The Impact of International Cross-Listings on Firm Value after the Sarbanes–Oxley Act:
Evidence From American Depositary Receipts

Presented
By

Man Minh Cao

To
The Department of International Business and
The school of Business
In partial fulfillment of the requirements for
The Degree of Doctor of Business Administration
In the Subject of
International Business

Southern New Hampshire University

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To my wife: Nguyen Thi Ngoc Diep

Who sacrificed her career to support me throughout my doctoral study.

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Abstract

The Sarbanes-Oxley Act is formally named the Public Company Accounting Reform and Investor Protection Act of 2002. The act is arguably one of the most significant reforms to affect the U.S. stock markets since the Securities Exchange Act of 1934. This study compares valuation implications of ADR announcements before and after the introduction of the act. A total of 234 ADR announcements are analyzed over a time frame spanning from 1994 to 2010 by employing event study methodology. Even though several studies attempt to explore the effects of the act on the value of firms issuing American Depository Receipts (ADR), reported results are either negative or positive. The empirical results presented in this study indicate that the impact on ADR issuing firms is not negative. The observed cumulative abnormal returns (CARs) reveal that investors on average positively react to ADR issue announcements during the post Sarbanes-Oxley period. However, empirical results do not lend support for the hypothesis that CARs are significantly different during the two periods analyzed in the study.

1. Introduction

In the last decade, many corporate scandals have adversely affected U.S. investors' confidence in corporate governance practices of large firms. Due to these adverse consequences, U.S. investors saw a need for innovation that was to improve corporate governance practices of companies and enforce transparency in disclosing financial information to public. This would mainly come from the government through regulations. During the beginning of the millennium various bills were passed to satisfy this requirement including a bill that was a reaction to major corporate accounting scandals, namely Sarbanes-Oxley Act of 2002 (SOX) also referred as the 'Public Company Accounting Reform and Investor Protection Act' (in the Senate) and 'Corporate and Auditing Accountability and Responsibility Act' (in the House). Sarbanes-Oxley Act is essentially a US - Federal Law that sets new standards or improves the existing standards for all U.S. public company boards, management and public accounting firms[1].

In a capitalist economy, policy makers must give careful consideration to all of their actions. Ideally, government regulations should help to restore corporate integrity and investor confidence without disturbing the corporate dynamism that underlies a strong economy. In practice, however, some government regulations do not achieve this objective as some regulations create controversies due to potential trade-offs between the costs and benefits. The Sarbanes-Oxley Act can be construed as such a controversial act. It is an important act that impacts all public firms listed on the U.S. stock markets.

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[1] Thomas Clarke, 2007.

Various researchers have conducted studies to examine the SOX's effects on public firms and most of them concentrated on U.S. firms that are listed in the U.S. stock markets. The results of these studies are varied: some find that the Act has a positive impact on the firm value[2] while the others claim the act has a negative impact[3]. Some other researchers who are interested in the effects of the Act on the cross-listed foreign firms or the ADR programs have also conducted studies, and reported varying results[4].

In general, there are two main reasons for researchers to pursue study of the ADR programs and the SOX's effect on these programs: first, the ADR programs have an important role in the U.S. and the global equity markets; second, SOX is a critical act that affects all listed firms in the U.S. Since the corporate governance structure in the United States is a configuration of an Anglo-American system, which is also considered as an outsider system, listed firms' behaviors are monitored in the equity markets through government regulations[5]. Hence, firms are obligated to comply with set standards in order to display their commitment to good corporate governance structures to public. The importance of the ADR programs and special role of the SOX are elaborated below.

In recent decades, foreign firms have increased their ADR programs significantly. This might suggest that foreign firms and U. S. investors have gained benefits from these programs. The diversity of these programs is also an important characteristic; the origins of foreign firms range from emerging market countries to developed countries. There is also substantial regional diversity and regional origin varies from Latin America to

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[2] Berger et al. (2006); Lai (2003); Li, Pincus, and Rego (2008); Rezaee and Jain (2006).
[3] Asthana et al. (2004); Block (2004); Eldridge and Kealey (2005); Kamar et al. (2005); Leuz et al. (2006); Zhang (2005)
[4] Kate Litvak (2007a), Berger et al., (2006); Kamar et al., (2005); Smith,(2007)
[5] Thomas Clarke, 2007

Australia. Currently, the ADR programs play a significant role in both U.S. stock markets and foreign stock markets: In 2010, the trading value and volume of the depository receipt (DR) programs worldwide reached $3.5 trillion and 147 billion DRs respectively. The NYSE and NASDAQ are the dominant markets that account for 89 percent of the trading value and 84 percent of the trading volume.[6] The U.S. investors can conveniently invest in foreign companies in the U.S. equity markets through ADRs and therefore ADRs constitute an important link between the U.S. and the foreign equity markets. Primarily because of this linkage, researchers are interested in understanding the increasing importance of the ADR programs. Consequently, a number of studies have been conducted to explore the reasons behind the growth of the ADR programs and the potential benefits of these programs[7]. A widely reported result in these studies is that the ADR programs support a convenient way for the foreign firms to access to the U.S. stock markets where they can attain lower cost of capital, higher liquidity, and prestige[8].

The reason for enacting the SOX of 2002 is clear; the U.S. law makers want to restore investors' confidence about the transparency of the U.S. stock market that was significantly eroded by the frauds committed by some well-known corporations in 2001 and 2002. This act imposes significant changes in regulations that require public firms to increase the transparency of their financial statements and the responsibility of Board of directors.

Many policy makers and researchers have debated about the benefits and costs of this act. The supporters argue that the act's benefits are greater than the costs to the public firms

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[6] BNY Mellon. The depositary receipt market. 2010 yearbook
[7] Foerster and Karolyi (1999), Doukas and Switzer (2000), Salva (2003), Lee (1991), Varela and Lee (1993), and Lau et al. (1994).
[8] Foerster and Karolyi (1999)

while the critics say that the act's benefits are not worth the substantially higher compliance costs.

In order to better understand the cost-benefit effects on firms, numerous studies have been conducted. Some of these studies acknowledged the limitations due to deficiencies in the control groups. For example, Berger et al. (2005)[9] compare stock returns of the cross-listed firms and those of the U.S. public firms to find the effects of the act; the limitation of their method is the lack of a control group that was not affected by the act that could be compared with a group affected by the act.

This study uses a control group to find SOX's effect on the ADR programs; however, it utilizes a distinct control group than those of Smith (2007)[10] and Litvak (2007b)[11]. Since the SOX was passed in July 30, 2002, the time line is divided into two periods: the pre-SOX period and the post-SOX period. This division creates a natural point of comparison. The post-SOX period begins on July 30, 2002 when the SOX were enacted. In this period, the level-2 and level-3 cross-listed firms have to comply with the Act. The pre-SOX period spans the period before July 30, 2002; in this period, the level-2 and level-3 cross-listed firms were not subject to any such regulations. In contrast to Smith (2007) and Litvak (2007b), this study compares the valuation implications on the level-2 and level-3 cross-listed firms in the post-SOX period with those in the pre-SOX period to explore the SOX's effects.

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[9] Berger et al. (2005)
[10] Smith (2007)
[11] Litvak (2007b)

This study considers the ADR issuing announcement date as an event date. Then, it measures the abnormal returns of the local stocks (listed already in the local market) of these foreign firms around the event dates to measure the SOX's effects.

When the foreign firms announce that they are going to issue the ADRs, the prices of their local stocks are theoretically impacted (either increase or decrease) by these announcements. In the context of the event study, the reaction of the home market investors (positive or negative) upon these announcements is the key determinant of the changes in the foreign firms' value.

The study aims to answer two research questions: First, does SOX impact the firm values of the ADR issuers? If SOX's effects are significant, the study then goes on to explore whether these effects are positive or negative. As previously described, the reaction of the local investors to the announcement date determines the change in underlying stock and, as a result, changes in the firm value of the foreign firms. The difference between these changes in the pre-SOX period and the post-SOX period represents SOX's effect on the ADR issuers. This study compares the stock returns of these two sub periods to conclude whether the SOX have an impact on the ADR issuers.

Second, how do factors, such as firm size, country, and stock exchange, impact SOX's effects on the ADRs? Litvak (2007b)[12] uses several independent variables (firm size, country, and stock exchange) to examine SOX's effects on the ADRs, and this study also utilizes them to further explore the influence of SOX's effects.

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[12] Litvak (2007b)

This study contributes to the international business literature with two findings: SOX's effects on the ADR issuers; and the correlation between certain factors and SOX's effects. Even though previous studies have examined these issues, the contribution of this study is that it uses a new method, and extends the sample period.

The results of this study may provide some insights to policy makers, managers, and investors. The policy makers may gain additional understanding of SOX's effects on the ADR issuers. This understanding combined with other findings on how SOX affects U.S. public firms might help to understand SOX's effect on the U.S. market as a whole. This recognition will help them to develop their policies. Managers might better understand SOX's effects on their firms according to their firms' characteristics (firm-size, country, and stock exchange), and then they might use this understanding to improve their strategies. Investors will also be able to gain insights on the impact of the regulation on their investments.

The sample screening in this study included all level-2 and level-3 ADRs issued between 1994 and 2010. Then, these ADRs were checked to see if their issuing announcement dates are available; the study only keeps those firms with confirmed announcement dates which resulted in 234 cases.

The remainder of the study is organized as follows: Chapter II focuses on the theoretical and empirical literature, Chapter III discusses the data and methodology, Chapter IV presents the empirical results, and Chapter V concludes the study with final remarks and discussion.

2. The American Depositary Receipt and The Sarbanes-Oxley Act of 2002 (SOX)

2.1. The American Depositary Receipt, a rising role

This section describes the ADR's characteristics and its role in the U.S. stock market in past decades.

There are two ways the foreign firms can list in the U.S. stock market: direct listing or issuing ADRs. In direct listing, the foreign firms, like the U.S. firms, have to strictly comply with all regulations of the Securities Exchange Commission (SEC). In issuing ADRs, they can have some leeway because the SEC favors to encourage them to list in the U.S. stock market. Since foreign firms may have difficulties in complying with the SEC's regulations to list directly, they prefer issuing ADRs.

In the early twentieth century, many foreign firms and investors used the Depositary Receipt (DR) programs to meet their global needs. In the beginning, there were only a few DR programs, but over the decades, these DR programs have gradually developed. As of 2010, there are over 3,500 DR programs originating a large cross-section of markets ranging from UK to Singapore. These DR programs play an important role in the global financial markets[13].

There are several types of the DR programs: the American Depositary Receipts (ADR), the Global Depositary Receipts (GDR), the European Depositary Receipts (Euro DR). Their names signal the markets where they are listed and traded[14].

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[13] Depositary basic & benefits. Webpage of BNY Mellon
[14] Depositary basic & benefits. Webpage of BNY Mellon

The American Depositary Receipt programs comprise a majority of the DR programs. There are currently more than 2,500 ADR programs listed and traded in the U.S. equity markets (NYSE, NASDAQ, and OTC) and they account for 70 percent of all DR programs. According to JPMorgan Depositary Receipt Guide[15], the ADR programs account for 16 percent of the entire U.S. equity market.

The ADRs are negotiable securities; they are traded, cleared, and settled like any other U.S. securities. Since they are dollar-denominated and they represent the ownership of the cross-listed firms' securities[16], they constitute an easy route for international diversification for US investors. The ADRs also provide foreign firms to access to the world's largest and most active capital markets.

The historical development of the ADRs can be summarized in the following timeline[17]:

In 1927, the first ADR program was established by JP Morgan. It was utilized by the U.K. based Selfridges Department Store in order to increase the efficiency of its foreign investment. However, the pace of ADR programs was slow during this period.

In the 1950s, several large multinationals in Western Europe, Australia, and Japan began listing in the U.S. stock market. In the 1970s, dozens of ADR programs were developed for the mining industry. In the 1980s, the market experienced a tremendous growth, but there were still fewer than 200 ADR programs globally.

In the 1990s, the SEC dealt with the dramatically increased demand of U.S. investors for ADRs, while foreign firms who wanted to list in the U.S. market in form of ADRs were

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[15] Depositary basic & benefits. Webpage of BNY Mellon
[16] JPMorgan Depositary Receipt Guide
[17] JPMorgan Depositary Receipt Guide

disconcerted by the strict regulations of this market compared to those of the other foreign markets. In response, the SEC proposed several protocols to ease these regulations. These included allowing foreign firms a longer period of time before submitting their financial reports to the SEC and easing registration and filing requirements for foreign firms in tender, exchange, and right offers[18]. Meanwhile, the quick-paced development of privatizations, global offerings, and emerging markets brought high visibility to the ADR programs.

In the 1990s, the world experienced the boom of technology and the acceleration of mergers and acquisitions (M&As) activities that led the ADR market ahead.

The dramatic increase of the ADR programs in the 1990s shows that these programs satisfy the demand of both U.S. investors and foreign firms. Previously, U.S. investors had to deal with many difficulties when purchasing foreign firms' stocks, and foreign firms also had to deal with many challenges if they wanted to list in the U.S. stock market. The ADR programs help both entities to overcome these difficulties.

There are a number of ways for the U.S. investors to diversify internationally. First, they can buy shares from the U.S. global corporations like McDonalds, Microsoft, GE, Coca Cola, and Nike; 40% of the income of these companies comes from outside the U.S. Second, they can invest in mutual funds that possess global assets. They can also buy stocks of foreign index funds, and lastly, they can buy shares of non-U.S. companies from home countries or buy ADRs.[19]

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[18] Harold Schimkat (1992)
[19] JPMorgan Depositary Receipt Guide

If U.S. investors want to invest directly in the foreign markets by buying stocks of the non-U.S. firms, they will have to face many of the following difficulties

The quotes and dividends of these stocks are in foreign currencies. It can be costly and inefficient to convert these currencies to the U.S. dollar constantly. Trading, clearing, and settlement in a foreign country are usually performed in the native language and supplemented by native customs. This makes these procedures unfamiliar and cumbersome for the U.S. investors. Trading costs and custodian charges are often much higher than those in the U.S. market. Dividend withholdings and other taxes are often weighty and expensive in foreign countries. Annual reports, proxies, and other corporate information may not be available in English[20].

For these and many other reasons, a lot of U.S. investors prefer to buy ADRs instead of stocks of non-U.S. firms from home countries. Buying ADRs also have the following benefits.

2.1.1. Benefits to the foreign firms

When foreign firms list their ADRs in the U.S. market, the market is expanded. Since the price of the underlying share is affected by the conditions of the local market and the U.S. market. Any large fluctuations in either market would be neutralized by the stability of the other market[21].

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[20] JPMorgan Depositary Receipt Guide
[21] Depositary basic & benefits. Webpage of BNY Mellon

When listing in the U.S. market, the name and image of the company is exposed to the foreign market. Foreign firms usually issue their ADRs in large capital markets that require the listed firms to comply with some strict regulations. Therefore, if the foreign firms are listed in these markets, their names and images are spread to the world market and investors have more faith in the quality of their corporate governance[22].

Companies that list in the U.S. market have more chances to raise capital. Foreign firms typically issue the ADRs in the largest and most active capital markets; this is a good opportunity for them to raise the capital. [23]

2.1.2. Benefits to the U.S. investors

The U.S. investors face several challenges in international diversification of their portfolios. These challenges include: unreliable settlements, costly currency conversions, unreliable custody services, poor information flows, unfamiliar market practices, confusing tax conversion, and many others. By providing the following benefits, ADRs help the investors avoid these obstacles[24].

U.S. investors have to pay to convert the foreign currency to the U.S. dollar when they buy foreign stocks directly to diversify their portfolio. However, when quotations, payment of dividends, or interest of the ADRs are in U.S. dollars, this helps U.S.

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[22] Depositary basic & benefits. Webpage of BNY Mellon
[23] Depositary basic & benefits. Webpage of BNY Mellon
[24] Depositary basic & benefits. Webpage of BNY Mellon

investors save on costs because they don't have to convert the foreign currency to the U.S. dollar[25].

Trade, clearance, and settlement procedures of the ADRs are like those of U.S. stocks, and since U.S. investors are familiar with them, this promotes confidence when they trade ADRs.

Investors can convert DRs to the underlying shares directly upon cancelation, and this provides U.S. investors with greater opportunity to trade their ADRs. The more the opportunity to trade, the better the chance for greater profit and fewer losses; this is the advantage of ADRs that attract U.S. investors[26].

Generally, U.S. investors prefer investing in foreign firms when their investments are protected by U.S. securities regulations. The ADRs satisfy this requirement, because they represent the underlying foreign stocks and are listed in the U.S. stock market; therefore, the ADR is the preferred channel for U.S. investors.

2.1.3. Types of the ADRs

Depositary banks play an important role in creating and trading ADRs. They are the banks that support all services for the ADR programs. These services include arranging a custodian for the foreign firms' stocks at the foreign stock market. This custodian is necessary for the depositary banks issuing the ADRs. After the ADRs are issued in the U.S. stock market, the depositary banks continue to maintain the information of the ADR

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[25] Depositary basic & benefits. Webpage of BNY Mellon
[26] Depositary basic & benefits. Webpage of BNY Mellon

holders and play the agency role to distribute dividends to the ADRs holders in U.S. dollars[27].

Depending on the characteristics of the agreement signed between depositary banks and the foreign firms, there are two types of the ADRs: unsponsored and sponsored. While the former is issued by the depositary banks without a formal agreement, the latter is issued by the depositary banks appointed by the foreign firms under a formal agreement. This agreement specifies the responsibilities and benefits for both the foreign firms and the depositary banks and sets up the firms' ability to raise capital by issuing the DR.

2.1.3.a. Sponsored level-1 ADRs

This is the simplest form of the ADR programs. The level–1 ADRs do not need full SEC registration. They also do not have to report their accounts to the U.S. Generally Accepted Accounting Principle (GAAP) or provide full disclosure to the SEC. They only need to continue complying with the disclosure regulations of the home stock market. This means that when foreign firms issue sponsored level-1 ADRs, they can earn the benefits of a publicity- traded security in the U.S. market without having to change their current reporting process. Due to these benefits, the level-1 ADR programs are the fastest-growing of all ADR programs[28].

The level-1 ADR programs constitute the majority of the ADR programs, in which many well-known multinational-corporations have participated. The foreign firms that

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[27] Depositary basic & benefits. Webpage of BNY Mellon
[28] Depositary basic & benefits. Webpage of BNY Mellon

participate in this program usually have between 5 and 15 percent of their shareholders in this ADR program. Many foreign firms use the level-1 programs as the first stepping stone to upgrade to the level-2 and level-3 ADRs.

The limitation of the level-1 ADR programs is that the foreign firms in these programs do not have the right to raise capital in the U.S. stock market or to offer the DRs to the public and they are not listed on the U.S. stock exchanges. Nevertheless, they are allowed to list in the OTC markets and their prices are published in the Pink Sheets

2.1.3.b. Sponsored level-2 and level-3 ADRs

Foreign firms must register level-2 or level-3 ADRs in order to satisfy the requirements to list on the U.S. stock exchanges (NYSE, NASDAQ, and AMEX) and raise capital. Level-2 and level-3 ADRs need to have SEC registration and must satisfy GAAP rules. While the firms with level-2 ADRs have the right to list on U.S. stock exchanges without raising capital privileges, firms with level-3 ADRs have both the privilege to list and to raise capital[29].

Both the level-2 and the level-3 ADRs use public offerings to issue their ADRs and are required to submit annual filings (20-F) with the SEC. U.S. exchanges also require the level-2 and the level-3 ADRs to meet some listing requirements, such as annual turnover, breadth of shareholder base, etc[30].

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[29] Depositary basic & benefits. Webpage of BNY Mellon
[30] Depositary basic & benefits. Webpage of BNY Mellon

2.1.3.c. The level-4 ADRs

Foreign firms can use restricted programs to ensure that their stock can only be traded by certain individuals. There are two restricted programs: Rule 144-A and Regulation S. The level-4 ADR programs issued under these two programs are the Rule 144-A ADRs and Regulation S ADRs.

