The Long-term Valuation Impact of Sarbanes-Oxley

on U.S. vs. Foreign Firms

Lorne N. Switzer and Hui Lin*

This Version: November 2007

ABSTRACT

The long-term impact of the passage of the Sarbanes-Oxley Act of 2002 (SOX) on firm valuation is examined. Long-term benefits of SOX are shown, particularly for small companies and U.S.-traded foreign companies, although disproportional compliance costs are shown for the former. Firms that are less compliant with the legislation experienced relatively higher abnormal returns, supporting the hypothesis that relaxing compliance constraints is value enhancing. Long-term abnormal returns are negatively related to board independence and CEO duality, but are positively related to the ownership by insiders and institutional investors.

JEL Codes: G14, G15, G18, G32, G34.

* Finance Department, Concordia University. Financial support from the SSHRC and the Autorité des Marches Financiers is gratefully acknowledged. Please address all correspondence to Dr. Lorne N. Switzer, Associate Dean, Research, The Van Berkom Endowed Chair of Small-Cap Equities, and Associate Director, Institute for Corporate Governance of Private and Public Organizations, John Molson School of Business, Concordia University, 1455 De Maisonneuve Blvd. W., Montreal, Quebec, CANADA H3G 1M8; tel.: 514-848-2424, x2960 (o); 514-481-4561 (home and FAX); E-mail: switz@jmsb.concordia.ca.

1. Introduction

The Sarbanes-Oxley Act of 2002 (SOX or the Act hereafter) was introduced in the aftermath of a series of major corporate governance and accounting scandals which fundamentally shook public confidence in the integrity of the U.S. security markets. As stated by the SEC Chairman, the main objective of the SOX is to restore investor confidence in and assure the integrity of the U.S. markets (Donaldson, 2005). To this end, the SOX introduced provisions designed to: strengthen enforcement of the federal securities laws; strengthen and restore confidence in the auditing profession; enhance the accountability of corporate officers; improve disclosure and financial reporting; and improve the performance of gatekeepers, such as accounting firms, research analysts and attorneys.

Despite the good intentions of lawmakers, the Act has received mixed responses from the financial community and academics since its passage. The supporters suggest that it might improve corporate governance and strengthen financial markets (Mitchell, 2003; Prentice and Spence, 2007). The critics doubt its effectiveness and emphasize the costs of compliance (Ribstein, 2002). Some argue that the Act's importance has been overstated and predict its effect to be modest (Cunningham, 2003). Some even suggest that Sarbanes-Oxley may have satisfied a political need, but that it will do little to protect investors or strengthen the market (Romano, 2005).

Several empirical papers study the impact of the Act by examining market reactions to events surrounding the passage of the Act, and report mixed findings. Li, Pincus, and Rego (2004) find significantly positive stock returns around the events resolving uncertainty about the Act's contents. Jain and Rezaee (2005) also find a

positive abnormal return associated with legislative events that increased the likelihood of the Act's passage. They also report that the market reaction is more positive for more compliant firms with effective corporate governance and reliable financial reporting. In contrast, Zhang (2007) finds that the cumulative abnormal return around legislative events leading to the passage of the SOX is significantly negative, and estimates that the loss in total market value around the most significant of those events amounts to $1.4 trillion. Litvak (2007) reports that the stock prices of cross-listed companies declined (increased) significantly compared to their matches, during key announcements indicating that the Act would (would not) fully apply to cross-listed foreign issuers.

Although several studies have examined the short-term market impact of the Act's passage, no one has attempted to disclose the long-run market reaction to the Act. Sarbanes-Oxley contains many reforms intended to protect investors by improving corporate governance standards designed to enhance the accuracy and reliability of corporate disclosures. Therefore, it is reasonable to expect the SOX to have a long-term impact on firm valuation since the Act's effectiveness should take a relatively long time to realize and evaluate. In addition, previous research shows that the market is often slow to incorporate public information (Ikenberry, Lakonishok, and Vermaelen 1995; Loughran and Ritter 1995; Zheng 2007), which is inconsistent with the efficient market hypothesis (EMH). The purpose of the present study is to examine the long-term (three year and a half) effects of SOX's enactment on firm valuation. Specifically, we test the long-run stock performance of three groups of firms (namely large-, small-, and foreign-firms) after the passage of the Act, and examine whether

capital markets consider SOX influences these firms differently. Moreover, because SOX legislation aims to improve corporate governance mechanisms and financial disclosure, this study also investigates whether the observed market reactions are associated with firm-specific corporate governance and disclosure characteristics.

Employing Carhart's (1997) four-factor model (an extension of Fama and French's three-factor model), we find significant positive long-run abnormal returns for a group of 796 publicly traded companies. The observed abnormal return is annualized at 5.8%, which is also economically significant. This result indicates that SOX has a beneficial long-term effect on the capital market. Although SOX imposes a heavy compliance burden on public firms, its implementation effectively improves corporate governance mechanisms and financial disclosure thus increases shareholder wealth in the long run.

To account for potential benchmark biases or model specification effects, two sets of robustness tests are performed. The overall results are similar to our initial findings. Finally, we examine whether our results are affected by a potential survival bias. After adding delisted companies to our sample, we still detect significant post-SOX abnormal returns, and the positive abnormal returns are even higher than what we observed when delisted firms are excluded.

When we explore the return patterns for different sample groups, we find that small and foreign firms experience much higher average abnormal returns than large companies. This finding is inconsistent with the compliance-cost hypothesis which suggests that large firms will obtain more net benefits from the enactment of the SOX since normally they are more compliant with SOX's provisions and are thus subject to

less compliance costs. However, small firms and foreign firms usually have less compliant governance mechanisms and thus need more money and efforts to comply with SOX's requirements. To examine the persistence of this finding, we further divide the foreign-group firms into two sub-groups (namely the high-compliance group and the low-compliance group) according to their SOX-compliance degree. Consistent with our previous findings, results show that low-compliance firms significantly outperform high-compliance firms. We interpret these results as suggesting that investors anticipate low-compliance firms to gain more benefits from SOX in the long run because those companies have more potential to improve their corporate governance and financial disclosure, and consequently enhance operating performance. In contrast, large companies tend to have relatively advanced governance mechanisms already and thus have less potential to make significant improvements.

Our multivariate analyses examine whether the cross-sectional variation of the observed abnormal returns can be explained by certain firm-specific corporate governance characteristics. Our regression results provide moderate evidence of a correlation between market valuation and firm-specific corporate governance characteristics. We find that our sample firms' post-SOX abnormal returns are negatively related to board independence, which is inconsistent with many previous studies. We also interpret this result as investors expecting low-compliance firms to benefit more from the implementation of the Act. In contrast, independence of the nominating committee is positively correlated with post-SOX abnormal returns, which implies that market participants may anticipate less possibilities of improvement in a firm's corporate governance structure if the firm does not have an independent

nominating committee, because nominating committee directly determine the composition of the firm's board of directors. Results also show that firms whose CEO also holds the position of chairperson of the board experience lower post-SOX abnormal returns, which is consistent with the view that CEO duality reduces the monitoring effectiveness of the board.

Furthermore, we find that firms' post-SOX stock market performance is positively correlated with insider ownership and institutional ownership. This finding provides new evidence for the notion that ownership structure affects firm performance, and that shareholdings by management and institutional investors increase firm value. However, the ownership structure of cross-listed foreign companies has much less influence on stock market performance. We attribute this variation to differences in the ownership structure between U.S. and non-U.S. firms.

Consistent with the view that SOX imposes a significant compliance burden on public companies especially on small firms, the post-SOX market reactions are negatively related with firms' audit fee expenses, and this negative relation is much stronger for small firms. Surprisingly, the negative relationship is much weaker for foreign companies and is statistically insignificant.

Another result that sets foreign firms apart from other sample firms is that foreign companies' stocks react more positively to financial disclosure variables than U.S. firms. This implies that U.S. investors may have less confidence on foreign firms' financial reporting thus they pay more attention to those companies' financial disclosure.

There is a large body of literature studies long-term stock market impact of

various events, such as seasoned equity offerings (Loughran and Ritter, 1995), stock repurchases (Ikenberry, Lakonishok, and Vermaelen, 1995), and stock splits (Desai and Jain, 1997). Our study contributes to this literature by exploring the long-term shareholder wealth effects of securities legislation. Previous studies that have investigated the impact of the SOX legislation have typically focused on measuring abnormal performance during short-term event windows around several events leading up to the passage of the SOX. As such, their findings only imply market's expectation about the effects of the SOX's passage. However, by examining the market reactions in a relatively longer time period, our study provides evidence on the real impact of the enactment of the SOX. The results of this study have implications for the ongoing debate on SOX's benefits vs. costs. In addition, our study contributes to the literature on the relationship between firm-specific corporate governance characteristics and firm valuation.

The remainder of the paper is organized as follows. The next section reviews the related literature. Section III describes our research methodology; Section IV presents the sample and data. Empirical results and analyses are reported in Section V; The paper concludes with a summary in Section VI.

2. Related Research

The main purpose of the Sarbanes-Oxley Act of 2002 was to assure integrity in U.S. financial markets and restore investor confidence in corporate governance, financial reports, and related audit functions. As indicated by Jain and Rezaee (2005), proper implementation of the provisions of the Act is expected to enhance corporate

governance thus better align management's interests with those of outside investors, and to improve the quality and reliability of financial information disclosure.

Many concurrent studies examine the consequences of the Sarbanes-Oxley Act, measured by various indicators; however, there is no consensus on how SOX changes corporate governance practices, nor whether the changes are value increasing for firms. Li, Pincus and Rego (2004) report significantly positive stock returns associated with events that resolved uncertainty about the Act's final provisions or were informative about its enforcement. They conclude that investors expect the Act to have a net beneficial effect by improving the accuracy and reliability of financial reports by means of constraining earnings management and enhancing corporate governance.

