

EVENT WINDOW	MEAN				MEDIAN			
	Pre SOX (1996-2002)	Post SOX (2002-2009)	Post - Pre	t-stat	Pre SOX (1996-2002)	Post SOX (2002-2009)	Post - Pre	z-stat
[-60, -30]	1.84%**	-1.59%	-3.43%**	-2.24	1.77%**	-1.58%	-3.35%***	-2.53
[-30, -10]	5.95%***	3.31%	-2.64%*	-1.87	5.54%***	3.66%***	-1.88%**	-1.98
[-10, -5]	3.40%***	2.70%***	-0.70%**	-2.21	3.21%***	3.76%***	0.55%	0.85
[-5, 0]	29.32%***	29.79%***	0.47%	1.44	32.29%***	32.33%***	0.04%	1.01
[-1, 0]	24.73%***	28.38%***	3.65%*	1.65	27.90%***	30.93%***	3.03%*	1.84
[0, 0]	22.11%***	27.27%***	5.16%*	1.74	25.21%***	29.86%***	4.65%**	2.17
[-1,+1]	30.18%***	39.42%***	9.24%***	2.50	33.64%***	42.36%***	8.72%***	2.74
[0, +1]	27.56%***	38.31%***	10.75%***	3.17	30.95%***	41.29%***	10.34%***	4.13
[0, +5]	27.86%***	38.55%***	10.69%***	2.86	31.25%***	41.59%***	10.34%***	3.89
[+5, +30]	1.90%***	1.42%*	-0.48%	-1.28	1.39%**	2.51%**	1.12%	0.98
OBSERVATIONS	593	250			593	250		

Table 3-4 Regression of Cumulative Abnormal Returns for Targets on Explanatory Variables

This table reports the results from regressing the cumulative abnormal returns for targets on different explanatory variables. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The dependent variable we use here is Cumulative Abnormal Return from t=-1 to t=+1, $CAR_{-1,+1}$. First model uses a 'SOX' dummy (equals to one if the announcement date was after August 29, 2002, and zero otherwise); Second model uses SOX dummy along with target characteristics controls like operating income growth rate (average growth between t=-3 to t=-1 year), firm size (log of total assets), leverage (long term debt scaled by total assets), operating performance (EBITDA scaled by total assets), and tobin's q; Third model uses 'SOX' dummy along with deal characteristics control variables like premium (Percent premium paid to target based on the price on the day before the announcement), relative deal size (transaction value scaled by acquirer's market value), 'Hostile' dummy (equals to one if the deal was flagged as hostile in SDC Platinum), payment method dummy 'Cash' (equals to one if the deal was an all cash transaction), and diversification dummy (equals to one if target and acquirer's 4-digit SIC match). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

	MODEL I	MODEL II	MODEL III	MODEL IV
SOX (dummy)	0.091*** (2.91)	0.074*** (3.81)	0.085*** (3.01)	0.081*** (2.71)
Target Characteristics:				
Operating income growth rate (target)		-0.023 (-1.07)		-0.011 (-0.67)
Firm Size (target)		-0.031*** (-2.83)		-0.038*** (-3.65)
Leverage (target)		0.013 (1.51)		0.006 (1.21)
Operating performance (target)		0.023 (1.11)		0.016 (1.02)
Tobin's q (target)		0.031* (1.66)		0.146 (1.43)
Deal Characteristics:				
Premium			0.009** (1.96)	0.011** (2.02)
Relative deal size			-0.079 (-0.97)	-0.051 (-1.25)
Hostile (dummy)			0.039* (1.78)	0.027* (1.89)
Cash (dummy)			0.003 (0.07)	0.001 (0.11)
Diversification (dummy)			-0.009 (-1.39)	-0.003 (-0.67)
Sample Size	843	659	843	659
Adjusted R^2	0.009	0.017	0.010	0.021

Figure 3-3 Cumulative Abnormal Return (CARs) for Acquirers around the Announcement Date

This figure represents the CARs around acquisition announcements for acquiring firms. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The solid line represents pre-SOX sample period returns and the dotted line represents the post SOX period.