These programs raise capital through private placement, in which the Rule 144-A ADRs raise capital through large institutional investors or Qualified Institutional Buyers (QIBs), and the Regulation S ADRs raise capital through offshore or non-U.S. residents[31].

The level-4 ADRs are special programs that foreign firms can use to access U.S. stock markets without SEC registration. Due to these special characteristics, some foreign firms may find level-4 ADR programs attractive. Approximately 30% of all issued ADRs governed fall under one of these two rules[32].

The following sections feature some issues associated with the ADRs such as issuance, trading, termination, pricing, etc.

2.1.4. Issuing ADRs

There are two ways that U.S. investors can buy the ADRs. The first and most straightforward method is to buy existing ADRs in the U.S. stock market[33]. This is a simple, secondary market transaction like any other. If there are no willing sellers of an

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[31] Depositary basic & benefits. Webpage of BNY Mellon
[32] Depositary basic & benefits. Webpage of BNY Mellon
[33] Depositary basic & benefits. Webpage of BNY Mellon

outstanding ADR in the market, investors can acquire ADRs through their brokers. In this case, an ADR is created in the market. The broker directly buys the foreign firms' underlying stocks at the foreign market and sends them to a designated custodian in the foreign market. Afterwards, the custodian informs the depositary bank in the U.S. market about the transaction and the depositary bank issues the ADRs to the initiating broker. The number of the ADRs issued is specified by the custodian and is based on the number of the underlying stocks held in the custodian account in the foreign market. Finally, these ADRs are delivered to the U.S. investors. The initiating brokers must convert the U.S. dollars paid by the U.S. investors into the corresponding local currency and pay the foreign brokers[34].

2.1.5. Trading ADRs

After the ADRs are issued, they are traded in U.S. stock markets. If U.S. investors want to buy the ADRs, there are two ways to do it, and these were described in the previous section about the issuance of ADRs. U.S. investors can sell their ADRs either in the secondary market or cancel ADRs through their brokers by selling them back to the foreign market. In the ADR cancelation, the initiating brokers take the order and ask the foreign brokers to sell the underlying stocks that represent the number of ADRs. When these transactions are completed, the initiating brokers surrender the ADRs to the depository institutions and the depositary bank cancels the ADRs. The depository bank also informs the custodian bank in the foreign market to deliver the underlying stock to

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[34] Depositary basic & benefits. Webpage of BNY Mellon

the foreign brokers to settle the transaction. In the end, the brokers arrange the conversion of the local currency to U.S. dollar and pay the U.S. investors[35].

2.1.6. ADR termination

The termination of one ADR program cancels all ADRs of that program. As a result, this termination delists all ADRs from the stock market where they were traded. This termination is usually at the issuer's request, but it also can be at the discretion of the depositary bank. The ADRs are terminated usually because the foreign issuers are reorganizing their firms or merging with other firms[36].

The ADR issuers must issue a notice in writing at least thirty days before the termination date. After this announcement date, the holders of these terminated ADRs can react in two ways: they can ask the depositary bank to surrender their ADRs and convert them into the home underlying stocks or they can continue to hold their ADRs. If they choose the sell their ADRs, the ADR holders must find the brokers in the home market where their underlying stocks are traded to continue transactions on their underlying stocks. If they choose to keep their ADRs, the depositary banks continue holding the ADRs and collecting dividends, but they cease distribution to the ADR holders. One year after the termination date, the depositary bank liquidates these ADRs and allocates the money to their ADR holders[37].

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[35] Depositary basic & benefits. Webpage of BNY Mellon
[36] Depositary basic & benefits. Webpage of BNY Mellon
[37] Depositary basic & benefits. Webpage of BNY Mellon

2.1.7. Pricing ADRs

The intra-market trading of an ADR is formed and operated efficiently when there is a large number ADRs in this market. If 3 percent to 6 percent of the ADR issuer's share are in the form of ADRs, intra market trading may be feasible. Before this intra-market trading market is formed, most operations in this market include buying the underlying stocks in the foreign market and converting them into the ADRs; these operations are categorized as ADR issuance[38].

Brokers use intra-market trading to conduct transactions for their customers. There are three types of transaction that the brokers can use to satisfy their customers' orders: (1) buying or selling existing ADRs, (2) surrendering the ADRs, and (3) issuing the new ADRs. The brokers choose among these three ways, seeking the best prices and the highest profits for their operations. For example, if brokers have an order to buy an ADR with a certain price set by the customer; they would proceed in one of two ways: buying the existing ADRs or buying the underlying stocks in the home market and then converting them into the new ADRs. Before they act, they must consider which way costs the least and brings them the highest profit. For example, if the brokers have an order to sell ADRs with a certain price from the customers, they would consider two ways to do: (1) selling them to the existing ADRs market or (2) surrendering the ADRs to the depositary bank and then selling the underlying stocks in the home market[39]. They will choose the way that brings them the highest profit. This continuous buying and selling of

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[38] Depositary basic & benefits. Webpage of BNY Mellon
[39] Depositary basic & benefits. Webpage of BNY Mellon

the ADRs in either market helps minimize the ADRs' price difference between the home and U.S. market.

2.1.8. Equity Offerings

Before the intra-market trading market is established, the ADR issuers can offer their first public ADRs. This provides a sufficient number of the ADRs to the market and forms a pool where investors can begin trading. During an ADR issue, the issuers (the foreign firms) deliver their underlying stocks to the custodian at the home market. Then the depositary bank in the U.S. market issues the corresponding ADRs based on the underlying stocks to be held by the custodian. Afterwards, the depositary bank sends these ADRs to the underwriting syndicate. At this point, a regular market can commence[40].

Overall, the ADR's characteristics help U.S. investors easily buy the foreign stocks at U.S. stock markets and help the foreign firms to issue their stocks in U.S. markets without having to drop regulations that they have complied with in their home markets. Due to these convenient characteristics, the ADRs are established and have played an important role in U.S. equity markets.

2.2. The Sarbanes-Oxley Act of 2002(SOX)

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[40] Depositary basic & benefits. Webpage of BNY Mellon

This section explores the reasons why this law was enacted and illuminates the underlying principles concerning auditing, securities analysis and corporate governance. These requirements help U.S. public firms increase the transparency in their financial reports.

This act was passed on July 30, 2002. Formally, the Sarbanes-Oxley Act is referred to as the Public Company Accounting Reform and Investor Protection Act of 2002. The law's informal name was given in honor of its sponsors, Senator Paul Sarbanes (D-MD) and Representative Michael G. Oxley (R-OH)[41].

In 2001, many large corporations such as Enron, WorldCom, Sunbeam, Tyco, and Parmalat collapsed under the pressure of financial information frauds. These collapses revealed the systemic weakness of the accounting regulations in the U.S. capital markets. The corporations used "creative" accounting schemes to hide liabilities and enhance income while the auditors compiled good recommendations for the corporation's financial statement. As a result, the investors were at a disadvantage because the underlying operational conditions were concealed from financial reporting. These collapses not only resulted in huge devaluations of the assets of investors, they also eroded the investors' confidence in U.S. stock markets. Consequently, the development of U.S. stock markets was badly affected. To restore investors' confidence and prevent other disastrous occurrences, SOX was enacted. SOX establishes a controlling mechanism to separate the benefits for the auditors and the benefits for the corporations.

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[41] SEC. 2002. A guide to the Sarbanes-Oxley Act

This method of prevention is believed to guarantee the independence of the auditors and increase the reliability of financial reports[42].

Another widely cited reason for the collapse is the overlap between investment banking and securities analysis in financial institutions. The investment banking division makes a lending decision after analyzing results produced by the securities analysis division. However, these two operate under one corporate umbrella. Therefore, if the later division leads the former division to make a wrong leading decision, a problem occurs. The SOX Act is designed to address this problem[43].

According to the Act, the remaining reason that contributed to the collapse was the responsibility of the firms' managers. Before SOX was created, the SEC's regulations did not impose a strict controlling mechanism that linked the managers' responsibility with the financial statements' transparency; SOX was designed to address this problem[44].

The Act is applicable to all public firms (both domestic and foreign) that have registered equity or debt securities under the Securities Exchange Act of 1934. Foreign accounting firms that conduct work for companies subject to the Act also must comply with the Act.

Overall, the Act enhances financial standards in three areas: (1) the performance of the audit work, (2) securities analysis and (3) corporate governance. The details of these improvements are presented in the ensuing section[45].

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[42] SEC. 2002. A guide to the Sarbanes-Oxley Act
[43] SEC. 2002. A guide to the Sarbanes-Oxley Act
[44] SEC. 2002. A guide to the Sarbanes-Oxley Act
[45] SEC. 2002. A guide to the Sarbanes-Oxley Act

2.2.1. New requirements for auditors

According to policy makers who designed and passed the SOX, the overlap in the operations between the firms and their auditors is one of the most important causes of the collapse of the U.S. stock market in the early years of the twenty-first century. The SOX Act points out that when an auditor works for a firm, they have a dependent relationship; this connection would then lead to biased financial recommendations written by the auditor if he or she is selected to examine the firms' financial statements. The SOX Act prevents the auditors from providing bookkeeping services, financial information system design, appraisals, valuations, fairness opinions, actual services, management functions, human resources, brokers/dealers, investment banking, investment advisory, legal, and other services to clients. However, tax services are allowed. The SOX Act also bans the firms from hiring their auditors' employees as CEO, CFO, CAO, or controller if they worked for the auditor during the one year period preceding the company's last audit.

Aside from regulating the relationship between the auditors and their clients, SOX also issues some regulations that control the auditing firms' operations. In order to do this, SOX required the establishment of The Public Accounting Oversight Board (PAOB). This is a nonprofit corporation overseen by the SEC, which selects all five members of the PAOB. All auditing firms have to register with the PAOB, whose role is to register, regulate, inspect, investigate, and discipline public accounting firms[46].

Consequently, auditors are required to keep their notes, records, and work papers for every audit conducted for at least seven years after the work is performed. These records

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[46] SEC. 2002. A guide to the Sarbanes-Oxley Act

need to include enough information to support the auditors' decisions. These requirements collectively contributed to a surge in auditing costs[47].

The managers of the ADR issuing firms anticipate that the higher standards and costs of the auditing process would boost the firm value (because the investor would have more faith in the better quality of auditing) and thus compensate for the auditing cost[48].

2.2.2. New requirements for securities analysis

Regarding conflicting interests in securities analysis, the SOX Act's objective is to further separate the tacit cooperation between the investment banking and the securities analysis division of most financial-services institutions[49]. The Sarbanes-Oxley Act prevents members of a financial services institution's investment banking division from supervising, approving compensation for or retaliating against members of the securities analysis division. The act also requires auditors to disclose all personal conflicting interests to clients, compelling them to reveal all compensations and business relating to clients[50].

This separation requires the securities analysis divisions to be more independent and careful in analyzing the financial situation of the firms and compiling a credible report for the investment banking divisions in order for the latter to make a reasonable lending

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[47] SEC. 2002. A guide to the Sarbanes-Oxley Act
[48] SEC. 2002. A guide to the Sarbanes-Oxley Act
[49] SEC. 2002. A guide to the Sarbanes-Oxley Act
[50] SEC. 2002. A guide to the Sarbanes-Oxley Act

decision. This mission requires the securities analysis divisions to receive more pay from the ADR issuers.

The higher the quality of the securities analysis service, the more confident the investors; the more trust the investors place in the firm, the better the firm's value. This study examines this argument carefully.

2.2.3. New requirements for corporate governance

The Act requires the ADR issuers' managers and officials to know the firms' financial situation to increase their responsibility and limit criminal actions. In order to do this, the Act requires ADR issuers to form their own auditing committees; these committees consult with the ADR issuers' managers about the firms' auditing and financial situation. They have some rights including appointing, inspecting, regulating, and controlling the auditors' operations; the auditors, in turn, have to report their operations directly to these committees. In order to warrant the independence and professionalism of these committees, the Act requires that the committees' members should not be the ADR issuers' employees, and the firms have to disclosure these members' qualifications to ensure they are "financial experts". The committees also have some other responsibilities in preparing and addressing complaints and confidential or anonymous submissions about the firm's financial situation to the managers[51].

In order to increase the responsibility of the firms' managers, the act also assigns some details that the firms' managers should pay attention to and some penalties that would be

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[51] SEC. 2002. A guide to the Sarbanes-Oxley Act.

imposed if they violate the regulations. The Act requires the Chief Executive Officer (CEO) and Chief Financial Official (CFO) to certify in writing that the disclosure of the firms' financial statements complies with the act. This certification prevents these officers from issuing misleading financial statements in order to obtain personal benefits. The act stipulates that the firms' officers who use their power to manipulate or pressure the auditors into signing off misleading financial statements would be committing federal crimes. Additionally, the act specifies that if the firms that made misleading financial statements are exposed, these firms must redo those statements and their CEO and CFO have to return the bonuses, compensations and profits made by personal trades of the firm's securities during the year after the faulty documents were initially disclosed[52].

In terms of limiting deception in compensating the firms' officers, the Act states the following rules: most kinds of loans are banned to the firms' directors and officers and the firms' CEO and CFO are prohibited from selling their securities during the period when the firms' other employees and retirement-plan participants cannot. In addition, the act also rules that if there is any change in the ownership that accounts for 10 percent or more of the firms' securities, the owner of these trading securities has to inform to public within two business days[53].

The act also encourages the firms' employees to uncover and correct any problem in the firms' financial statements. The logic behind this rule is that the firms' insiders or employees are in a unique position to discover of internal corruption; in order to protect the insiders, the act establishes rules that extend whistleblower protection to employees.

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[52] SEC. 2002. A guide to the Sarbanes-Oxley Act.
[53] SEC. 2002. A guide to the Sarbanes-Oxley Act.

The act also rules that if a firm's lawyers discover the firms' violation of the SOX Act, they should report it to the firms' chief counsel or CEO, or anyone higher up on the chain of command or to the board of directors if no appropriate response is given[54].

The act creates a strict mechanism that increases the efficiency of the auditing, increases the trustfulness in the securities analyses and improves the corporate governance of the U.S. firms and intends to restore confidence of US investors[55].

3. Literature review

3.1. Direct cost, indirect cost, and benefit implications of the Sarbanes-Oxley Act on the listing firms

To fulfill the designated objectives, the act's issuance helps increase the U.S. public firms' benefits by improving auditing systems, enhancing managers' responsibilities and improving securities analyses; however, the act's compliance cost is the firms' burden. This section explains the act's benefits and compliance costs and helps readers gain a clearer understanding of the relationship between the act's benefits and its compliance costs.

3.1.1. Direct and indirect costs of the SOX

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[54] SEC. 2002. A guide to the Sarbanes-Oxley Act
[55] SEC. 2002. A guide to the Sarbanes-Oxley Act

The SOX Act imposes some new regulations regarding auditing, lending and corporate governance on the listing firms. These regulations require these firms to pay to comply with this act. Many studies found that there are two types of compliance costs: direct and indirect. The former are the additional expenses the firms have to pay for auditing and managerial costs; the latter are the expenses that the firms do not have to spend but which can indirectly impact the firms' operations.

3.1.1.a. Direct costs

Most of the studies on direct cost focus on the auditing costs; these are theoretically the most expensive of the compliance costs. All regulations on auditing that the firms have to comply with are presented in section 404 of the act.

Asthana, Balsam, and Kim (2004)[56] find out that the ratio of auditing fees to assets increased in the year 2000 and 2002. Supporting this result, Eldirdge and Kealey (2005)[57] examined the costs of the internal control from a sample of Fortune 1,000 companies and revealed that the average auditing fees increased to $2.3 million from 2003 to 2004 alone.

In terms of the relationship between the firm size and the auditing cost of the listing firms, one study published in Financial Executives International (2005)[58] uses the differences in firm sizes to examine the compliance costs in section 404 of the act. The study reports that the large firms (market capitalization above $700 million) that comply

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[56] Asthana, Balsam, and Kim (2004)
[57] Eldirdge and Kealey (2005)
[58] Financial Executives International (2005)

with section 404 spend an average of $4.3 million, while the small firms (market capitalization below $700 million) spend an average of $1 million.

Koehn & Del Vecchio (2004)[59] find an interesting statistic regarding the cumulative compliance costs of all public firms, which amounts to approximately $7 billion, or 1% of their combined revenue.

Hartman (2007)[60] discovers that the auditing fees in the period from 2001 to 2006 increased 189% for the S&P 500 firms, 251% for the S&P mid-cap firms and 311% for the S&P small-cap firms. Furthermore, Hartman (2007) also indicates that auditing costs vary across firms.

The results of the studies cited above show that the firms' auditing fees have significantly increased since SOX was enacted. These studies also show that the auditing fees vary depending on the firm size[61].

3.1.1.b. Indirect costs

A few studies focus on indirect cost, which is divided into three types: (1) lost investment opportunities, (2) opportunity costs and (3) excessive staff burdens. These types of costs along with direct cost are described as factors that can negatively impact U.S. stock markets, U.S. investors and listing firms' operations.

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[59] Koehn & Del Vecchio (2004)
[60] Hartman (2007)
[61] Asthana, Balsam, and Kim (2004), and Eldirdge and Kealey (2005)

Engel, Hayers, and Wang (2006)[62] find that the number of firms who were going private modestly increased after SOX's enactment. Supporting this conclusion, Carney (2007)[63] discovers that the firms who file the Schedule 13E-1 complain that one of the most important reasons why they decide to go dark is the high compliance costs of SOX. These studies suggest that the action of delisting, or not listing, on U.S. stock exchanges for some large-sized domestic firms shows that these firms and U.S. investors are losing their investment opportunities because they miss the chance to use the stock exchange to mobilize capital and "bond" their image. These firms then decide to go dark or list on foreign stock exchanges such as the London stock exchange; some other firms also decide to list in other foreign stock exchanges.

The executive officials, staffers, accounting department and some other departments of firms have to spend more time and resources in order to comply with the requirements of the SOX Act. Consequently, this inevitably reduces their capability to handle other missions, increases opportunity costs and increases the staffers' burdens. A survey of the CFO Magazine (2003)[64] finds that 33% of those surveyed have delayed or canceled several strategic projects due to SOX. This survey also finds that the executive officials have to spend 10% of their time on internal control assessment and certifying the firm's financial reporting.

3.1.2. Benefits of SOX

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[62] Engel, Hayers, and Wang (2006)
[63] Carney (2007)
[64] CFO Magazine (2003)

SOX is described as a controversial act. Along with the compliance costs previously mentioned, many benefits of the act were also discovered and analyzed. These benefits are: improving the reliability of financial reporting, enhancing the effectiveness of corporate governance and increasing the liquidity of firms.

Li, Pincus, and Rego (2004)[65] and Jain and Rezaee (2006)[66] find that the SOX Act plays an important role in restoring customer confidence, the integrity of the stock exchanges and the participants' willingness to trade after assessing the firm's published financial information.

Governance Metrics International (2005)[67], in a study composed of 2,500 international firms, found that the act led to a 10% improvement in the corporate governance of U.S. firms in comparison to their foreign partners'.

Shadab (2007)[68] demonstrates that the act has an important role in persuading firms to focus more on internal financial control. The study also shows that the Sarbanes-Oxley Act enhances the turnover and the responsibility of the boards of directors and reinforces the firms' compliance with regulations.

In terms of SOX's role of limiting, controlling and eliminating financial statement fraud, some scholars try to measure the incidence of fraud before and after the enactment of SOX. These findings show that SOX has a positive effect on fraud reduction. Prentice (2007)[69] shows that not one outrageous fraud in financial statements has been discovered

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[65] Li, Pincus, and Rego (2004)
[66] Jain and Rezaee (2006)
[67] Governance Metrics International (2005)
[68] Shadab (2007)
[69] Prentice (2007)

since SOX was passed. Cornerstone Research (2007)[70] also confirms that the incidence of fraud has declined since SOX was passed.

