An Examination of the Impact of the Sarbanes-Oxley Act on the Attractiveness of US Capital Markets for Foreign Firms[*]

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Abstract

We document that the passage of the Sarbanes-Oxley Act (SOX) coincided with an increase in voluntary delistings of foreign firms traded as American Depository Receipts (ADRs) from US stock exchanges. We examine the extent to which these delistings were motivated by firms' costs of complying with SOX or by managers' or controlling shareholders' (MCOs) loss of control rents that resulted from corporate governance mandates of SOX. We show that compared to foreign firms that maintained their ADRs, foreign firms which voluntarily delisted have weaker corporate governance, had a less negative stock market reaction when SOX was passed, and suffered a significant price decline in their home-markets when they announced their intention to delist. Taken together, our results are consistent with our hypothesis that foreign firms with weaker corporate governance delisted to avoid complying with the corporate governance mandates of SOX. We label this effect as the paradoxical unintended consequence of SOX which intended to strengthen shareholder protection. In contrast, our evidence is not consistent with the delistings being motivated by firms' (as opposed to MCO's) compliance costs with SOX.

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1.   Introduction

Congress passed the Sarbanes-Oxley Act of 2002 (SOX) with the main objective of restoring investors' confidence (including the accuracy and reliability of corporate disclosures) in US capital markets following the governance failures occurring in the preceding decade. To this end, SOX established more stringent standards for internal controls, auditing, disclosure, and management conduct and accountability. However, while proponents argue that SOX was necessary,[1] the evidence to date suggests that the expected net benefits of SOX are negative purportedly because of large direct and indirect compliance costs (Zhang, 2006 and DeFond, Hung, Karaoglu, and Zhang, 2006). We use a sample of foreign-domiciled firms (henceforth, foreign firms) traded in the US as American Depository Receipts (henceforth ADRs) to analyze the tradeoff between the cost of compliance with SOX and governance benefits of SOX.

Foreign firms can avoid complying with US listing requirements by delisting. However, the associated costs (e.g., due to the loss of liquidity) are likely to be much smaller than those of US firms (which must either comply with SOX, go private, or trade on the "pink sheets" see Engel, Hayes, and Wang (2006) and Leuz, Triantis, and Wang (2006)) because after delisting, foreign firms are still publicly traded in their home countries (and hence do not incur costs due to loss of liquidity). As a result, voluntary delisting decisions constitute a lower hurdle for foreign firms and thus, can more clearly reflect the trade-off between the costs of compliance with SOX and the benefits of improved governance. Although not perfect (because by delisting, foreign firms still forgo the benefits of being listed in the US), the delisting decisions by foreign firms

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[1] See, for example, opening statement of Candice Miller, Chairman, Subcommittee on regulatory affairs, April 5, 2006.

provide a more transparent metric by which to study the impact of SOX as the significant costs of going private that US firms would incur do not confound our analysis of delisting decisions by foreign firms.

Using foreign firms we test two hypotheses: whether foreign firms delisted[2] to avoid compliance costs when compliance costs exceed the respective governance benefits (compliance cost hypothesis) and whether the delistings were motivated by managers' and controlling shareholders' (MCOs' hereafter) attempt to protect their control rents (agency conflict hypothesis).

To test these two hypotheses, we model the decision of a foreign MCO to delist from the US exchanges. Our model allows us to examine the probability of delisting based on the costs and benefits of being listed in the US, including the MCOs' control rents. Our results indicate that delisting firms had corporate governance characteristics that are generally deemed to be poor compared to those of foreign firms that decided not to delist (e.g., lower percentage of independent directors, smaller boards, higher CEO ownership, and lower financial reporting quality). Further, we document that relative to the stock prices of foreign firms with "better governance," the share prices of firms with bad governance characteristics fell less when SOX was passed, consistent with our hypothesis that investors believed that SOX is likely to reduce MCOs exploitation of non-controlling investors.

Moreover, our analysis of the stock price reaction at the delisting announcement date documents a negative stock-price response. This result implies that investors were disappointed that the firms avoided the corporate governance improvements required by SOX and is again consistent with the governance benefit hypothesis. Finally, we find no evidence that delisting

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[2] We use "delisting" and "deregistration" interchangeably. Typically, delisting comes first and conveys to investors the foreign firm's intention to deregister. All but eight firms in our study who made a delisting announcement have already deregistered. A detailed discussion of these issues follows in Section 2.

decisions were motivated by avoiding the costs of compliance. What emerges is evidence of paradoxical unintended consequences of SOX: Firms whose shareholders (both foreign and domestic) who benefited most from the superior US governance model (relative to their domestic model) prior to SOX exit as a result of a passage of SOX which intended to further improve the US governance model.

Our results contribute to the literature on the impact of SOX on US capital markets as follows: First, we document a significant increase in delistings following the passage of SOX. This result is consistent with the results of Engel et al. (2006) and Leuz et al. (2006) who document a significant increase in SEC deregistrations and going-private decisions after the passage of SOX, and with Piotroski and Srinivasan (2007) who document a decrease in foreign firms listing in the US following SOX.

Second, we extend the results of Zhang (2006) and DeFond et al. (2006) who find that the aggregate stock and bond market responded negatively to the events that led to passage of SOX by documenting that the market reaction to the passage of SOX is a function of the perceived benefits of the Act. Specifically, we find a less negative market reaction in a small segment of the market where investors face a higher risk of expropriation.

Third, consistent with Cohen, Dey, and Lys (2004a) who find that earnings management decreased following SOX, our evidence is consistent with SOX working towards its objective of reducing fraud and expropriation of outsiders by insiders.

Fourth, our paper expands other studies that examine the impact of SOX on foreign firms listed in the US in two important ways (e.g., Marosi and Massoud, 2006; Witmer, 2005). First, we directly measure corporate governance characteristics at the firm level rather than using country-level corporate governance variables. Country-level measurements are likely to lead to

biased inferences because companies that cross-list may be significantly different from their peers who do not. Second, and more importantly, we take into account that firms that maintain their US listings may be doing so involuntarily because of the large costs of delisting. Specifically, we form a control group of firms that have similar fraction of shares owned by US investors that did not choose to delist. We then draw our inferences based on the differences between the sample of delisting firms and the control group.

Finally, we also make a contribution to a larger body of literature investigating cross-listings and competition among stock exchanges. Our results are broadly consistent with Doidge (2004) and Doidge et al. (2005) who find evidence that US cross-listed firms have lower control premia and controlling shareholders are less likely to choose to list their firms' shares in the US when private benefits of control are high. We find that MCOs who face a larger reduction in their private benefits of control are more likely to delist. Further, our finding that, on average, SOX is driving away firms with weaker corporate governance tempers the view that SOX adversely affects the competitiveness of US exchanges (McCreevy, 2007).

The remainder of the paper is organized as follows. Section 2 lays out the institutional background. Section 3 develops our research hypotheses. Section 4 describes the sample selection and the characteristics of the sample firms. Section 5 presents the empirical evidence and Section 6 concludes.

2.   Institutional Background

Foreign firms have two options to achieve a listing on US exchanges. First, just as any US firm they can issue shares by registering them with the SEC. Under this option, they can be exclusively traded in the US or be traded both in the US and on foreign exchanges (e.g., in their

home country). Second, they can choose to be traded as an ADR. Under this option, a foreign firm can issue ADRs backed by shares issued in the home country through a depository institution acting as a custodian.[3] It is this second option that is the focus of our analysis.

There are three levels of ADRs. Level I ADRs are traded on 'pink sheets' and are, to a large extent, exempt from US SEC regulations. Level II and Level III ADRs trade just as any other US security and are considered SEC registrants. Level II ADRs involve shares previously-issued abroad while Level III ADRs allow companies to raise capital through the issuance of new shares. In either case, ADRs can be redeemed for shares in the home market.

If the foreign firm decides to terminate its ADR program, it requests termination of its deposit agreement and the depository institution purchases the ADRs from their holders in exchange for the deposited shares or their cash equivalent. After the end of this redemption period, the depository institution can sell all deposited shares and keep custody of the proceeds until any remaining holders redeem their ADRs.