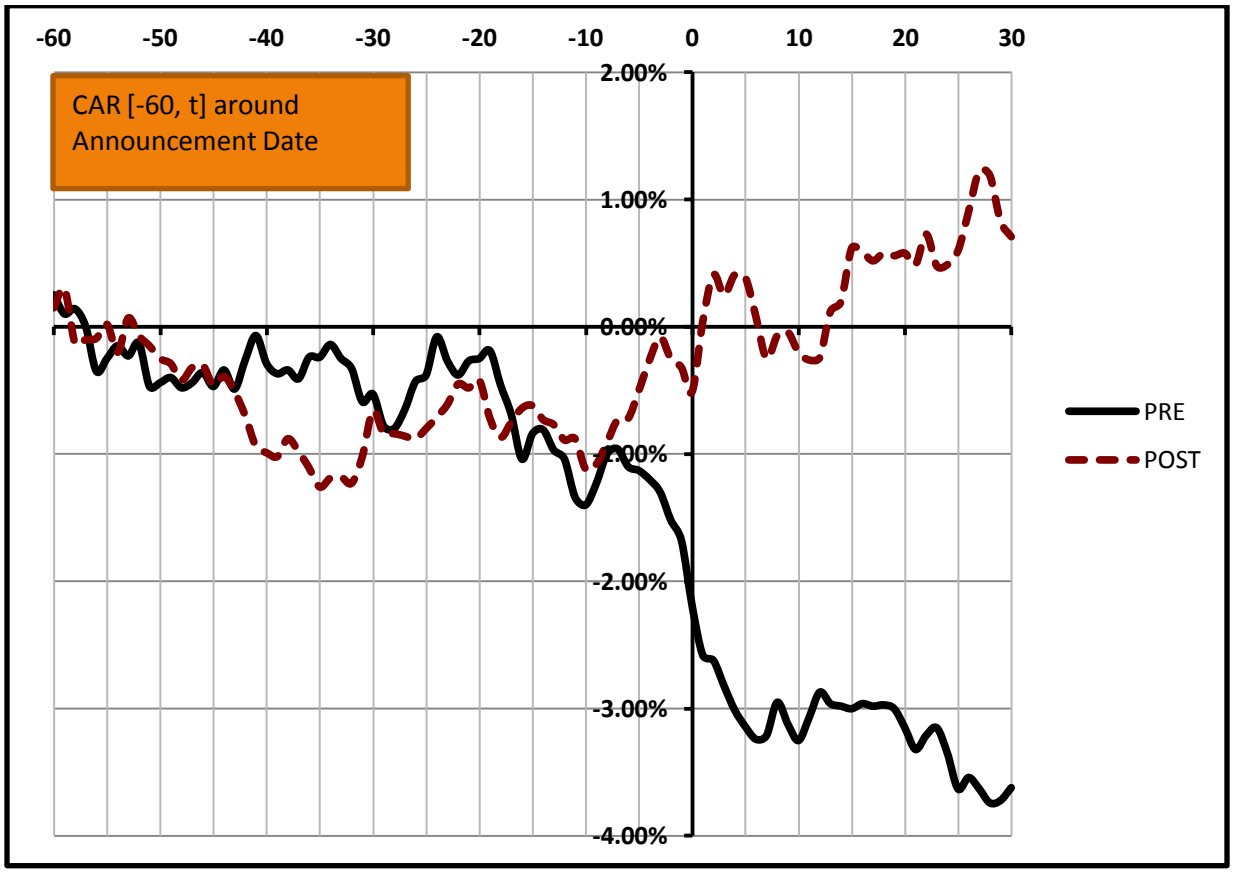

Table 3-5 Cumulative Abnormal Return (CARs) for Acquirers around the Announcement Date

This table reports the abnormal returns around acquisition announcement dates for both pre and post SOX periods. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. We report different windows around the acquisition announcement date, starting from t=-60 to t=+30 days, where t=0 is the announcement date. Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we compared post RegulationFD v. post SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

EVENT WINDOW	MEAN				MEDIAN			
	Pre SOX (1996-2002)	Post SOX (2002-2009)	Post - Pre	t-stat	Pre SOX (1996-2002)	Post SOX (2002-2009)	Post - Pre	z-stat
[-60, -30]	-0.54%	-0.65%	-0.11%	-0.21	-0.28%	-0.60%	-0.32%	-0.82
[-30, -10]	-0.82%	-0.11%	0.71%	0.78	-0.79%	-0.40%	0.39%	0.91
[-10, -5]	0.21%	0.39%	0.18%	1.19	0.43%	0.39%	-0.04%	-0.17
[-5, 0]	-1.08%*	0.21%*	1.29%*	1.71	-0.91%**	0.05%*	0.96%**	2.13
[-1, 0]	-0.67%**	-0.27%**	0.40%*	1.66	-0.49%*	-0.22%**	0.27%*	1.83
[0, 0]	-0.51%**	-0.19%***	0.32%*	1.78	-0.42%***	-0.10%**	0.32%**	1.99
[-1,+1]	-1.06%**	0.29%**	1.35%**	1.98	-0.94%***	0.47%**	1.41%***	2.57
[0, +1]	-0.90%**	0.36%***	1.26%**	2.18	-0.86%***	0.60%**	1.46%***	2.73
[0, +5]	-1.35%**	0.60%*	1.95%*	1.87	-1.62%**	0.86%**	2.48%**	2.01
[+5, +30]	-0.60%	0.31%	0.91%	1.46	-0.81%	-0.18%	0.63%	0.98
OBSERVATIONS	543	247			543	247		

Table 3-6 Regression of Cumulative Abnormal Returns for Acquirers on Explanatory Variables

This table reports the results from regressing the cumulative abnormal returns for acquirers on different explanatory variables. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. The dependent variable we use here is Cumulative Abnormal Return from t=-1 to t=+1, $CAR_{-1,+1}$. First model uses a 'SOX' dummy (equals to one if the announcement date was after August 29, 2002, and zero otherwise); Second model uses SOX dummy along with acquirer characteristics controls like operating income growth rate (average growth between t=-3 to t=-1 year), firm size (log of total assets), leverage (long term debt scaled by total assets), operating performance (EBITDA scaled by total assets), and tobin's q; Third model uses 'SOX' dummy along with deal characteristics control variables like relative deal size (transaction value scaled by acquirer's market value), 'Hostile' dummy (equals to one if the deal was flagged as hostile in SDC Platinum), payment method dummy 'Cash' (equals to one if the deal was an all cash transaction), and diversification dummy (equals to one if target and acquirer's 4-digit SIC match). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

VARIABLES	MODEL I	MODEL II	MODEL III	MODEL IV
SOX (dummy)	0.023** (2.14)	0.014* (1.81)	0.015** (2.21)	0.019* (1.93)
Acquirer Characteristics:				
Operating income growth rate (acquirer)		-0.001 (-0.87)		-0.000 (-0.89)
Firm Size (acquirer)		-0.009* (-1.89)		-0.008* (-1.65)
Leverage (acquirer)		0.151 (1.41)		0.126 (0.87)
Operating performance (acquirer)		0.066 (1.61)		0.062 (1.52)
Tobin's q (acquirer)		0.189*** (2.41)		0.146*** (2.86)
Deal Characteristics:				
Relative deal size			-0.089 (-0.51)	-0.062 (-0.97)
Hostile (dummy)			-0.231 (-0.78)	-0.197 (-0.89)
Cash (dummy)			0.403 (1.07)	0.391 (0.81)
Diversification (dummy)			-0.009 (-1.39)	-0.008 (-0.99)
Sample Size	790	637	790	637
Adjusted R^2	0.006	0.029	0.007	0.030