Jain and Rezaee (2005) find positive (negative) abnormal returns around legislative events that increased (decreased) the probability of the passage of the SOX. The market reaction is more positive for more compliant firms with effective corporate governance, reliable financial reporting, and credible audit functions prior to its enactment. Investors interpreted the Act as good news as it led towards the restoration of investor confidence in public financial information, because SOX provides incentives and mechanisms for both public companies and their auditors to better signal the quality, reliability, and transparency of their financial statements as well as the effectiveness and credibility of audit functions.

Chhaochharia and Grinstein (2007) study the announcement effects of different provisions of the SOX and associated stock exchange regulations on firm value. Different from Jain and Rezaee (2005), they find that firms that are less compliant with the new rules experienced positive abnormal returns compared to firms that are more

compliant. However, less compliant small firms earn negative abnormal returns compared with more compliant small firms.

To investigate the net costs vs. benefits of SOX for small firms, Switzer (2007) examines the performance of small-cap Canadian firms that are subject to the SOX with those that are not. He finds that firms subject to SOX have a significantly higher market valuation (measured by market-capitalization weighted Tobin's Q), which implies that the benefits of enhanced accountability of managers to shareholders outweigh the associated compliance costs.

Akhigbe and Martin (2006) examine the valuation effects of SOX on the financial services industry and find that except for securities firms, these firms significantly benefited from its adoption. These positive effects may be attributed to the expected improvement in the transparency of relatively opaque financial services firms. They also report that the cross-sectional variation in the valuation effects can be explained by disclosure and governance characteristics.

In contrast, Zhang (2007) uses concurrent stock returns of non-U.S.-traded foreign firms to estimate normal U.S. returns and find that the cumulative abnormal return around key SOX events leading to the passage of the Act is significantly negative which implies that SOX imposes net cost on complying firms.

Some studies focus on the response of cross-listed foreign companies to the adoption of the SOX. Litvak (2007) compares the returns of U.S.-listed foreign firms subject to SOX with returns of their non-U.S.-listed matches. She finds that U.S.-traded foreign firms experienced significantly negative abnormal returns during the announcements indicating that the Act would fully apply to cross-listed foreign

issuers. Investors expected the SOX to have net negative effect on cross-listed foreign companies, with high-disclosing companies suffering larger net costs, and faster-growing, low-disclosing firms suffering smaller costs.

Berger, Li and Wong (2005) compare the value-weighted portfolio of foreign private issuers listed on US markets to the value-weighted portfolio of US companies, and find that the former had a significantly more negative stock price reaction to the Act than the later. They interpret this result as indicating that the incremental legal bonding benefits provided by the Act for cross-listed firms were exceeded by the Act's incremental costs. They also find that the stock market reaction to SOX was more beneficial to firms from countries with weak private enforcement of investor rights which is consistent with SOX improving investor protection and with such improvements enhancing firm value.

Several papers investigate whether the enactment of the SOX influenced public companies' specific behaviours. For example, Cohen, Dey and Lys (2004) investigate whether SOX's enactment influenced firms' earnings management. They find that firms' management of accounting earnings increased steadily from 1987 until the passage of the SOX, with a significant increase during the period prior to SOX, followed by a significant decline after passage of SOX. Gordon, Loeb , Lucyshyn and Sohail (2006) empirically examines the impact of SOX on companies' voluntary disclosure of information security activities. They find clear evidence that indicates that SOX had a positive impact on such disclosure. Corporate information security activities are receiving more focus since the passage of SOX than before. Jain, Kim, and Rezaee (2003) analyze market liquidity before and after passage of the SOX. They

find that SOX is associated with significant improvement in liquidity as measured by spreads and depth. SOX's positive effects on liquidity affect all types of companies, especially large companies.

Several researchers focus on firms' post-SOX going private decisions. Kamar, Mandic and Talley (2006) attempt to disclose whether the net cost of complying with SOX has driven firms out of the public capital market. They examine the post-SOX change in the propensity of U.S. public target firms to be bought by private acquirers rather than public ones with the corresponding change for foreign target firms. They find that SOX induced small firms but not large firms to exit the public capital market.

Engel, Hayes, and Wang (2007) investigate firms' going-private decisions in response to the passage of the SOX by examining a sample of all firms that went private between 1998 and 2004. They obtain three major findings: (1) the passage of the SOX was followed by a modest increase in the quarterly frequency of going private; (2) the abnormal returns associated with the passage of SOX were positively related to firm size and share turnover; (3) smaller firms and firms with greater insider ownership have experienced higher going-private announcement returns in the post-SOX period compared to the pre-SOX period.

Leuz, Triantis, and Wang (2004) examine the effects of SOX on firms' deregistration decisions and find a large increase in the incidence of firms' going dark (i.e., cease filing with the SEC, but continue to trade in the OTC market) after the passage of the SOX but no significant increase in the incidence of going private. They also find that announcing a plan to go dark is associated with negative returns, especially for small firms and firms that go dark after the enactment of SOX. They

explain that the trend of going dark reflect the increased reporting burden after SOX. They suggest that although SOX appears to have positive effects on firms with agency problems and poor accounting quality, given that firms can deregister and leave the SEC reporting system, the intended effects may not be realized.

3. Research Design

3.1 Testable Hypotheses

It is widely documented that good corporate governance is associated with higher profits and higher firm values. With SOX's great efforts to improve corporate governance and investor protection, it is reasonable to expect a positive long-run market reaction after its passage. On the other hand, firm valuation effects of the SOX are a function of both the expected benefits and costs imposed on public companies with the implementation of the Act. Theoretically, if the induced benefits of the Act exceed its imposed compliance costs, then we would expect a positive market reaction following the passage of the Act. Alternatively, if the imposed compliance costs exceed the induced potential benefits, we would expect negative market reactions following the enactment of the Act. Generally, large U.S. companies are more compliant with the requirements of the Act than small companies and foreign companies. They need to make fewer changes to their pre-Act governance structure compared to small or foreign firms. Moreover, because a large fraction of the compliance costs is relatively fixed, imposing the same rules on large and small firms might be particularly harmful to small firms. This motivates our first hypothesis:

Hypothesis 1. Large firms experience positive long-term post-Act abnormal stock returns, while the long-run market reaction to small and foreign companies is less positive or even negative.

Numerous scholars report that good corporate governance mechanisms are associated with higher stock market valuation (Cremers & Nair 2005, Durnev & Kim 2003). Therefore, differences in corporate governance structures should be an important reason which causes different market valuations. In addition, compliance with provisions of the SOX concerning corporate governance would be more costly to poor governance firms than good governance firms. Thus, the observed market reaction difference may be largely attributable to a firm's characteristics of corporate governance.

Hypothesis 2. The observed positive or negative long –term capital market reactions are closely related to firms' corporate governance structures.

3.2 Empirical Analyses

In line with the above hypotheses, our empirical analysis consists of two main sections. First, we examine the post-SOX stock price performance for our sample firms through a univariate stock price analysis. This is to test the existence of long-term abnormal returns after passage of the SOX. Secondly, we use a multivariate approach to examine whether the observed abnormal returns are related to certain corporate governance characteristics.

The financial literature shows that there are two main methods to measure long-term abnormal stock price performance: the characteristic based matching approach (BHAR approach) and the calendar-time portfolio approach (Jensen's α approach). Barber and Lyon (1997) argue that the BHAR is the appropriate estimator because buy-and-hold returns better resemble investors' actual investment experience than periodic rebalancing employed in other approaches to measuring abnormal performance.

Fama (1998) argues against the BHAR method because the systematic errors that may arise as a result of bad model problem are compounded with long-horizon returns. Mitchell and Stafford (2000) claim that the BHARs and the closely related cumulative abnormal returns are particularly vulnerable to the cross-sectional dependence problem among event firms. In contrast, the calendar-time methodology uses monthly returns which are less susceptible to the bad model problem. Moreover, by forming monthly calendar-time portfolios, all cross-correlations of event–firm abnormal returns are automatically accounted for in the portfolio variance. Therefore, the present study will employ calendar-time methodology to examine long-term post-Act stock market reactions.

A. Univariate Market Reaction Analysis

Since SOX is expected to improve the corporate governance mechanisms of publicly traded companies, we expect the market as a whole to react positively in the post-SOX period.

Fama and French's three-factor model (1993) as well as Carhart's (1997) four-factor model (an extension the three-factor model) will be used to examine the

post-SOX stock price performance of our sample forms:

$$R_{pt} - R_{ft} = \alpha + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_t \quad (1)$$

$$R_{pt} - R_{ft} = \alpha + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + \varepsilon_t \quad (2)$$

Where:

α = the mean monthly abnormal returns of an equally weighted sample portfolio in our test period (from July 2002 to December 2005);

R_{pt} = the average return of the equally weighted sample portfolio during month *t*;

R_{ft} = the return on a risk-free asset, which is measured as the one month Treasury bill rate;

R_{mt} = the market return measured as the S&P 500 index return;

SMB = the differences in the returns of portfolios of small and large stocks;

HML = the differences in the returns of portfolios of value and growth stocks;

MOM = the momentum factor which is measured as the returns on high momentum stocks minus low momentum stocks.

We obtain the relevant data of SMB, HML and MOM from Professor Kenneth R. French's website.