The regulatory and disclosure requirements for Level II and III are very similar except that Level III ADRs require the filing of an initial registration form. Specifically, level II and III ADRs are subject to US reporting standards and securities regulations, including the provisions of SOX. Thus companies must file annual reports and must furnish certain information in the interim including a reconciliation of their accounts with US GAAP on Form 20-F. The SEC has repeatedly stated that provisions of SOX apply to all issuers regardless of the country of origin.[4]

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[3] A foreign company may also privately place ADRs with "Qualified Institutional Buyers" under Rule 144A.
[4] For example, in Release No. 33-8124 the SEC states "Because of the broad scope of Section 302 of the Act, the new rules are applicable to all types of issuers that file reports under Section 13(a) or 15(d) of the Exchange Act, including foreign private issuers, banks and savings associations, issuers of asset-backed securities, small business issuers and registered investment companies." Release No. 33-8177 states this more emphatically: "We have determined to include foreign private issuers within the scope of the final rules implementing Sections 406 and 407. Their inclusion comports both with the plain language of the above statutory sections, which applies broadly to issuers, as well as with the overarching purpose of the Sarbanes-Oxley Act, which is to restore investor confidence in U.S. financial markets, regardless of the origin of the market participants." The word "foreign" appears 18 times

Thus the provisions of SOX apply to Level II and III ADRs essentially to the same manner as they apply to US domestic firms. Limited exceptions have only emerged regarding implementation deadlines. In the case of Section 404 requirements, implementation deadlines for foreign firms have been extended similar to those of smaller US issuers.

We examine the recent delisting and deregistration activities of Level II and III ADRs. A foreign company may voluntarily delist from an exchange by following the rules of that exchange and by applying to the SEC on Form 25.[5] For example, in the case of NYSE, the company submits a letter indicating its intention to delist and a board resolution approving the delisting. The SEC can then impose additional terms if necessary to protect investors, but has not done so for many years.[6] The delisting can become effective after 10 days from the filing date. The delisting is typically followed by deregistration. To deregister completely and to be freed from all filing requirements, the company needed to have fewer than 300 US shareholders during the period of our study.

To calculate the number of U.S. security holders, the foreign private issuer had to "look through" record ownership of brokers, dealers, banks or other nominees on a worldwide basis to identify beneficial owners resident in the US, which is a difficult task (Bergman, 2004)

The difficulty of complying with the "fewer than 300 US shareholders" requirement is exacerbated by continuing requirements that the number of US shareholders stays below 300 permanently for Level III ADRs and for at least 18 months for Level II ADRs. Otherwise, the company's reporting obligations resume. Since some foreign firms may have more than 300 US shareholders outside their ADR programs or some investors may buy shares to hold up the firm's

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in the Sarbanes-Oxley Act and none of these mentions exemptions or distinctions between the requirements for domestic firms vs. foreign firms.
[5] Rule 12d2-2 of the Securities Exchange Act of 1934 *Removal from Listing and Registration* describes the actions that a company must take in order to delist from an exchange and deregister with the SEC.
[6] 70 FR 42456, July 22, 2005.

delisting, the termination of ADR programs alone need not be, by itself, sufficient for foreign firms to deregister from the SEC.[7]

Some of the options that are available to foreign companies to reduce the number of US shareholders are reverse stock splits, adjustments of the exchange ratio on the ADR program, amendment of articles to seize minority shareholdings, share buybacks, and reduction of capital. However, these measures cannot be targeted exclusively to US investors. Some of them require court or shareholder approvals and risk bad publicity for the firm due to their adversity to minority shareholders (Lovells Client Note, 2004). Therefore, deregistration is likely to be a time consuming and costly procedure. Testable hypotheses are discussed next.

3. Hypothesis Development

We begin our analysis by modeling the cross-listing and delisting decisions of a foreign issuer as a function of benefits to the firm, compliance costs, and the loss of private benefits by the MCOs. We focus on the costs of complying with the provisions of SOX and SOX' effectiveness in reducing agency costs.

The major benefits to foreign companies of a US listing are access to the US capital markets to raise capital and to enhance liquidity, increased visibility and reputation of a firm's products in the US and in other countries. We denote these benefits by B. In addition to those benefits, shareholders in many foreign firms benefit from the imposition of the US legal system which provides better investor protection and corporate governance. These benefits increase the value of the firm by reducing the control rents that insiders appropriate (see e.g. Jensen and

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[7] In April 2007, the SEC made a change that considerably reduces the hurdles for foreign companies to deregister.

Meckling, 1976). We denote these private benefits by *A*. (See Pagano, Roell, and Zechner (2002) for a review of benefits to cross-listing.)

Offsetting these benefits, firms incur listing fees, additional audit fees, and various compliance costs including charges for professional services. We denote these costs by *C*. *B* and *C* are shared by all investors of the firm, while *A* benefits MCOs at the expense of other shareholders.

SOX has significantly changed US corporate governance by mandating certain corporate governance practices rather than just requiring their disclosures (Romano, 2005). These mandates include audit committee independence, majority board independence,[8] prohibition of loans to executives, limitations on non-audit services by a firm's auditors, increased criminal penalties for executives, accelerated reporting of insider trades, executive certification of financial statements, and increased risk of litigation.

The increased scrutiny and risk of litigation due to SOX are likely to decrease the control rents earned by MCOs. SOX also imposes large direct and indirect costs (implementation costs and deviation from what may have been value maximizing policies that are restricted or banned by SOX) which increase the cost of cross-listing in the US, *C*.

There is ample anecdotal evidence that suggests MCOs of foreign companies are directly affected by the US legal environment including SOX and also that SOX compliance is an important factor in their delisting decisions.[9] The purpose of our analysis is to empirically distinguish the two aspects of SOX that may play a role in the delistings.

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[8] The majority independence rules were introduced by the NYSE and NASDAQ in conjunction with SOX mandated rules.
[9] For example, Vivendi, who delisted in 2006, had been the target of a high profile shareholder lawsuit in the US in 2002 (Grover and Matlack, 2002). Many companies mention that there will be substantial cost savings from being relieved of SEC reporting requirements, e.g. LION bioscience delisting announcement (11/15/2004).

The Model:

In this section, we derive a set of equations that demonstrate the conditions under which MCOs cross-list and exit the US capital markets and generate testable hypotheses based on these predictions. We model these decisions as a wealth maximization problem of MCOs, which may differ from maximizing shareholders' wealth.

Let V be the present value of the firm's cash flows absent control rents and US cross-listing costs and benefits. Then, assume that MCOs can appropriate private control benefits, A_k, as a function of the legal system k ($k \in \{F, US_{preSOX}, US_{postSOX}\}$), where the subscript F denotes the foreign market, the US before SOX ($USpreSOX$) and the US after SOX ($USpostSOX$), respectively. Thus, the value of the firm in the foreign market (before a US cross-listing) is $V_F = V - A_F$.

We assume that the control rents A_k is an increasing function of the MCO's ownership percentage (α) for $\alpha < 0.5$. This reflects the two roles of α in the private benefits. First, the probability of MCOs' maintaining control is likely to increase with α until the MCOs control the majority of the voting rights and remain constant above that level.[10] Second, as α increases the marginal benefit to the MCOs from misappropriation decreases because they bear a larger fraction of the costs as shareholders. In addition, the private benefits of control also depend on the quality of the corporate governance (g). Therefore,

$$A_k(\alpha, g) \tag{1a}$$

and for $\alpha < 0.5$, $\frac{\partial}{\partial \alpha} A_k > 0, \frac{\partial^2}{\partial \alpha^2} A_k < 0, and \frac{\partial}{\partial g} A_k < 0.$[11] Finally, we assume that

$$A_F > A_{USpreSOX} > A_{USpostSOX} \tag{1b}$$

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[10] In fact, it may continue to increase beyond 50% with supermajority rules.
[11] Our specification is consistent with prior empirical research, e.g., McConnell and Servaes (1995), who document a quadratic relationship. Our specification for example would be consistent with $A(\alpha) = a \times \alpha \times (1-\alpha)$ where a is a constant.