Table 3-7 Relationship between Target Gain and Total and Acquirer Gains

This table reports regression results where target gain is the dependent variable. In Model I Total Gain is the independent variable and in Model II Acquirer Gain is the independent variable. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. We classify acquisitions either as synergy driven or agency driven using the approach in Berkovitch and Narayanan (1993). They use the correlation between target gain and total gain and the correlation between target gain and acquirer gain are used as predictors of agency driven or synergy driven acquisition. A positive correlation factor implies the presence of synergy and vice versa. According to them, if the total, target, and acquirer gains are all positive then it is classified as a value-maximizing (synergy) merger; else it is an agency-driven merger. Following them, we calculate the cumulative abnormal return around the announcement date for both target and acquirer firms. Market model estimates for each firm were calculated using a maximum of 255 trading days of daily returns data beginning 127 days before the announcement of the first tender bid. Target gain is calculated by multiplying the CAR by the market value of target's equity as of the end of six trading days prior to first announcement for the target minus the value of target shares held by the acquirer before the announcement. Likewise, the acquirer gain is calculated by multiplying the CAR by the market value of acquiring firm as of the end of six trading days prior to the first announcement made by the acquiring firm. The total gain is the sum of the target and acquirer gains. Coefficients are estimated for the entire sample for each regime (pre- and post SOX) as well as subsamples of positive and negative total gains. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

DEPENDENT VARIABLE = TARGET GAIN	FULL SAMPLE				POSITIVE TOTAL GAIN SUB-SAMPLE				NEGATIVE TOTAL GAIN SUB-SAMPLE			
	MODEL I		MODEL II		MODEL I		MODEL II		MODEL I		MODEL II	
	Pre SOX (1996-2002)	Post SOX (2002-2009)	Pre SOX (1996-2002)	Post SOX (2002-2009)	Pre SOX (1996-2002)	Post SOX (2002-2009)	Pre SOX (1996-2002)	Post SOX (2002-2009)	Pre SOX (1996-2002)	Post SOX (2002-2009)	Pre SOX (1996-2002)	Post SOX (2002-2009)
INTERCEPT	147.263*** (8.27)	201.860*** (7.20)	147.110*** (8.28)	192.041*** (6.60)	150.867*** (5.97)	78.038* (1.80)	167.697*** (6.75)	220.731*** (4.73)	87.460*** (3.60)	137.722*** (3.53)	80.130*** (3.32)	112.824*** (2.88)
TOTAL GAIN	0.004* (1.71)	0.039** (2.07)			0.0154* (1.68)	0.295*** (5.85)			-0.013** (-2.26)	-0.018* (-1.94)		
ACQUIRER GAIN			-0.006 (-1.10)	-0.011 (-0.57)			-0.004 (-0.43)	0.014 (0.19)			-0.016*** (-2.89)	-0.036** (-2.02)
R-SQUARE	0.002	0.030	0.004	0.002	0.012	0.031	0.001	0.001	0.046	0.016	0.074	0.068
Sample Size	593	250	593	250	344	171	344	171	249	79	249	79

Table 3-8 Post-Acquisition Operating Performance (ROA)

This table reports the industry and matched firm adjusted post-acquisition operating performance (ROA) results for the acquirers. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. Operating performance here is measured as the return on assets (ROA). Barber and Lyon (1996) also use ROA and ROS as operating performance measures. ROA is the ratio of operating income scaled by total assets where operating income is measured as earnings before interest, taxes, depreciation and amortization (EBITDA). We analyzed the ratios for 6-year period starting from the year of the announcement to five years after the acquisition.***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively. The results for same and different industry subsamples were qualitatively similar to that of the full sample reported above. Therefore, we did not report it here for brevity. All ratios reported in this table are industry and matched firm adjusted. We matched each of the acquiring firm with a non-event firm based on Industry (2-digit SIC), Book-to-Market, and Size.

Panel A: Year-by-year Industry and Matched-Firm adjusted ROA

	Industry adjusted			Matched firm adjusted		
Year	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre
0	-0.46%	-1.28%*	-0.82%	0.33%	0.47%*	0.14%
+1	-1.42%***	-0.74%*	0.69%*	0.72%	1.64%*	0.92%
+2	-1.56%***	-1.19%*	0.37%*	-0.31%*	1.03%**	1.34%*
+3	-2.33%***	-1.36%*	0.96%*	-1.27%*	0.35%*	1.62%*
+4	-1.86%***	0.54%*	2.40%*	-1.17%*	0.98%*	2.15%*
+5	-2.47%***	0.48%*	2.95%**	-0.30%*	2.38%**	2.68%**

Panel B: Summary – Industry and Matched-Firm adjusted ROA

	Industry adjusted			Matched firm adjusted		
	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre
Average 3-year	-1.77%***	-1.05%**	0.72%**	-0.29%	1.01%**	1.30%*
Average 5-year	-1.93%***	-0.71%**	1.22%**	-0.47%**	1.14%***	1.61%**

Table 3-9 Cross-Sectional Analysis of Operating Performance – ROA

This table reports regressions of average three and five year industry and matched firm adjusted return on assets (ROA) on various independent variables. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. Adapting and expanding from Heron and Lie (2002) we use independent variables like SOX dummy (equals to one if the announcement date was after August 29, 2002, and zero otherwise), ratio of targets assets to target and acquirer combined assets (assets are book value of assets and at time t=-1), market-to-book for acquirer (at t=-1), market-to-book for target (at t=-1), same industry dummy (equals to one if 4-digit SIC matches, MSV 1990), and a delay variable (the time lag between the first announcement of a bid and the final acquisition of the target). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