An additional benefit of SOX was discovered in a survey conducted by Price Waterhouse Coopers' (2005)[71]. This study finds that private firms are also impacted by SOX even though, according to the SEC, they are not subject to the act. These private firms absorb some positive aspects from SOX's regulations and change their corporate governance. The study shows that SOX has positive effects on the private and non-profit firms and reports that 30 percent of the firms in the survey replied that they are impacted or would be impacted in the near future by the act. This survey reveals that there are two motivations for private firms to willingly comply with SOX's provisions: they want ex-ante preventative maintenance rather than ex-post problem solving and the private firms want to adopt them to become the best-in-business practice. The survey concludes that the private firms want to adopt SOX's provisions because they want to avoid fraud and financial difficulties when they follow operational and controlling efficiencies. Most of the private firms in this survey perceive that they need to improve documentation and testing, strengthen corporate governance and reinforce ethics.

Liquidity is another positive effect of SOX discovered by Bushee and Leuz (2005)[72]; this study reports that enhanced mandatory disclosure helps the firms improve market liquidity by reducing informational asymmetry.

Generally, the results of these studies show that the compliance to the requirements of the act helps increase the U.S. public firms' value by improving their corporate governance,

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[70] Cornerstone Research (2007)
[71] Price Waterhouse Coopers' (2005)
[72] Bushee and Leuz (2005)

but the act's compliance costs and several other indirect costs spark controversial debate about whether the act has a positive impact on the ADRs' firm value.

3.2. The effect of the Sarbanes-Oxley Act on cross-listed firms

This section describes some important provisions of Sarbanes-Oxley: first, the kinds of ADRs that are subject to the act and the reasons why these ADRs are chosen to be subject to the act; second, two contrasting arguments about SOX's effect on U.S. public firms; third, two methods (quantity and quality) to study SOX's effects on U.S. public firms and the studies' results that use these two methods; and fourth, some studies that examine SOX's effects on the ADR issuers. The methods used in the studies about the SOX's effects on U.S. public firms vary, as do the results.

3.2.1. The level-2 ADRs and level-3 ADRs are subject to the Act but the level-1 ADRs and level-4 ADRs are exempt:

The SEC implementation of the Act relating to the ADRs is based upon their liquidity and firm-size. The level-1 and level-4 ADRs have low liquidity and small firm-size; therefore, the SEC categorizes them as an exception; since the level-2 and the level-3 have high liquidity and large firm-size, the SEC categorizes them as being subject to the act.

Before SOX was enacted, there were discussions among U.S. law makers regarding this act and the cross-listed firms. Some asserted that the cross-listed firms are not the cause

of the U.S. stock markets' problems; therefore, the act should not apply to them. Others stated that they want to build a universal condition that applies to all firms in the stock market; therefore, the act should apply to the cross-listed firms. According to Senator Michael Enzi on this matter, "we need to be clear with respect to the area of foreign issuers and their coverage under the bill's broad definition… Foreign issuers are not part of the current problems being seen in the U.S. capital markets, and I do not believe it was the intent of the conferees to export US standards, disregarding the sovereignty of other countries as well as their regulators."[73]

According to the spirit of the act, the SEC wants all the public firms to comply with all requirements on disclosure in financial reporting and enhance the responsibility of the corporate managers. The SEC also wants to eliminate all mistakes that happened before because of fraud in financial statements and create a new era of corporate governance where the investors can wholeheartedly believe in the reliability of financial reporting and the responsibility of corporate managers. The SEC hopes that a "global village" of modern business would be set up after the act is implemented[74].

However, there is an exception for level-1 ADRs and level-4 ADRs. As described earlier, according to the SEC's regulations, level-1 ADRs and level-4 ADRs do not need to fully register and comply with all the disclosure requirements of the SEC while the Level-2 and Level-3 ADRs need to fully register and comply with all the disclosure requirements of the SEC. Following this regulation, the SEC requires the level-2 level-3 ADRs to comply with the SOX's regulations immediately while the level-1 and level-4 ADRs are

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[73] Sarbanes-Oxley Act of 2002
[74] Sarbanes-Oxley Act of 2002

given a certain grace period to comply with these regulations. The small firm-size and low liquidity of the level-1 and level-4 ADRs are major reasons why the SEC sets them apart as an exception[75].

In summary, the level-2 and level-3 ADRs have to comply with the Act immediately while the level-1 and level-4 ADRs are given a certain time before they must comply with it.

3.2.2. Two contrasting views about the SOX's effects on the public firms

The act brings benefits to the U.S. public firms, but it also adds compliance costs to these firms. Due to these two opposing effects, there are two contrasting views about SOX's effect: the act may increase or decrease the value at any given U.S. public firm.

Proponents argue that the act intensifies disclosure, enhances transparency in the firms' accounting and auditing and increases the responsibility of the firms' officials, actions that enhance the firms' operational efficiency and firm value. In contrast, opponents state that the act increases the firms' costs and decreases the firm value. This latter view asserts that adjustments to the firms' accounting system and auditing work should be placed in the hands of market forces[76]. This argument points out further that market forces (or the market mechanism) should play a major role in adjusting firms' accounting system and auditing work. The government's attempts to interfere by issuing rules can

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[75] Sarbanes-Oxley Act of 2002
[76] Karolyi (2009).

increase the firm's compliance costs and decrease the firm's value[77]. The implementation of the act by adjusting auditing work and increasing corporate governance, according to the spirit of this argument, are negative actions by the government that impose more compliance costs on firms and consequently decrease the firms' value.

Mitchell (2003)[78], a supporter of the SOX, argues that the act brings benefits to the business community in several ways. Mitchell (2003) argues that the act brings the gatekeepers (auditors, lawyers, and analysts) into the realm of internal governance. These positions play an important role as watchdogs to ensure transparency for the firm's financial system. Second, the act also enhances the responsibility of the CEO and of the audit committee; they are asked to be comprehensive about the firm's financial situation and aware of the penalty should they violate the act. Finally, the act limits and separates conflicting-interest transactions. Thus, the Sarbanes-Oxley Act reestablishes the investors' confidence and increases the shareholders' value.

In contrast, Romano (2005)[79] and Butler and Ribstein (2006)[80] argue that adjustment of the quality of corporate governance should depend on market forces. According to their view, the act only increases the bureaucratic burden and costs for the firm. They assert that well-governed firms already have reliable financial reporting systems, qualified officers and independent auditors. Therefore the act does not offer much help in improving the management quality of these firms. In actuality, it increases their cost burden if they want to comply with the requirements.

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[77] Karolyi (2009).
[78] Mitchell (2003
[79] Romano (2005)
[80] Butler and Ribstein (2006)

However, for those firms with high growth and low disclosure standards which invariably need more external capital to fuel their development, the act is helpful. Doidge at al. (2004a)[81] argue that the act helps these firms improve the quality of their financial statements, enhance the officers' responsibility, develop transparency in the auditing operations, and build up the firms' credit. As a result, the firms will have more chances to mobilize external capital and grow. Thus, these kinds of firms would have benefits that outweigh the costs that they will have to pay for complying with the act's requirements.

Overall, SOX's issuance triggered a controversial debate about its effects on the value of U.S. public firms: some argue that SOX increases firm value while others forward a counter argument amounting to value destruction.

3.2.3. Two ways to measure the SOX's effects

There are many studies about SOX's effects on the ADRs, using a number of different methods to measure these effects. Karolyi (2009)[82] summaries these methods into two groups: (1) quantitative methods and (2) qualitative methods. The former includes studies that measure the number of the firms that relisted from U.S. stock markets after SOX's enactment. According to these studies, the number of these relisting firms shows SOX's negative effects on the listed firms; the higher the number of the relisting firms after SOX's enactment, the more pronounced are SOX's negative effects on the listed firms. The latter includes other studies that measure SOX's effects on firm value. These studies use the event-study method to measure the stock return of the listed firm around the event

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[81] Doidge at al. (2004a)
[82] Karolyi (2009)

dates of SOX's enactment; these event dates include some important dates in which the U.S. Congress organized some events to discuss, vote, and pass the act. These studies argue that the higher the positive or negative stock returns of the listed firms around the event dates, the greater the positive or negative effects, respectively, of the SOX Act.

3.2.3.a. The results of the studies that use the quantitative method to study SOX's effects on the cross-listed firms

The results of these studies are mixed. Some claim that the act has a negative impact on the listed firms of the cross-listed firms; they demonstrate that the number of delisting cross-listed firms has been increasing since SOX's enactment. Others disagree with this conclusion. They find that the act does not have a negative impact on the number of domestic and foreign firms that list on U.S. stock markets. They argue that the decrease in the number of the cross-listed firms in the U.S. market after SOX's enactment is a common phenomenon in the world stock markets[83].

A few studies use the London stock market as a potential alternative to U.S. stock markets[84]. These studies argue that after SOX's enactment, foreign firms could consider the benefits and the compliance costs of SOX in order to decide if they should continue listing on U.S. stock markets or delist and then list in another stock market such as the London stock market. These studies also use this argument for the potential foreign firms that desire and plan to list on U.S. stock markets. They also consider the benefits and

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[83] Doidge, Karolyi, Stulz (2008a), Hostak et al. (2007), and Duarte et al. (2007)
[84] Piotroski and Srinivasan (2008)

compliance costs of SOX in order to decide if they are going to list on U.S stock markets or the London stock market.

Supporting these studies (quantitative method), the researchers calculate the number of cross-listed firms that delist and the number of the cross-listed firms that begin listing in both markets (U.S. stock market and the London stock market) in two separate periods (the pre-SOX and the post-SOX). They argue that the increase or decrease in the number of the delisted firms on U.S. stock markets after SOX's enactment and the increase or decrease in the number of the cross-listed firms that begin listing on the London stock market show that SOX has a negative or positive effect on the ADRs; the logic being that if SOX has a negative effect on the ADRs, the cross-listed firms delist from U.S. stock market and then list on the London stock market, and vice versa.

These studies also use two time periods (the pre-SOX and the post-SOX) in their comparison. The argument is that the higher number of the delisted firms in the post-SOX period compared to that in the pre-SOX period should show that SOX's negative effects are worse in the post-SOX period, and vice versa[85].

Doidge, Karolyi, and Stulz (2008a)[86] advocate SOX's positive effects on cross-listed firms. They find that the number of cross-listed firms in both the U.S. stock market and the London stock market have been declining in their study period (after the SOX's enactment), but they demonstrate that the decline is due to the change in firm characteristics rather than benefits of cross-listings. This study also verifies that the decline of ADRs on the U. S. stock exchanges is not related to SOX and confirms that

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[85] Doidge, Karolyi, and Stulz (2008a)
[86] Doidge, Karolyi, and Stulz (2008a)

cross-listings on U.S. stock market have unique governance benefits for the foreign issuers. These benefits cannot be affected by SOX's compliance costs or terminated when the firms cross-list on the London Stock Exchange.

Piotroski and Srinivasan (2008)[87] support the conclusions of Doidge, Karolyi, and Stulz; the study finds that SOX does not impact the change in number of cross-listed firms in U.S. stock markets and the London stock market. However, this study presents a new discovery in the relationship between SOX's effects and firm-size of the cross-listed firms; the study finds that large foreign firms have the same benchmarks for choosing between U.S. stock exchanges and the London stock market after the act's passage. This study shows, moreover, that small foreign firms are likely to choose the London Stock Exchange instead of NASDAQ. This is because small foreign firms are not as capable of absorbing SOX's compliance costs as are large foreign firms that can absorb SOX's compliance costs and then distribute them into many products that help reduce the ratio of SOX's compliance costs to each of the firms' products.

In contrast to the two studies just described above, Hostak et al. (2007)[88] provide evidence of the SOX's negative effects on the delisting of the ADRs. The study finds that SOX's passage coincides with an increase in the delisting of ADRs on the U.S. stock market. The result demonstrates that there are two motivations that led to the delisting of ADRs after the SOX Act: compliance costs and agency costs.

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[87] Piotroski and Srinivasan (2008)
[88] Hostak et al. (2007)

Duarte et al. (2007)[89] show some interesting results in their study. One result supports the SOX's negative effects but another supports the SOX's positive effects. The former emphasizes that SOX has negative effects on the capability of foreign firms to list in the U.S.; the study shows that the probability of foreign firms listing in the U.S. is reduced because of SOX's passage. The latter finds that SOX has positive effects on firm value; the study shows that firm value increased after SOX was implemented. This study also discovers some results linked to SOX's effects on managers and minority investors. The study shows that SOX increases the opportunity cost of the managers and enhances benefits for minority investors. The study explains that since SOX's passage, managers have to work harder than before in order to fulfill SOX's requirements. As a result, this takes more of the managers' time away from more productive activities. The study argues that if the managers reserve more time for SOX's fulfillment, they have less time for the firms' other jobs; this is an opportunity cost the firms have to pay to comply with SOX. Regarding the argument that SOX's passage increases the benefits of minority investors, the study explains that SOX's regulations guarantee the transparency of a firm's financial situation, which helps minority investors avoid fraud usually conducted by majority investors. This benefits the minority investors.

Marosi and Massoud (2008)[90] look for the reasons why the cross-listed firms want to go "dark" (delisting), and what the characteristics are of these firms and the consequences on their stock price fluctuations and shareholder values. The study provides evidence supporting negative effects of SOX and concludes that SOX or auditing fees are a driving force behind the going-dark phenomenon.

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[89] Duarte et al. (2007)
[90] Marosi and Massoud (2008)

Overall, the results of the studies that use the quantity method to study SOX's effects are mixed. Supporters of SOX's positive effects argue that the delisting of the ADRs in U.S. stock markets after SOX's issuance is due to firm characteristics and is a common phenomenon of world markets; supporters of SOX's negative effects argue that the delisting of the ADRs in the U.S. stock market after SOX's issuance is caused by SOX's high compliance costs.

3.2.3.b. The results of the studies that use the qualitative method to study the SOX's effects on the cross-listed firms

The studies using this method utilize firm value to measure SOX's effects on the ADR issuers. These studies are grouped into two types: (1) studies focused on U.S. public firms on U.S. stock exchanges[91] and (2) studies that focused on cross-listed firms on U.S. stock markets[92]. The results of these studies are mixed since they focus on either U.S. public firms or on cross-listed firms.

3.2.4. The results of the studies that focus on the SOX's effects on the U.S. public firms

U.S. public firms are U.S.-based firms that list on U.S. markets. These firms are major subjects of the SOX Act. The results of the studies that focus on the SOX's effects on these firms are mixed.

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[91] Zhang (2007), Rezaee and Jain (2006), Li, Pincus, and Rego (2008), Chhaochharia and Grinstein (2007)
[92] Berger, Li, and Wong (2006), Litvak (2007a), Li (2007), Smith (2007)

Almost all of the studies that measure SOX's effects on U.S. public firms find that the act has negative effects on firm value. Zhang (2007)[93] discovers that the cumulative abnormal returns around the event date of the firms that are subject to the SOX Act turns out negative after the act was implemented. One of the most critical discoveries of this study is that the act is responsible for the loss of around $1.4 trillion in value for U.S. public firms that list on NYSE, AMEX, and NASDAQ around the event dates when the act was implemented. Zhang concludes that the results of the study confirm the shareholders' hypothesis that both the restriction of non-audit services and the provisions to enhance corporate governance are costly to business.

Rezaee and Jaim (2006)[94] also use a sample of almost all of the U.S. public firms that list on U.S. stock markets to analyze the act's effects on abnormal returns. They use the S&P 500 Index and Value-Line Index to represent the entire market. Several leading events that represent the probability of SOX's passage are chosen as the event dates. In contrast to Zhang's results, this study discovers that the act is wealth-increasing on average and that the market reaction is more positive for the more compliant firms with effective corporate governance, reliable financial reporting and credible audit functions before the act was passed. To explain this result, the author cites the investors' opinion that the firms in possession of a well-run corporate governance, good transparency in financial reporting and credible auditing functions do not have to spend a lot of money to comply with the act, while the firms with bad corporate governance, little transparency, and unreliable auditing functions have to suffer high costs in order to comply. Generally, the study concludes that there are many more induced benefits of the act than the imposed

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[93] Zhang (2007)
[94] Rezaee and Jaim (2006)

compliance costs because investors believe that the act helps improve corporate governance and increase shareholder value.

Li, Pincus and Rego (2008)[95] also use a large sample of firms in U.S. stock markets where their names are listed in S&P 500, S&P MidCap 400 and S&P SmallCap 600; like Rezaee and Jaim's results, Li, Pincus and Rego's results show that the act's legislative events have positive impacts on abnormal returns and firm value.

Chhaochharia and Grinstein (2007)[96] also employ the firms that list on U.S. stock markets along with several legislative events of the act to measure the fluctuations of abnormal returns. However, the results of this study are different from the conclusions of Zhang, Rezaee and Jaim, Li and Pincus, and Rego. While Zhang concludes that the act generally has negative impacts on the firm value, Rezaee and Jaim, Li and Pincus, and Rego argue that the act generally has positive effects on the firm value. This study concludes that the act significantly impacts the firm value. It also argues that the firms that are more compliant with the law would earn negative abnormal returns, while the firms that are less compliant would earn positive abnormal returns from the act's legislative events.

The studies described above show puzzling results. These studies focus on the same firms, U.S. public firms, but the results about SOX's effects on these firms are conflicting; furthermore, even though these studies concentrate on firms that have the same characteristics of corporate governance (transparency and the auditing system), the

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[95] Li, Pincus and Rego (2008)
[96] Chhaochharia and Grinstein (2007)

results are still contradicting. These contrasting results show that the act is truly controversial.

Recently, Hochberg, Sapienza, and Vissing-Jørgensen (2009)[97] (henceforth, HSVJ) use an interesting method to measure the act's effects on firm value. They observe lobbying activity of the firms on U.S. stock markets that opposed the act's passage is an indicator of the firms that will be subject to the act. The authors hypothesize that the firms who sent lobbying letters to the SEC would be subject to the act. They group these firms in the observed set while the other firms that do not send lobbying letters to the SEC form the control set. The result of this study supports the benefits of the act. The authors find that the lobbying firms are those who have more and larger profitability, lower future growth opportunity, retain more cash, have agency problems, and are supposedly subject to the act. Interestingly and surprisingly, according to the findings of the study, the firms that lobby to block the law have higher cumulative abnormal returns surrounding the legislative event dates compared to the firms who choose not to lobby.

3.2.5. The results of the studies that focus on the SOX's effects on the cross-listed firms

There are a few studies regarding SOX's effects on the cross-listed firms. These studies show that SOX causes a negative effect on the cross-listed firms and the impact varies depending on the cross-listed firms' specific characteristics, such as the legal norms and disclosure standards of the home country, firm size, and level of corporate governance.

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[97] Hochberg, Sapienza, and Vissing-Jørgensen (2009)

Berger et al. (2006)[98] finds that SOX not only helps increase the cross-listed firms' legal bonding benefits but also causes an increase in these firms' compliance costs (such as audit fees); in general, the study discovers that SOX causes the cross-listed firms to incur negative price reactions because the increased compliance costs exceed the legal bonding benefits. The study also finds that SOX brings benefits to the cross-listed firms that have a home country with high judicial efficiency, weak private enforcement and weak minority-shareholder protection because SOX helps these countries extend their commitment to following higher standards. Finally, the study finds that the portfolios of U.S. public firms have higher negative price reactions than that of the cross-listed firms.

Kate Litvak (2007a)[99], a proponent of the second research direction, finds that the cross-listed firms with high disclosure standards from developed countries suffered the strongest reduction in stock price after the act was passed. In contrast, the cross-listed firms that have lower disclosure standards from developing countries experienced a lower decline in their stock prices. This evidence is consistent with the view of investors that the act had a negative impact on cross-listed firms. The firms that have high disclosure standards and low growth suffer larger net costs, while the firms that have lower disclosure standards and higher growth experience lower net costs.