B. Multivariate Analysis

The univariate analysis focuses on average stock price effects across all sample firms; therefore it does not consider the possibility of differential market reactions with regard to firm-specific characteristics. In this section, we attempt to identify some firm-specific corporate governance factors that influence the long-run stock market reaction to the passage of the SOX through the following model:

$$AR_i = \gamma + \beta_1 BOARD_i + \beta_2 CEOCHAIR_i + \beta_3 AUDIT_i + \beta_4 COMPEN_i + \beta_5 NOMINATING_i +$$

$$\beta_6 \textit{INSIDEOWN}_i + \beta_7 \textit{INSTIOWN}_i + \beta_8 \textit{AUDFEE}_i + \beta_9 \text{AUDDISC}_i + \beta_{10} \text{OFFDISC}_i$$
$$+ \beta_{11} \textit{SIZE}_i + \beta_{12} \textit{LEVERAGE}_i + \beta_{13} \textit{PROFIT}_i + \beta_{14} \textit{GROWTH}_i + \varepsilon_i \quad (3)$$

where the dependent variable AR_i is the average monthly abnormal return of individual firm *i*, which comes from the Carhart four-factor model abnormal return (the α) of individual firm *i*. Specifically, we run regressions for each sample firm using monthly returns in the 42-month post-Act period, thus we get one α for each company. Then, the abnormal returns of individual firms are regressed on certain corporate governance variables and control variables. Fiscal year 2002 data of these explanatory variables will be used in our analysis.

Independent Variables

Two major parts of the SOX which most attract investors' concerns are the provisions designed to enhance governance mechanism and improve corporate disclosure. Thus, we may reasonably anticipate that the post-SOX long-run market reaction should be closely related with firm-specific disclosure and governance characteristics. Accordingly, our cross-sectional valuation analysis focuses on the following two groups of explanatory variables:

a. Corporate governance variables

Although it is a common belief that independent directors are potentially the best monitors of management, academic research reports mixed findings about the effect of board independence on firm performance. Klein, Shapiro and Young (2005) find no evidence that board independence has any positive effect on firm performance. Bhagat and Black (2002) also claim that there is no convincing evidence that greater board independence correlates with greater firm profitability or faster growth. In contrast,

Rosenstein and Wyatt (1990) show that the appointment of independent directors is value enhancing. Lee and Carlson (2007) report an increase in the number of independent board members with the enactment of the SOX, and firms with most independent boards perform significantly better than firms with less independent boards.

To enhance the monitoring of public U.S. companies, SOX mandates the independence of audit committees. The new governance rules of the NYSE and NASDAQ uniformly require firms to have a majority of independent directors of the board. Furthermore, NYSE and NASDAQ also require that **all** directors that comprise the compensation and nominating committees be independent. To capture the effects of the independence requirement of SOX on firm valuation, we examine five variables: BOARD, CEOCHAIR, AUDIT, COMPEN and NOMINATING which are defined as follows:

BOARD (Board independence) is the percentage of independent directors on the board. We define an independent director as a director who is not a present or former employee of the company or a majority-owned subsidiary.

CEOCHAIR (CEO duality) is a dummy variable which is set to one if the chairman of the board is also the company's CEO, and zero otherwise. One of the most important functions of the board is to oversee the effectiveness of the corporation's top management. When the CEO also holds the dual position of board chair, a potential conflict of interest arises, because the CEO is in a position of self-evaluation. It is unreasonable to think that the CEO/chairman can and will make such an evaluation objectively (Petra, 2005). Although it is a common view

that the separation of the two positions is beneficial to companies and shareholders, some scholars argue that the potential costs have been overlooked (Brickley, Coles and Jarrell, 1997). They suggest that the costs of separation exceed the benefits for most large firms.

AUDIT (Audit committee independence) is a dummy variable which equals one if the firm has an independent audit committee. We determine a committee to be independent if the majority (more than 60%) of its members is independent.

COMPEN (Compensation committee independence) is a dummy variable which equals one if the firm has an independent compensation committee, and zero otherwise.

NOMINATING (Nominating committee independence) is a dummy variable which equals to one if the firm has an independent nominating committee, and zero otherwise.

We expect a positive relationship exists these variables and market valuation effects except for the CEO duality variable (CEOCHAIR), which is supposed to be negatively correlated with firm value. If the chair position of a board is held by its CEO, the board's independence is questionable.

Several previous studies show that ownership structure affects firm performance. Jensen and Meckling (1976) claim that manager's equity ownership can better align the monetary incentives between managers and outside investors. This implies a positive relation between firm value and managerial ownership. Many empirical studies find a significant nonlinear relationship between insider ownership and firm value (e.g., Selarka, 2005; Bing, 2006). In this study, we use two variables (INSIDEOWN and

INSTIOWN) to test the effect of ownership structure on market performance with the enactment of the SOX.

INSIDEOWN (Insider ownership) is defined as the proportion of outstanding shares owned by officers and directors. This variable is expected to be positively correlated with abnormal returns because insiders' interests are more aligned with those of outside shareholders when they own a significant proportion of the company's shares.

INSTIOWN (Institutional ownership) is defined as the proportion of shares owned by institutional investors. Here we use the percentage of shares held by institutional shareholders with an ownership greater than 5% of the firm's outstanding shares. There are two reasons to only include more than 5% shareholders. One is that most companies don't disclose block holders who own less than 5% outstanding shares. Another reason is that institutional shareholders with minor stakes may lack both incentive and enough power to monitor. Institutional ownership is also expected to be positively related to market valuation because of the monitoring function it performs.

AUDFEE (Audit fee relative, which is a firm's audit fee scaled by its total assets) is a proxy for the cost of compliance with the SOX. One criticism of the SOX is the excessive compliance burden imposed by the reforms. Turner (2005) estimates that the cost of complying with Section 404 of the Act is about 0.1 percent of the total revenue for public companies. The additional audit fee paid for audit report on internal control is about 0.02 of the total revenue. Since audit fees are estimated to

constitute a large portion of the total compliance costs (Jain and Rezaee 2005), we use audit fees as a proxy for the compliance costs of each firm. This variable is anticipated to be negatively related to market valuation.

b. Company disclosure variables

To restore investors' confidence in public company's financial reporting, SOX introduces a set of new disclosure requirements. For example, companies are required to report: (1) any off-balance sheet arrangements that either have, or are reasonably likely to have an effect on their financial conditions, revenues or expenses, or other factors that are material to investors; (2) additional disclosure regarding the use of non-GAAP financial measures; (3) audit fees paid to outside independent auditors; and (4) CEO and CFO's certification of all registration statements with the SEC. In this study, we use the following two variables to represent the degree of financial disclosure:

AUDDISC (Audit fee disclosure) is a dummy variable which equals one if a firm discloses its audit fee information in its annual report, and zero otherwise. This variable is anticipated to be positively related to market valuation.

OFFDISC (Off-balance sheet information disclosure) is a dummy variable which equals one if a firm discloses information about its off-balance sheet arrangements in its annual report, and zero otherwise. The off-balance sheet arrangements include guarantee contracts, retained or contingent interests, certain derivative instruments and variable interest entities, that either have, or are reasonably likely to have, a

current or future material effect on a company's financial statements.

Greenstone, Oyer, and Vissing-Jorgensen (2006) find that firms required by the 1964 Securities Act Amendments to increase disclosures experienced a positive abnormal return around the announcement of the law. They claim that mandatory disclosure can cause managers to focus more narrowly on the maximization of shareholder benefits. Therefore, we anticipate that both the above two variables are positively related to market valuation. High level financial disclosure is consistent with the reform spirit of SOX. There, it should be valued by the market.

c. Control variables

We will also include several firm characteristic variables which have been commonly documented to be associated with firm valuation.

SIZE (Natural logarithm of a firm's market value of equity) Many people argue that SOX imposed a significant financial burden that fell disproportionately on smaller firms (Gray 2005, Greifeld 2006). Large firms normally have more resources and are better equipped to cope with the compliance costs of the Act. Thus, the size variable is expected to be positively correlated with abnormal returns.

LEVERAGE (Leverage, long-term debt scaled by total assets) Agency theory suggests that leverage increases a firm's monitoring effectiveness (Jensen and Meckling 1976), which is consistent with the intent of the SOX. I anticipate leverage to be positively related with price performance.

PROFIT (EBIT scaled by total assets) is a measure of profitability, which is also positively related to stock return according to the literature.

GROWTH (Annual sales growth rate) is a common measure of a firm's investment opportunity which is expected to be positively related to stock return (Litvak 2007).

4. Sample Selection and Descriptive Statistics

4.1 Sample and Data

Our sample firms consist from the NYSE Composite Index component companies (there are 2004 such firms as of Feb.12, 2007). Three samples are constructed: a large-firm group, a small-firm group, and a foreign-firm group. The large-firm sample consists of the top 20% of NYSE Index companies according to their market capitalizations, and the small-firm sample is composed of the bottom 20% NYSE Index firms. Thus, there are 327 firms in each group. The foreign-firm group includes all NYSE Index foreign companies (365 firms). These foreign issuers are all subject to the requirements of SOX (i.e., listed as Level-II or Level-III ADRs).

To be included in our sample group, firms should also have the following data available:

(1) Three and a half year (7/2002- 12/2005) of post-Act stock return data on the CRSP;

(2) Market capitalization, total assets, long-term debt, EBIT and annual sales for the 2002 fiscal year in the Compustat database;

(3) Relevant corporate governance data including information on the board of directors, board committee members, and annual audit fees. This information is collected from firms' SEC filings. For U.S. companies, the relevant data are mainly

collected from their proxy statements (DEF14A) and annual reports (10-K). For foreign firms, we gather these data from annual and transition reports (20-F).

According to the above requirements, our final sample consists of 796 firms which have all the required data, including 278 large firms, 272 small firms and 246 foreign firms.