	Industry adjusted ROA		Match firm adjusted ROA	
	Average 3-year	Average 5-year	Average 3-year	Average 5-year
SOX (dummy)	0.004*** (3.89)	0.009*** (2.98)	0.010** (1.98)	0.007* (1.79)
Assets (Target)				
Assets (Target + Acquirer)	0.001 (0.79)	0.006 (1.01)	0.013 (1.41)	0.009 (1.28)
M to B (Acquirer)	0.011*** (3.17)	0.019*** (3.56)	0.009** (2.34)	0.013** (2.17)
M to B (Target)	-0.007* (-1.67)	-0.001 (-0.91)	-0.003 (-1.51)	-0.005 (-1.39)
Same Industry (dummy)	0.019** (2.01)	0.027** (1.98)	0.021*** (3.73)	0.033*** (2.87)
Delay	-0.001 (-0.43)	-0.000 (-0.27)	-0.003 (-0.79)	-0.001 (-0.54)
Sample Size	753	657	753	657
Adjusted R-square	0.007	0.012	0.011	0.009

Table 3-10 Post-Acquisition Operating Performance (ROS)

This table reports the industry and matched firm adjusted post-acquisition operating performance (ROS) results for the acquirers. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. Operating performance is measured as the return on sales (ROS). Barber and Lyon (1996) use ROA and ROS as operating performance measures. ROS is measured as the ratio of operating income (EBITDA) scaled by sales revenue. We analyzed the ratios for 6-year period starting from the year of the announcement to five years after the acquisition.***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively. The results for same and different industry subsamples were qualitatively similar to that of the full sample reported above. Therefore, we did not report it here for brevity. All ratios reported in this table are industry and matched firm adjusted. We matched each of the acquiring firm with a non-event firm based on Industry (2-digit SIC), Book-to-Market, and Size.

Panel A: Year-by-year Industry and Matched-Firm adjusted ROS

	Industry adjusted			Matched firm adjusted		
Year	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre
0	-1.13%	-2.15%*	-1.02%	-0.20%	0.57%**	0.77%*
+1	-3.69%***	-1.62%*	2.07%*	-0.40%	0.36%*	0.77%
+2	-4.16%***	-1.98%*	2.18%*	-0.71%*	0.97%*	1.68%*
+3	-4.89%***	-3.25%**	1.64%*	-2.02%**	3.04%**	5.06%**
+4	-3.32%***	-1.94%*	1.37%*	-2.21%***	4.58%**	6.79%**
+5	-3.63%***	0.72%*	4.36%*	-0.66%*	7.25%**	7.91%*

Panel B: Summary – Industry and Matched-Firm adjusted ROS

	Industry adjusted			Matched firm adjusted		
	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre	Pre Sox (1996 - 2002)	Post Sox (2002-2009)	Post - Pre
Average 3-year	-4.25%***	-2.17%**	2.08%*	-1.04%**	1.26%**	2.29%**
Average 5-year	-3.94%***	-1.86%***	2.07%**	-1.20%***	2.26%***	3.46%**

Table 3-11 Cross-Sectional Analysis of Operating Performance – ROS

This table reports regressions of average three and five year industry and matched firm adjusted return on sales (ROS) on various independent variables. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009. Adapting and expanding from Heron and Lie (2002) we use independent variables like SOX dummy (equals to one if the announcement date was after August 29, 2002, and zero otherwise), ratio of targets assets to target and acquirer combined assets (assets are book value of assets and at time t=-1), market-to-book for acquirer (at t=-1), market-to-book for target (at t=-1), same industry dummy (equals to one if 4-digit SIC matches, MSV 1990), and a delay variable (the time lag between the first announcement of a bid and the final acquisition of the target). ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively.

	Industry adjusted ROS		Match firm adjusted ROS	
	Average 3-year	Average 5-year	Average 3-year	Average 5-year
SOX (dummy)	0.011** (2.09)	0.019** (1.97)	0.021** (2.13)	0.017** (1.99)
Assets (Target) / Assets (Target + Acquirer)	0.000 (0.08)	0.001 (0.21)	0.003 (0.57)	0.010 (0.18)
M to B (Acquirer)	0.016** (2.19)	0.011*** (3.16)	0.006*** (2.84)	0.009** (1.97)
M to B (Target)	-0.008* (-1.67)	-0.008* (-1.91)	-0.013* (-1.68)	-0.010 (-1.59)
Same Industry (dummy)	0.026** (2.14)	0.023** (1.99)	0.031*** (2.93)	0.023** (2.07)
Delay	-0.000 (-0.03)	-0.000 (-0.06)	-0.001 (-0.55)	-0.000 (-0.43)
Sample Size	741	639	741	639
Adjusted R-square	0.011	0.009	0.049	0.071