Litvak (2007b)[100] uses Tobin's q and market/book ratios to estimate the effect of SOX on the cross-listing premium and comes up with the same results as her previous work. This study finds that Tobin's q and market/book ratios of the cross-listed firms subject to the act reduced significantly in comparison with those of the firms that are not subject to it.

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[98] Berger et al. (2006)
[99] Kate Litvak (2007a)
[100] Kate Litvak (2007b)

Another finding reported in the study indicates that the firms with high profitability, higher risk, smaller size, and better governance suffer the biggest losses as a result of SOX's effects. The study confirms the investors' expectations that the act has negative effects on the cross-listed firms on average, especially for the smaller and the already well-governed firms.

Li Xi (2007)[101] finds that the abnormal returns of the cross-listed firms have an average of -10% before and after the event dates that implement the act, while the others that list on the Pink Sheets and are not subject to the law do not show the effect of the act. Most of the cases involve negative returns for the well-governed firms. Li Xi also finds that the quantity of cross-listed firms that "go dark" in the post-SOX period is larger than that in the pre-SOX period. These firms would like to delist and deregister to avoid the "bad" regulations of the act. Li Xi discovers that the abnormal returns of delisting and deregistering are negative in the pre-SOX period but turn out positive in the post-SOX period. The conclusion of this study is that SOX brings excessive compliance costs to the cross-listed firms.

In conclusion, these studies find that in the case of the cross-listed firms, the well-governed firms and the small firms suffer the worst of SOX's negative effects, while the badly-governed firms and the large firms suffer less of SOX's negative effects. The explanation for this finding is that the well-governed firms already have good corporate governance in terms of auditing systems, transparency and management; therefore, these firms should not have to pay (SOX's compliance costs) to build a new system of corporate governance to comply with SOX requirements. Nevertheless, in reality, these

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[101] Li (2007)

well-governed firms still have to pay SOX's compliance costs; therefore, according to the investors' view, this cost is unnecessary, increases costs for the firms, negatively impacts the firms' bottom lines, and, consequently, reduces firm value. In the case of small firms, since the operational size is small, compliance cost cannot be diffused across the firms' products or operations. As a result, as the costs per product increases, there seems to be negative impact or reduction in firm value.

As described, the study aims to capture SOX's effect on the ADR issuers. SOX's effects and characteristics were discussed in the above sections; for further exploration, factors that boost the firm value of the ADR issuers as described by the study are discussed in the following section. The following section complements the discussion of SOX's related parts and intends to clarify how SOX's regulations might impact ADR issuers.

3.3. Factors that boost the value of the ADR issuers

In the finance literature, the results reported in studies focusing on the market reactions to cross-listings have been mixed. In the early 1990s, some studies found that the market barely reacts to cross-listings[102]. These studies focus on London, Tokyo, Toronto, and Continental Europe. In the late 1990s and more recently, studies on the subject report that market reactions to cross-listings are significant when the listing takes place in Anglo-Saxon stock exchanges[103].

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[102] Lee (1991), Varela and Lee (1993), and Lau et al. (1994).
[103] Foerster and Karolyi (1999), Miller (1999), Doukas and Switzer (2000), Salva (2003), and Peter Roosenboom and Mathijs A. Dijk (2009).

The majority of the empirical studies on international listings focus on the share price reactions around a firm's cross-listing decision. They use the event study methodology to carry out these studies; the event date is chosen as the date related to the firm's cross-listing decision and the abnormal returns associated with the underlying stocks around the event date are measured to find if the cross-listing positively or negatively impacts the firm values.

The length of the event window and return frequency employed in these studies vary; some use event-studies with monthly and weekly returns and a two-year event window, while others use daily returns and two or three month event windows.

Description of the event date also differs across studies. While some studies focus on listing dates as event dates, others use exchange-application, application-acceptance, or regulatory-approval as event dates.

While the results reported in the literature indicate that the U.S firms listing on major global equity markets do not benefit from the listing, the foreign firms that list on U. S markets experience significant share-price reactions[104].

The most comprehensive studies on the issue are those of Miller (1999)[105] and Foerster and Karolyi (1999)[106]. Miller (1999) employs an event study with a 180-day event window around the cross-listing announcement dates; Miller uses daily returns and finds that there is a positive abnormal return of 1.15 percent. This means that the average firm

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[104] Foerster and Karolyi (1999), Miller (1999), Doukas and Switzer (2000), Salva (2003), and Peter Roosenboom and Mathijs A. Dijk (2009), Lee (1991), Varela and Lee (1993), and Lau et al. (1994).
[105] Miller (1999)
[106] Foerster and Karolyi (1999)

value increases by 1.15 percent as a result of cross-listings. This indicates that the investors realize that the cross-listing of these firms would be to their advantage.

Foerster and Karolyi (1999)[107] use Miller's sample but employ weekly returns and a two-year event window. They discover that there is a positive average abnormal return of 1% and that the pre-announcement weekly abnormal return increases by 10%, while the post-announcement weekly abnormal return decreases by 9%. Their most significant finding is that the share price reaction is as pronounced for developed-market firms as for emerging-market firms. This finding confirms Miller's findings and demonstrates that cross-listings provide a good opportunity for foreign firms to reap benefits and increase their firm value. This study also shows that the benefits from cross-listings are still significant even though firms come from countries with varying levels of corporate governance.

A few studies look for the reasons why foreign firms want to issue DRs in the U.S. market. The results of these studies are presented below.

Why the foreign firms pursue ADRs:

These studies show that there are a number of reasons why foreign firms issue ADRs: first, to access low cost capital; second, to increase the liquidity of their stocks; third, to increase their prestige.

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[107] Foerster and Karolyi (1999)

Karolyi (2006)[108] surveys the literature involving ADRs and forms several theories as to why the foreign firms issue ADRs, despite the resulting risks.

He theorizes that foreign firms take the opportunity of issuing ADRs to access low cost capital. He explains that when ADRs are issued in U.S. markets, U.S. investors can buy them as easily as they buy the stocks of U.S.-based firms; the more that U.S. investors buy, the better the opportunities for foreign firms to mobilize the capital in U.S. markets. This source of capital is not easy to acquire if these foreign firms do not issue ADRs because of the many difficulties of international investment barriers that block U.S investors from directly buying foreign stocks. Thus, the issuance of ADRs is an opportunity for foreign firms to access low cost capital in the U.S. stock markets.

The second reason that foreign firms issue ADRs is to increase the liquidity of their stock. Several studies have noted that issuance of ADRs by foreign firms in a high liquidity equity market like U.S. market helps increase the liquidity of their stock[109].These studies explain that when foreign firms issue ADRs, their stocks' trading is expanded from one market (the local market) to two markets (the local market and the U.S. market); thus, the liquidity of the firms' stocks is increased. These studies also explain that the reputational impact on the foreign firms issuing ADRs. When a stock somehow gains recognition, the investors might buy more of this stock and thus increase its liquidity.

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[108] Karolyi (2006)
[109] Tinic and West (1974), Noronha, Sarin and Saudagaran (1996), Foerster and Karolyi (1998), Smith and Sofianos (1996), Silva and Chávez (2008), Halling et al. (2008)

Various studies[110] have shown that the prestige of the foreign firms issuing ADRs is another motivation for them to list their ADRs on the U.S. markets. These studies indicate that the U.S. market has an advanced legal infrastructure that requires ADR issuers to comply with the requirements of high standards in their financial reporting; this advanced legal system also efficiently protects the rights of the minority investors from any fraud by the majority investors or by the firms' managers. Thus, when foreign firms issue ADRs, the investors both in the local market and in the U.S. market have more faith in the quality of these foreign firms; this leads to reduced risk premiums and consequently an increase the ADR issuing firm's value.

The reasons described above are positive factors that persuade foreign firms to issue ADRs. However, there are negative factors that may inhibit them from engaging in the issuance of ADRs. Karolyi (1998 and 2006)[111] describes some of these negative factors that foreign firms have to deal with when they want to issue ADRs: first, the foreign firms have to convert their accounting reports to fit the standards of U.S. markets; second, they are required to comply with additional disclosure requirements and to deal with other listing costs. In order to comply with these requirements, foreign firms have to pay more and change their managerial reporting systems.

As analyzed above, there are some positive and some negative factors impacting the foreign firms' decisions about issuing ADRs. Foreign firms must consider both the positive and the negative reasons before deciding whether they should issue ADRs.

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[110] Coffee (1999), Mitton (2002), Durnew & Kim (2005), Ashbaugh, Collins and LaFond (2006)
[111] Karolyi (1998 and 2006)

Based on the examination of recent studies in the field of cross-listings, Karolyi theorizes four possible factors that boost the value of the cross-listing firms: (1) overcoming market segmentation, (2) increased market liquidity, (3) improved information disclosure, and (4) better investor protection (bonding).[112]

3.3.1. Market segmentation

Globalization helps DR issuers from home countries that are isolated from world market to access to capital sources with lower costs, diversify their capital resources and decrease their systematic risk exposure. As a result, access to international capital markets helps decrease the market segmentation and increase the value of ADR issuers.

Karolyi[113] states that in recent decades, the world has been witnessing a rapid development of technology that in turn accelerates the process of globalization in many fields of the economy and in society at large. In the financial field, investors have been witnessing the fact that international financial markets are progressively becoming one huge, integrated, global capital market. The companies involved in this process have a good chance to benefit from the process of globalization. One of these benefits is the opportunity to reduce cost of capital and increase their share value. It is not difficult to imagine the reasons why the firms involved in the process of financial globalization attain lower cost of capital. There are two channels leading to cost reduction: first, ability to raise capital at a lower cost; second, the benefits from diversification of sources of capital.

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[112] Karolyi (1998, 2006).
[113] Karolyi (1998, 2006).

The traditional argument about why cross-listing boosts firm value is that cross-listing helps foreign firms overcome international investment barriers and reduce the cost of capital as the risk premium resulting from the investment barriers dissipates[114]. The broader the range of capital markets that firms can access, the lower the cost of capital the firms can achieve.

According to the market segmentation hypothesis, the value boost the cross-listed firms can achieve depends on the degree to which the home country is integrated into the world capital markets. The more closely integrated the home country of the cross-listed firms is with the world capital markets, the lower the value these firms extract when they cross-list. In contrast, the less closely integrated the home country of the cross-listed firms is, the higher the value these firms can extract when they cross-list. The logic behind this argument is that if the home country of the cross-listed firms is somewhat isolated from the world capital market, these firms have lesser chance of accessing global capital markets where they can borrow with low cost or diversify their capital. As a result, the only alternative these firms have is to borrow at a high cost. Afterwards, if an isolated country decides to participate in the world market, the big gap in the cost of capital between the isolated country and the world capital market is diminished, and the cross-listed firms can borrow capital at substantially lower cost, and, thus, their firm value is increased significantly. In contrast, if the home country of the cross-listed firms is more integrated with the world capital market, these firms are likely to borrow capital with lower cost or are able to diversify their capital. In reality, the gap between the cost of capital in the given country and the world market is small; therefore, if this country

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[114] Stapleton and Subrahmanyam (1977), Alexander, Eun and Janakiramanan (1987), Eun and Janakiramanan (1986), and Errunza and Losq (1985)

decides to participate more in the world market, the cross-listed firms in this country may not be able to acquire capital at substantially lower cost. Consequently, their firm value could not increase significantly.

Many studies have examined this argument, and their results are presented in the following section.

Miller (1999) [115] explores the difference between the stock returns (around the announcement to issue the ADRs) of the foreign firms from the developed countries and those from the emerging countries. He discovers that cross-listing in the U.S. market is associated with significantly higher announcement returns for the firms from the emerging countries compared to those for the firms from the developed countries. Lins et al. (2005)[116] emphasize the importance of access to external capital markets, especially for the firms from the emerging countries. Peter Roosenboom and Mathijs A. van Dijk (2009)[117] examine the impact of the cross-listing on many different stock markets in the world. Their study reveals that cross-listings has a significantly positive impact on almost all of the markets; they also discover that this impact varies in the different markets. The results show that there is an average increase of announcement return of 1.3% on the U.S. exchanges, 1.1% on the London Stock Exchange, 0.6% on exchanges in Continental Europe, and 0.5% (not statistically significant) on the Tokyo Stock Exchange.

3.3.2. Market liquidity

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[115] Miller (1999)
[116] Lins et al. (2005)
[117] Peter Roosenboom and Mathijs A. van Dijk (2009)

There have been many studies conducted to determine whether cross-listings help to increase the liquidity of foreign firms. Even though these studies use various measurements that represent the firms' liquidity, the results of these studies consistently show that cross-listing tends to increase the foreign firms' liquidity.

In their surveys of corporate managers who have cross-listed their firms on the foreign stock markets, Fanto and Karmel (1997)[118] present evidence that the increase in liquidity motivates them to issue ADRs in the U.S. market. Karolyi (1998)[119] in his survey of studies about the effects of cross-listings on the foreign firms' liquidity confirms the hypothesis that liquidity changes as a response to cross-listings. Early studies by Tinic and West (1974)[120] on 112 Canadian stocks listed on the U.S. stock market find evidence that those stocks have lower bid-ask spreads than their purely domestically-traded counterparts (these lower bid-ask spreads show higher liquidity). Noronha, Sarin and Saudagaran (1996)[121] show that there are no measurable differences in daily weighed-average spreads for U.S. companies after they list on the London and Tokyo exchanges. Foerster and Karolyi (1999)[122] provide evidence that there is a 29% increase in intraday volume and a 44 basis-point decline in intraday effective spread for 52 Canadian companies that list on U.S. stock exchanges.

The studies about the effects of cross-listing on the cross-listed firms' liquidity also find that cross-listing on stock markets that have high liquidity can lead to an increase in the cross-listed firms' liquidity and a decrease in their cost of capital. Smith and Sofianos

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[118] Fanto and Karmel (1997)
[119] Karolyi (1998)
[120] Tinic and West (1974)
[121] Noronha, Sarin and Saudagaran (1996)
[122] Foerster and Karolyi (1999)

$(1996)^{123}$ find a substantial increase in the combined value of trading for a sample of the cross-listed firms on the NYSE. Silva and Chávez $(2008)^{124}$ find that Latin American firms with an ADR do not always exhibit a liquidity advantage in the local market. Halling et al. (2008) document that for cross-listing on U.S. market, the fraction of trading that occurs on the destination market is greater for firms from countries that are geographically close to the U.S. and for firms from less developed countries.

3.3.3. Information disclosure

When foreign firms issue DRs in world markets, they know that they have to adapt to a new environment that requires a higher level of information disclosure. Even though this requirement increases the compliance cost for the DR issuers, it also helps increase their prestige in the eyes of investors. This increase in prestige usually increases their stock price, which can offset the compliance costs and, as a result, increase the firm value.

Coffee $(1999)^{125}$ notes that a good legal system built up by the governments from developed countries is designed to protect fraud. A century of experience in developed countries testifies to the fact that their legal systems have changed continuously to protect the legal rights of both majority and minority investors. The U.S. system of securities regulation is one of the most advanced structures of those of the developed countries. That not only indicates a higher standard of disclosure but also directly seeks to reduce agency costs. In recent years, harmonization of higher standards of disclosure from

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[123] Smith and Sofianos (1996)
[124] Silva and Chávez (2008)
[125] Coffee (1999)

developed economies helped worldwide issuers, especially those from emerging economies, providing transaction cost saving and giving them access to many markets in the world. The U.S. legal system is very strict; it limits the power of majority shareholders and protects the rights of minority shareholders. As a result, agency costs are reduced, large firms can sell more shares in public markets, the cost of capital is reduced, and the economy grows. Fuerst (1998)[126] studies the relationship between the willingness of managers of cross-listed firms and the level of regulatory strictness of the market where they intend to list their depositary receipts. The study finds that the regulatory strictness of the stock markets of developed countries such as the U.S. or United Kingdom has a positive relationship with the willingness of the firms' managers who intend to cross-list their depositary receipts on foreign stock markets. The study confirms that the stricter the regulatory environment, the higher the willingness of the cross-listed firms' managers to cross-list in that stock market. The study explains that in a stricter regulatory environment, the cross-listed firms are required to disclose more of their private information about the minority investors' protection. This requirement increases the firms' costs because the firm has to complete several procedures to satisfy it; however, this increased cost is being offset by higher stock prices when the investors realize that the firm value is higher in a stricter legal environment. The managers know the benefit the firm can gain in a stricter legal environment; therefore, they are willing to list in stock markets that have stricter legal environments.

Many scholars argue that firms in a country with a weak national legal system and feeble national financial system have to deal with many difficulties to gain the investors'

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[126] Fuerst (1998)

confidence. However, they state that these firms can develop despite the disadvantageous legal environment. They argue that these firms can build up some bonding strategies with foreign partners, who usually come from developed countries where the legal system is strong in order to build up investors' confidence. These scholars explain that when foreign firms list their depositary receipts in the stock market of a developed country, they show investors that they voluntarily subject themselves to stricter requirements of corporate governance and hence bond themselves. It is argued that such "bonding" increases the investor confidence in these firms, and accordingly reduce cost of capital.

Mitton (2002)[127] finds that corporate governance has an important role not only at the country level but also at the firm level. This means that the firms should improve the quality of corporate governance in order to increase investors' confidence and consequently increase firm value. Coffee (1999) [128] states that in a weak legal environment, firms must design strategies to gain investors' confidence. Durney & Kim (2005)[129] find that there is a positive relationship between a firm's choice of governance and disclosure practices and the following benefits: growth opportunities, external finance, and ownership concentration. They argue that if firms have a good corporate governance structure and disclosure practice, they can achieve high growth opportunities, acquire cheap external financial sources and diversified ownership concentration. These authors also indicate that these positive relationships are stronger in countries with weaker legal systems where firms meddle in governance and disclosure practices in

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[127] Mitton (2002)
[128] Coffee (1999)
[129] Durney & Kim (2005)

hopes of expanding growth opportunities, obtaining cheaper external finance, and increasing the ownership concentration.

Ashbaugh-Skaife, Collins, and Lafond (2006)[130] find that there is a positive relationship between corporate governance and "credit ratings". They indicate that the stronger the quality of corporate governance, the higher the level of credit ratings and the lower the cost of capital the firms can obtain.

An essential aspect of an advanced legal system such as the U.S. legal system is disclosure. Mitton (2002)[131] argues that the disclosure quality is an important element of corporate governance. In contrast, disclosure is usually nonexistent in emerging economies. If the firms are listed in the U.S. securities markets, it means that they qualify for the U.S. stock exchanges and are thereby qualified in the minds of the investors. Doidge, Karolyi, and Stulz (2004)[132] and Lins, Strickland, and Zenner (2005)[133] find that cross-listings help firms in an emerging economy improve market valuation and solve capital constraints.

Cantale (1996), Fuerst (1998), and Moel (2001)[134] show that firms can use cross-listings in advanced foreign markets with stringent disclosure requirements to prove their quality to investors. Some exchanges have more stringent disclosure requirements than others, but cross-listings do not affect the information environment of firms through compulsory disclosure alone. Baker et al. (2002), Lang et al. (2003a), and Lang et al. (2003b)[135] show

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[130] Ashbaugh-Skaife, Collins, and Lafond (2006)
[131] Mitton (2002)
[132] Doidge, Karolyi, and Stulz (2004)
[133] Lins, Strickland, and Zenner (2005)
[134] Cantale (1996), Fuerst (1998), and Moel (2001)
[135] Baker et al. (2002), Lang et al. (2003a), and Lang et al. (2003b)

that cross-listings are associated with increased media attention, greater analyst coverage, improved accuracy of analysts' forecasts, and higher quality of accounting information.

3.3.4. Investor protection

Siegel (2005)[136] argues that bonding is a commitment used by firms from emerging countries. These commitments are usually offered to their foreign partners during good economic times and ensure that majority shareholders will not take over/expropriate the assets of minority shareholders or outside partners/foreign investors during periods of economic shock. These commitments are extremely important not only for the short term but also for the long term operation of the firms. The outside partners or foreign investors are always paranoid about the safety of their capital and even more so during a crisis period. If the companies make a reliable commitment firmly guaranteed during a crisis period, then they would attract more investors and mobilize capital more readily.