Next, we derive MCO's total wealth (W) including their private benefits. The MCO's net wealth is the fraction α of the firm value in the firm's home market plus the value of private benefits, that is

$$W_F = \alpha \times V_F + A_F \tag{2a}$$

where $V_F = V - A_F$.

Listing in the US reduces the rents earned by MCOs to $A_{USpreSOX}$, provides other benefits that are not related to corporate governance, $B_{USpreSOX}$, and requires incremental compliance costs of $C_{USpreSOX}$. The MCO wealth upon a cross-listing is expressed by

$$W_{USpreSOX} = \alpha \times (V - A_{USpreSOX} + B_{USpreSOX} - C_{USpresSOX}) + A_{USpreSOX} \tag{2b}$$

Accordingly, the MCOs will decide to list in the US prior to the passage of SOX if $W_{USpreSOX} > W_F$ or combining (2a) and (2b)

$$\frac{\alpha}{1-\alpha} \times (B_{USpreSOX} - C_{USpreSOX}) > A_F - A_{USpreSOX} \tag{3}$$

Similarly, cross-listing in the US prior to SOX would change the firm value to

$$V_{USpreSOX} = V_F - (A_{USpreSOX} - A_F) + (B_{USpreSOX} - C_{USpreSOX}) \tag{4a}$$

where $V_{US,preSOX}$ is the firm value in the US prior to SOX. Then, equations (3) and (4a) imply that conditional on a US cross-listing prior to SOX, firm value increases since $0<\alpha<1$, and $A_F > A_{USpreSOX}$. That is

$$\begin{aligned} \Delta V_{list,preSOX} &= V_{USpreSOX} - V_F = B_{USpreSOX} - C_{USpreSOX} + A_F - A_{USpreSOX} \\ &> 0 \end{aligned} \tag{4b}$$

In summary, MCOs may not always cross-list in the US even if doing so would result in an increase in shareholder wealth. However, shareholder wealth increases given that MCOs chose to cross-list in the US.

Passage of SOX changes the firm value by

$$\Delta V_{SOX} = (B_{postSOX} - B_{preSOX}) - (C_{postSOX} - C_{preSOX}) - (A_{USpostSOX} - A_{USpreSOX}) \tag{5a}$$

If we assume that the first term on the RHS of (5a) is zero (*i.e.* the benefits of a US listing will not change due to SOX for reasons other than reducing private benefits from control A), then $\Delta V_{SOX} < 0$ implies that $-\Delta A_{SOX} < \Delta C_{SOX}$ and vice versa. In other words, negative market returns around SOX imply that the costs of SOX exceed the reduction in private benefits appropriated by MCOs.

If the firm remains listed in the US, the MCOs' wealth decreases to

$$W_{USpostSOX} = \alpha \times (V - A_{USpostSOX} + B_{USpostSOX} - C_{USpostSOX}) + A_{USpostSOX} \tag{5b}$$

MCOs would decide to delist if

$$W_{USpostSOX} < W_F \tag{5c}$$

$$\frac{\alpha}{1-\alpha} \times (B_{USpostSOX} - C_{USpostSOX}) < A_F - A_{USpostSOX}$$

Equation (5c) can be expressed as a function of the changes in private benefits, ΔA_{SOX}, changes in non-governance related benefits of US listing, ΔB_{SOX}, and compliance costs for US listing, ΔC_{SOX}.

$$\frac{\alpha}{1-\alpha} \times (B_{USpreSOX} + \Delta B_{SOX} - C_{USpreSOX} - \Delta C_{SOX}) < A_F - A_{USpreSOX} - \Delta A_{SOX}$$

$$\frac{\alpha}{1-\alpha} \times (B_{USpreSOX} - C_{USpreSOX}) - (A_F - A_{USpreSOX}) < - \frac{\alpha}{1-\alpha} \times (\Delta B_{SOX} - \Delta C_{SOX}) - \Delta A_{SOX}$$

$$0 \leq \Phi < - \frac{\alpha}{1-\alpha} \times (\Delta B_{SOX} - \Delta C_{SOX}) - \Delta A_{SOX}$$

where $\Phi > 0$ represents the net benefits gained by the MCOs from being listed in the US before SOX (otherwise the MCOs would have delisted before SOX.) Assuming that $\Delta B_{SOX} = 0$, *i.e.* the

benefits of a US listing will not change due to SOX for reasons other than reducing private benefits of control, the firm will delist if:

$$\Phi < \frac{\alpha}{1-\alpha}\Delta C_{SOX} - \Delta A_{SOX} \qquad (5d)$$

In other words, the MCOs will decide to delist if their share of the SOX compliance costs together with lost private control benefits exceed their share of the benefits of a US cross-listing. Interestingly, both higher compliance costs (ΔC_{SOX} high) and higher efficacy of SOX ($|\Delta A_{SOX}|$ high) make the MCO worse of and more likely to exit the US capital markets.

Upon delisting firm value decreases by the lost benefits from US cross-listing, increases by US compliance cost savings, and decreases by additional private benefits:

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\begin{aligned}
\Delta V_{delist,postSOX} &= V_F - V_{USpostSOX}\\
&= -B_{USpostSOX} + C_{USpostSOX} - A_F + A_{USpostSOX}\\
&= -B_{USpreSOX} - \Delta B_{SOX} + C_{USpreSOX} + \Delta C_{SOX} - A_F + A_{USpreSOX} + \Delta A_{SOX}\\
&= -\Delta V_{list,preSOX} - \Delta B_{SOX} + \Delta C_{SOX} + \Delta A_{SOX}
\end{aligned}
\qquad (6a)
$$

Therefore, the delisting decision following SOX does not necessarily result in an increase in shareholder wealth unlike it does for the MCOs. In particular, if SOX compliance costs are low compared to SOX' efficacy, (5d) and (6a) imply that the impact of the exit on firm value will be negative.

Based on this analysis (particularly equations (5d) and (6a)), the probability of a voluntary delisting will be increasing in the reduction of private benefits by SOX, and increase in the costs of compliance with SOX. Finally, using our earlier assumption that $A(\alpha,g)$ is an increasing function of α, we conjecture that the likelihood of delisting will be

$$prob(delisting) = f(\Delta C_{US,SOX}, \alpha, g, \Phi) \qquad (6b)$$

where the first and second partial derivatives are positive, and the third and fourth are negative.

This implies that firms with high SOX compliance costs, firms with large reductions in private benefits of control due to SOX, and firms that had lower benefits of being listed in the US are more likely to delist. These predictions lead to our main hypotheses.

> ***H1: The probability of delisting is negatively associated with the quality of corporate governance.***

We consider several attributes of corporate governance based on past literature and develop working hypotheses that are empirically testable. We first consider the independence of the board of directors. We assume that a board with a higher percentage of non-affiliated directors is an indicator of better corporate governance (Weisbach, 1988). Accordingly we have our first testable hypothesis.

> ***H1a: The probability of delisting is negatively associated with the degree of independence of the board of directors .***

Second, we consider the entrenchment effect of controlling shareholders and private benefits of control. Relying on prior research, we assume that corporate governance quality deteriorates when the firm is more closely controlled. Claessens, Djankov, and Lang (2000), Dyck and Zingales (2004), Mitton (2002), among others, support this assumption. Hence, we predict that:

> ***H1b: The probability of delisting is positively associated with the degree to which the firm is closely controlled.***

Next, we use financial reporting quality as an indirect measure of corporate governance quality. Previous research (e.g., Klein, 2002) shows that there is a significant positive association between financial reporting quality and corporate governance quality. This leads to our third hypothesis:

> ***H1c: The probability of delisting is negatively associated with the quality of financial reporting.***

Finally, we consider investors' stock price reaction to the passage of SOX as a broad proxy of corporate governance quality. If SOX increases firm value by improving corporate governance then, as we derived in equation (5a), investors' price reaction provides an overall evaluation of the net benefits caused by SOX. Therefore, our last testable hypothesis is stated as follows.