Table 3-12 Performance Tests—BHAR Approach

This table reports the Buy-and-Hold abnormal returns (BHAR) for the acquiring firms. As per Mitchell and Stafford (2000), BHAR would represent the abnormal returns from holding a long position in the event firms and a short position on the matching firms, vis-à-vis the difference between long positions in event and matched firms where event firms could be matched based on some firm characteristics. We match each of the acquiring firm with a non-event firm based on Industry (2-digit SIC), Book-to-Market, and Size. An alternate approach is the *Jensen's alpha approach*, also known as calendar time portfolio approach. Since this approach weights observations equally across time rather than firms, Kothari and Warner (2004) and Loughran and Ritter (2000) argue against using the Jensen's alpha approach as it is more biased towards finding results consistent with market efficiency. The sample consists of 910 completed U.S. tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $50 million; (2) the target and acquirer are both publicly traded and has stock return and financial data available from Center for Research in Security Prices (CRSP) and Compustat respectively. Pre SOX announcements cover announcement dates from January 1, 1996 to August 29, 2002; for post SOX sample the dates are from August 30, 2002 to December 31, 2009.We report the performances for three and five year time periods after the acquisition. The full sample for each period was divided into quartiles based on related deal size (transaction value scaled by acquirer's market value)—the 1st quartile being the smallest of related deal sizes and the fourth being the largest ones. Same industry subsample signifies a 4-digit SIC match between the target and the acquirer. Morck, Shleifer, and Vishny (1990) report that if targets and acquirer share same 4-digit SIC then they are in the same industry or else they are in different industry. Panel A and panel B report results from pre- and post SOX periods respectively. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. For robustness check, we only include post RegulationFD years for pre SOX, but qualitatively results were similar for the full sample. We have also controlled for macro events by excluding IT bubble and post credit crunch years, and our results still hold qualitatively for the full sample.

Panel A: Pre SOX Sample

PERIOD	FULL Sample	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Same Industry	Different Industry
3-year	-18.12%**	-20.62%***	-14.28%**	-10.01%**	-27.16%*	-13.91%**	-20.13%**
5-year	-18.20%***	-23.47%***	-19.64%*	-11.24%*	-17.69%***	-6.80%**	-23.01%***

Panel B: Post SOX Sample

PERIOD	FULL Sample	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Same Industry	Different Industry
3-year	9.25%***	2.72%***	5.76%**	16.60%**	9.67%***	11.22%***	8.43%***
5-year	2.29%**	8.01%***	-7.50%**	12.14%*	-4.66%*	4.21%**	1.44%***

Table 4-1 Sample Description by Year and Diversification

The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. If the acquirer and target have same 4-digit SIC[59] then they are considered within the same industry or else they are considered to be in different industry. Relative deal size is measured as Transaction Value reported in SDC scaled by the Market Value of the acquirer.

Year	Total Deals	Different Industry	Same Industry	Relative Deal Size
1996	15	4	11	8.82%
1997	24	11	13	15.64%
1998	20	10	10	15.19%
1999	24	11	13	36.55%
2000	41	26	15	15.55%
2001	24	11	13	35.10%
2002	11	7	4	18.52%
2003	3	2	1	2.22%
2004	9	4	5	36.98%
2005	8	5	3	29.31%
2006	12	3	9	18.04%
2007	21	13	8	19.67%
2008	15	8	7	12.49%
2009	11	5	6	23.44%
Total	238	120	118	21.10%

[59] Morck, Shleifer, and Vishny (1990) report that if targets and acquirer share same 4-digit SIC then they are in the same industry or else they are in different industry.

Table 4-2 Summary Statistics

This table provides some summary statistics about the acquiring and target firms, and the deals. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. The definitions of the variables have been provided in Appendix I. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

	PRE C-SOX (1996 - 2003) [N = 159]		POST C-SOX (2003 - 2009) [N = 79]		POST - PRE	
VARIABLES	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
ACQUIRER CHARACTERISTICS						
Firm Size (log of book value of assets)	8.17	7.25	8.17	6.66	0.00	-0.60**
Leverage	0.51	0.40	0.70	0.40	0.19*	0.00
Operating Performance (ROA)	0.13	0.12	0.16	0.17	0.03**	0.05*
Sales ($ millions)	1309.25	645.50	1781.97	294.21	472.72	-351.29*
TARGET CHARACTERISTICS						
Firm Size (log of book value of assets)	6.79	4.96	6.91	5.20	0.12**	0.23**
Leverage	0.49	0.39	0.63	0.50	0.14**	0.11*
Operating Performance (ROA)	0.04	0.03	0.09	0.06	0.05*	0.03*
Sales ($ millions)	286.07	73.11	860.50	118.17	574.43*	45.06**
DEAL CHARACTERISTICS						
Transaction Value ($ millions)	204.21	124.61	369.63	188.09	165.42*	63.48*
Relative Deal Size	0.21	0.08	0.21	0.18	0.00	0.10
Delay (in days)	75.00	64.00	93.00	84.00	18.00**	20.00*
Diversification (dummy)	0.51	1.00	0.38	0.00	-0.13**	-1.00***
Premium (%)	23.17	20.84	50.03	26.56	26.86**	5.72*
Synergy (dummy)	0.48	0.00	0.47	0.00	-0.01	0.00

Figure 4-1 Cumulative Abnormal Return (CARs) for Targets around the Announcement Date

This figure represents the CARs around acquisition announcements for target firms. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. The solid line represents pre-CSOX sample period returns and the dotted line represents the post CSOX period.