The commitment of the companies is only part of what the firms and the outside partners/dispersed partners have to get through together in order to satisfy each other. The other part is a guarantee by a legal system designed by the government to insure that the commitment of the firms would be honored.

In the last two decades, there have been many debates about the rights of dispersed and concentrated ownership[137]. Initially, some scholars fashioned the "political" theory of corporate finance, which accounts for restrictions by U.S. laws on institutional

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[136] Siegel (2005)
[137] Coffee (1999).

activism[138]. Based on this theory, the rights of dispersed ownership are better protected than the rights of concentrated ownership; however, this result is caused by political forces, not economic efficiency[139]. In recent years, many scholars who study dichotomies in rights between dispersed and concentrated ownership and the effects of these differences on the growth of stock markets suggest that legal protections for minority shareholders is a critical variable in the development of viable security markets[140].

Several studies reveal strong relationships among the development of a national legal system, the progress of a national financial system, and increases in national economic growth. They find that a weak national legal system results in a weak national financial system that adversely affects the firm's ability to mobilize capital. La Porta et al. (1997)[141] find strong evidence that the legal environment has pronounced effects on the size and breadth of capital markets across countries. The countries with poorer investor protections, measured by both the character of legal rules and the quality of law enforcement, have narrower capital markets. This finding applies to both debt and equity markets. These authors discover that the British common law has better investor protections for both shareholders and creditors against expropriation of insiders in comparison with French civil law; therefore, investors in countries under the English common law are willing to invest their money in capital markets and thereby help these markets to become more developed capital markets compared to countries subject to

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[138] Roe (1991). This political theory argues that political force instead of economic efficiency explains corporate structure and shareholder behavior. According to this theory, the U. S. and Great Britain law limits the ownership of the owners in the large institutions because they are afraid that the vast majority can damage market efficiency. This political force is the primary cause of the fragmented ownership of the public firm instead of demands of technology and diversification of investors.
[139] Coffee(1999).
[140] Coffee (1999).
[141] La Porta et al. (1997)

French civil law. As a result, the British common law provides a good opportunity for external finance, including debt and equity, for the firms. Accordingly, these authors also find that richer countries have better law enforcement than poorer countries.

Wurgler (2000) [142] confirms La Porta et al.'s 1997 findings; he indicates that the protections of the minority investor rights are associated with better capital allocation. He shows that in developed financial systems, in which the minority investor rights are protected, investors would overinvest their capital in growing industries and limit their investment in declining industries. These effective investments build developed capital markets, and firms have better opportunities to acquire cheaper financial sources, including both debt and equity.

Coffee (1999) [143] says that, in an ideal world, a good legal system is developed by the governments from both developed and developing countries to protect the rights of the minority investors. This is only wishful thinking. Some studies found the legal systems in developing countries so weak that they are unable to protect the rights of the dispersed investors.

It is fortunate that companies in developing economies can temporarily "borrow" the legal systems of the developed economies to help companies gain the trust of investors in their companies' commitments. By setting up close cooperation with partners in developed countries, firms in developing economies can take advantage of the excellent

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[142] Wurgler (2000)
[143] Coffee (1999)

legal system of the developed countries to improve their operations. This also improves the minority investors' confidence in the firms in which they invested[144].

How can the companies bond themselves and develop in a weak financial institutional setting? Some previous studies showed that these companies can use cross-listings. Doidge, Karolyi, & Stulz (2004a)[145] find that cross-listing helps companies earn the trust of outside investors, provides benefits to the companies and improves market valuation. Lins, Strickland, & Zenner (2005) and Roosenboom and Dijk (2009)[146] find that firms in developing economies benefit from cross-listing in the U. S. stock markets. These authors state that when the ADR firms cross-list in the U.S. stock markets, they lower capital constraints by acquiring more opportunities to access external capital markets.

Coffee (1999) and Stulz (1999)[147] argue that firms can "bond" themselves by cross-listing in stock exchanges with higher standards of investor protection in order to protect minority shareholders. Doidge et al. (2004a)[148] model the cross-listing decision as a trade-off between private benefits of control and taking advantage of growth opportunities by bonding to reduce the cost of capital. They show that firms with cross-listings in the U.S. have a higher valuation than non-cross-listed firms, especially when they have high growth opportunities. Reese and Weisbach (2002) and Lins et al. (2005) [149] show that cross-listings by firms from countries with weaker investor protections lead to greater subsequent equity issues and a relaxation of capital constraints.

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[144] Doidge, Karolyi, and Stulz (2004a)
[145] Doidge, Karolyi, & Stulz (2004a)
[146] Lins, Strickland, & Zenner (2005) and Roosenboom and Dijk (2009)
[147] Coffee (1999), Stulz (1999)
[148] Doidge et al. (2004a)
[149] Reese and Weisbach (2002) and Lins et al. (2005)

Doidge et al. (2004a)[150] finds that the voting premiums of firms with dual-class shares are considerably lower for cross-listed firms. Chung (2006)[151] argues that investor protection also affects the liquidity of ADRs.

Overall, cross-listings help foreign firms (the DR issuers or ADR issuers) decrease the market segmentation, improve liquidity, and increase the prestige regarding information disclosure and minority shareholder protection. As a result, it helps foreign firms increase firm value.

4. Hypotheses Development

The hypotheses presented below represent some of the central testable predictions concerning the effects of the SOX Act on firm value using the crucial factors (the level of institutional development in the home market -developed and emerging countries-, listing exchange and firm-size) affecting the firm value of the ADR issuers. The preceding review of literature and the conceptual overview led to the development following four hypotheses:

- Hypothesis 1: The CSARs before SOX and the CSARs after SOX are different. This hypothesis states that the difference between the CSARs in two periods (pre-SOX and post-SOX) is significant. This means that the economic effect of SOX on the ADR issuing firms' value is significant.

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[150] Doidge et al. (2004a)
[151] Chung (2006)

- Hypothesis 2: The level of institutional development does not have differential effect on the CSARs measured in pre and post SOX periods. In other words, the hypothesis states that the institutional domicile of the firm does not have any bearing on the impact of SOX.

- Hypothesis 3: The CSAR differentials are not influenced by the listing market. This hypothesis supposes that regardless the listing market (NYSE or NASDAQ) the impact of the SOX on ADR issuing firms is insignificant.

- Hypothesis 4: The firm size does not affect CSAR differentials; accordingly the impact of the SOX is neutral to firm size.

5. Data and methodology

5.1. Data

The sample includes all ADRs (level-2 and level-3) listed on the NYSE and NASDAQ from 3/01/1994 to 12/31/2010. This sample is divided into two groups: the first group includes the ADRs listed in the period from 7/31/2002 (when SOX was enacted) to 12/31/2010; the second group includes the ADRs listed in the period from 3/01/1994 to 7/31/2002. The length of each period is eight years and the entire sample spans a sixteen year period. The sample was divided into two groups to create a control group.

The ADRs in the sample were collected from an ADR database maintained by the Bank of New York Mellon. The initial sample has 401 ADRs, in which there are 238 ADRs listed in the first period (referred to as pre-SOX period) and 163 ADRs listed in the

second period (referred to as post-SOX period). The initial sample was narrowed down based on the availability of data. Consequently, the final sample includes 208 ADRs for the whole period under study, in which there are 85 ADRs in the post-SOX period and 128 ADRs in the pre-SOX period. Since the objective of the study is to examine SOX's effect on the ADR issuers, the date on which ADR issuance announced is chosen as the event day. The announcement date is the day the foreign firm announces the details regarding the issuance of an ADR on a particular U.S. stock market. It is also the first day the public receives information regarding the new ADR issue. The announcement date is different from the listing date because the latter is the first day the stock is listed and traded in the market, while the former occurs prior to listing and trading. To measure how much of an impact the announcement of an ADR issuance has in the issuer's home market, the announcement date is used as the event date.

Any ADR with an announcement date available in the database is considered for the final sample; otherwise it is eliminated from the final sample. The announcement dates were screened in NexisLexis® Academic database.

The availability of the ADR announcement date is the first condition the ADRs must meet to be considered for the final sample. The second condition is the availability of the listing dates, which were drawn from Bank of New York Mellon. Sometimes, an ADR issuer announces its intention to issue an ADR; however, after this announcement the ADR issuer may not list their stock on a U.S. stock market for various reasons. The failure to follow through or delay may have an impact on the firm value. However, the study excludes these cases from the sample. Overall, any ADR with the necessary

announcement information and data is included in the final sample. Underlying stock price data and index values were extracted from DataStream.

5.2 Methodology

As discussed in the literature review, there are three factors that might impact the stock return around ADR issuance announcement date: the local market dynamics, the certification effect of the ADR issue and the potential implications of SOX. In order to disentangle these three factors a controlled event study methodology is employed. In order to capture the impact of ADR announcement a standard event study design is used. The event date in this set up is the "announcement date" of the ADR issuance. If ADR issuance signals "bonding " or an implicit improvement in corporate governance and therefore potentially lower cost of capital for the issuing firm, investors are expected to respond to the announcement with an anticipation of lower required returns. This should increase the firm value. If a comparison between the firm value in the wake of ADR issuance announcement can be made with the value that would prevail in the absence of the announcement, the impact of the announcement on the firm value can be isolated. Event study framework facilitates such comparisons and allows isolation of the impact of an event on the firm value. While one can isolate the impact of the ADR issue announcement on the firm value, in the post-SOX period, this impact would also include the implications of the SOX regulations on the foreign firm's issuing ADRs in the U.S. equity markets. In order to capture the impact of the SOX regulation, two sets of event studies are conducted. The first set of event studies are conducted during the period

preceding the introduction of the Sarbanes-Oxley act. The impact of the ADR issuance announcements are captured for the sample firms during this period where the impact will only consist of certification effect of an ADR issue. A second set of event studies are conducted on a matching sample which includes ADR announcements from the same industries, countries and by companies with similar size to the companies analyzed in the pre SOX period[152]. The announcement affects captured in the second period consist of combined effect of "certification" and "Sarbanes-Oxley act". The unexpected changes in firm values captured in both periods are compared and differences are tested for statistical significance. In order to elaborate on the methodology, standard event study methodology is introduced in the following section.

5.2.1. Standard Event Study Methodology:

An event study methodology is used to measure the impact of a specific event on firm value. This methodology is supported by the theory that the effect of an event will be immediately reflected in security prices. To measure the effect of a specific economic event, researchers can use financial market data observed in a relatively short time period. In this study, the specific event is the announcement made by an ADR issuer regarding their intention to list its ADR.

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[152] When the country matching criterion cannot be met because there is no ADR in the pre-SOX period with the same country as another ADR in the post-SOX period, the study uses a specific corporate governance index to replace the country criterion. This index was developed by La Porta et al. (1999). Based on a survey conducted in many countries (emerging and developed), La Porta et al. built up a list that evaluates the level of corporate governance for a number of countries. All the countries in the study's sample are included in that list. The rationality in choosing a matched ADR in the pre-SOX period (following the matching criterion of the corporate governance index) is that this type of ADR has the home country with the closest corporate governance index to that of the ADR in the post-SOX period.

The event study methodology has been applied in many fields such as finance, accounting, law, and economics. In these fields, the researchers use the event studies to measure the effects of mergers & acquisitions, earnings announcements, issues of new debt or equity, announcements of macro–economic variables such as the trade deficit, and changes in the regulatory environment.

The event study methodology often focuses on one particular class of security, usually shares of common stock affected by the event.

5.2.2. Market Model

The event can take place at different points in time or clustered on a particular date. Let t stand for time when the event takes place and i stand for a class of security. The return of a sample security i at the time t is presented as:

$$R_{it} = K_{it} + e_{it} \tag{1}$$

where:

R_{it} = return of security i at the time t (actual return)

The returns are defined as follows:

$$Return = LN \frac{P_t}{P_{t-1}} \tag{2}$$

where

P_1 = closing price of stock for the present day

P_{t-1} = closing price of stock for the previous day

K_{it} = normal or expected or predicted return given a particular of expected return

$K_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$

$AR_{it} = R_{it} - K_{it}$ = abnormal or unexpected return

Therefore:

$AR_{it} = R_{it} - K_{it}$ or $e_{it} = AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$ (3)

where α_i = the intercept term and β_i = the systematic risk of stock i

R_{mt} = the rate of return on a market index (such as Standard & Poor's 500) at the time t.

The abnormal return AR_{it} is the difference between the observed return and the predicted

return. Furthermore, the abnormal return AR_{it} is the difference between the return

conditional on the event and the predicted return unconditional on the event. Therefore,

the abnormal return is a direct measure of the unexpected change of the security's return

associated with the event.

While there are several models that can be used to estimate the expected returns, in this

study the market model used to estimate returns[153]. Market model regression was used to

estimate the model parameters α and β:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$ (4)

where R_{mt} is daily the return on local market index of the ADR issuer in local currency,

and R_{it} is the daily returns of the issuer in local currency[154]. A 300-day period was used

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[153] It is widely reported the choice of estimation model has little impact on the event study results.

to estimate parameters α and β for each company in the sample. Estimation period ranged from t = -11 to t = -310 where t = 0 is the event/announcement date. The event window is defined as 10 days prior to the announcement date and 10 days after. The estimated coefficients α and β from the market model regression are used to predict the returns during the event window. As indicated earlier, the predicted returns represent expected returns based on all the available information during the estimation period. Any significant information following estimation period such as an earnings announcement, a major acquisition or fund raising attempt is likely to affect the stock returns and should create a deviation from the "model predicted returns". Provided that the date that this material information becomes available can be accurately captured, the impact of the event on the firm value can be measured as the difference between the actual returns and the model predicted returns. These so called "abnormal returns" reflect the impact of the information that becomes available to the investors. In the context of this study, firm returns were estimated during the event window, and were compared with the actual observed returns to capture the impact of ADR issuance announcements during the pre and post Sarbane-Oxley periods described above.

The event dates in this study were determined based on the information released to the press. Since ADR issuing announcement has significant implications on firm's perceived risk and cost of capital, investors are expected to react to this information by trading the shares. Although this information is expected to be incorporated to the prices instantly in

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[154] In event studies daily returns is the norm except when there is uncertainty about when the release of the information event occurred. For further insight on return frequency see Brown and Warner (1980; 1985) and Dyckman, Philbrick, and Stephan (1982).

efficient markets, it is plausible that information leakages and proper interpretation of the news may lead to changes in stock prices before and after the event date (the date the information is assumed to become available to the market). Therefore a 21 day event window was used in this analysis which consistent with the event windows used in similar studies.

5.2.3. Standardized Abnormal Returns:

In the event studies, cross-sectional regression analysis plays an important role. In order to capture the relative influence of the independent variables having different units of measurement, an essential step required in advance is the standardization of all variables in the cross-sectional regression models. This process results in standardized regression coefficients.

The standardization of the abnormal returns (SARs)[155] is expressed as follows:

$$SAR_{jt} = \frac{AR_{jt}}{\sqrt{s^2_{AR_{jt}}}}$$

(5)

Where

SAR_{jt} = SAR for firm j at time t

AR_{jt} = AR for firm j at time t

$\sqrt{s^2_{AR_{jt}}} = s_{AR_{jt}}$ = square root of the variance of the AR for firm j at time t

= standard deviation of the AR for firm j at time t

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[155] Michael Seiler 2003

The variance is given by the following equation[156]:

$$s^2_{AR_{jt}} = \left[\frac{\sum\limits_{t=-310}^{-11} \left(AR_{jt(est.period)} - \overline{AR}_{j(est.period)} \right)^2}{D_j - 2} \right] * \left[1 + \frac{1}{D_j} + \frac{\left(R_{mt(event.window)} - \overline{R}_{m(est.period)} \right)^2}{\sum\limits_{t=-310}^{-11} \left(R_{mt(est.period)} - \overline{R}_{m(est.period)} \right)^2} \right]$$

(6)

Where

$s^2_{AR_{jt}} = $ variance of the AR for firm j at time t

$AR_{jt(est.period)} = $ AR for firm j at time t over the estimation period

$\overline{AR}_{j(est.period)} = $ mean AR for firm j over the estimation period

$D_j = $ number of observed trading-day returns for firm j over the estimation period

$R_{mt(event.window)} = $ return on the local market at time t over the event window

$R_{mt(est.period)} = $ return on the local market at time t over the estimation period

$\overline{R}_{m(est.period)} = $ mean return on the local market over the estimation period

5.2.4. Cross-sectional Aggregation

In event studies, an event's average effect on the cross section of the firms is referred to as "Total SAR" or "TSAR" . The TSAR measures the event's average effect on firm value of all firms in the sample for each day in the event window. Then, a statistical test

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[156] Michael Seiler 2003

is performed using the TSAR values for each day of the event window to determine whether they are significant. The result of this test helps evaluate whether the event's effect is significant for the firm value of all firms in the sample for each day in the event window[157].

The TSAR is defined as follows[158]:

$$TSAR_t = \sum_{j=1}^{N} SAR_{jt}$$

(7)

Where

$TSAR_t =$ total SAR for each day in the event window

$SAR_{jt} =$ SAR of firm j at time t.

$N =$ number of firms in sample.

After the TSARs are calculated, statistical test are performed to determine if they are significant.

The Z-statistic on the TSAR is given by

$$Z_t = \frac{TSAR_t}{\sqrt{\sum_{j=1}^{N} \dfrac{D_j - 2}{D_j - 4}}}$$

(8)

where

$Z_t =$ Z statistic for each day in the event window

$TSAR_t =$ TSAR for each day in the event window

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[157] MacKinlay A. C. 1997 and McWilliam, A. & D. Siegel. 1997
[158] Michael Seiler 2003

D_j = number of observed trading-day returns for the firm j over the estimation period

N= number of firms in the sample

5.2.5. Time-series Aggregation (CTSAR)

In an event study, researchers are interested in measuring the effects of the event not only at a given event date "t" but also before and after the event date. The cumulative or aggregated impact of the event over a given interval may reveal the diffusion speed of the event in the market[159]. In order to capture the cumulative impact of the event individually, SARs are cumulated over a selected interval individually to calculate CSARs. Alternatively TSARs are cumulated over a selected interval to calculate CTSARs. The CTSARs capture the impact of the event on the cross section of the firms on in a given interval. Depending upon the objective of the analysis, the CTSAR can be cumulated into intervals of two or more days or over the whole event window. The CTSARs are tested to determine whether they are statistically significant.

The CTSAR is defined as follows[160]:

$$\text{Cumulative } TSAR_{T_1,T_2} = \sum_{t=T_1}^{T_2} TSAR_t \tag{9}$$

where:

$\text{Cumulative } TSAR_{T_1,T_2}$ = cumulative TSAR for each day in the event window

$TSAR_t$ = TSAR for each day in the event window

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[159] McKinlay A. C. 1997 and McWilliam, A. & D. Siegel. 1997
[160] Michael Seiler, 2003

T_1 = earliest date in the event window (-10)

T_2 = latest date in the event window (+10)

The Z-statistic for the CTSAR is given as follows[161]:

$$Z_t = (\frac{1}{\sqrt{N}})\left[\frac{\left(\sum_{T_1}^{T_2} SAR_{jt}\right)}{\sqrt{(T_2 - T_1 + 1)\left[\frac{D_j - 2}{D_j - 4}\right]}}\right]$$

(10)

Where:

Z_t = the cumulative TSAR Z-statistic for each day in the event window

N = number of firms in the sample

SAR_{jt} = SAR for firm j for each day in the event window

T_1 = earliest date in the event window (-10)

T_2 = latest date in the event window (ranges from -10 through +10)

D_j = number of observed trading day returns for firm over the estimation

period

5.3. Controlled Event Study and Isolation of SOX Effect with Matched Pairs

As briefly described above, in order to capture the impact of the SOX regulation, two sets

of event studies are conducted. The first set of event studies covered the period preceding

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[161] Michael Seiler 2003

the introduction of the Sarbanes-Oxley act. Using the SARs of each firm in the first sub-period, cumulative SARs (CSARs) are calculated for various event windows. The CSAR is defined as

$$CSAR_{t,j} = \sum_{t=T_1}^{T_2} SAR_{tj}$$

(11)

where:

$CSAR_{tj}$ = cumulative SAR of firm j for a whole event window

SAR_{tj} = SAR of firm j for each day in the event window

T_1 = earliest date in the event window (-10)

T_2 = latest date in the event window (+10)

The CSARs in the pre-SOX period represent the certification impact of the ADR issue announcements for each firm. In other words, investor reactions in this period reflect only the perceived impact of an ADR issue with no novel regulatory consideration. In contrast, CSARs calculated in the post-SOX period reflect a combination certification effect and the perceptions related to Sarbanes-Oxley regulation. Hence, it is conjectured that the differences in CSARs between the matching pairs of ADR announcements represent the impact of Sarbanes Oxley legislation on the ADR issuers. To ensure that as many factors as possible are controlled, 80 matching pairs of pre-SOX and post-SOX ADR issues are identified. CSARs for each company representing the pair individually calculated. Consequently, 80 CSAR differentials were calculated and the significance of the

differences are tested. Statistically significant cross sectional differences point to the significance of SOX legislation.