4.2 Descriptive Statistics

Table 1 presents summary statistics for the 796 sample firms as a whole as well as the three sub-samples (i.e., large, small, and foreign firms). Panel A reports some financial statistics for the sample firms. The mean size of the full sample is $9,890 million (median = $3,123 million), and for the large-firm sample and small-firm sample their mean size are $17,754 million (median = $7,833 million) and $235 million (median = $238million) respectively. The foreign-firm sample has a moderate size of $11,679 million (median = $3,636 million) comparing with the other two sub-samples. The mean ROA of the full sample is 7.65% (median = 6.65%). Large companies appear to be more profitable than small and foreign companies with a mean ROA of 10.16% (median = 7.92%). The mean leverage of the full sample is 22.36% (median = 20.13%) and there is no significant difference among the 3 sub-sample. The mean sales growth rate is 7.13% (median=3.74%) for the full sample and 4.43% and 3.62% for large firms and small firms respectively. Foreign companies grew much faster than U.S. companies with a mean growth rate of 14.07% (median=10.01%). The mean audit fee for the full sample is $5.11 million. Large firms spent mean audit fees of $7.71 million (median=$4.52 million) while the mean audit fees of small firms and foreign firms are $0.93 million and $6.78 million, respectively. Small companies spent

more audit fees than large and foreign firms relative to their size.

Panel B reports the relevant corporate governance characteristics for our sample companies. The mean board size of the full sample is 10.34 (median = 10); the large-firm sample has a mean board size of 11.21 (median = 11), while the small-firm group has a mean board size of 8.18 (median = 8). The mean board independence of the full sample is 73.62% (median = 80%); large companies have the highest mean independence of 82.65 and foreign firms have the lowest mean independence of 63.34%. Both large and small U.S. companies have relatively high audit committee and compensation committee independence which are above 95%. In contrast, foreign firms have an audit committee independence of 74.49% and a compensation committee independence of 57.19%. Large U.S. companies also have the highest mean nominating committee independence of 92.97% while the foreign companies have the lowest mean nominating committee independence of 40.77%. The mean insider ownership for the full sample is 12.25% (median = 3.18%). Small-firm group has the highest mean insider ownership of 21.46% while the large-firm sample has the lowest insider ownership of 6.1%. Foreign companies have a relatively high institutional shareholdings of 32.33% (median = 24.9%) comparing with large companies (16.2%) and small companies (24.95%).

The correlation matrix for the explanatory variables is reported in Table 2. In general, most corporate governance variables are correlated to some extent. For example, board independence is closely related with audit, compensation, and nominating committee independence. Highly independent boards usually create highly

independent board committees. There is also a fairly strong positive relationship between institutional shareholdings and board committees' independence, which implies that institutional investors prefer to invest in companies with highly independent boards. Another implication is that the existence of institutional shareholders influences a firm's choice of corporate governance structures. One interesting finding is that institutional ownership is negatively correlated with insider ownership. This is inconsistent with the view that insider shareholdings align managers' interests with outside investors. We also observe a negative correlation between CEO duality and firms' profitability and growth, which is consistent with the hypothesis that CEO duality reduces the board's monitoring effectiveness and therefore decreases the firm's value. However, these negative correlations are not very significant.

5. Results and Analyses

5.1. Univariate Market Reaction Analysis

A. Basic Results

Table 3 presents the sample portfolios' post-SOX abnormal returns over the period from July 2002 to December 2005, as measured by Carhart's (1997) four-factor model. The alpha coefficients represent the estimated excess returns. The average monthly excess return for the full sample is 0.4852% and is statistically significant at the 1% level. We can convert this rate into an average annual return by multiplying it by 12 months. This results in an average annual abnormal return of 5.8224% which is economically significant. We also run regressions for the three sub-samples and get

average monthly abnormal returns of 0.1779%, 0.5904% and 0.6872% for the large-sample, the small-sample and the foreign-sample, respectively. Once annualized, these returns amount to 2.1348%, 7.0848% and 8.2464%, respectively. Except for large companies, the abnormal returns for the sub-samples are all significant at the 5% level or better. The large firms' abnormal return is marginal significant at the 10% level.

Table 4 reports the long-term abnormal returns based on Fama-French's three-factor model. On the whole, the results are similar to those reported by Carhart's four-factor model except that the significance level of large firms' abnormal return decreases a little.

The overall regression results are consistent with our prediction that investors expect the enactment of the SOX to enhance corporate governance and improve financial disclosure. Although investors may expect firms to suffer from high compliance costs, they may also anticipate that firms benefit in the long-run. These results give support to Mr. Donaldson's prediction that the Act's enactment "should have an enormous positive impact on the management and governance of U.S. public companies in the decades ahead" (Donaldson 2005).

On the other hand, there is also a big difference between the test results and our initial hypothesis. Based on the compliance-cost hypothesis, we forecast that large companies will receive higher net benefits from the enactment of the Act since they are subject to less compliance costs. Small firms and foreign firms usually have less-compliant governance mechanism. Thus, they need to expend more money and efforts to comply with SOX's requirements. However, the test results indicate that

foreign and small companies actually earn much higher abnormal returns than large companies. One possible explanation for the superior performance of these two groups is that the market anticipates small and foreign companies to benefit more from the SOX than large companies in the long run. Investors give higher valuations to those companies because they believe that they have a bigger potential to improve their corporate governance and financial disclosure, and that they will consequently display bigger improvements in forms of operating performance. In contrast, large companies are normally more compliant with SOX's requirements and already have relatively high level governance mechanisms, leaving them with less room to improve on.

In a short-term event study that examines the response of U.S.-listed foreign companies to the passage of the SOX, Litvak (2007) reports that cross-listed foreign companies experienced a significantly negative market reaction. In particular, high disclosure firms react more negatively than poorly-disclosing companies. Her findings are similar to ours to some extent as our results indicate that more compliant firms (large firms) receive less positive market valuations than less compliant firms (small and foreign firms). In addition, we find support for our findings from Chhaochharia and Grinstein's study (2007). They find that firms that are less compliant with the SOX experienced positive abnormal returns compared to firms that are more compliant. Their findings are yielded on a difference in difference bases; that is, they compare the returns of the two groups of firms. However, they don't examine whether both groups of firms experienced abnormal returns.

In order to examine whether firms' potential for governance improvement is an important factor that leads to firms' superior post-SOX market performance, we

further investigate the long-term abnormal returns of foreign firms. Specifically, we separate the foreign-firm sample into two groups (i.e., a high-compliance group and a low-compliance group) according to their SOX-compliance degree, and test which group earns higher abnormal returns. In general, European and North American (Canadian) companies have a higher corporate governance level and are more compliant with U.S. regulations; therefore we assign European and Canadian companies to the high-compliance group and companies from other regions to the low-compliance group. Table 5, Panel A, shows the country region distribution of the companies in the foreign-sample. The high-compliance portfolio consists of 143 firms while the low-compliance portfolio includes 103 companies.

Table 5, Panel B, reports the regression results employing the Carhart four-factor model. The average monthly abnormal return of the low-compliance firms is 1.08% which is statistically significant at the 1% level. However, the abnormal return for high-compliance companies is only 0.4% and is statistically insignificant. Low-compliance firms outperformed high-compliance firms by approximately 8% on an annualized basis. Table 5, Panel C, presents regression results employing the Fama-French three-factor model. The results are very similar with those reported by Carhart's four-factor model. The low-compliance group experiences a 1.09% monthly abnormal return, which compares to an abnormal return of 0.4% for the high-compliance group.These results give support to our hypothesis that investors value low-compliant firms' growth potential, and that low-compliance companies gain higher long-run net benefits from SOX. However, since a large part of companies in the low-compliance sample come from Asian countries such as China and India, we

cannot attribute all the examined abnormal returns to the effect of the SOX. We should note that emerging markets have been enjoying the fastest economic growth in recent years.

B. Robustness Tests

Our univariate market reaction analysis indicates that the sample firms experienced significant positive abnormal returns in the 42-month period following the passage of the SOX. However, we are concerned about whether the detected abnormal returns are due to the choice of some specific benchmark or some potential weakness in our model construction. We conduct two robustness tests to confirm that our results are free from the above mentioned bias.

First, we use five different indices (i.e., the Russell 1000, the Russell 2000, the Russell 3000, and the CRSP value-weighted and equally-weighted indices) to proxy for market returns in addition to the S&P 500 index. Table 6 reports the regression results using the Carhart four-factor model. We find positive abnormal returns for all three Russell indices, and they are all statistically significant at the 1% level. The CRSP value-weighted index detects a positive abnormal return which is significant at the 10% level. However, the CRSP equally-weighted index reports a negative abnormal return, which is not statistically different from zero.

On the whole, these results are consistent with the findings reported in Table 3. The detected post-SOX abnormal returns are relatively free of a benchmark choosing bias.

Second, we examine the return patterns of our sample firms prior to the passage of the SOX. If the abnormal returns presented in Table 3 are only resulted from our model

construction, then we should find similar return patterns in the period prior to the enactment of the SOX. We employ the four-factor model to explore the abnormal returns during a one-year, two-year, and three-year period before the passage of the SOX, respectively. The relevant test results are presented in Table 7. Results show that our sample firms experience significant but negative abnormal returns in all three pre-SOX periods. No positive abnormal return is detected as we do for the post-SOX period. This result implies that the abnormal returns we find in table 3 are not due to specific model construction but are truly related to the enactment of the SOX.

Many researchers have expressed their concerns about the survival bias problem in time series studies of equity returns (Ball and Watts 1979; Brown, Goetzmann, and Ross 1995). In order to collect sufficient data for examination, survivorship criteria are commonly used in sample selections. However, this sample construction method may result in an unrepresentative sample because it reduces the likelihood of poor-performing firms entering the sample. In accordance with SOX's requirements, NYSE adopted stricter corporate governance rules for listing companies, for example: the majority of a board of directors must be independent; the entire compensation committee, nominating committee, and audit committee must be composed of independent members; shareholders' voting on equity-compensation, etc. These tighter standards directly or indirectly increase the costs of listing on the stock exchange and have led some firms to exit the public capital markets as several studies report (Kamar et al., 2006; Engel et al., 2007). In our study, we only choose companies that have survived for at least 42 months since passage of the SOX, therefore our results may not reflect the complete impact of the SOX on firm valuation.