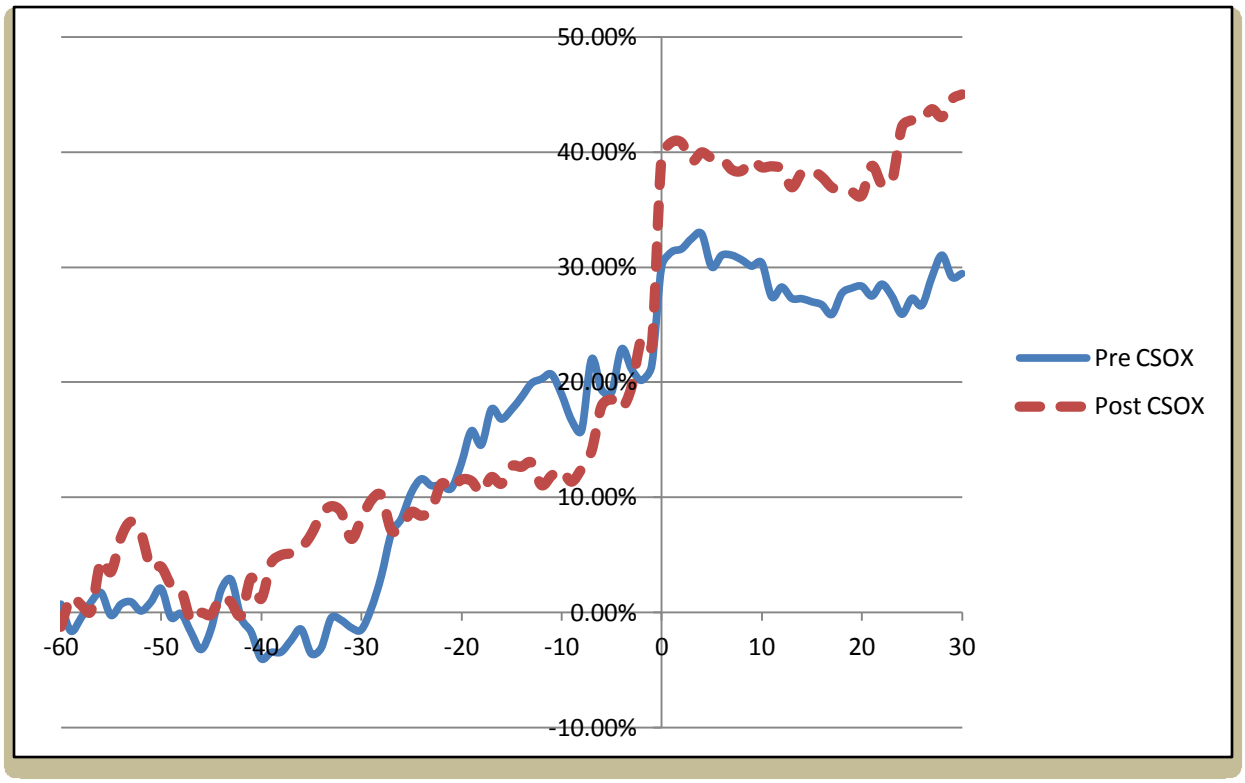

Table 4-3 Cumulative Abnormal Return (CARs) for Targets around the Announcement Date

This table reports the abnormal returns around acquisition announcement dates for both pre and post CSOX periods. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. We report different windows around the acquisition announcement date, starting from t=-60 to t=+30 days, where t=0 is the announcement date. This is a comparison study between pre- and post CSOX periods to test the differences in activities around merger between these two regimes. Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

Event Window	MEAN				MEDIAN			
	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Post - Pre	t-stat	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Post - Pre	z-stat
[-60, -30]	6.10%	8.10%	2.00%	0.68	2.87%	6.84%	3.97%	0.55
[-30, -10]	21.80%***	5.96%	-15.84%	-0.27	22.21%**	3.85%	-18.36%	-0.67
[-10, -5]	-0.51%	6.61%**	7.12%	1.58	-2.98%*	5.74%	8.72%	0.88
[-5, 0]	10.70%***	21.67%***	10.97%***	2.45	11.70%**	20.36%**	8.66%**	1.99
[-1, 0]	10.53%***	15.79%***	5.26%***	3.01	12.52%**	14.68%***	2.16%**	2.01
[0, 0]	8.76%***	16.56%***	7.80%***	2.87	11.43%**	15.63%***	4.20%***	4.27
[-1,+1]	12.03%***	17.01%***	4.98%***	3.28	14.41%**	16.13%***	1.72%***	3.89
[0, +1]	9.91%***	17.78%***	7.87%**	1.98	11.55%***	17.08%***	5.53%***	2.97
[0, +5]	8.62%***	16.4%***	7.78%**	2.11	10.34%*	15.22%**	4.88%*	1.65
[+5, +30]	-3.45%	4.01%	7.46%	1.14	-5.15%	3.34%	8.49%	1.11
OBSERVATIONS	114	57			114	57		

Table 4-4 Regression of Cumulative Abnormal Returns for Targets on Explanatory Variables

This table reports the results from regressing the cumulative abnormal returns for targets on different explanatory variables. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. The dependent variable we use here is Cumulative Abnormal Return from t=-1 to t=+1, $CAR_{-1,+1}$. First model uses a 'CSOX' dummy (equals to one if the announcement date was after April 6, 2003, and zero otherwise); Second model uses CSOX dummy along with target characteristics controls like firm size (log of total assets), leverage (long term debt scaled by total assets), and free cash flow (EBITDA scaled by total assets); Third model uses 'CSOX' dummy along with deal characteristics control variables like relative deal size (transaction value scaled by acquirer's market value), premium (as reported on SDC platinum), 'Hostile' dummy (equals to one if the deal was flagged as hostile in SDC Platinum), and payment method dummy 'Cash' (equals to one if the deal was an all cash transaction). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

VARIABLES	MODEL I	MODEL II	MODEL III	MODEL IV
CSOX (dummy)	0.019*	0.014*	0.008*	0.009*
Target Characteristics				
Firm Size		-0.001**		-0.004**
Leverage		-0.011		-0.007
Free Cash Flow		-0.151*		-0.091*
Deal Characteristics				
Relative Deal Size			-0.013	-0.017
Premium			0.051**	0.079**
Hostile (dummy)			0.007	0.012
Cash (dummy)			0.010	0.012

Figure 4-2 Cumulative Abnormal Return (CARs) for Acquirers around the Announcement Date

This figure represents the CARs around acquisition announcements for acquiring firms. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. The solid line represents pre-CSOX sample period returns and the dotted line represents the post CSOX period.