5.3.1. Cross-sectional Analysis of CSAR Differentials

The significance of the CSAR Differentials described in the previous section reveal the perceived impact of the Sarbanes-Oxley act on the ADR issuing firms. It is plausible to anticipate some cross sectional variation in the impact depending on the origin of the issuing firm, the listing market and firm size.

The origin of the ADR issuing firm matters because of the degree of segmentation. The argument is that the higher the degree of segmentation of the market where the ADRs originate from or list their underlying stocks, the higher the expected impact on the firm value when these firms announce ADR issues. Miller (1999)[162] uses institutional origin (developed versus emerging market) as a proxy for the degree of market segmentation. He argues that share value is affected by international restrictions on capital flows; therefore, the price reaction of cross-listing will differ from market to market depending on the degree of restriction. The countries that erect a high barrier against capital flows will experience larger abnormal returns upon cross-listing.

A similar proxy is employed in this study and matched ADR pairs were classified into emerging and developed country groups. An institutional origin dummy variable entitled "DEVELOPED/EMERGING" was used and assigned value of 1 if the matched pair is from a developed market and zero otherwise.

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[162] Miller (1999)

The listing market of the ADR has implications on the liquidity of the ADRs upon issuance. Earlier studies (e.g. Miller (1998), Merton (1987) and Chuhan (1992)[163]) indicate that the higher the recognition by the investors of the stock exchange where the ADRs are listed, the higher the ADRs' liquidity and the higher the expected valuation impact. Miller (1999) uses prominence of an exchange as a proxy for the effect of liquidity and investor recognition. He argues that when firms are listed on a major exchange, they have a good chance of getting recognized by investors and using the vast liquidity of such an exchange to increase their liquidity. Merton (1987) argues that an increase in "investor recognition" lowers the investors' required return and increase the firm value. Chuhan (1992) argues that the greatest barrier when for emerging market investments is the liquidity problem; this can be solved with cross-listing in a prominent exchange, which in turn is expected to have a positive impact on the firm value.

Accordingly we differentiate the listing market of the ADRs and use an exchange dummy (NYSE versus NASDAQ) as a proxy to test a joint hypothesis that liquidity and investor recognition segment the international capital market. The dummy variable "NYSE/NADAQ" takes value 1 if the ADR issue announcement indicates listing in NYSE and 0 otherwise.

Earlier studies analyzing the impact of the SOX regulation pointed to the fact that firms' absorption capacity of the regulatory costs depend on their size. These studies indicate that the larger the firm-size of the U.S. public firms, the lesser the burden these firms have to bear. Alexander (2010)[164] conducted a survey on managers regarding the compliance costs of SOX; he found that the smallest firms are the most severely

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[163] Miller (1999), Merton (1987) and Chuhan (1992)
[164] Cindy R. et al (2010)

burdened by these costs, whereas the largest firms are not. He argues that the benefits of the act outweigh the compliance costs in the large firms at the expense of small firms. Furthermore, several studies and surveys find that firm size has an important role in the firm's reaction to the act's effect on the firm value.[165] These studies indicate that small firms with firm value of float under $75 million are burdened with more compliance costs than the medium-size firms. Consequently, these studies establish that small firms are likely to face more negative effects than medium and large firms when they are impacted by the act. In order to explore the linkage between the firm size and the impact of Sarbanes-Oxley act, matched pairs of firms were divided into small, medium and large firm categories. Firms with a market capitalization of under $75 million are categorized as small firms. Firms with market capitalization above $75 million but under $700 million are categorized as medium size firms. Finally firms with market capitalization above $700 million, are categorized as large firms.

In order to explore the relationship between these variables and the impact of the Sarbanes-Oxley act, difference between the Cumulative Standardized Abnormal Returns (CSARs) in the post-SOX period and the CSARs in the pre-SOX period for various windows are used as dependent variable in various cross-sectional regressions. In each cross-sectional regression, CSAR differentials for a particular event window are used as dependent variable.

5.3.2. The cross-sectional Regression Model

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[165] Ribstein (2002), Solomon and Bryan-Low (2004), Romano (2005) and Cindy R. et.al (2010).

$$\Delta\ CSAR_i = \delta_0 + \delta_1\ NYSE/NASDAQ + \delta_2\ DEVELOP/EDEMERGING + \delta_3\ FIRMSIZE +$$

$$\varepsilon_i \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad (12)$$

where:

$\Delta\ CSAR_i$ = the difference between the CSARs in the post-SOX period and that those in the pre-SOX period at the event window i

δ_0 = the intercept

δ_i = the regression coefficients (i=1,2,3)

$NYSE/NASDAQ$ = NYSE or NASDAQ where the ADRs listed

DEVELOPED/EMERGING = Developed country or emerging country where the ADR lists the underlying stocks

FIRMSIZE = Firm size of the ADRs

$E\ (\varepsilon_i) = 0$

6. The results and discussion

6.1. The results

6.1.1. The general results of the statistical tests on the CTSARs in the two periods: the pre-SOX and the post-SOX

The results of the statistical tests on the CTSARs in the two periods (the pre-SOX and the post-SOX) clearly demonstrate that the CTSAR in both periods is significant.

Even though the primary objective of this study is to find SOX's effects by examining whether the difference of the CSARs in the two periods (the pre-SOX and the post-SOX) is significant; the result of the CTSARs in each period also yields a useful discovery.

The CTSARs in the pre-SOX period represent the ADR issue's effect on the firm value before SOX was enacted, and the CTSARs in the post-SOX period represent the ADR issue's effect on the firm value after SOX was enacted. The results of the CTSARs in the two periods give a general evaluation about the ADR issue's effect in these two periods. There have been a number of studies involving the ADR issue's effect on firm value (Miller, Karolyi and Litvak), but by using a different sample and a different methodology, the result varies.

6.1.1.a. The results of the statistical tests on the CTSARs in the pre-SOX period

(Insert table 1a in here)

The result of the statistical tests on the CTSAR in this period shows significance.

Overall, the results of the CTSARs in this period show that all the values from the first day to the 21st day in the 21-day event window are positive; this demonstrates that in the pre-SOX period, the ADR issue helps increase the stock return and also the firm value of the ADR issuers.

Even though the results of the CTSARs show positive values for all days in the event window, the CTSARs of each day in the first nine days of the event window do not show significance (at the test level is of 5 percent). The CTSAR at the ninth day has z-value and p-value of 1.45 and 0.15, respectively. On the tenth day, one day before the date event, the CTSAR becomes significant with z-value and p-value of 1.95 and 0.05, respectively. From this date to the last date of the event window, including the last 12 days in the event window, the CTSAR of each day maintains a significant value. On the event date, the CTSAR's significance reaches an especially high level with a z-value and p-value of 2.63 and 0.009, respectively.

Overall, the last 12 dates of the event window all have significant values; there are nine dates significant at a level of 5 percent and 3 dates significant at a level of 10 percent. The three dates significant at 10 percent are dates 14, 16 and 21 in the event window.

The z-value and p-value of the 20th (the date before the last date of the event window) are 2.01 and 0.04, respectively. The 21st date, the last date of the event window, has a z-value and p-value of 1.88 and 0.06, respectively.

In conclusion, even though the results of the first nine days in the 21- day event window do not show significance (at the 5 percent and 10 percent significance levels), those of the

last 12 days in the event window show significance; therefore, the statistical tests of the CTSARs in the pre-SOX period are significant.

6.1.1.b. The results of the statistical tests on the CTSARs in the post-SOX period

(Insert table 1.b here)

The results of the statistical tests on the CTSAR in this period also show significance.

One again, as the results in the pre-SOX period foreshadowed, the results of the CTSARs in this period show that all values from the first day to the 21st day in the 21-day event window are positive; this demonstrates that the ADR issue helps increase the stock return and also the firm value of the ADR issuers in the post-SOX period.

In terms of significant dates in the event window, there is little difference between the two periods. There are eight significant dates in the post-SOX period in comparison with 12 significant dates in the pre-SOX period.

The same occurrence appears in the pre-SOX period; even though the results of the CTSARs show positive value for all days in the event window, the CTSARs of each day in the first nine days of the event window are not significant (at the 5 percent level). The CTSAR on the ninth day has a z-value and a p-value of 1.35 and 0.18, respectively. On the tenth day, one day before the date event, the CTSAR becomes significant with a z-value and a p-value of 1.88 and 0.06, respectively (the test level at 10 percent).

After this significant date, the next four dates, including the event date and the 12th, 13th and 14th dates, show insignificance.

The last seven dates in the event window show significance; the 15th and 16th dates are significant at the test level of 10 percent and the last 5 dates are significant at the test level of 5 percent.

The z-value and the p-value of the 20th (the date before the last date of the event window) are 2.04 and 0.04, respectively. The 21th date, the last date on the event window, has a z-value and p-value of 2.07 and 0.04, respectively.

Overall, even though the results of the first nine days in the 21- day event window and the four dates including the event date and the 12th, 13th and 14th dates do not show significance (at the test levels of 5 percent or 10 percent), those of the last 7 days in the event window do show significance; therefore, the statistical tests of the CTSARs in the post-SOX is significant.

In conclusion, the statistical tests on the CTSARs in the pre-SOX period before SOX was enacted are significant, and the statistical tests on the CTSARs in the post-SOX period are also significant.

6.1.2. The mean difference of the post-SOX's CSARs and the pre-SOX's CSARs- the SOX's effects

(Insert table 2 here)

There are eight event windows analyzed, including (-10,10), (0,10), (0,5), (0,3), (0,1),(0,0), (-1,1) and (-3,3). The results of each event window are presented in the following section.

The means of the post-SOX period and the pre-SOX period are 0.89 and 0.69, respectively at window (-10, 10). The mean difference of the two periods has a z-value of 0.508 and a p-value 0.611 with significance level of 5 percent.

The means of the post-SOX period and the pre-SOX period are -0.11 and 0.25, respectively at window (0). The mean difference of the two periods has a z-value and a p-value of -2.82 and 0.005, respectively.   This is significant at the test level of 5 percent.

At window (0, 1), the means of the post-SOX period and the pre-SOX period are -0.19 and 0.30, respectively. The mean difference of the two periods has a z-value and a p-value of -2.3 and 0.02, respectively with significance at the test level of 5 percent.

The result of event window (0, 3) suggests that the mean of the post-SOX period is -0.10 the mean of the pre-SOX period 0.20. The mean difference of the two periods has a z-value and a p-value of -0.73 and 0.46, respectively at 5 percent significance level.

At window (0, 5), the means the post-SOX period and the pre-SOX period are 0.07 and 0.21, respectively. The mean difference of the two periods has a z-value of -0.36 and a p-value of 0.72 at 5 percent significance level.

The result of event window (0, 10) suggests that the mean of the post-SOX period is 0.32 and the mean of the pre-SOX period is 1.71. The mean difference of the two periods has a z-value of -2.1 and a p-value of 0.035. Here the significance level is 5 percent as well.

At event window (-1, 1), the mean of the post-SOX period is -0.20 and the mean of pre-SOX period is 0.15. Here the mean difference of the two periods has a z-value and a p-value of -0.87 and 0.38, respectively with significance level of 5 percent.

At event window (-3, 3), the mean of the post-SOX period and the pre-SOX period are 0.34 and -0.83, respectively. Here, the mean difference of the two periods has a z-value of -2.3 and a p-value of 0.02 with significance level of 5 percent.

Overall, in the eight event windows chosen to measure the SOX's effect, the results suggests that there are four significant event windows ((-10,10), (0,3), (0,5) and (-1,1)) at test level of 5 percent and four other insignificant event windows ((0,0), (0,1), (0,10) and (-3,3)) at the same significance level. The results of the statistical test on the event window (-10, 10) are critical because this event window covers the entire 21-day event window. However, the test result does not show significance. On the other hand, the results of event windows (0, 0), (0, 1), (0, 10) prove to be statistically significant.

6.1.3. The mean difference of the post-SOX's SARs and the pre-SOX's SARs in each date of the event window/ SOX's effect

(Insert table 3 here)

Here the test results of these mean differences vary. 52.38 percent of these tests are significant and 47.62 percent of them are insignificant. The results of the statistical tests of the mean differences for each date in the event window between the two periods are presented below.

On day (-10), the post-SOX period's mean is 0.15, and the pre-SOX period's mean is 0.02; the means of both periods are positive, and more significantly, the post-SOX period's mean is larger than that of the pre-SOX period. The values of z and p for the

statistical test are -1.6 and 0.11, respectively with significance at a test level of 5 percent. On day (-9), the post-SOX period's mean is -0.11, and the pre-SOX period's mean is -0.27. The means of both periods are negative, and the post-SOX period's mean is larger than that of the pre-SOX period. The values of z and p for the statistical test are -1.1 and 0.27, respectively. Here the significance level is at 5 percent. Day (- 8) shows that the post-SOX period's mean is 0.03, and the pre-SOX period's mean is 0.13; the means of both periods are positive, and the post-SOX period's mean is less than that of the pre-SOX period. The values of Z and p for the statistical test are -1.11 and 0.27, respectively with significance level of 5 percent.

The result of day (-7) suggests that the post-SOX period's mean is 0.09, and the pre-SOX period's mean is -1.04. The values of z and p for the statistical test are -3.86 and 0, respectively with significance level of 5 percent. On event window (-6), the post-SOX period's mean is -0.04, and the pre-SOX period's mean is 0.40. The value of z is -1.80 and the value of p is 0.07 with significance level of 10 percent. Result at window (-5) states that the post-SOX period's mean is 0.20, and the pre-SOX period's mean is 0.01. The values of z and p for the statistical test are -1.14 and 0.25, respectively with significance level of 5 percent.

On day (-4), the post-SOX period's mean is -0.18, and the pre-SOX period's mean is 0.31. The values of z and p for the statistical test are -3.04 and 0.00, respectively. Here the significance is at a test level of 5 percent. Similarly, on day (-3), the post-SOX period's mean is 0.17, and the pre-SOX period's mean is -0.35. Here, the values of z and p for the statistical test are -2.57 and 0.01, respectively with significance level of 5 percent.

On the event day (-2), the post-SOX period's mean is 0.09, and the pre-SOX period's mean is -0.16. Hence, the values of z and p for the statistical test are -1.53 and 0.13, respectively. Here the significance level is, once again, 5 percent. And on day (-1), the post-SOX period's mean is 0.17, and the pre-SOX period's mean is -0.24. The values of Z and p for the statistical test are -2.29 and 0.02, respectively. This result shows that the mean difference for each date in the event window between the two periods is reasonably significant at a test level of 5 percent. Similarly, day (0) shows a mean of -0.11 for the post-SOX period and 1.14 for the pre-SOX period. Here, the values of z and p for the statistical test are -1.69 and 0.091, respectively. This result shows that the mean difference for each date in the event window between the two periods is not significant at a test level of 5 percent.

Day (1) shows that the post-SOX period's mean is -0.08, and the pre-SOX period's mean is 0.25. The values of Z and p for the statistical test are -1.79 and 0.07, respectively with significance level at 10 percent. On day (2) the post-SOX period's mean is 0.06, and the pre-SOX period's mean is 0.05. The values of z and p for the statistical test are -0.28 and 0.78, respectively at 5 percent significance level. On day (3) the post-SOX period's mean is 0.03, and the pre-SOX period's mean is -0.52. Here the values of z and p for the statistical test are -2.68 and 0.01, respectively at 5 percent significance level. Day (4) shows that the post-SOX period's mean is 0.19, and the pre-SOX period's mean is 0.41. The values of z and p for the statistical test are -1.27 and 0.21, respectively with 5 percent significance.

Days 5, 6, 7, 8, 9, and 10 show statistical significance of 5 percent. For day 5 the post-SOX period's mean is -0.02, and the pre-SOX period's mean is -0.59The values of z and

p for the statistical test are -2.76 and 0.01, respectively. For day 6, the post-SOX period's mean is 0.13, and the pre-SOX period's mean is 0.61. The values of z and p for the statistical test are -2.98 and 0.00, respectively. For day 7, the mean values of the post-SOX period is 0.17, and the mean for the pre-SOX period is 1.22. The values of z and p for the statistical test are -3.06 and 0.00, respectively. For day (8) the post-SOX period's mean is -0.15, and the pre-SOX period's mean is 0.01. The values of z and p for the statistical test are -1.01 and 0.31. On fay (9) the post-SOX period's mean is 0.05, and the pre-SOX period's mean is 0. The z and p values for the statistical test are -0.18 and 0.86. Finally, day (10) indicates that the mean for the post-SOX period is 0.06, and for the pre-SOX periods 0.29. Z value here is -1.30 and p value is 0.19.

A summary of the overall results of this section is presented as follows:

Since there are 21 days in the event window, the comparison of the mean of the SARs for each date of the post-SOX period with that for each corresponding date (the same date in the event window) of the pre-SOX period gives 21 individual results, of which there are 11 of these dates (52.38 percent of all dates in the event window) that show significant differences between the compared means and there are 10 of those dates (47.62 percent of all dates in the event window) that show insignificant differences between the compared means. Of the 11 individual dates that show significance, 8 of these dates (72.72 percent) show significant differences at a test level of 5 percent and 3 of these dates (27.28 percent) that show significant differences at a test level of 10 percent.

The mean of the SARs for each date in the 21-day event window in the post-SOX period are positive for 14 dates and negative for 7 dates, while the means are positive for 13 dates and negative for 8 dates in the pre-SOX period.

After comparing the mean of the SARs for each date in the event window with that in the other period, the findings show that there are 11 dates for which the mean in the post-SOX period is larger than that in the pre-SOX period and 10 dates for which the mean in the post-SOX period is less than that in the pre-SOX period.

6.1.4. The results of the cross-sectional regression

(Insert table 4 in here)

In order to examine the effects of some factors on the CSARs, this study uses the values of the CSARs in eight windows: (-10,10), (0,10), (0,5), (0,3), (0,1),(0,0), (-1,1), and (-3,3). These windows are the same as those used for the mean difference analysis of the CSARs and SARs. The results show that two of the factors, DEVELOPED/EMERGING and NYSE/NASDAQ, have significant effects on SOX's effect while the remaining factor, FIRMSIZE, has an insignificant effect on SOX's effect. The results also show that two factors, DEVELOPED/EMERGING and FIRMSIZE have a negative impact, while the NYSE factor produces a positive effect on SOX's effect.

The results of the cross-sectional regression are presented as follow:

At window (-10, 10), the values of the standardized coefficient (δ) and p of the variable of DEVELOPED/EMERGING are respectively -0.21 and 0.06, while the value of the

standardized coefficient (δ) and p of the variable of NYSE/NASDAQ are respectively 0.21 and 0.10 and the value of the standardized coefficient (δ) and p of the variable of FIRMSIZE are respectively -0.23 and 0.86. If the test level is set at 10 percent, the result shows that the DEVELOPED/EMERGING and NYSE/NASDAQ variables are significant and the variable FIRMSIZE is not.