> **H1d: The probability of delisting is positively associated with the cumulative abnormal return for events surrounding the passage of SOX.**

Our second main hypothesis considers the alternative argument that it is the increased compliance costs of SOX that drive foreign firms away from the US capital markets.

> **H2: The probability of delisting is positively associated with the compliance costs of SOX.**

Sample selection and variable measurement are discussed next.

4. Sample Selection and Variable Measurement

We identify all Level II and III ADRs and all ADR terminations (ADR sample) from the web portals of the largest US depositary banks, the Bank of New York, JP Morgan, and Citibank.[12] Citibank and Bank of New York both provide a comprehensive list of all ADRs listed in the US, including Level I ADRs on their websites. We also review the list of *International Registered and Reporting Companies* issued by the SEC, the *Non-US Listed Companies* list provided by the NYSE, and firms that have delisting codes in CRSP to ensure accuracy. This procedure yields a sample of 573 Level II and III ADRs as of June 30, 2002.

We then search Factiva and Lexis-Nexis to ensure that we have identified all voluntary ADR delistings and we review the firms' delisting and deregistration press releases. We exclude terminations of ADR programs that are the result of financial distress, acquisitions, major

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[12] These three banks sponsor more than 90% of ADRs in the US (http://www.adrbny.com/dr_directory.jsp).

restructuring, or failure to meet exchange listing criteria. In addition, we exclude Canadian ADRs, as the American and Canadian capital markets are highly integrated and the cross-listing reasons of Canadian firms are different from those of other foreign firms who use ADRs.[13] Finally, we exclude any delisting announcements that are confounded by events such as earnings announcements, restructuring plans, and financing activities. We use the earliest announcement date when firms make multiple announcements at different stages of the delisting process (intention to delist, final decision to delist, formal delisting, and formal deregistration) because subsequent announcements are likely to be anticipated by the investors. This procedure yields 89 firms that voluntarily delisted from January 2001 to May 2006. We match this delisting sample with 89 control firm ADRs that have continued trading after the passage of SOX based on the percentage of firms' shares issued as ADRs, the country of origin, and whenever possible, size and industry.[14]

We extend our sample period to 2006, because the implementation deadlines for certain SOX provisions have been extended for foreign issuers until July 15, 2005 and even beyond for Section 404 requirements for smaller issuers. These companies have a real option to wait until implementation deadlines. This option is valuable because both the delisting and a potential re-entry after the delisting are costly actions.

We obtain home-country stock prices and market indices from Datastream and Yahoo Finance and cross-validate across these data sources.[15] When price series are available from

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[13] The US and Canada constitute the largest trade partnership in the world, barriers to foreign investments between the two countries are minimal, the structure and regulatory framework of their stock markets are similar, and the shares of a significant number of Canadian and American firms are inter-listed (Beaulieu and Bellemare, 2000).

[14] Although we have not yet observed deregistration for all our sample firms, the assumption that the delisting is aimed at ultimate deregistration is supported by three observations. First, all but 8 of the firms in our 89 firms sample have already deregistered. Second, the remaining eight firms that have not deregistered have stated deregistration as their goal in their delisting announcements. Third, there does not seem to be any significant direct benefits for firms to be registered with the SEC but not to participate in trading in the US.

[15] In one case, we obtain the data from the firm's own website.

multiple exchanges (e.g., Germany) we select the one with the highest trading volume or price volatility.

We collect financial statement variables from Global COMPUSTAT, Datastream, North American COMPUSTAT, the Form 20-F's filed with the SEC, and the annual reports available from firms' websites. We cross-validate the information from the different sources with data from the Form 20-F's. Corporate governance variables and information about percentage of shares owned by US residents are extracted from Form 20-Fs or annual reports. The requirement of financial statement information and stock price data reduces our delisting sample to 75 firms all delisted after February 2002.

Table 2 Panel A provides a breakdown of our delisting sample across countries and across years. To understand the intensity of deregistration across countries, we compute the ratio of voluntary delistings to the number of active Level II and Level III ADR programs in the US as of the end of May 2006. The 89 firms identified above represent 16.5% of the 539 Level II and Level III ADR programs that were active as of May 2006 (Table 2). While the UK leads the number of delistings with 17, 11 out of 14 Swedish and four out of six New Zealander firms delisted. No African firms and only 9.8% South American firms voluntarily delisted in these years.

Panel B of Table 2 and Figure 1 document the pattern of US ADR listings and delistings over the years. As can be seen from both Panel B and Figure 1, there is a noticeable jump in the number of voluntary delistings starting in 2002 (we include delistings prior to 2002 for comparison). The number of delistings in 2002 alone far exceeds the total number of delistings in all prior years. In addition, there is a concurrent decrease in new Level II and Level III ADRs listings that occurs in 2002. Moreover, untabulated results indicate that the percentage of new

ADR listings that are Level II and Level III to all new ADR listings declined significantly from approximately 23.8% in the 1990-2001 period to 17.3% in the 2002-2006 period. In addition, we do not observe a significant change in the rate of new Level I listings ADRs between the two subperiods (88 per year in 1990-2001 vs. 91.2 per year in 2002-2006).[16]

4.1 Corporate governance characteristics of delisting firms

We have four categories of corporate governance variables, each corresponding to one of our four sub-hypotheses, H1a - H1d. (See Table 1 for a summary of the variables used and their definitions.) To measure board independence for H1a, we use two variables: (i) the proportion of outside directors on the board (*OUTDRTPCT*)[17] and (ii) the number of directors (NUMDRT). We conjecture that it would be more difficult for the board to be complacent or collude and act against shareholders' interests when there are more directors relative to firm size.[18,19]

For H1b, we adopt three empirical proxies for the degree of ownership concentration, i.e. how closely a firm is controlled: (i) total percentage of shares owned by the largest five owners (*FIVEOWN*),[20] (ii) the CEO's ownership in the firm (*CEOOWN*), and (iii) the chairman's ownership (*CHAIRMANOWN*).

For H1c, for financial reporting quality we construct three measures of financial reporting quality, following Leuz et al. (2006): (i) the firm-level standard deviation of net income divided by the standard deviation of operating cash flows (*STDRATIO*), (ii) the firm-level median of the

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[16] Marosi and Massoud (2006) find a "hand full" cases of voluntary delistings prior to 2001. This is probably because they examine all types of ADR programs, while we focus only on Level II and Level III ADRs. In addition, we exclude Canadian ADRs.

[17] Outside directors are identified as those who have no employment record with the firm according to Item 6 of Form-20F.

[18] We control for firm size in all our regressions.

[19] This argument is different from that of Yermack (1996) who hypothesizes that larger bonds are more inefficient and finds that smaller boards are associated with higher firm valuations.

[20] As a robustness check we also examine the ownership controlled by the top three owners (*THREEOWN*).

absolute value of accruals divided by operating cash flows (*MEDIANACC_OCF*), (iii) the firm-level correlation between accruals and operating cash flows (*CORR_NI_OCF*). Note that financial reporting quality is positively associated with CORR_NI_OCF and negatively associated with both *STDRATIO* and *MEDIANACC_OCF*.

For our last sub-hypothesis we calculate the cumulative abnormal returns surrounding the events that are related to the passage of SOX. Based on Litvak (2006), Jain and Rezaee (2005), and Zhang (2006), we identify five critical event periods during which there was a significant, abnormal market reaction to SOX. Three of those event periods are prior to the passage of SOX and two are subsequent events that are related to the SEC's proposal for new rules to enforce SOX. Table 3 provides a detailed description of these five events.

We measure the abnormal reaction by the standardized cumulative abnormal returns over the nine-day period covering the first three events. The standardization procedure follows Patell (1976):

$$Wi\_0109 = \sum_{t=1}^{9} \frac{u_{i,t}}{s_i \sqrt{LC_{i,t}}}, \tag{7a}$$

where,
$$C_{i,t} = 1 + \frac{1}{T} + \frac{(R_{m,t} - \overline{R}_m)^2}{\sum_{\tau=1}^{T} (R_{m,\tau} - \overline{R}_m)^2}, \tag{7b}$$

and L = number of days in the accumulation period, i.e., nine for *Wi_0109*, $u_{i,t}$ = market-adjusted stock returns in home market, s_i = standard deviation estimated over an estimation period before the event period that is 50 to 400 trading days long based on data availability, *T* = number of trading days in the estimation period.