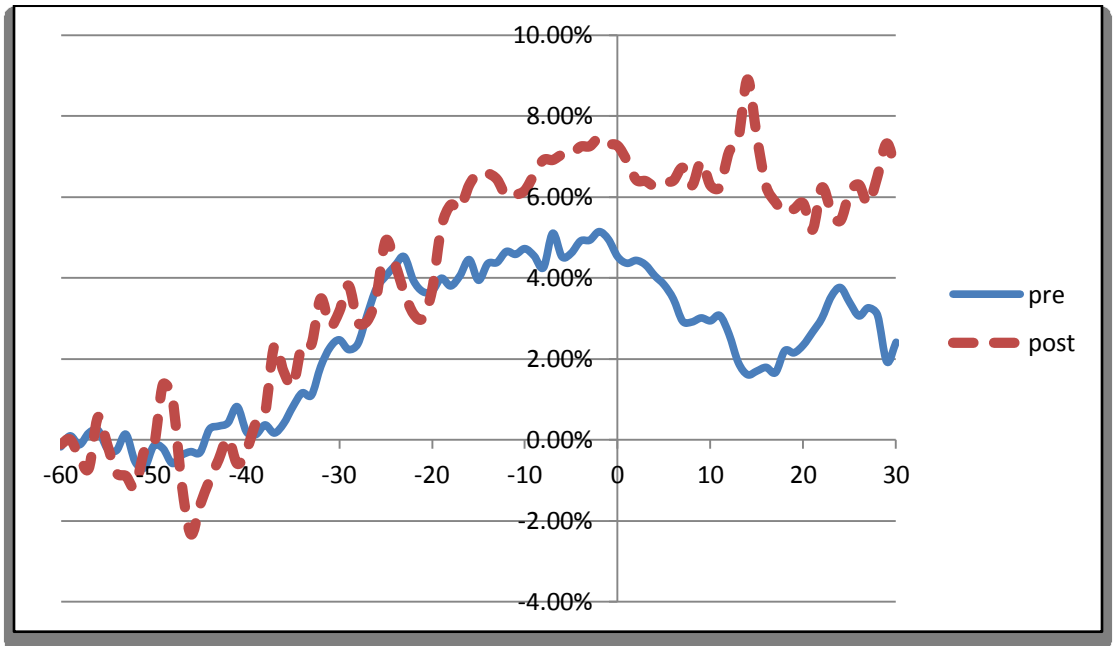

Table 4-5 Cumulative Abnormal Return (CARs) for Acquirers around the Announcement Date

This table reports the abnormal returns around acquisition announcement dates for both pre and post CSOX periods. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. We report different windows around the acquisition announcement date, starting from t=-60 to t=+30 days, where t=0 is the announcement date. This is a comparison study between pre- and post CSOX periods to test the differences in activities around merger between these two regimes. Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

	MEAN				MEDIAN			
Event Window	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Post - Pre	t-stat	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Post - Pre	z-stat
[-60, -30]	2.47%*	3.17%*	0.70%*	1.66	1.78%**	3.11%*	1.33%*	1.71
[-30, -10]	2.44%**	3.34%	0.90%*	1.81	2.36%**	4.63%*	2.27%*	1.65
[-10, -5]	0.03%***	0.99%**	0.96%**	1.98	0.44%**	0.93%**	0.49%*	1.68
[-5, 0]	0.00%***	0.22%**	0.22%**	2.17	-0.38%***	0.42%***	0.80%***	3.14
[-1, 0]	-0.62%**	-0.20%*	0.42%**	2.11	-0.57%***	-0.08%**	0.49%**	1.98
[0, 0]	-0.43%***	-0.05%**	0.38%***	2.87	-0.21%**	0.00%**	0.21%*	1.87
[-1,+1]	-0.78%**	-0.57%**	0.21%**	2.01	-0.51%***	-0.20%**	0.31%**	2.09
[0, +1]	-0.59%***	-0.42%**	0.17%**	1.97	-0.29%**	-0.17%**	0.12%*	1.81
[0, +5]	-1.12%**	-0.94%*	0.18%*	1.65	-0.98%*	-0.39%**	0.59%*	1.73
[+5, +30]	-1.64%*	0.35%*	1.99%*	1.73	-1.34%*	0.22%*	1.56%*	1.84
OBSERVATIONS	119	58			119	58		

Table 4-6 Regression of Cumulative Abnormal Returns for Acquirers on Explanatory Variables

This table reports the results from regressing the cumulative abnormal returns for acquirers on different explanatory variables. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. The dependent variable we use here is Cumulative Abnormal Return from t=-1 to t=+1, $CAR_{-1,+1}$. First model uses a 'CSOX' dummy (equals to one if the announcement date was after April 6, 2003, and zero otherwise); Second model uses CSOX dummy along with target characteristics controls like firm size (log of total assets), leverage (long term debt scaled by total assets), and free cash flow (EBITDA scaled by total assets); Third model uses 'CSOX' dummy along with deal characteristics control variables like relative deal size (transaction value scaled by acquirer's market value), premium (as reported on SDC platinum), 'Hostile' dummy (equals to one if the deal was flagged as hostile in SDC Platinum), and payment method dummy 'Cash' (equals to one if the deal was an all cash transaction). Returns are market adjusted. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

VARIABLES	MODEL I	MODEL II	MODEL III	MODEL IV
CSOX (dummy)	0.002*	0.001	0.003	0.001
Acquirer Characteristics				
Firm Size		-0.003*		-0.005*
Leverage		0.081		0.043
Free Cash Flow		0.023		0.016
Deal Characteristics				
Relative Deal Size			-0.071	-0.066
Hostile (dummy)			-0.191	-0.172
Cash (dummy)			0.031	0.019