The negative value of the coefficient of the DEVELOPED/EMERGING variable in the regression equation shows an inverse relationship between SOX's effect and level of development of the country where the ADR issuers list their underlying shares. It suggests that the ADR issuers of the developed countries constitute a substantial proportion that increases the negative effect of SOX. That finding supports the argument that the ADR issuers from developed countries with strict controlling mechanisms (high auditing standards, required transparency in financial statements, the explicit responsibilities of managers) must spare more expenses for requirements that they have already met or at least almost met. This negatively affects the investors' attitudes and decreases firm values. This result also supports the situation facing emerging countries. The argument is that the ADR issuers of the emerging countries where the controlling mechanisms are inadequate must accept the compliance cost in order to access the U.S. market where they can bond themselves and increase their firm values; this increase in benefits could outweigh the compliance costs that affect investors' attitudes in a positive way. Consequently, we find that firm values increase.

The positive value of the coefficient of the NYSE/NASDAQ shows a consistent relationship between SOX's effect and the liquidity of the exchange where the foreign firms list the ADRs. It indicates that SOX's effect on the price reaction of the underlying

shares of the ADR issuers that list the ADRs on the NYSE is positive while that of the ADR issuers who list on the NASDAQ receive somewhat lower positive values. This finding is consistent with the argument concerning the effects of the higher liquidity of certain exchanges. The assertion is that the price reaction of the underlying shares of cross-listing firms is more positive on the exchanges that have greater liquidity compared with those exchanges that have lesser liquidity.

At window (0, 10), the values of the coefficient (δ) and p of the DEVELOPED/EMERGING variable are respectively -0.37 and 0.00 (indicates significance at a test level of 5 percent), while those of the NYSE/NASDAQ variable are respectively 0.01 and 0.95 (indicates insignificance at a test level of 5 percent), and those of the variable FIRMSIZE are respectively -0.09 and 0.47 (indicates insignificance at a test level of 5 percent).

The results concerning event window (0) indicate that the values of the coefficient (δ) and p of the DEVELOPED/EMERGING variable are respectively -0.11 and 0.33 (indicates insignificance at a test level of 5 percent), while those of the NYSE/NASDAQ variable are respectively 0.08 and 0.55 (indicates insignificance at a test level of 5 percent) and those of the variable FIRMSIZE are respectively -0.01 and 0.96 (indicates insignificance at a test level of 5 percent).

At event window (0, 1), the values of the coefficient (δ) and p of the DEVELOPED/EMERGING variable are respectively -0.15 and 0.19 (indicates insignificance at a test level of 5 percent), while those of the NYSE/NASDAQ variable

are respectively 0.02 and 0.86 (indicates insignificance at a test level of 5 percent) and those of the variable FIRMSIZE are respectively - 0.06 and 0.65 (indicates insignificance at a test level of 5 percent).

Window (0, 3) results suggest that the values of the coefficient (δ) and p of the DEVELOPED/EMERGING variable are respectively -0.08 and 0.47 (indicates insignificance at a test level of 5 percent), while those of the NYSE/NASDAQ variable are respectively 0.08 and 0.56 (indicates insignificance at a test level of 5 percent) and those of the variable FIRMSIZE are respectively -0.00 and 0.98 (indicates insignificance at a test level of 5 percent).

Results for window (0, 5) show that the values of the coefficient (α) and p of the DEVELOPED/EMERGING variable are respectively -0.08 and 0.47 (indicates insignificance at a test level of 5 percent), while those of the NYSE/NASDAQ variables are respectively 0.16 and 0.23 (indicates insignificance at a test level of 5 percent) and those of the variable FIRMSIZE are respectively 0.10 and 0.43(indicates insignificance at a test level of 5 percent).

At window (-1, 1) results suggest that the values of the coefficient (δ) and p of the DEVELOPED/EMERGING variable are respectively 0.59 and 0.59 (indicates insignificance at a test level of 5 percent), while those of the variable NYSE/NASDAQ are respectively 0.19 and 0.13 (indicates insignificance at test level of 5 percent), and those of the variable FIRMSIZE are respectively - 0.20 and 0.12 (indicates insignificance at a test level of 5 percent).

At the window (-3, 3), the values of the coefficient (α) and p of the DEVELOPED/EMERGING variables are respectively 0.15 and 0.12 (indicates insignificance at a test level of 5 percent), while those of the NYSE/NASDAQ variable are respectively 0.27 and 0.02 (indicates significance at a test level of 5 percent) and those of the variable FIRMSIZE are respectively -0.25 and 0.04 (indicates insignificance at a test level of 5 percent).

Overall, the results show that in the eight windows examined, there are four windows indicating certain factors having significant relationships with the CSARs. In the window (-10, 10), the most important window of this study, there are two factors evidencing their significance at the test level of 10 percent: DEVELOPED/EMERGING and NYSE/NASDAQ. In the window (0,10), one factor shows significance: DEVELOPED/EMERGING. And in the window (-3, +3), two factor shows significance: NYSE/NASDAQ and FIRMSIZE.

In terms of the factors' impacts on the CSARs, the study finds that the DEVELOPED/EMERGING variable shows a negative impact six out of eight times (75 percent) while the NYSE/NASDAQ factor shows a positive impact eight out of eight times (100 percent) and the FIRMSIZE variable results in shows a negative impact seven out of eight times (88 percent).

6.2. Discussion

6.2.1. The major pattern in the observations

In summary, the study results in three important findings. Firstly, SOX's effect on the ADR issue is not statistically significant. Secondly, foreign firms increasing firm values when they announce their ADR's issuance is significant statistically. And finally, the effects of the two factors (country, whether developed or emerging, and exchange [NYSE or NASDAQ]) on SOX's effect on the ADR issuers' firm values after SOX was enacted is statistically significant, while the effect of the third factor (firm size) on the ADR issuers' firm values after SOX's passage is not statistically significant.

These three discoveries are found when the study uses the largest event window (the 21-day event window) in carrying out the analysis. However, if the study uses smaller event windows, these latter results are not always consistent with those for the 21-day event window. This finding is confirmed for three major analyses carried out in this study: (1) using the CSARs in the mean different analysis for the cumulative windows, (2) using the SARs in the mean difference analysis for each date in the event window, and (3) using regression to analyze the effects of the factors. This inconsistency shows that SOX's effect is insignificant. Several studies[166] support this finding.

In the case of using the CSARs in analyzing the mean differences in the two periods, the result of using the 21-day event window shows that SOX's effect on the ADR issue is insignificant. On the other hand, the foreign firms' gain in their firm values when they announce the ADR's issuance after SOX's enactment is significant. However, when the study uses smaller event windows, the results are neither consistent among themselves nor when compared with the 21-day event window's result. When considering these results, we note that the CSARs' mean difference between the two periods and SOX's

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[166] Romano (2005) and Butler and Ribstein (2006)

effect on the ADR issue is insignificant and the foreign firms gain firm value when they announce their ADR's issuance. This finding differs from other findings[167] that the SOX's effect on the ADR issue is significant and that the foreign firms lose firm value when they announce their ADR's issuance.

When using the SARs in the analysis of the mean differences in the two periods, the results from each date of the 21-day event window show almost the same finding as those in the CSARs' case. Using the SARs, the study also finds that the number of event windows with results that support the significance of SOX's effect on the ADR issue is slightly less than those that indicate that SOX's effect on the ADR issue is insignificant. The SARs also show that the number of event windows with a positive mean for the SARs in the post-SOX period is slightly higher than those with a negative mean for the SARs in that same period.

When using regression analysis to determine the effects of the factors on SOX's effect on the ADR issue, the study also arrives at the same findings as those for the CSARs' case and for the SARs' case. The findings of the regression analysis show that when the study uses the 21-day event window, the result indicates two factors (country and exchange) that significantly impact SOX's effect. However, when the study uses smaller event windows, their results are not consistent with the result from the 21-day event window; they show that the effect of the two factors on SOX's effect on the ADR issue is insignificant.

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[167] Berger et al. (2006)

The reason that there is an inconsistency between the result of the 21-day event window and the results of the smaller event windows may be due to the fact that SOX's effect is not negative enough or positive enough to cause a significant negative impact or a significant positive impact on the firm values of the ADR issuers.

If SOX has a strong negative impact on the ADR issue, it can cause a significant negative impact on the results for almost all of the event windows in both the CSAR analysis and the SAR analysis. However, the study does not reveal this phenomenon. The study still finds that after SOX's issuance, the foreign firms significantly increase their firm values when they announce the issue of their ADRs. Furthermore, if SOX has a strong positive impact, it can help increase the significant positive impact on the results for almost all of the event windows in both the CSAR analysis and the SAR analysis. Once again, the study does not reveal this phenomenon. Therefore, this study concludes that SOX's effect on the firm values of the foreign firms that announce their ADRs' issuance is neither strongly positive nor strongly negative.

In terms of inconsistency among the factors' effects (country, exchange, and firm size) on SOX's effect on the ADR issuers' firm values, the reason might be because SOX's effect on the ADR issuers' firm value is insignificant. Therefore, the study is not able to find consistency in the factors' effect on SOX's effect. SOX's effect on the ADR issuers' firm value is so negligible, in some small event windows, that it cannot be detected; when the study uses the largest event window (the 21-day event window) that cumulates all of SOX's negligible effects in small event windows, there can be enough of a cumulative effect to reveal the significance in the factors' effects on the firm value of the foreign firms.

6.2.2. The relationship among the results

Even though, as the above discussion points out, the major pattern of the observations demonstrates that there are inconsistencies among the results of the largest event window (21-day event window) and the smaller event windows in each analysis of the CSARs, the SARs, and the regression analysis, the relationships among the results of these analyses is consistent.

In the CTSAR analysis, the results show that after SOX's issuance, the firm values of the foreign firms increase significantly when they announce their ADR's issuance. The CSAR analysis also supports this finding. The result of the CSAR analysis reveals that SOX's effect is insignificant, and half of the results of the event windows in the study show a positive mean for the CSARs in the post-SOX period. Most importantly, one of the event windows that shows a positive mean is the largest event window, which represents a critical result. The results of both the CTSAR analysis and the CSAR analysis support the argument that SOX's effect is insignificant and that the firm values of the foreign firms increase when they announce their ADR's issuance. This argument is confirmed by the results of the SAR analysis. The results of the SARs show that over half of the results of the event windows in the study indicate a positive mean for the SARs in the post-SOX period. Overall, the major results of this study support the argument that SOX's effect on the firm values of the foreign firms when they announce their ADR's issuance is insignificant and that these foreign firms increase their firm value when they announce their ADR's issuance.

These methodologies use the same data base even though they are calculated by many different methodologies (the CTSAR, the CSAR and SAR); this might account for the consistency in their results. It may also be due to the fact that the quality of study sample is robust enough to represent the trend of SOX's effect on the ADR issuers' firm value.

6.2.3. The relationship between the original question and the present result

The question initially posed in this study is whether the SOX Act has a positive or negative impact on the firm values of the foreign firms when they announce their ADRs' issuance. Many of the studies conducted to answer this question are described in the literature review section; some support SOX's positive impact, and the others support SOX's negative impact.

This study's primary result differs from those that either support SOX's positive impact or support SOX's negative impact. This study finds that SOX's effect is insignificant with regard to the firm values of the foreign firms when they announce their ADR' issuance; alternatively, the study discovers that SOX's effect is neutral with respect to the firm values of the foreign firms when they announce their ADR's issuance.

The increase of the firm values of the foreign firms found in the CTSAR analysis, the CSAR analysis and the SAR analysis might simply be the result of the ADR issuance. Many studies find that the ADRs' issuance helps increase the firm value (these studies are also described in the literature review).

6.2.4. The significance of the present results

The finding of SOX's neutral effect on the firm values of the foreign firms when they announce their ADRs' issuance is a useful discovery.

SOX's objective is to improve the corporate governance of the public firms in U.S. stock market; in reality, the public firms in U.S. stock markets have to comply with this act and improve their corporate governance. This improvement is very helpful for investors and U.S. stock markets; the investors will have more faith in the firms listed on U.S. stock markets, and the reputation of the U.S. stock markets will be enhanced.

The SOX Act helps improve corporate governance in the firms listed on U.S. stock markets, restores the investors' confidence and increases trust in U.S. stock markets. Remarkably, the act's compliance costs do not cause a negative impact on firm values of the foreign firms when they announce their ADR's issuance (as this study discovered, SOX's effect is neutral); therefore, this act should prove beneficial for all concerned parties.

More specifically, this study's discovery of SOX's neutral effect on the firm values of the foreign firms when they announce their ADRs' issuance justifies regarding SOX as a successful law in terms of its effect on the ADR issuers.

7. Conclusion

By using a matching methodology and event study to find SOX's effect on the firm values of the foreign firms when they announce their ADRs' issuance, this study makes

some important findings: first, SOX's effect on the firm values of the foreign firms when they announce their ADRs' issuance is insignificant (table.2, table.3). This conclusion rejects the hypothesis 1, which states that the effect of SOX on the firm value of the ADR issues is significant; second, after SOX's issuance, the firm values of the foreign firms increases significantly when they announce their ADRs' issuance (table.1a, table.1b); third, the effect of the two factors (country and exchange) on SOX's effect on the firm values of the foreign firm is significant. This conclusion rejects the two hypotheses 2 and 3, which suppose that the factor of country does not impact significantly the effect of SOX and the factor of exchange does not impact significantly the effect of SOX as well; and fourth, the effect of the third factor (firm size) on the firm values of the foreign firms is insignificant. This conclusion accepts that hypothesis 4, which states that the factor of firm-size does not impact significantly the effect of SOX (table.4).

Many studies[168] have examined SOX's effect on the ADR issuers, but their results vary. Some support SOX's positive impact, but others support SOX's negative impact. This study uses a matching methodology that matches the ADRs in the post-SOX period and those in the pre-SOX period following some matching criteria such as identical industries, countries (or the corporate governance) and firm sizes. The study was able to find eighty matching pairs following this method.

By comparing the firm values between two groups of ADRs (one group belonging to the pre-SOX period, and the other belonging to the post-SOX period) of the eighty matching pairs, this study discovers that SOX's effect on the ADR issuers is insignificant. The

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[168] Mitchell (2003), Romano (2005), and Butler and Ribstein (2006)

study uses several approaches to analyze this question: the CTSARs, the CSARs, the SARs and regression analysis; all of them support this finding.

The CTSAR approach confirms that after SOX's issuance, the ADR issuers' firm value increases significantly. This can be taken to mean that SOX does not have a significant negative impact on the ADR issuers in the post-SOX period. Alternatively, in the post-SOX period, when the foreign firms announce their ADRs' issuance, their firm values are likely to increase. This increase may be the result of the highly significant positive impact of the ADR issue, as many studies have concluded. It appears that the firm value increases and then remains relatively stable even though these firms issue the ADRs in the post-SOX period; this means SOX does not have a significantly negative impact on this increase.

The CSAR approach confirms the finding of the CTSAR approach. The finding of the CSARs' approach states that SOX's effect on the ADR issuers is insignificant. In other words, since SOX's effect is insignificant, the ADR issuers' firm value increases significantly and then remains relatively constant even though these firms issue the ADRs in the post-SOX period.

The SAR approach confirms the finding of the CSAR approach. The finding of the SAR approach also confirms that SOX's effect on the ADR issuers is insignificant.

Using the cross-sectional regression approach, the study discovers a significant effect from the two factors' (country and exchange) on the ADR issuers' firm value, but the firm size does not have significant impact on the ADR issuers' firm value. The study's findings support the argument that the foreign firms from developed countries where the

corporate governance standards are high suffer severely from SOX's significantly negative impact. The reason might be because these foreign firms already have a high quality system of corporate governance; therefore, the investors are led to believe that these firms do not have to pay SOX's compliance costs. This attitude might result in a reduction in the firm values of these foreign firms when they issue their ADRs. Regarding the finding of an exchange's effect on the ADR issuers' firm value, the study's finding supports the argument that the ADRs listed on the NYSE are respected by investors since they believe that the liquidity of the NYSE is high. This attitude overcomes the burden of SOX's compliance costs, and this might be responsible for the increase in the ADR issuers' firm value on the NYSE. Alternatively, if the ADRs are listed on the NASDAQ, where the liquidity is not as high as that of the NYSE, the investors might worry about SOX's compliance cost, and this attitude might reduce the ADR issuers' firm value for the NASDAQ listing.

The study divides the 21-day event windows in each of the three approaches (the CSAR, the SAR and regression) into a number of small event windows; the study finds some inconsistency among the results of these small event windows. These inconsistencies might be because of SOX's insignificant effect. Since SOX's effect is insignificant, when this effect is divided into many event windows, the result for each window is likely to be very inconsequential. Also, these results might be easily transferred from the negative side to the positive side or vice versa; as a consequence, these results are inconsistent. Therefore, the inconsistencies among the results of the small event windows support the finding that SOX's effect on the ADR issuers is in fact, significant.

The findings of this study have important implications for researchers and policy makers.

Policy makers should be able to recognize SOX's usefulness. SOX helps improve the corporate governance of U.S. publically traded firms; it restores the investors' confidence and bolsters the U.S. stock market's reputation, while at the same time SOX's compliance costs do not cause a significantly negative impact on the ADR issuers' firm value.

Researchers now have some new results to consider when examining this controversial act.

Recommendation

The study applies the matching methodology for ADRs between two periods (the post-SOX and the pre-SOX). This technique is applicable if the corporate governance of each firm and country is measured and the results of this measurement are comparable.

The matching technology could be applied to many different kinds of events to test the efficiency of these occurrences. Policy makers and researchers also might use the results of the studies that employ the matching technique to examine efficiency of various policy measures.