To check robustness, we also measure the standardized cumulative abnormal returns over the 13-day period covering all five events (*Wi_0113*). We use these cumulative abnormal returns to gauge investors' assessment of the quality of their firms' corporate governance.

4.2   Empirical Proxy for Compliance Costs (*SOX_FEER*):

Our proxy for compliance costs is the audit fee premium that a firm pays as a consequence of its US cross-listing. We assume that the audit fee premium for cross-listing is highly correlated with the overall cross-listing costs after SOX.

As Choi et al. (2006) document, cross-listed firms incur higher audit fees if the cross-listing increases audit complexity or raises the auditor's litigation risk by exposing her to a stricter legal regime. SOX affects both of these dimensions. The requirement that outside auditors attest to and report on management's assessment of the internal control system of each issuer necessarily increases audit complexity. At the same time auditors face greater litigation risk as the penalties for corporate fraud have increased after SOX.

To develop this measure we estimate the following regression model for a pooled sample of all foreign firms, for all years with available data from Global COMPUSTAT. We estimate an audit fee model as a function of the client's size, the client's audit complexity, and auditor's litigation risk due to firm-specific, domestic, and cross-listing factors.

$$
\begin{aligned}
AUDITFEE_{it} = {}& \alpha_0 + \sum_{j=1}^{2} \beta_{1j} Size_{it} + \sum_{k=1}^{4} \varphi_{1k} AuditComplexity_{it} + \sum_{l=1}^{3} \gamma_{1l} ClientLitigationRisk_{it} \\
& + \sum_{l=4}^{5} \gamma_{1l} DomesticLitigationRisk_{it} + \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=1}^{2} \beta_{2j} XL_{it} * Size_{it} + \sum_{k=1}^{4} \varphi_{2k} XL_{it} * Audit\ Complexity_{it} \quad (8) \\
& + \sum_{l=1}^{3} \gamma_{2l} XL_{it} * ClientLitigationRisk_{it} + \sum_{l=4}^{5} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + \sum_{m=1}^{9} \delta_m * Industry_{it} + \varepsilon_{it}
\end{aligned}
$$

We then measure our proxy for compliance costs (*SOX_FEER*) as

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$$SOX\_FEER_{it} = \frac{E[CrossListing\ Premium_{it}]}{E[AUDITFEE_{i,t}]} \qquad (9)$$

where

$$E[CrossListing\ Premium_{it}] = \hat{\alpha}_1 XL_{it} + \hat{\alpha}_2 SOX_{it} + \sum_{j=1}^{2}\hat{\beta}_{2j}XL_{it}*Size_{it} + \sum_{k=1}^{4}\hat{\varphi}_{2k}XL_{it}*AuditComplexity_{it}$$
$$+ \sum_{l=1}^{3}\hat{\gamma}_{2l}XL_{it}*ClientLitigationRisk_{it} + \sum_{l=4}^{5}\hat{\gamma}_{2l}XL_{it}*CrossListingLitigationRisk_{it} \qquad (10)$$

and

$$E[AuditFee] = \hat{\alpha}_0 + \sum_{j=1}^{2}\hat{\beta}_{1j}Size_{it} + \sum_{k=1}^{4}\hat{\varphi}_{1k}AuditComplexity_{it} +$$
$$\sum_{l=1}^{3}\hat{\gamma}_{1l}ClientLitigationRisk_{it} + \sum_{l=4}^{5}\hat{\gamma}_{1l}DomesticLitigationRisk_{it} + \qquad (11)$$
$$\sum_{m=1}^{9}\hat{\delta}_m*Industry_{it} + E[CrossListing\ Premium_{it}]$$

Further details of this model are provided in Appendix 1.

4.3 Control characteristics of delisting firms

The impact of corporate governance quality on the MCOs' control rents and private benefits is only one of many factors that affect the delisting decisions of foreign firms. While we examine the impact of governance variables, we control for other confounding factors that may be related to the benefits and costs of cross-listing.

Firm size (*SIZE_B*):   Firm size captures various aspects of the cost-benefit considerations involved in the delisting process. On one hand, larger firms may enjoy higher benefits of cross-listing. For instance, larger firms have a greater demand to raise capital outside their home markets. They are also likely to derive greater revenues outside their home countries, and thus to benefit from the enhanced visibility and prestige that comes with the US listing.

On the other hand, firms of different sizes possibly face different SOX-related compliance costs, a conjecture supported by the intense debate about whether small firms should

be exempted from SOX.[21] In addition, because of the large US investor base, larger firms may also find that it more difficult to meet the current deregistration conditions set by the SEC than smaller firms. Based on this analysis, we predict that overall firm size is negatively associated with the likelihood of delisting. We measure firm size as the log of assets at the end of the fiscal year preceding the delisting and as the log of market value in sensitivity tests.

Foreign sales (*NORTHAMSALES*): Prior research suggests that foreign firms derive benefits from cross-listing because it enhances the sale of their products in the US (Pagano et al., 2002; Bancel and Mittoo, 2001). It would, therefore, be relatively more costly for these firms to delist. We use the percentage of sales from North America as our empirical proxy,[22] and predict that it is negatively associated with the likelihood of delisting.

Growth opportunities (*MTB*): Growth opportunities have two effects on firms' costs and benefits of delisting. On one hand, higher growth firms need more capital, making it more costly for these firms to withdraw from the US capital market with the passage of SOX. On the other hand, high growth firms potentially sustain greater uncertainty and, thus, experience a greater challenge in setting up an internal control system as required by the SEC. Moreover, these firms may also suffer higher opportunity costs for their SOX-related compliance efforts. As such, we do not have a prediction for the sign of this variable. Consistent with the vast literature investigating growth opportunities, we use the market-to-book ratio as our empirical proxy.

Profitability (*ROA*): ADRs of less profitable foreign firms are likely to benefit less from cross-listing because they are less likely to raise capital or benefit from product market

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[21] See, for example, Government Reform Subcommittee on Regulatory Affairs hearings on "The Sarbanes-Oxley Act 4 Years Later: What Have We Learned?" on April 5, 2006 and Report of the Securities and Exchange Commission Advisory Committee on Smaller Public Companies, 2006.

[22] In very few cases, when that information is not available, we use the percentage of foreign sales as a substitute.

reputation spillovers. Therefore, we predict that profitability, as measured by return on assets, is negatively associated with the probability of delisting.

Leverage (*DEBTPCT*): Depending on a firm's current debt level, we have different predictions on the direction of the association between leverage and firms' tendency to delist. Specifically, if the current leverage level is above the firm's target level, then the firm is more likely to raise equity capital in the near future to balance the financial structure. Since cross-listing provides the opportunity to raise equity, the firm would be less likely to delist. In contrast, if the firm is more likely to raise debt because it is below its target leverage, then the US listing would be less beneficial. Therefore, we do not predict the direction of the association with leverage, but include this variable as a control. Our empirical leverage proxy is the ratio of total liabilities to total assets.

Other control variables: There is evidence that the CEO or Chairman of the Board's tenure may affect governance quality. For example, Bertrand and Mullainathan (2001) find that shorter CEO tenure is associated with less pay for luck. This is probably because the longer a CEO's tenure with the firm, the more entrenched she may become and the more private benefits she can extract. To control for this effect, we include both the CEO's tenure (*CEOTENURE*) and the Chairman's tenure (*CHAIRMANTENURE*) in our model. We also include another well-accepted measure of corporate governance quality, whether the CEO and the Chairman are the same person (*CEO_CHAIRMAN*).