Table 4-7 Relationship between Target Gain and Total and Acquirer Gains

This table reports regression results where target gain is the dependent variable. In Model I Total Gain is the independent variable and in Model II Acquirer Gain is the independent variable. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. We classify acquisitions either as synergy driven or agency driven using the approach in Berkovitch and Narayanan (1993). They use the correlation between target gain and total gain and the correlation between target gain and acquirer gain are used as predictors of agency driven or synergy driven acquisition. A positive correlation factor implies the presence of synergy and vice versa. According to them, if the total, target, and acquirer gains are all positive then it is classified as a value-maximizing (synergy) merger; else it is an agency-driven merger. We calculate the cumulative abnormal return around the announcement date for both target and acquirer firms. Market model estimates for each firm were calculated using a maximum of 255 trading days of daily returns data beginning 127 days before the announcement of the first tender bid. Target gain is calculated by multiplying the CAR by the market value of target's equity as of the end of six trading days prior to first announcement for the target minus the value of target shares held by the acquirer before the announcement. Likewise, the acquirer gain is calculated by multiplying the CAR by the market value of acquiring firm as of the end of six trading days prior to the first announcement made by the acquiring firm. The total gain is the sum of the target and acquirer gains. Coefficients are estimated for the entire sample for each regime (pre- and post SOX) as well as subsamples of positive and negative total gains. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively.

DEPENDENT VARIABLE = TARGET GAIN	FULL SAMPLE				POSITIVE TOTAL GAIN SUBSAMPLE				NEGATIVE TOTAL GAIN SUBSAMPLE			
	MODEL I		MODEL II		MODEL I		MODEL II		MODEL I		MODEL II	
	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)
INTERCEPT	117.900*** (4.18)	186.211 (1.33)	116.046*** (3.89)	623.318* (1.84)	132.108** (2.51)	-55.922 (-0.33)	233.649*** (4.64)	579.586 (1.37)	-7.439 (-0.64)	74.758 (1.25)	-8.111 (-0.69)	61.349 (1.18)
TOTAL GAIN	0.043** (2.47)	0.660*** (7.67)			0.324*** (2.97)	0.783*** (10.56)			0.005 (0.85)	-0.208*** (-3.76)		
ACQUIRER GAIN			0.030 (1.58)	0.223 (0.72)			-0.025 (0.88)	0.486 (0.96)			0.004 (0.72)	-0.172 (-1.08)
R-SQUARE	0.119	0.072	0.053	0.009	0.002	0.011	0.001	0.003	0.071	0.083	0.009	0.006
SAMPLE SIZE	114	57	114	57	53	36	53	36	61	21	61	21

Table 4-8 Operating Performance Analysis

This table reports the industry adjusted post-acquisition operating performance results for the acquirers. The sample consists of 238 completed Canadian tender offers between 1996 and 2009. We obtain the initial sample of acquisitions from Thomson Financial Data Corporation (SDC) Platinum database. Our final sample includes all completed tender offers subject to: (1) the deal value disclosed in SDC is greater than $30 million; (2) the target and acquirer are both publicly traded and Canadian and has stock return and financial data available from Canadian Financial Markets Research Center (CFMRC) and Compustat respectively. Pre CSOX announcements cover announcement dates from January 1, 1996 to April 6, 2003; and for post CSOX sample the dates are from April 7, 2003 onwards. Panel A reports the detailed yearly post-acquisition operating performance. Operating performance is measured as the return on assets (ROA) and return on sales (ROS). Barber and Lyon (1996) also use ROA and ROS as operating performance measures. ROA is the ratio of operating income scaled by total assets where operating income is measured as earnings before interest, taxes, depreciation and amortization (EBITDA). Likewise, ROS is measured as the ratio of operating income (EBITDA) scaled by sales revenue. We analyze the ratios for 6-year period starting from the year of the announcement to five years after the acquisition. Panel B reports the cross sectional analysis where long term operating performance measures are the dependent variables. Adapting and expanding from Heron and Lie (2002) we use independent variables like CSOX dummy (equals to one if the announcement date was after April 6, 2003, and zero otherwise), ratio of targets assets to target and acquirer combined assets (assets are book value of assets and at time t=-1), market-to-book for acquirer (at t=-1), market-to-book for target (at t=-1), same industry dummy (equals to one if 4-digit SIC matches, MSV 1990), and a delay variable (the time lag between the first announcement of a bid and the final acquisition of the target).***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels respectively. Only ROA related results are presented for brevity. ROS related results are qualitatively similar and will be provided upon request from the author.

Panel A reports the detailed performance results and Panel B provides the cross sectional analysis

Panel A: Detailed Operating Performance Analysis

YEAR	Pre CSOX (1996 - 2003)	Post CSOX (2003 - 2009)	Post - Pre
0	-3.22%	-1.07%*	2.15%*
+1	0.00%***	0.42%*	0.42%
+2	-3.96%**	-1.21%**	2.76%*
+3	-3.26%***	-1.81%*	1.45%*
+4	-7.32%***	-3.22%**	4.10%**
+5	-2.72%***	-0.86%*	1.86%*
AVERAGE 3-YEAR	-2.39%***	-0.70%**	1.69%**
AVERAGE 5-YEAR	-3.41%***	-1.00%**	2.41%**

Panel B: Cross-Sectional Analysis

Industry Adjusted ROA	Average 3-year	Average 5-year
CSOX (dummy)	0.011** (2.09)	0.017** (1.98)
Assets (Target) Assets (Target + Acquirer)	0.001 (0.39)	0.003 (0.91)
M to B (Acquirer)	0.021*** (2.97)	0.011** (2.36)
M to B (Target)	-0.001 (-1.49)	-0.002* (-1.71)
Same Industry (dummy)	0.009* (1.77)	0.017** (2.11)
Delay	-0.001 (-0.63)	-0.000 (-0.19)
Sample Size	114	57
Adjusted R-square	0.011	0.009