In order to test whether the survival bias problem exists in this study, we perform a robustness check by adding some delisted firms to our sample. Specifically, we collect all the NYSE composite index component companies which were delisted during the period of January 2003 to January 2007, and use the same criteria as we construct our original sample to choose some of these firms for the post-SOX abnormal return analyses. That is, we select all the foreign companies, and choose the top 25% and bottom 25% U.S. firms according to their market capitalization. Finally, 36 foreign firms, 39 large U.S. firms and 39 small U.S. companies are added to our sample. Table 8 exhibits the relevant results of the abnormal returns for the new samples which include the delisted firms. We also redo the robustness test on the benchmark-choice effects as well as the pre-SOX abnormal return test; these results are reported in Table 9 and Table 10. On the whole, the results are consistent with our previous findings. Our sample firms experienced significant positive post-SOX abnormal returns and the detected abnormal returns are robust to different benchmark choices. Some tiny differences are as follows: (1) the average monthly abnormal returns are slightly higher than our previous results (an increase of 0.08% for the full sample); (2) the abnormal return of large firms became more significant (the significance level increased from 10% to 5%). The above results may also imply that the main reason for some firms exiting the public capital markets after SOX's passage was to avoid the higher compliance costs of tighter listing requirements, but not for poor market performance.

5.2 Multivariate Analysis

In the previous section we investigated the long-term market valuation effect of

the SOX on our sample firms as a whole, and found significant evidence for the existence of positive post-SOX abnormal returns. In this multivariate analysis section, we examine whether the observed abnormal returns vary with regard to certain firm-specific corporate governance and financial disclosure characteristics. Table 11 reports regression results for the full sample portfolio as well as three sub-sample portfolios and a U.S.-sample portfolio which combines both large and small U.S. companies. Our cross-sectional regression model uses the post-SOX abnormal return as the dependent variable and several corporate governance variables as explanatory variables.

A. Results for the Full Sample

As a whole, the regression results show that there is a moderate correlation between capital market reaction and corporate governance characteristics. Contrary to our prediction, we find that most of the board independence variables are negatively related with capital market valuation. For example, the coefficient for the board of directors independence variable (BOARD) is -0.3169 and is -0.2394 for the compensation committee independence dummy variable (COMPEN). But these two coefficients both lack statistical significance. The coefficient for the audit committee independence dummy variable is -0.5497 and is statistically significant at the 5% level. These negative coefficients imply that our sample firms' post-SOX stock market performance is negatively related to their management independence state at the passage of the SOX. The higher the board and committee independence, the lower the post-SOX performance. This result is contrary to the findings of most previous studies that use a short event window to examine SOX's impact on firm valuation. For

example, Li et al. (2004), Akhigbe and Martin (2006) both report a positive relationship between stock returns and the proportion of independent audit committee members.

On the other hand, the observed negative relationship between independence and long-term capital market reaction is consistent with the results we obtained in our univariate market reaction analysis. In the univariate analysis section we find that low-compliance firms perform better than high-compliance firms; here it is the same case. The most reasonable interpretation for this is that investors expect low-compliance companies to show more improvement in their corporate governance mechanisms than high-compliance firms that already have relatively good mechanisms in place. We may lend some supports for this explanation from Lee and Carlson (2007) who report an increase in the number of independent board members following the enactment of the SOX.

However, contrary to the above finding, we find that the nominating committee independence variable is positively correlated with post-SOX abnormal returns, and is statistically significant at 1% level. Usually, the most important function of the nominating committee is selecting nominees for the board of directors. The nominating committee directly determines the composition of the board of directors. Shivdasani and Yermack (1999) report that firms without nominating committee appoint fewer independent outside directors and more gray outsiders with conflicts of interest. Therefore, investors may anticipate less possibility of improvement in a firm's board structure if the firm does not have an independent nominating committee, and this is the reason why we observe a positive relationship between market reactions and

nominating committee independence.

As we have predicted, the post-SOX abnormal return is negatively related with the CEO duality variable (CEOCHAIR). This is consistent with the view that CEO duality reduces the monitoring effectiveness of the board. Since the chairman of the board has the greatest influence over the board's activities, the separation of decision management and decision control is compromised when the CEO is also the chairman of the board. Therefore, assigning these two positions to different persons can more effectively control the agency problem associated with the separation of ownership and control (Desai, Kroll and Wright, 2003)

Consistent with our anticipation, the two disclosure variables (OFFDISC and AUDDISC) are positively related with post-SOX abnormal returns, but they are statistically insignificant. SOX's provisions regarding company disclosure are supposed to improve the accuracy and reliability of financial reporting, thus reducing information uncertainty and better protecting investors' interests. Thus, it is not surprising that investors give a higher value to high-disclosure firms.

Consistent with Jain and Rezaee (2005), we find a negative relation between the audit fee variable (AUDFEE) and the long-run market reaction to the SOX. The excessive compliance burden has been an ongoing criticism since the passage of the SOX. Some of the burdens are direct compliance costs such as costs associated with reporting and attestation requirements of internal controls, and costs of employing independent directors. Other burdens are indirect costs such as opportunity costs associated with changes in corporate governance mechanism and accounting and auditing practices to comply with SOX's provisions (Jain et al., 2005). SOX put strong

pressures on the management to maintain paper trails and organize management activities around the paper-trail requirements (Litvak, 2007). According to a survey conducted by the Financial Executive International (FEI), the average compliance cost for a sample of 217 large companies was $4.36 million. The survey also indicates that the actual compliance costs associated with the SOX were approximately 39% higher than those companies had expected (Gray, 2005). With such a heavy financial burden, there is no surprise that investors express their concerns by giving low valuation to firms with heavier compliance costs.

We also find that firms' post-SOX stock market performance is positively related to insider ownership (INSIDEOWN) and institutional ownership (INSTIOWN). Corporate governance theories state that the principal-agent relationship that results from the separation of ownership and control gives rise to conflicts between interests of managers and outside investors. The divergence of interests may be reduced in two ways: (1) managers hold a greater proportion of outstanding shares; and (2) institutional investors hold a significant fraction of ownership and provide active monitoring.

McConnell and Servaes (1990) investigate the relationship between equity ownership structure and firm value. They find a significant curvilinear relation between firm value (Tobin's Q) and corporate insiders' shareholdings. The curve slopes upward until insider ownership reaches approximately 40% to 50% and then slopes slightly downward. They also find a significant positive relation between firm value and the fraction of shares owned by institutional investors. Navissi and Naiker (2006) also report a non-linear relationship between corporate value and ownership of

insiders and institutional shareholders. They find that shareholdings (less than 30%) by active institutional investors or insiders improve the value of the firm. However, shareholdings beyond 30% decrease firm value.

The significant positive relationship between capital market valuation and both insider ownership and institutional ownership documented in our study provide new evidence for the hypothesis that ownership structure affects firm performance; shareholdings by management and institutional investors increase firm value.

As for the four control variables, we find a negative coefficient for SIZE, LEVERAGE, and GROWTH, and a positive coefficient for PROFIT whereas only the coefficient of SIZE is significant (at the 1% level). Most of these results are contrary to our initial hypotheses. We forecasted firm size to be positively correlated with abnormal returns because large firms normally have more resources and are better equipped to cope with the compliance costs of the Act. However, the detected negative coefficient implies that the dominant viewpoint of market participants is that large companies have less improvement potential in their corporate governance mechanisms than small companies and that they can thus benefit less from the enactment of the SOX. Another possible explanation is that although small firms may incur disproportionately greater direct compliance costs, large firms could be subject to greater litigation and political costs as an indirect result of SOX or future legislation (Zhang 2007). In addition, this result is consistent with Fama and French's (1992) finding of a negative relation between size and average stock return, thus still another possible implication is small firms' higher level market returns are actually compensations for some extra risk factors.

The observed negative coefficient for the leverage variable (LEVERAGE) may be

explained as investors are concerned about high-levered firms' financing ability to cope with their substantial compliance burden. In contrast, low-levered companies may benefit more from increased financing ability associated with their improved governance mechanism and financial reporting.

The negative relationship between the growth variable (GROWTH) and stock price performance is also inconsistent with our initial hypothesis. We interpret this result as faster-growing firms possibly incurring higher opportunity costs because the Act imposes stricter constrains and higher litigation risks on managers, who thus have to act more conservatively after the passage of the SOX. Slow-growing firms lose less since they have fewer investment opportunities to give up. Consistent with our prediction, the profitability variable (PROFIT) is positively related to abnormal returns. It is common sense that investors value high-profitable companies.

As a whole, the cross-sectional analysis results indicate that governance and disclosure variables are important in explaining the valuation effects that resulted from the enactment of SOX.

B. Results for the Sub-samples

Table 11 shows that the variation in the valuation effects for our three sub-samples is not explained by many of the governance and disclosure factors, especially for the large-firm sample. One possible reason is the decreased sample size causes some variables lose significance.

The overall results for the four sub-samples are similar to those for the full sample, but there are still some differences among these sub-samples. We find that foreign companies' abnormal returns react more positively to financial disclosure variables

(AUDDISC and OFFDISC) than U.S. firms. This implies that U.S. investors may have less confidence in foreign firms' financial reporting thus they pay more attention to those companies' financial disclosure. We also find that small U.S. firms have a more positive relationship between post-SOX abnormal returns and insider and institutional shareholdings than foreign firms. Because of country and cultural differences, ownership structures of many foreign companies differ from those of U.S. firms, therefore it's unreasonable to evaluate the valuation effects of ownership variables for foreign and U.S. firms in the same way. This may explain why investors pay more attention to the ownership structure of U.S. firms than of foreign firms.