5. Empirical Analysis

In this section, we provide the empirical evidence on the extent to which voluntary delistings of ADRs were consistent with either the agency conflict hypothesis or the compliance

cost hypothesis. As can be seen from Table 3, our results indicate that relative to non-delisting firms, share prices of the delisting firms first increased in response to the passage of SOX. Moreover, as we document in Table 7, delisting firms suffered a significant price decline at the delisting announcement, contradicting the compliance cost hypothesis. Consistent with the general tenor of our analysis, we also find that delisting firms have weaker corporate governance attributes and higher concentration of ownership than those of control firms. Finally, we show that a more positive reaction to the passage of SOX is a predictor of subsequent delisting. Together, the evidence suggests that investors were expecting that SOX would curb control rents that MCOs were earning and that the MCOs decided to delist their firms from the US rather than lose their control rents. However, we do not find much evidence to support the compliance cost hypothesis. Thus, this evidence is consistent with the agency conflict hypothesis rather than with the compliance cost hypothesis.

5.1 Descriptive statistics

The means of the independent variables are consistent with the agency conflict hypothesis (Table 4). That is, the delisting firms tend to have weaker corporate governance compared to the control firms: their boards are less independent (H1a), they have more concentrated ownership (H1b), they have lower financial reporting quality (H1c), and their returns in conjunction with SOX are higher (H1d, reported in Table 3). There is also some support for the compliance cost hypothesis (H2).

Consistent with the agency conflict hypothesis, first, the boards of delisting firms are less independent (H1a). On average they have a lower proportion of outside directors than control firms and they have smaller boards (61.60% vs. 68.34% outside directors and 9.00 vs. 11.28

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directors, both significantly different at the conventional levels). Second, the ownership of delisting firms is more concentrated and insiders own more of their firm's shares (H1b). The top five owners (*FIVEOWN*) on average own 48.06% of a delisting firm's shares, whereas the ownership stake of the top five owners of the control firms average 36.99% (these two means are statistically different at conventional levels). Further, both the CEO (*CEOOWN*) and the chairman of the board (*CHAIRMANOWN*) own more in the delisting firms than they do in the control firms (CEO: 6.94% vs 3.38%; Chairman: 11.50% vs 7.05%). Third, the delisting firms have lower financial reporting quality than the control group (H1c). Two of the three financial reporting quality measures demonstrate that delisting firms have lower reporting quality than the control firms do (as shown by *STDRATIO* and *CORR_NI_OCF*). Fourth, the price appreciation of the delisting firms was higher than that of the control firms around the events that led to the passage of SOX (H1d). This is consistent with investor anticipation of decreasing agency costs following SOX. Separately, and consistent with the compliance cost hypothesis, delisting firms have higher cross-listing compliance costs, as proxied by the ratio of the estimated cross-listing premium to the estimated audit fee (*SOX_FEER*).

Delisting firms are significantly smaller than the control firms. This is consistent with the argument that firms with more US shareholders face greater difficulties in delisting assuming that size and number of US shareholders are positively correlated. In brief, the descriptive statistics are consistent with both the agency conflict and the compliance cost hypotheses.

We present both Spearman and Pearson correlations in Table 5. The Pearson correlation between the three financial reporting quality proxies are 0.24 between *STDRATIO* and *MEDIANACC_OCF,* -0.25 between *MEDIANACC_OCF* and *CORR_NI_OCF*, and -0.11 between *STDRATIO* and *CORR_NI_OCF* but the last one is not statistically significant. The

proxy for compliance costs (*SOX_FEER*) has relatively large and statistically significant correlations with some corporate governance characteristics. For example, the correlations with number of directors (*NUMDRT*), concentrated ownership (*FIVEOWN*), and *CEO and chairman ownership*, (*CEOOWN* and *CHAIRMANOWN*) are -0.44, 0.24, 0.16, and 0.21 respectively. Firm size is also correlated with the same four variables, in the opposite direction (0.56, -0.20, -0.15, and -0.17 respectively). Revenues from North America (*NORTHAMSALES*) are negatively correlated with concentrated ownership measure (*FIVEOWN*).

5.2   Decision to delist – multivariate analysis

We test our hypotheses using a model of the likelihood of voluntary delisting as a function of corporate governance characteristics, SOX compliance costs, and benefits from a US listing. As an improvement on existing literature, we use a matched sample design to address concerns for misclassified dependent variables. Because we cannot detect firms' *true willingness* to delist in the absence of exogenous factors such as regulatory obstacles to delisting, some firms that should be classified as *ones* (otherwise willing to delist) may be classified as *zeros* (not delisted). Further, if there were systematic patterns in this misclassification, the results would be biased.

For instance, our unreported preliminary evidence indicates that there is a positive correlation between corporate governance quality as measured by La Porta (1998) scores and the size of ADR programs. Thus, we are likely to observe fewer delistings (more zeros) by firms from countries that have better La Porta (1998) scores. In turn, the empirical results are likely to be biased toward the finding that firms with good corporate governance are less likely to delist.[23]

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[23] Since this problem is about the misclassification of the dependent variable, it cannot be corrected by simply including ADR percentage or variables correlated with ADR percentage as control variables.

To minimize this problem, we form a control group matched on the size of their ADR programs. The ideal variable for the matching procedure is the number of US shareholders that is stipulated by the SEC rule, but this information is seldom disclosed by the firms. Therefore, we obtain the percentage of a firm's shares issued as ADRs for all Level II and III ADR firms during the period from 2001 to 2006. Then, for each firm that delisted, we identify a matching firm from the same country and, whenever possible, from the same industry with a similar ADR percentage.[24] Because it is generally not possible to match further on firm size, we also include firm size in our regression.[25] We then perform our regression analysis in the matched sample as follows.

$$\log(\frac{\Pr(SAMPLE = 1 \mid X, Z)}{1 - \Pr(SAMPLE = 1 \mid X, Z)}) = \alpha + XB_1 + ZB_2 + \varepsilon, \qquad (12)$$

where *SAMPLE* is a dummy variable that takes the value of one if the firm in question voluntarily delisted, and zero otherwise; *X* is our set of variables measuring corporate governance quality; *Z* is a set of variables controlling for other factors affecting the voluntary delisting decision; and α, B_1, and B_2 are parameters.

In Table 6 we report the results of this regression. Because the data requirements for proxies of financial reporting quality significantly reduce our sample size, in column I we report the tests for only H1a, H1b, and H1d and include the test of H1c in column II.

Many of our test and control variables have significant regression coefficients. Number of directors has a negative coefficient of -0.21 (p < 0.05). The percentage of outside directors

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[24] When it is not possible to match on country, we require that the control firm be from the same legal origin.
[25] When the number of US shareholders is within a certain range, the firm may delist - it is simply more difficult and more costly for the firm to do so as the number of US security holders increases. However, when the US shareholder base reaches a certain level, it would be excessively costly and practically impossible for the firm to meet the deregistration condition. Thus, the argument here about using firm size as a control variable only applies to the difficulty level that is "within a certain range." In contrast, the argument for the control-group methodology applies after the difficulty level "reaches a certain level."

has a negative coefficient of -3.78 that is statistically significant at the one percent level. Therefore, there is strong evidence in favor of H1a, namely that the board independence is negatively associated with the decision to delist.

When we examine managerial and blockholder ownership in the delisting firms (H1b), concentrated ownership, measured by the percentage of shares owned by the five largest shareholders has a positive coefficient of 0.03 ($p < 0.05$). Percentage of shares held by the CEO has a positive coefficient as predicted, but does not differ significantly from zero. However, the percentage of shares held by the chairman of the board is negative and statistically significant, a finding which is inconsistent with our hypothesized relationship. Except for the chairman ownership, all these coefficients are consistent with the agency conflict hypothesis: firms with more concentrated ownership and held more heavily by insiders (i.e., firms with weaker corporate governance systems) are more likely to delist after SOX.

In testing H1d, the abnormal return around the passage of SOX enters the regression with a coefficient of 0.59 ($p < 0.05$). In other words, the higher the appreciation of a firm's shares around the passage of SOX, the more likely it is for that firm to delist subsequently. This finding is consistent with the agency conflict hypothesis. It suggests that investors were anticipating that SOX would curb control rents that MCOs were earning and that the MCOs decided to delist their firms rather than lose their control rents. If investors could foresee that SOX would hurt MCOs interests they could also anticipate that the MCOs would attempt to circumvent SOX by delisting. However, as long as there is a non-zero probability that the firm would stay listed in the US, there would still be a positive return around the passage of SOX. Therefore, to the extent that the delisting was anticipated by investors, our findings are downwards biased.