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APPENDIX

Table 1a Statistical test on the CTSARs in the pre-SOX period

The table presents the Cumulative Total Standardized Abnormal Returns (CTSARs) of 80 ADR issuing announcements by foreign firms over the 1994-2002 period. Cumulative Total Standardized Abnormal Returns (CTSARs) are computed from the market model as prediction errors. Day 0 refers to the announcement day of ADR issuance as reported by NexisLexis® Academic. Z-statistics is used to test for the statistical significance of mean [CTSARs]. *, **, *** indicates significance at 10%, 5%, and 1% levels, respectively. Significant results (at 5% level or better) are shown in **boldface.**

Event date	Cumulative TSAR	Cumulative TSAR Z-statistic	Cumulative TSAR p-value	Event date	Cumulative TSAR	Cumulative TSAR Z-statistic	Cumulative TSAR p-value
(-10,-10)	10.3397	1.1177	0.2636	(-10,0)	80.64079	2.6283	**0.0085*****
(-10,-9)	11.2768	0.8619	0.3886	(-10,1)	77.7115	2.4250	**0.0153****
(-10,-8)	18.3868	1.1475	0.2511	(-10,2)	73.1375	2.1927	**0.0283****
(-10,-7)	14.5099	0.7842	0.4328	(-10,3)	62.4931	1.8054	**0.0709***
(-10,-6)	7.4802	0.3616	0.7176	(-10,4)	67.5359	1.8850	**0.0594***
(-10,-5)	17.9426	0.7918	0.4284	(-10,5)	62.9896	1.7023	**0.0886***
(-10,-4)	26.7657	1.0936	0.2741	(-10,6)	74.4649	1.9523	**0.0508***
(-10,-3)	38.7466	1.4808	0.1386	(-10,7)	86.9490	2.2154	**0.0267****
(-10,-2)	40.0914	1.4446	0.1485	(-10,8)	80.6138	1.9992	**0.0455****
(-10,-1)	57.0315	1.9495	**0.0512***	(-10,9)	83.1708	2.0104	**0.0443****
				(-10,10)	79.7217	1.8805	**0.0600***

Table 1b Statistical test on the CTSARs in the post-SOX

The table presents the Cumulative Total Standardized Abnormal Returns (CTSARs) of 80 ADR issuing announcements by foreign firms over the 2002-2010 period. Cumulative Total Standardized Abnormal Returns (CTSARs) are computed from the market model as prediction errors. Day 0 refers to the announcement day of ADR issuance as reported by NexisLexis® Academic. Z-statistics is used to test for the statistical significance of mean [CTSARs]. *, **, *** indicates significance at 10%, 5%, and 1% levels, respectively. Significant results (at 5% level or better) are shown in **boldface.**

Event date	Cumulative TSAR	Cumulative TSAR	Cumulative TSAR	Event date	Cumulative TSAR	Cumulative TSAR	Cumulative TSAR
		Z-statistic	p-value			Z-statistic	p-value
(-10,-10)	13.7709	1.4886	0.1365	(-10,0)	44.8002	1.4601	0.1442
(-10,-9)	2.0062	0.1533	0.8781	(-10,1)	39.3132	1.2268	0.2198
(-10,-8)	4.4291	0.2764	0.7822	(-10,2)	42.8655	1.2851	0.1987
(-10,-7)	10.8093	0.5842	0.5590	(-10,3)	48.4926	1.4010	0.1612
(-10,-6)	6.8510	0.3312	0.7404	(-10,4)	67.2430	1.8768	**0.0605***
(-10,-5)	24.5476	1.0833	0.2786	(-10,5)	64.7835	1.7507	**0.0799***
(-10,-4)	11.9776	0.4893	0.6245	(-10,6)	75.6955	1.9846	**0.0471****
(-10,-3)	33.5418	1.2819	0.1998	(-10,7)	90.4853	2.3055	**0.0211****
(-10,-2)	37.4923	1.3509	0.1767	(-10,8)	79.4552	1.9704	**0.0487****
(-10,-1)	54.8841	1.8761	**0.0606***	(-10,9)	84.4078	2.0403	**0.0413****
				(-10,10)	87.5388	2.0649	**0.0389****

Table 2: The mean difference of the post-SOX's CSARs and the pre-SOX's CSARs/

the SOX's effect

The table represents equality tests of mean SCARs of two groups of ADR issuing announcements: the pre-SOX period and the post-SOX period. Z-statistics [Wilcoxon Sign-Rank Test] is used to test for the statistical significance of mean difference.*, **, *** indicates significance at 10%, 5%, and 1% levels, respectively. Significant results (at 5% level or better) are shown in **boldface.**

Event window	Mean		Result	
	Post-SOX	**Pre-SOX**	**Z-value**	**P- value**
(-10,10)	0.89	0.69	-0.51	0.61
(0,0)	-0.11	0.25	-2.82	**0.01***
(0,1)	-0.19	0.30	-2.30	**0.02**
(0,3)	-0.10	0.20	-0.73	0.46
(0,5)	0.07	0.21	-0.36	0.72
(0,10)	0.32	1.71	-2.10	**0.04**
(-1,1)	-0.20	0.15	-0.87	0.38
(-3,3)	0.34	-0.83	-2.30	0.02

Table 3 The mean difference of the post-SOX's SARs and the pre-SOX's SARs in each date of the event window/the SOX's effect.

The table represents equality tests of mean SCARs of two groups of ADR issuing announcements: the pre-SOX period and the post-SOX period. Z-statistics [Wilcoxon Sign-Rank Test] is used to test for the statistical significance of mean difference.*, **, *** indicates significance at 10%, 5%, and 1% levels, respectively. Significant results (at 5% level or better) are shown in **boldface.**

Event Date	Mean		Results		Event Date	Mean		Results	
	Post-SOX	Pre-SOX	Z-value	P-value		Post-SOX	Pre-SOX	Z-value	P-value
-10	0.15	0.02	-1.60	0.11	0	-0.11	1.14	-1.61	**0.09***
-9	-0.11	-0.27	-1.1	0.27	1	-0.08	0.25	-1.79	**0.07***
-8	0.03	0.13	-1.11	0.27	2	0.06	0.05	-0.28	0.78
-7	0.09	-1.04	-3.86	**0.00****	3	0.03	-0.52	-2.68	**0.01****
-6	-0.04	0.40	-1.80	**0.07***	4	0.19	0.41	-1.27	0.21
-5	0.20	0.01	-1.14	0.25	5	-0.02	-0.59	-2.76	**0.01****
-4	-0.18	0.31	-3.04	**0.00****	6	0.13	0.61	-2.98	**0.00****
-3	0.17	-0.35	-2.57	**0.01****	7	0.17	1.22	-3.06	**0.00****
-2	0.09	-0.16	-1.53	0.13	8	-0.15	0.01	-1.01	0.31
-1	0.17	-0.24	-2.29	**0.02****	9	0.05	0.00	-0.18	0.86
					10	0.06	0.29	-1.30	0.19

Table 4 The results of the cross-sectional regression

The table presents results of regression. Dependent variable in this analysis is the difference between the Cumulative Standardized Abnormal Returns (CSARs) in the post-SOX period and the CSARs in the pre-SOX period. The independent variables used in this study are the dummy variables. There are three dummy variables: DEVELOPED/EMERGING, NYSE/NASDAQ, and FIRMSIZE. The value 0 is applied to the firms from emerging market countries, firms that list their ADR on NASDAQ and small firms (with market capitalization less than \$75 million); the value 1 is applied to the firms from developed countries, firms that list their ADR on NYSE and large firms (with market capitalization larger that \$75 million). *, **, *** indicates significance at 10%, 5%, and 1% levels, respectively. Significant results (at 5% level or better) are shown in **boldface**

Event window	DEVELOPED/EMERGING		NYSE/NASDAQ		FIRMSIZE	
	α-value	P-value	β-value	P-value	δ-value	P-value
(-10,10)	-0.21	**0.06***	0.21	**0.10***	-0.23	0.86
(0,10)	-0.37	**0.00*****	0.01	0.95	-0.09	0.47
(0,0)	-0.11	0.33	0.08	0.55	-0.01	0.96
(0,1)	-0.15	0.19	0.02	0.86	-0.06	0.65
(0,3)	-0.08	0.48	0.08	0.56	-0.00	0.98
(0,5)	-0.08	0.47	0.16	0.23	0.10	0.43
(-1,1)	0.59	0.59	0.19	0.13	0.20	0.12
(-3,3)	0.15	0.12	0.27	**0.02****	0.25	**0.04****

Wilcoxon signed-rank test

This is a non-parametric statistical hypothesis test used to compare two related samples or repeated measurements in a single sample to determine whether their population means differ.

This method is used instead of the paired Student's t test when the sample does not fulfill the assumption of a normal distribution or the data is measured on an ordinal scale.

Wilcoxon Z_w statistic is defined as:

$$Z_w = \frac{\left| w - \frac{n(1+n)}{4} \right|^{-0.5}}{\sqrt{\frac{n(n+1)(2n+1)}{24}}}$$

where:

n = the sample CSARs

The Wilcoxon signed-rank test Z-value is measured by:

Z = W / std.dev.(W)

where:

W = the sum of the products of the signs and ranks of the absolute values of the CSARs

Std.dev.(W) = calculated using the formula n(n+1)(2n+1)/6

Z ~ N (0,1) the standard normal distribution

Table 5 list of the ADRs used in the pre-SOX period

Financials in: USD (mil)

	Symbol	Industry	Country	Average sales	Average assets	Average debt to asset ratio
1	ABB	Industrial Engineer.	Switzerland	20,332	26,403	0.21
2	ASX	Tech.Hardware&Equip.	Taiwan	1,951	3,725	0.37
3	ATE	Tech.Hardware&Equip.	Japan	1,765	2,880	0.05
4	AEG	Life Insurance	Netherlands	23,600	338,200	0.02
5	PVD	Financial Services	Chile	195	438	0.09
6	ALU	Tech.Hardware&Equip.	France	14,368	32,454	0.22
7	AU	Mining	South Africa	2,334	6,841	0.21
8	AZN	Pharma. & Biotech.	United Kingdom	21,746	25,112	0.04
9	BBVA	Banks	Spain	18,120	421,804	0.04
11	CIB	Banks	Colombia	582	9,230	0.16
12	IRE	Banks	Ireland	5,495	168,389	0.23
13	BP	Oil & Gas Producers	United Kingdom	209,176	190,152	0.12
14	BRFS	Food Producers	Brazil	1,957	1,316	0.46
15	CUK	Travel & Leisure	United Kingdom	8,456	22,678	0.28
16	CX	Construct.&Materials	Mexico	11,860	22,539	0.32
17	CGV	OilEquip.,Serv.&Dist	France	991	1,540	0.26
18	CBD	Food &Drug Retailers	Brazil	NA	3,993	0.25
19	CIG	Electricity	Brazil	3,455	6,958	0.27
20	SID	Indust.Metals&Mining	Brazil	3,687	8,703	0.38
21	CS	Banks	Switzerland	26,402	900,445	0.29
22	DB	Banks	Germany	44,933	1,242,202	0.34
23	DEO	Beverages	United Kingdom	1,387	25,903	0.38
24	RDY	Pharma. & Biotech.	India	433	693	0.13
25	ERJ	Aerospace & Defense	Brazil	2,683	5,569	0.21
26	GGB	Indust.Metals&Mining	Brazil	8,433	8,043	0.39
27	GFI	Mining	South Africa	2,023	4,394	0.07
28	GMK	Food Producers	Mexico	2,397	2,434	0.27
29	HMY	Mining	South Africa	1,073	3,622	0.13

30	HDB	Banks	India	468	13,095	0.08
31	HBC	Banks	United Kingdom	40,128	1,287,104	0.17
32	IBN	Banks	India	1,349	35,638	0.29
33	ING	Life Insurance	Netherlands	53,130	1,181,807	0.18
34	IRS	Real Estate Inv&Serv	Argentina	110	716	0.29
35	JHX	Construct.&Materials	Australia	1,011	1,065	0.22
36	KT	Fixed Line Telecom.	Korea	15,386	24,394	0.4
37	LYG	Banks	United Kingdom	1,540	521,608	0.09
38	MTE	Fixed Line Telecom.	India	1,276	4,560	0.03
40	NBG	Banks	Greece	1,623	74,159	0.08
41	NGG	Gas,H2O&Multiutility	United Kingdom	15,128	47,017	0.55
42	NJ	Electron&ElectricEq	Japan	4,002	3,335	0.21
43	NTT	Fixed Line Telecom.	Japan	85,345	169,965	0.31
44	NOK	Tech.Hardware&Equip.	Finland	38,430	28,354	0.02
45	NMR	Financial Services	Japan	11,999	277,527	0.14
46	NVS	Pharma. & Biotech.	Switzerland	25,888	51,463	0.13
47	IX	Financial Services	Japan	5,801	54,024	0.65
48	PSO	Media	United Kingdom	6,760	12,576	0.27
49	PKX	Indust.Metals&Mining	Korea	20,013	23,505	0.18
50	PUK	Life Insurance	United Kingdom	135,471	331,929	0.02
51	RBS PR F	Banks	United Kingdom	15,128	1,129,009	0.03
53	SPP	Forestry&Paper	South Africa	4,543	5,620	0.37
54	SSL	Oil & Gas Producers	South Africa	9,152	11,030	0.21
55	SI	Gerneral Industrials	Germany	83,213	76,213	0.12
56	SKM	Mobile Telecom	Korea	9,343	14,343	0.26
57	SNN	HealthCareEquip.&Ser	United Kingdom	2,351	2,893	0.15
58	TSM	Tech.Hardware&Equip.	Taiwan	7,433	13,968	0.1
59	TCL	Fixed Line Telecom.	India	785	1,783	0.06
60	TEF	Fixed Line Telecom.	Spain	42,235	92,276	0.45
61	TM	Automobile & Parts	Japan	151,928	20,059	0.34
62	UBS	Banks	Switzerland	7,438	1,263,808	0.51
63	VALE-P	Indust.Metals&Mining	Brazil	NA	23,772	0.35
64	VE	Gas,H2O&Multiutility	France	31,092	38,966	0.44
65	WIT	Software&ComputerSvc	India	NA	1,861	0.02

66	AUO	Tech.Hardware&Equip.	Taiwan	5,233	8,687	0.28
67	ITUB	Banks	Brazil	4,734	24,325	0.25
68	DCM	Mobile Telecom	Japan	41,721	53,675	0.18
69	SBS	Gas,H2O&Multiutility	Brazil	1,933	5,315	0.41
70	TSU	Mobile Telecom	Brazil	760	2,189	0.07
71	APSA	Real Estate Inv&Serv	Argentina	77	392	0.2
72	ASMI	Tech.Hardware&Equip.	Netherlands	821	958	0.3
73	ASML	Tech.Hardware&Equip.	Netherlands	2,857	4,266	0.24
74	CTEL	Fixed Line Telecom.	Hong Kong	151	230	0.2
75	CRESY	Argentina	Food Producers	28	211	0.17
77	EDAP	HealthCareEquip.&Ser	France	23	39	0.08
78	FORTY	Software&ComputerSvc	Israel	167	622	0.33
79	INFY	Software&ComputerSvc	India	1,589	1,734	0
80	NVGN	Pharma. & Biotech.	Australia	10	42	0.03
81	SPIL	Tech.Hardware&Equip.	Taiwan	1,433	1,853	0.28
83	WACLY	Personal Goods	Japan	1,435	1,971	0.04
84	GOLD	Mining	South Africa	148	328	0.16
85	TRMD	IndustrialTransport.	Denmark	433	1,296	0.41
86	WBK	Banks	Australia	8,567	171,607	0.23

Table 6 list of the ADRs used in the post-SOX period

Financials in: USD (mil)

	Symbol	Industry	Country	Average sales	Average assets	Average debt to asset ratio
1	BMA	Banks	Argentina	370	5,537	0.02
2	BUD	Beverages	Belgium	22,460	67,484	0.34
3	CHT	Fixed Line Telecom.	Taiwan	5,957	14,155	0
4	CIG/C	Electricity	Brazil	6,625	12,150	0.31
5	BCA	Banks	Chile	660	9,218	0.12
6	CPL	Electricity	Brazil	5,899	7,755	0.4
7	FMS	HealthCareEquip.&Ser	Germany	8,655	11,804	0.36
8	FMS PR	HealthCareEquip.&Ser	Germany	8,655	11,804	0.36
9	SAB	Food &Drug Retailers	Mexico	2,320	1,046	0.05
10	IHG	Travel & Leisure	United Kingdom	2,258	4,023	0.33
12	MFG	Travel & Leisure	Japan	11,463	1,394,525	0.32
13	NBG PR A	Banks	Greece	5,133	121,585	0.05
14	PAM	Electricity	Argentina	622	1,686	0.11
15	PTI	Software&ComputerSvc	India	385	901	0.23
16	PBR	Oil & Gas Producers	Brazil	104,309	126,689	0.23
17	PBR/A	Oil & Gas Producers	Brazil	104,309	126,689	0.23
18	ENL	Media	Netherlands	4,512	1,827	0.01
19	RUK	Media	United Kingdom	4,877	1,879	0
20	RBS	Banks	United Kingdom	49,434	2,579,208	0.05
21	RBS PR L	Banks	United Kingdom	49,434	2,579,208	0.05
22	RBS PR M.	Banks	United Kingdom	49,434	2,579,208	0.05
23	RBS PR N	Banks	United Kingdom	49,434	2,579,208	0.05
24	RBS PR P	Banks	United Kingdom	49,434	2,579,208	0.05
25	RBS PR Q	Banks	United Kingdom	49,434	2,579,208	0.05
26	RBS PR R	Banks	United Kingdom	49,434	2,579,208	0.05

27	RBS PR S	Banks	United Kingdom	49,434	2,579,208	0.05
28	RBS PR T	Banks	United Kingdom	49,434	2,579,208	0.05
29	RDS.A	Oil & Gas Producers	Netherlands	364,110	259,768	0.08
30	RDS.B	Oil & Gas Producers	Netherlands	364,110	259,768	0.08
31	SNY	Pharma. & Biotech.	France	37,937	105,089	0.1
32	SAP	Software&ComputerSvc	Germany	13,580	15,333	0.05
33	SHG	Banks	Korea	9,435	203,147	0.27
34	SLT	Indust.Metals&Mining	India	5,132	8,251	0.19
35	TAM	Travel & Leisure	Brazil	3,683	4,578	0.41
36	NZT	Fixed Line Telecom.	New Zealand	3,540	5,045	0.44
37	TI	Fixed Line Telecom.	Italy	39,739	120,373	0.51
38	TS	Indust.Metals&Mining	Luxembourg	8,789	12,625	0.2
39	WF	Banks	Korea	9,632	226,626	0.24
40	GENE	Pharma. & Biotech.	Australia	8	24	0.02
41	PRAN	Pharma. & Biotech.	Australia	0.48	9	0.04
42	RBSPRU	Banks	United Kingdom	49,434	2,579,208	0.05
43	AV	Nonlife Insurance	United Kingdom	56,623	550,260	0.04
44	BSBR	Banks	Brazil	7,800	88,511	0.07
45	STD	Banks	Spain	22,731	748,025	0.08
46	BCS	Banks	United Kingdom	34,762	2,231,874	0.49
47	BCS PR.	Banks	United Kingdom	34,762	2,231,874	0.49
48	BCS PR A	Banks	United Kingdom	34,762	2,231,874	0.49
49	BCS PR C	Banks	United Kingdom	34,762	2,231,874	0.49
50	BCS PR D	Banks	United Kingdom	34,762	2,231,874	0.49
52	ESV	OilEquip.,Serv.&Dist	United Kingdom	1,739	4,232	0.08
54	GFA	HouseGoods&homeConst	Brazil	733	1,894	0.29
56	TV	Media	Mexico	3,739	8,584	0.29
57	HBC PR A	Banks	United Kingdom	76,345	2,121,782	0.22
58	KB	Banks	Korea	NA	NA	NA
59	KNM	Leisure Good	Japan	2,564	2,850	0.18
60	LPL	Tech.Hardware&Equip.	Korea	13,376	14,695	0.24

61	LUX	Personal Goods	Italy	6,499	8,769	0.38
62	RIO	Mining	United Kingdom	33,144	70,448	0.28
63	SMS	Support Services	Australia	4,458	2,305	0.11
64	TCH	Broadcasting & Entertainment	France	6,320	9,004	0.4
65	UL	Food Producers	United Kingdom	53,435	50,673	0.28
67	UMC	Tech.Hardware&Equip.	Taiwan	3,125	9,121	0.1
68	LOGI	Tech.Hardware&Equip.	Switzerland	2,081	1,386	0
69	OIIM	Tech.Hardware&Equip.	Hong Kong	102	199	0.22
70	PTNR	Mobile Telecom	Israel	1,439	1,255	0.47
71	BTM.C	Mobile Telecom	Brazil	657	1,743	0.25
72	BTM	Mobile Telecom	Brazil	657	1,743	0.25
73	EBR	Electricity	Brazil	12,443	63,121	0.17
74	CCH	Beverages	Greece	8,228	8,903	0.35
75	CRH	Construct.&Materials	Ireland	24,982	26,103	0.32
76	MT	Indust.Metals&Mining	Luxembourg	74,036	82,691	0.23
77	BBD	Banks	Brazil	13,130	176,231	0.2
78	BBL	Mining	United Kingdom	44,435	14,720	0.21
79	BHP	Mining	United Kingdom	44,595	61,308	0.21
80	SMFG	Banks	Japan	12,345	1,005,923	0.15
81	AIXG	Mining	Australia	44,595	61,308	0.21
82	BLRX	Pharma. & Biotech.	Israel	NA	26	0
83	CSRE	Engineering Consultants	United Kingdom	343	435	0.19
84	GRFS	HealthCareEquip.&Ser	Spain	977	1,513	0.4
85	SHPGY	Pharma. & Biotech.	United Kingdom	2,350	4,783	0.16