Table 11 also shows that small U.S. companies' post-SOX returns are more negatively related to the audit fee variable (AUDFEE) than large U.S. companies and foreign companies. This is consistent with the view that SOX imposed a significant financial burden that fell disproportionately on small firms. As Bob Greifield (president and CEO of Nasdaq) states, "the burden on small companies, on a percentage of revenue basis, is 11 times that of large companies" (Wall Street Journal, 2006).

One interesting finding is that for the large-firm sample, many of the variables exhibit relationships that are different from the small and foreign samples as well as the full sample. For example, the coefficients of insider ownership, institutional ownership and profitability for large firms are negative which is contrary to what we find for small and foreign companies. Further study is needed to interpret these results.

6. Conclusions

This study investigates the long-term impact of the passage of the Sarbanes-Oxley Act of 2002 on firm valuation. We detect significant positive abnormal stock returns

during a 42-month period after the passage of the SOX for a sample of 796 publicly traded firms. This finding is consistent with the hypothesis that the enactment of SOX improves corporate governance mechanism and financial disclosure of public companies and thus enhances investor protection. Although SOX imposes a heavy compliance burden on public firms, it is value-enhancing in the long-run.

In particular, we find that small companies and U.S.-traded foreign companies experienced a more favourable post-SOX market reaction than large companies. A further investigation of the return patterns of foreign firms reveals that low-compliance companies experienced higher abnormal returns than high-compliance companies. We interpret this result as investors anticipating that low-compliance companies have more potential to improve corporate governance and financial disclosure, therefore benefiting more from the SOX than high-compliant companies.

Our cross-sectional analysis explores whether the variation of the observed abnormal returns can be explained by certain firm-specific corporate governance characteristics. We find moderate evidence of positive or negative correlation between long-term post-SOX abnormal returns and firm-specific corporate governance and disclosure variables. Results show that on the whole the post-SOX abnormal returns are negatively related with board independence, which is consistent with the implication of our univarate analysis that suggests that market participants expect low-compliant firms to benefit more from the reform. We also find that the ownership by insiders and institutional investors has a significant positive effect on market valuation. However, the ownership structure of cross-listed foreign companies has much less influence on stock market performance. We attribute this variation to the

ownership structure differences between U.S. and non-U.S. firms. We also find evidence that SOX imposed a significant financial burden that fell disproportionately on small firms.

On the whole, our results suggest that although SOX imposes a substantial compliance burden on public companies, it has net beneficial effects in the long run by improving corporate governance and financial disclosure.

References

Ball, Ray, and Ross Watts, 1979, Some additional evidence on survival biases, *Journal of Finance* 34, 197-206.

Barber, Brad M., and John D. Lyon, 1997, Detecting long-run abnormal stock returns: The empirical power and specification of test statistics, *Journal of Financial Economics* 43, 341-372.

Bhagat, Sanjai, and Bernard Black, 2002, The non-correlation between board independence and long-term firm performance, *Journal of Corporation Law* 27, 231-273.

Brickley, J.A., J. L. Coles, and G. Jarrell, 1997, Leadership structure: Separating the CEO and chairman of the board, *Journal of Corporate Finance* 3, 189-220.

Brown, Stephen J., William N. Goetzmann, and Stephen A. Ross, 1995, Survival, *Journal of Finance* 50, 853-873.

Carhart, Mark M., 1997, On persistence in mutual fund performance, *Journal of Finance* 52, 57-82.

Chhaochharia,Vidhi and Yaniv Grinstein, 2007, Corporate governance and firm value: The impact of the 2002 governance rules, *Journal of Finance,* Forthcoming.

Cohen, Daniel A., Aiyesha Dey, and Thomas Z. Lys, 2004, Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods, Working paper, Kellogg School of Management, Northwestern University.

Cremers, K. J. Martijn, and Vinay B. Nair, 2005, Governance mechanisms and equity prices, *Journal of Finance* 60, 2859-2894.

Cunningham, Lawrence A., 2003 , The Sarbanes-Oxley yawn: Heavy rhetoric, light reform (And it just might work), *University of Connecticut Law Review,* Vol. 36.

Desai, A., M. Kroll, and P. Wright, 2003, CEO duality, board monitoring, and acquisition performance: A test of competing theories, *Journal of Business Strategies* 20, 137-156.

Desai, H., and P. C. Jain, 1997, Long run common stock returns following stock splits and reverse splits, *Journal of Business* 70, 409–433.

Donaldson, William H., 2005, Testimony concerning the impact of the Sarbanes-Oxley Act, Speech before the House Committee on Financial Services, April 21.

Durnev, Art, and E. Han Kim, 2003, To steal or not to steal: Firm attributes, legal environment, and valuation, University of Michigan Working Paper, Tuck-JQFA Contemporary Corporate Governance Issues II Conference.

Engel, E., Rachel M. Hayes, and X. Wang, 2007, The Sarbanes-Oxley Act and firms' going-private decisions, *Journal of Accounting & Economics* 44, 116.

Fama, E.F., 1998, Market efficiency, long-term returns, and behavioural finance, *Journal of Financial Economics* 49, 283-306.

Fama, Eugene F., and Kenneth R. French, 1992, The cross-section of expected stock returns, *Journal of Finance* 47, 427- 465.

Fama, Eugene F., and French, Kenneth R., 1993, Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3-56.

Navissi, Farshid, and Naiker Vic, 2006, Institutional ownership and corporate value, *Managerial Finance* 32, 247- 256.

Gordon, Lawrence A., Martin P. Loeb, William Lucyshyn, and Tashfeen Sohail, 2006, The impact of the Sarbanes-Oxley Act on the corporate disclosures of information security activities, *Journal of Accounting and Public Policy* 25, 503–530.

Gray,Tara, 2005, Canadian response to the U.S. Sarbanes-Oxly Act of 2002: New directions for corporate governance, Working paper, Library of Parliament of Canada.

Greenstone, M., Oyer P., and A. Vissing-Jorgensen, 2006, Mandated disclosure, stock returns, and the 1964 Securities Acts amendments, *Quarterly Journal of Economics,* 399-460.

Greifeld, B., 2006, It's time to pull our SOX. *The Wall Street Journal*, Mar.6, A.14.

Han, Bing, 2006, Insider ownership and firm value: Evidence from real estate investment trusts, *Journal of Real Estate Finance and Economics* 32, 471-493.

Ikenberry, D., J. Lakonishok, and T. Vermaelen, 1995, Market underreaction to open market share repurchases, *Journal of Financial Economics* 39, 181-208.

Jain ,Pankaj K. and Zabihollah Rezaee, 2005, The Sarbanes-Oxley Act of 2002 and security market behavior: Early evidence, Working Paper, University of Memphis.

Jain, Pankaj K., Jang-Chul Kim, and Zabihollah Rezaee, 2003, The Sarbanes-Oxley Act of 2002 and market liquidity, Working paper, University of Memphis.

Jensen, M., and W. Meckling, 1976, Theory of the firm: managerial behavior, agency costs, and ownership structure, *Journal of Financial Economics* 3, 305–360.

Kamar, E., P. Karaca-Mandic, and E. Talley, 2006, Going-private decisions and the Sarbanes-Oxley Act of 2002: A cross-country analysis, Working Paper, RAND Institute for Civil Justice.

Klein,P., D. Shapiro, and J. Young, 2005, Corporate governance, family ownership and firm value: The Canadian evidence, *Corporate Governance: An International Review* 13 , 769-784.

Lee, Sharon K. and Loring R. Carlson, 2007, The changing board of directors: Board independence in S&P 500 firms, *Journal of Organizational Culture, Communication and Conflict* 11, 31-41.

Leuz, Christian, Alexander J. Triantis, and Tracy Y. Wang, 2007, Why do firms go dark? Causes and economic consequences of voluntary SEC deregistrations, Finance Working Paper, European Corporate Governance Institute.

Litvak, Kate, 2007, The effect of the Sarbanes-Oxley Act on non-U.S. companies

cross-listed in the U.S., *Journal of Corporate Finance* 13, 195-228.

Li, Haidan, Morton Picus, and Sonja O. Rego, 2004, Market reaction to events surrounding the Sarbanes-Oxley Act of 2002, Working Paper, University of Iowa.

Loughran, Tim and Jay R. Ritter, 1995, The new issues puzzle, *Journal of Finance* 50, 23-51.

McConnell, John J., and Henri Servaes, 1990, Additional evidence on equity ownership and corporate value, *Journal of Financial Economics* 27, 595-612.

Mitchell, Lawrence E., 2003, The Sarbanes-Oxley Act and the reinvention of corporate governance, *Villanova Law Review* 48, 1189.

Mitchell, Mark L. and Erik Stafford, 2000, Managerial decisions and long-term stock price performance, *The Journal of Business* 73, 287-329.

Petra, Steven T., 2005, Do outside independent directors strengthen corporate boards? *Corporate Governance* 5, 55-65.

Prentice, Robert A., and David B. Spence, 2007, Sarbanes-Oxley as quack corporate governance: How wise is the received wisdom, *Georgetown Law Journal*, McCombs Research Paper Series No. IROM-10-06.

Romano, Roberta, 2005, Quack corporate governance. *Regulation* 28, 36-44.

Ribstein, Larry E., 2002, Market vs. regulatory responses to corporate fraud: a critique of the Sarbanes-Oxley Act of 2002, *Journal of Corporation Law* 28, No. 1.

Rosenstein, S., and Jeffrey G. Wyatt, 1990, Outside directors, board independence, and shareholder wealth, *Journal of Financial Economics* 26, 175-191.

Selarka, Ekta, 2005, Ownership concentration and firm value, *Emerging Markets, Finance & Trade* 41, 83.