Additionally, we repeat the test with cumulative returns over the five events *Wi_0113* instead of *Wi_0109* and results are substantially the same.

SOX_FEER, the auditing fee premium paid for being listed in the US and our proxy for compliance costs, is also significant, but it has the opposite sign of what the compliance cost hypothesis would predict (-7.03, $p < 0.05$). In other words, firms that incur higher costs for their US listings are less likely to delist following SOX. This surprising result may partly be explained if *SOX_FEER* is capturing some of the benefits of a US cross-listing.

Finally, the control variables for size and North American sales have statistically significant coefficients in the predicted direction (-3.29, $p < 0.01$). In particular, the coefficient of size demonstrates that larger firms are less likely to delist probably because it is more difficult for them to do so. Also, the benefits of a US listing are probably increasing with the size of the firm.

We next run a similar regression after including the quality of financial reporting variables (Column II). However, including these variables reduces the sample size by 43 observations due to data availability. The coefficients of most variables remain unchanged with the inclusion of the financial reporting quality, consistent with H1a, H1b, and H1d. When we test the financial reporting quality hypothesis, only one of the proxies for financial reporting quality, *MEDIANACC_OCF,* has a coefficient that is weakly significant (-1.34, $p = 0.12$). One of the other proxies standard deviation of net income to standard deviation of cash flows is not significant and the third proxy, the correlation of income and cash flows has a negative coefficient that is the opposite of our predictions. Therefore, there is very weak evidence that financial reporting quality and agency conflicts play a role in the delisting decision.

The pseudo-R^2 of the logistic models presented in Table 6 are 35% and 39% and the model likelihood ratio is significant in both cases (p < 0.01). Thus, our models seem to have sufficient power in predicting foreign firms' decisions to maintain or terminate their US cross-listings after the passage of SOX. Overall, the results of our analysis strongly support our main hypothesis that, on average, firms with poorer corporate governance quality are more likely to delist following the passage of SOX. These results also suggest that, on average, we should observe negative stock price reactions to the delisting announcements when investors did not fully anticipate that their MCOs would delist rather than face the curbs in control rents. We examine this conjecture next.

5.3 Delisting announcement returns – event study

In this section, we examine the abnormal returns to the news announcement of a firm's intention to voluntarily terminate its US cross-listing and deregister from the SEC. These announcement returns provide a measure of the change in investors' assessment of the expected *net* benefits of delisting. In contrast to the SOX events analyzed in Table 3 that were centered on calendar time, the delisting event study is performed in event time. As a result, we do not need to control for concurrent events. A positive abnormal return is indicative of the expected compliance costs exceeding the expected benefits. However, this test is confounded by the loss of the benefits of cross-listing, but not the loss of the benefits of being publicly traded as these firms remain publicly traded in their home markets. Furthermore, in contrast to Table 3, these results are in event time, and we do not have non-delisting firms as controls. Figure 2 depicts the daily cumulative abnormal returns for our sample firms starting from 30 days before the news announcement to 30 days after.

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Overall, delisting announcements are associated with a negative market reaction. There is a steady decline in stock price starting five days before the announcement and ending five days after the announcement, without an obvious reversal within the following 25 trading days.

This overall negative reaction is confirmed by the tests of the cumulative abnormal returns in Table 7. The returns are significantly negative regardless of the choice of the accumulation windows. During the eleven-day window (days [-5,+5]) around delisting announcement events, stocks of delisting firms suffer a statistically significant loss (-4.6%). Of this decline, -1.9% materialized on the five-day window around the announcement (days [-2,+2]). For the 63 firms with available data, this eleven-day price decline amounts to $54 million per firm.

The negative price reactions to the delisting announcements contradict the argument that firms terminate cross-listings to enhance firm value. Rather, the evidence supports the conjecture that, on average, delisting decisions are motivated by MCOs' incentives to protect their control rents.

We further explore the cumulative abnormal returns by partitioning the market reaction based on the legal origin of firms' home countries. The legal origins of these countries are main drivers of the cross-sectional variation across private benefits, A_F, enjoyed by the MCOs of delisting firms. In Figure 3, we partition our sample firms according to their legal origin and observe three different patterns in price reaction. Firms from the common-law countries experience a negative price reaction to delisting announcements that does not reverse within the next month. However, the negative price reaction experienced by French-law firms reverses to some extent within the next ten days. Delisting firms from German- and Scandinavian-law origins enjoy a positive stock price response. To understand these different price reaction

patterns, and more importantly, to cross-validate our results in section 5.2, we next examine the abnormal returns cross-sectionally.

5.4   Delisting announcement returns – multivariate analysis

We explore the market reaction to delisting announcements using a similar logistic regression model to the one in Section 5.2:

$$\log(\frac{\Pr(POSITIVE = 1 \mid X, Z)}{1 - \Pr(POSITIVE = 1 \mid X, Z)}) = \alpha + XB_1 + ZB_2 + \varepsilon \tag{13}$$

where the variable *POSITIVE* takes the value of one if the short-window cumulative abnormal return is positive, and zero otherwise; all the independent variables, *X* and *Z* are the same as in equation (12) in Section 5.2.   We use the direction of the market reaction rather than the abnormal returns because it is difficult to characterize the exact valuation implication of our corporate governance variables.   Therefore, a dummy variable approach that uses the direction of the price reaction imposes fewer implicit assumptions on the detailed valuation mechanism.[26]

Table 8 presents the estimation results of this model over the sample of delisting firms using the five-day (i.e., [-2, +2]) cumulative abnormal returns.   The eleven-day ([-5,+5] return windows also yielded similar conclusions.   Overall, the agency conflict hypothesis predicts that there will be a negative market reaction to a delisting announcement if the firm has weaker corporate governance because the loss of shareholder value in such firms will be higher after they move out of the reach of SOX.   In contrast, the compliance costs hypothesis predicts that the market returns will be positive if the firm has higher compliance costs.

As in previous tests, we exclude the financial reporting variables in our first model and test only H1a, H1b, and H1d (financial reporting variables are not available for 20 delisting

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[26] The difficulty in characterizing the valuation implication of value-relevant variables is manifested by the low R^2s in studies that try to explain stock returns, with the studies about earnings' value relevance as one typical example. With respect to corporate governance variables, there is simply no valuation model that directly relates them to stock valuation.

firms.) We have 71 observations in Panel A, four more than the number of pairs in Table 6 Panel A because of missing data in the control firms in that regression. The results, reported in Column I, are consistent with the agency conflict hypothesis, in particular, board independence (H1a). The number of directors and the percentage of outsider directors are statistically significant at conventional levels in the hypothesized direction. However, the coefficient of the dummy for CEOs being the chairman of the board is opposite of the hypothesized direction with a p-value of 0.10. Also, both *Wi_0109* and *Wi_0113* (unreported) are not significant.

This result is generally consistent with the interpretation that investors recognize the implication of corporate governance characteristics for delisting decisions. MCOs of firms with weaker corporate governance delist to escape the stringent SOX legislation and retain their control rents, hence the market reacts negatively.

The coefficients for the variables for ownership concentration and insider ownership are not significant. In addition, the cumulative abnormal returns around the passage of SOX, does not enter the model significantly, either. Therefore, there is not support for H1b and H1d. Finally, the compliance cost proxy, *SOX_FEER* is not significant in the model, suggesting that the compliance costs are not a factor in the market reaction to the delisting announcements.

Among the control variables, the market to book ratio has a coefficient of 0.20 (p<.10). This result suggests that the indirect costs of compliance outweigh the benefits of being listed in the US for firms with high growth opportunities. The North American sales percentage has a coefficient of -3.58 (p<.10) indicating that the more product market ties a firm has with the US, the worse it is for the firm to delist its shares on the US exchange. This finding is consistent with the idea that when firms have to forgo more benefits from cross-listing, they are more likely to sustain a negative price reaction at their delisting announcements.