Shivdasani, A., and D. Yermack, 1999, CEO involvement in the selection of new board members: An empirical analysis, *Journal of Finance* 54, 1829-1853.

Switzer, Lorne N., 2007, Corporate governance, Sarbanes-Oxley, and small-cap firm performance, *Quarterly Review of Economics and Finance*, Forthcoming.

Zhang, Ivy, 2007, Economic consequences of the Sarbanes-Oxley Act of 2002, *Journal of Accounting and Economics* 44, 74.

Zheng, Steven X., 2007, Market under-reaction to free cash flows from IPOs. *The financial Review* 42, 75-97.

Table 1

Discriptive Statistics of Sample Firms (2002)

Panel A:Financial characteristics

		Full sample (N=796)	Large firms (N=278)	Small firms (N=272)	Foreign firms (N=246)
(1) Size ($Million)	Mean	9890.35	17754.30	234.89	11679.40
	Median	3123.20	7833.01	218.47	3636.48
(2) ROA (%)	Mean	7.65	10.16	5.82	6.84
	Median	6.65	7.92	6.30	6.08
(3) Leverage (%)	Mean	22.36	22.48	23.42	21.05
	Median	20.13	22.14	19.68	19.61
(4) Sales growth (%)	Mean	7.13	4.43	3.62	14.07
	Median	3.74	2.33	1.53	10.01
(5) Audit fee ($Million)	Mean	5.11	7.71	0.93	6.78
	Median	1.89	4.52	0.75	2.80
(6) Audit fee relative	Mean	0.00102	0.00051	0.00189	0.00063
	Median	0.00057	0.00034	0.00161	0.00037

The table describes financial characteristics of the sample firms. (1) Size is a firm's market capitalization. (2) ROA equals EBIT divided by total assets. (3) Leverage equals long-term debt divided by total assets. (4) Sales growth is the annual sales growth rate. (5) Audit fee is the average annual audit fees paid to independent outside auditors from 2003 to 2005. (6) Audit fee relative is audit fee scaled by total assets.

Panel B:Corporate governance characteristics

		Full sample (N=796)	Large firms (N=278)	Small firms (N=272)	Foreign firms (N=246)
(1) Board size	Mean	10.34	11.21	8.18	11.75
	Median	10.00	11.00	8.00	11.00
(2) Board independence (%	Mean	73.62	82.65	73.70	63.34
	Median	80.00	85.71	77.78	66.67
(3) Audit committee	Mean	91.58	99.61	98.82	74.49
independence (%)	Median	100.00	100.00	100.00	100.00
(4) Compensation committe	Mean	84.87	99.16	95.95	57.19
independence (%)	Median	100.00	100.00	100.00	75.00
(5) Nominating committee	Mean	66.14	92.97	61.44	40.77
independence (%)	Median	100.00	100.00	100.00	0.00
(6) Insider ownership (%)	Mean	12.25	6.10	21.46	8.99
	Median	3.18	2.00	12.64	1.00
(7) Institutional ownership (	Mean	24.18	16.20	24.95	32.33
	Median	18.09	13.70	21.9	24.90
(8) Audit fee disclosure (%)		73.74	99.64	97.79	17.89
(9) Off-balance sheet disclosure(%)		47.61	54.68	46.3	41.06

The table describes corporate governance characteristics of the sample firms. (1) Board size is the number of directors. (2) Board independence equals number of independent directors divided by total directors. (3) Audit committee independence equals number of independent audit committee members divided by total members. (4) Compensation committee independence equals number of independent compensation committee members divided by total members. (5) Nominating committee independence equals number of independent nominating committee members divided by total members. (6) Insider ownership is the percentage of shares held by directors and officers. (7) Institutional ownership is the percentage of shares held by institutional shareholders with an ownership greater than 5% of the firm's outstanding shares. (8) Audit fee disclosure is the percentage of firms that disclose their audit fee information. (9) Off-balance sheet disclosure is the percentage of firms that disclose their off-balance sheet arrangement information.

Table 2

Pearson Correlation Matrix for Explanatory Variables

	BOARD	CEOCHAIR	AUDIT	COMPEN	NOMINATINC	OFFDISC	AUDDISC	INSIDEOWN	INSTIOWN	AUDFEE	SIZE	LEVERAGE	PROFIT	GROWTH
BOARD	1													
CEOCHAIR	0.10324*	1												
AUDIT	0.33321***	0.11334***	1											
COMPEN	0.42562***	0.1703***	0.60662***	1										
NOMINATING	0.35428***	0.19521***	0.34356***	0.51295***	1									
OFFDISC	0.12557***	-0.05289	0.12088***	0.1485***	0.04772	1								
AUDDISC	0.32239***	0.31666***	0.41155***	0.52627***	0.36155***	0.1001***	1							
INSIDEOWN	-0.19581***	-0.09924***	0.05928*	-0.05870*	-0.24012***	-0.08677**	0.03468	1						
INSTIOWN	-0.17289***	-0.11874***	-0.21674***	-0.25543***	-0.25631***	-0.02709	-0.24675***	-0.21874***	1					
AUDFEE	-0.01058	-0.04433	0.11559***	0.09032**	-0.00645	-0.06843*	0.21816***	0.23299***	0.04446	1				
SIZE	0.12701***	0.09884***	-0.03212	0.04027	0.19939***	0.08169**	-0.08952**	-0.3758***	-0.1892***	-0.5072***	1			
LEVERAGE	-0.03983	0.03054	0.01448	0.03174	0.0278	-0.05901*	0.06773*	0.00606	-0.07601**	-0.04125	0.22112***	1		
PROFIT	0.03914	-0.05307	0.03513	0.03165	-0.00068	0.03493	0.06284*	0.03479	-0.04302	-0.0775**	-0.05302	0.00155	1	
GROWTH	-0.09557***	-0.07758**	-0.02292	0.00598	-0.05027	-0.03646	-0.12217***	-0.05034	-0.00661	-0.08388**	0.06444*	0.11495***	0.00011	1

***, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.**

Table 3						
Post-SOX Long-term Abnormal Returns Using Carhart's Four-factor Model						
	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R2**
Full sample	0.4852***	0.99***	0.53***	0.5***	-0.03	0.96
(P-value)	0.0012	0.0000	0.0000	0.0000	0.3890	
Large firms	0.1779*	0.87***	0.26***	0.29***	-0.07**	0.97
(P-value)	0.1050	0.0000	0.0000	0.0000	0.0207	
Small firms	0.5904***	0.83***	1.04***	0.63***	-0.06	0.94
(P-value)	0.0035	0.0000	0.0000	0.0000	0.2374	
Foreign firms	0.6872**	1.26***	0.3**	0.57***	0.03	0.88
(P-value)	0.0217	0.0000	0.0209	0.0004	0.6661	
This table estimates abnormal returns for 42-month horizon after the passage of the SOX using time-series OLS regression based on the Carhart(1997) four-factor model:						
$R_{pt} - R_{ft} = \alpha + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + \varepsilon_t$						
where R_{pt} is the monthly return on equally weighted sample portfolio(a 42- month period starting from the month of the passage of the Act); R_{ft} is the return on a risk-free asset, which is measured as the one month Treasury bill rate; R_{mt} is the market return measured as the S&P 500 index return. The factors SMB and HML are measured as the difference in the returns of portfolios of small and large stocks (SMB), value and growth stocks (HML). The momentum factor MOM is measured as the returns on high momentum stocks minus low momentum stocks). The α measures the monthly abnormal excess returns.The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.						

Table 4

Post-SOX Long-term Abnormal Returns Using Fama-French Three-factor Model

	Factor Loadings				
	α	**β_1**	**β_2**	**β_3**	**Adjusted R^2**
Full sample	0.4842***	1.01***	0.52***	0.48***	0.96
(P-value)	0.0012	0.0000	0.0000	0.0000	
Large firms	0.1759	0.92***	0.24***	0.26***	0.96
(P-value)	0.1300	0.0000	0.0000	0.0000	
Small firms	0.5887**	0.88***	1.02***	0.6***	0.94
(P-value)	0.0038	0.0000	0.0000	0.0000	
Foreign firms	0.6881**	1.24***	0.31**	0.58***	0.88
(P-value)	0.0201	0.0000	0.0138	0.0002	

This table estimates abnormal returns for 42-month horizon after the passage of the SOX using time-series OLS regression based on the Fama-French (1993) three-factor model:

$$R_{pt} - R_{ft} = \alpha + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_t$$

where R_{pt} is the monthly return on equally weighted sample portfolio(a 42- month period starting from the month of the passage of the Act); R_{ft} is the return on a risk-free asset, which is measured as the one month Treasury bill rate; R_{mt} is the market return measured as the S&P 500 index return. The factors SMB and HML are measured as the difference in the returns of portfolios of small and large stocks (SMB), value and growth stocks (HML). The α measures the monthly abnormal returns.The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 5

Post-SOX Abnormal Return Analyses of Foreign Firms

This table reports OLS regression results for the foreign-firm sample using Carhart's 4-factor model and Fama-French's three-factor model. The α represents the average monthly abnormal returns. The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Country region distribution of sample foreign firms

	high-compliance group		low-compliance group			
	North America	Europ	Latin America	Asia	Oceania	Africa
Number of Firms	45	98	33	56	6	7

Panel B: Post-SOX long-term abnormal returns using Carhart four-factor model

	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
High-compliance	0.4014	1.3509	0.2210	0.5721	-0.0032	0.8893
(P-value)	0.2046	0.0000	0.1068	0.0009	0.9705	
Low-compliance	1.0839***	1.1396	0.4036	0.5642	0.0871	0.7762
(P-value)	0.0112	0.0000	0.0264	0.0097	0.4442	

Panel C: Post-SOX long-term abnormal returns using Fama-French three-factor model

	Factor Loadings				
	α	**β1**	**β2**	**β3**	**Adjusted R^2**
High-compliance	0.4013	1.3533	0.2199	0.5707	0.8806
(P-value)	0.1986	0.0000	0.0967	0.0006	
Low-compliance	1.0863***	1.0742	0.4312	0.6033	0.7546
(P-value)	0.0105	0.0000	0.0154	0.0045	

Table 6

Robustness Check of Abnormal Returns Using Different Market Indices

	Factor Loardings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
Russell 3000	0.4479***	0.9991	0.4101	0.4857	-0.0437	0.9633
(P-value)	0.0022	0.0000	0.0000	0.0000	0.2513	
Russell 2000	0.6559***	0.9426	-0.4608	0.2327	-0.0506	0.9464
(P-value)	0.0003	0.0000	0.0001	0.0092	0.2715	
Russell 1000	0.429***	1.0040	0.4861	0.5036	-0.0411	0.9632
(P-value)	0.0033	0.0000	0.0000	0.0000	0.2818	
CRSP value-weighted	0.228*	1.0103	0.3546	0.4405	-0.0476	0.9688
(P-value)	0.0812	0.0000	0.0000	0.0000	0.1744	
CRSP equally-weighted	-0.2376	1.0182	-0.3811	0.1800	0.0898	0.9335
(P-value)	0.2289	0.0000	0.0025	0.0658	0.1229	

This table reports robustness test results using different market indices as benchmarks in the Carhart 4-factor model. The α represents the average monthly abnormal return of the full sample. The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7

Robustness Check of Abnormal Returns Prior to the Passage of SOX

	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
One year	-2.2988***	0.8070	0.7475	0.6202	-0.0775	0.9662
(P-value)	0.0004	0.0045	0.0001	0.0104	0.7094	
Two year	-2.0962***	0.9545	0.7002	0.4705	-0.0040	0.9358
(P-value)	0.0000	0.0000	0.0000	0.0000	0.9215	
Three year	-2.0745***	0.9399	0.5163	0.5390	-0.1071	0.8816
(P-value)	0.0000	0.0000	0.0000	0.0000	0.0021	

This table shows the OLS regression results of the Carhart 4-factor model using different time range before the passage of the SOX. The α represents average monthly abnormal return of the full sample . The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 8

Robustness Check of Abnormal Returns with Delisted Companies Included

This table reports OLS regression results of Carhart's 4-factor model and Fama-French's 3-factor model when delisted firms are added into the sample. The α represents average monthly abnormal return of the full sample . The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Post-SOX long-term abnormal returns using Carhart's four-factor model

	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
Full sample	0.5669***	0.9689	0.5585	0.5342	-0.0363	0.9556
(P-value)	0.0005	0.0000	0.0000	0.0000	0.3870	
Large firms	0.2251**	0.8498	0.2870	0.2958	-0.0727	0.9662
(P-value)	0.0456	0.0000	0.0000	0.0000	0.0210	
Small firms	0.6746***	0.7875	1.0454	0.6591	-0.0769	0.9400
(P-value)	0.0010	0.0000	0.0000	0.0000	0.1510	
Foreign firms	0.801**	1.2695	0.3432	0.6476	0.0406	0.8411
(P-value)	0.0251	0.0000	0.0256	0.0007	0.6721	

Panel B: Post-SOX long-term abnormal returns using Fama-French three-factor model

	Factor Loadings				
	α	**β1**	**β2**	**β3**	**Adjusted R^2**
Full sample	0.5659***	0.9962	0.5470	0.5178	0.9559
(P-value)	0.0005	0.0000	0.0000	0.0000	
Large firms	0.2231*	0.9044	0.2640	0.2631	0.9619
(P-value)	0.0609	0.0000	0.0000	0.0000	
Small firms	0.6725***	0.8452	1.0210	0.6245	0.9382
(P-value)	0.0012	0.0000	0.0000	0.0000	
Foreign firms	0.8021**	1.2390	0.3561	0.6659	0.8445
(P-value)	0.0233	0.0000	0.0172	0.0003	

Table 9

Robustness Check of Abnormal Returns Using Different Market Indices

	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
Russell 3000	0.5302***	0.9818	0.4369	0.5228	-0.0462	0.9571
(P-value)	0.0009	0.0000	0.0000	0.0000	0.2612	
Russell 2000	0.735***	0.9220	-0.4123	0.2751	-0.0551	0.9372
(P-value)	0.0002	0.0000	0.0012	0.0048	0.2693	
Russell 1000	0.5115***	0.9869	0.5114	0.5404	-0.0435	0.9573
(P-value)	0.0013	0.0000	0.0000	0.0000	0.2898	
CRSP value-weighted	0.3137**	0.9934	0.3820	0.4784	-0.0498	0.9630
(P-value)	0.0294	0.0000	0.0000	0.0000	0.1917	
CRSP equally-weighted	-0.1483	1.0055	-0.3474	0.2211	0.0879	0.9323
(P-value)	0.4540	0.0000	0.0059	0.0267	0.1344	

This table reports robustness test results using different market indices as benchmarks when delisted firms are included in the sample. The α represents the average monthly abnormal return of the full sample. The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 10

Robustness Check of Abnormal Returns Prior to the Passage of SOX with Delisted Companies Included

	Factor Loadings					
	α	**β1**	**β2**	**β3**	**β4**	**Adjusted R^2**
One year	-2.0069***	0.8807	0.7601	0.5500	0.0249	0.9546
(P-value)	0.0019	0.0056	0.0001	0.0304	0.9158	
Two year	-1.7464***	0.9393	0.6962	0.4569	-0.0050	0.9243
(P-value)	0.0001	0.0000	0.0000	0.0000	0.9098	
Three year	-1.7478***	0.9221	0.5144	0.5273	-0.1085	0.8750
(P-value)	0.0000	0.0000	0.0000	0.0000	0.0022	

This table shows the OLS regression results using different time range before the passage of the SOX for the sample with delisted companies included. The α represents average monthly abnormal return of the full sample . The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 11

Cross-sectional Analysis of the Relationship between Post-SOX Abnormal Returns and Firm-specific Characteristics

Explanatory variable	Coefficients of explanatory variables of different sample groups				
	Full sample	U.S.	Large	Small	Forigen
BOARD	-0.3169	-0.3643	-0.0512	-1.0439	-0.1407
(P-value)	0.3117	0.4749	0.9210	0.2320	0.6121
CEOCHAIR	-0.2865**	-0.1751	-0.2357	-0.1721	-0.3697
(P-value)	0.0158	0.2284	0.1464	0.4578	0.1155
AUDIT	-0.5497**	1.3630	0.0000	1.5544	-0.4824*
(P-value)	0.0452	0.3748	0.0000	0.4184	0.0705
COMPEN	-0.2394	-0.2722	-0.4403	-0.1946	-0.3215
(P-value)	0.2938	0.5590	0.6746	0.7509	0.3645
NOMINATING	0.5106***	0.5251***	-0.1657	0.7065***	0.4749**
(P-value)	0.0002	0.0027	0.5550	0.0034	0.0513
OFFDISC	0.0557	0.0453	-0.0050	0.0462	0.1249
(P-value)	0.6171	0.7207	0.9683	0.8400	0.5616
AUDDISC	0.0516	-0.5856	1.4235	-0.8897	0.541*
(P-value)	0.7485	0.2967	0.1628	0.2388	0.0745
INSIDEOWN	1.0822***	1.5265***	-0.3003	1.8477***	0.0811
(P-value)	0.0015	0.0004	0.6435	0.0023	0.9165
INSTIOWN	0.9371***	1.0208***	-0.0754	1.5057***	0.6105
(P-value)	0.0006	0.0082	0.8726	0.0113	0.2161
AUDFEE	-159.4093***	-210.9612***	-135.3062*	-262.951***	-48.6523
(P-value)	0.0030	0.0004	0.0941	0.0028	0.6483
SIZE	-0.0989***	-0.1078***	-0.0285	-0.3455**	-0.1522**
(P-value)	0.0030	0.0084	0.6173	0.0424	0.0368
LEVERAGE	-0.4385	-0.6317	0.3737	-1.6534	0.5420
(P-value)	0.2149	0.3379	0.5712	0.2465	0.2156
PROFIT	0.3742	0.3207	-0.3131	0.5384	2.1852
(P-value)	0.5054	0.3798	0.4536	0.2833	0.4634
GROWTH	-0.1776	-0.4465**	-0.0746	-0.4332	0.2361
(P-value)	0.2540	0.0215	0.7771	0.1274	0.4536
Constant	1.6949	0.4504	-0.0053	2.0266	2.1224
Adjusted R^2	0.0689	0.0820	0.0204	0.1118	0.0467
P-value of F-Stat	0.0000	0.0000	0.8198	0.0000	0.0320

This table reports coefficients for explanatory variables in the cross-sectional analysis of the relationship between post-SOX abnormal returns and firm-specific characteristics. BOARD is boarder independence, CEOCHAIR is a dummy variable which is equal to one if the chairman of the board is also the company's CEO, AUDIT is a dummy variable which equals to one if the firm has independent audit committee, COMPEN is a dummy variable which equals to one if the firm has independent compensation committee, NOMINATING is a dummy variable which equals to one if the firm has independent nominating committee, OFFDISC is a dummy variable which is equal to one if a firm disclose its off-balance sheet arrangement information, AUDDISC is a dummy variable which is equal to one if a firm disclose its audit fee information, INSIDEOWN is insider share ownership, INSTIOWN is institutional share ownership, AUDFEE is a firm's audit fee scaled by its total assets, SIZE is natural logarithm of a firm's market value of equity, LEVERAGE is debt to equity ratio, PROFIT is EBIT scaled by its total assets, GROWTH is annual sales growth rate.

The associated P-values are shown under each parameter. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.