Inclusion of the financial reporting variables (Column II) reduces the sample size by 18. Likely with the associated loss of statistical power, the number of directors and outside director percentage are no longer significant at the conventional levels. However, they have p values of 0.15 and 0.13 respectively. The coefficients are larger with the same signs as in Column I. Accordingly, we have only weak evidence supporting board independence (H1a) hypothesis.

The results for the ownership concentration and insider ownership (H1b) and the SOX events abnormal returns (H1d) continue to be insignificant. However, in the new test (H1c), one of the financial reporting quality variables *MEDIANACC_OCF* has a statistically significant ($p<.01$) coefficient of the predicted sign. The other two financial reporting quality variables are not significant, perhaps in part because of the noisy nature of these metrics. The result weakly indicates that firms with higher financial reporting quality are more likely to experience favorable price reactions to delisting announcements. Untabulated results show that the three financial reporting quality measures are jointly statistically significant ($p<.05$). Overall, it appears that the market takes into account that MCOs are motivated by protecting their control rents when they delist.

The market to book variable continues to be marginally significant in column II whereas the p-value for North American sales dropped to 0.13. Once again, we attribute the lower p-values partly to the lower statistical power with 53 observations.

5.5 Sensitivity analysis

This section describes the sensitivity analysis performed to investigate whether our results are sensitive to our empirical design choices, potential omitted variables correlated with the delisting decision such as a contemporaneous decline in the benefits of being listed in the US, and our measures of corporate governance. The tenor of our results remains the same.

Empirical Design

We verify the robustness of our empirical design in two ways. First, we include in the regressions the ADR percentage (ADRPCT) as an independent variable in both the delisting decision and the announcement returns regressions. Since we are matching control firms based on this variable, it should not be significant if the matching is successful. Indeed, it is not significant in both regressions. Second, we perform a conditional logistic analysis to verify that our matching design does not cause statistical biases attributed to using matched sample design when infrequent events in the population are analyzed. Our results are substantially the same. Since the delisting event is common in the population (16.5%), these potential problems seem not to affect our reported results.

Benefits of US Cross-listing

We explore the possibility that benefits enjoyed by the cross-listed firms from being listed in the US decreased coincidentally with the passage of SOX. One of the benefits of being cross-listed in the US identified in prior literature is the additional visibility that increases a firm's standing in its product markets. Accordingly, we have already included the levels of the North American sales, but in the sensitivity analysis we also include the change in sales experienced by these firms. For many of our firms, it is not possible to learn their North American sales figures and especially for years prior to SOX. When we include the change in North American sales around SOX, it is not significant in either of our main regressions.

Along the same lines, we include the change in ROA for these firms around SOX as well. A significant decline in profitability is likely to result in a significant decline in the benefits from a cross-listing. When we include this variable in our regressions, it is again not significant.

Last, we examine the changes in the market-to-book ratios (MTB) of the delisting firms in comparison to their matched firms. Prior studies (e.g. Zhang 2006) suggest that the first news events that may be tied to SOX were in January of 2002. To isolate the changes in benefits from the market's anticipation of SOX, we conservatively examine the changes in MTB for various periods ending in November 2001. This is just before the bankruptcy declaration of Enron on December 2, 2001. We repeat the analysis using various starting points, because shorter periods would be capturing a smaller fraction of the changes in benefits for our firms, but longer periods may exclude some of the sample firms if they listed recently or their less recent data is not available. We also calculate an annual average change in MTB for each firm over the longest horizon over which it has data.

When we compare the changes in MTB, we find that the difference between the delisting and matching firms is statistically insignificant over all horizons ending in November 2001 and the outcome does not differ. When we include the annual change in MTB in the delisting decision regression, the variable is again not statistically significant. Moreover, the significance levels of the originally significant variables do not change either. The slight exception to this is the board size which is now significant only at the ten percent level. Nevertheless, this may be the result of the smaller sample size, which drops to 57 pairs in this regression.

Alternative Measures

First, we explore alternative proxies for the compliance costs of SOX. For example, we use the number of segments of a firm as in Zhang (2006). While the sign of its coefficient is in the right direction, the variable is never significant at even the 10% level.

Second, while the exact form of the relationship between delisting returns and corporate governance is not known, we have also ran the delisting announcement returns regression with a

continuous variable of cumulative abnormal returns (CARs) as the dependent variable instead of the announcement returns indicator variable. We still find a significant result for *OUTDRTPCT*, which alone explains 7% of the variation of delisting announcement abnormal returns, but other variables are not significant. One reason why the continuous regression may not yield significance is because the dependent variable has too much noise. One intermediate solution (between the indicator variable approach and CAR) is to use the t-statistic on the dependent variable. This corrects for potential heteroscedasticity and reduces the variance of the LHS. However, the results of this analysis are also similar to the one with the continuous variable as the dependent variable.

In summary, even with the noisy nature of stock returns, we find evidence supporting the conjecture that corporate governance plays a role in the delisting decision and that investors are aware of this when they react to the delisting announcements.

6. Summary and Conclusions

Our analysis is motivated by the large number of foreign firms voluntarily delisting from the US markets following the passage of SOX, reversing a previous trend of large increases in the ADRs (see Figure 1). We investigate the extent to which the delisting decisions were motivated by MCOs' control rents and/or the costs to comply with SOX.

We find that the market response to the passage of SOX for the delisting firms was significantly higher (less negative) than the returns of matched control firms who experienced a significantly negative market reaction similar to those found in prior studies of SOX in large samples. In addition, we document that delisting firms tend to have weaker corporate

governance as measured by several traditional corporate governance proxies such as the proportion of outside directors, ownership concentration, and financial reporting quality.

We next examine the probability of delisting as a function of corporate governance characteristics. We use investors' price response to SOX-related events as a proxy for investors' assessment of the firms' corporate governance quality in this regression. Both measures of corporate governance and the SOX returns are significantly associated with the probability of delisting. In other words, companies with weaker governance characteristics are more likely to delist and the market seems to have anticipated that SOX would benefit these firms.

We then examine the average home-country market response to the earliest delisting announcement by each firm and explore how this response is related to the corporate governance characteristics in the cross-section. The firms on average experienced a significantly negative price reaction to their delisting announcements - a result that is contrary to the argument that these SOX-related delistings are primarily undertaken on the basis of cost savings that is associated with the burdensome SOX requirements. Instead, the evidence suggests that the delistings are motivated by the MCOs' desire to protect their private benefits that SOX would curb and investors seem to understand that the delistings are not value enhancing for outside shareholders.

In summary, based on our results, the exit of foreign companies does not imply that US capital markets are losing their competitiveness due to large compliance costs imposed by SOX. Rather, it seems that the policy choices embodied in SOX against appropriation of resources by corporate insiders is driving these firms away.

References

Bancel, Frank and Usha R. Mittoo, 2001. sEuropean managerial perceptions of the net benefits of foreign stock listings, *European Financial Management* 7, 213-236.

Beaulieu, Marie-Claude and Guy Bellemare. 2000. Canadian stock markets and North American integration. *ISUMA, Canadian Journal of Policy Research* 1, 79-85.

Bertrand, M. and S. Mullainathan. 2001. Are CEOs Rewarded for Luck? The Ones Without Principals Are. *Quarterly Journal of Economics*.

Bergman, M., 2004. No Easy Exit: The Challenges for Non-US Issuers Seeking to Delist. *Wall Street Lawyer*, Vol. 7 No. 12.

Choi, J.H., J.B. Kim, X. Liu and D.A. Simunic. 2006. Cross-listing audit fee premiums: Theory and evidence. Working Paper, Seoul National University, Hong Kong Polytechnic University, Hong Kong University of Science & Technology, and University of British Columbia.

Choi, J.H. and T.J. Wong. 2006. Auditors' Governance Functions and Legal Environments: An International Investigation. Working paper, Seoul National University and The Chinese University of Hong Kong.

Claessens, S., Djankov, S., Lang, L., 2000. The separation of ownership and control in East Asian corporations. *Journal of Financial Economics* 58, 81-112.

Coffee Jr., J. 1999. The future as history: the prospects for global convergence in corporate governance and its implications. *Northwestern Law Review* 93, 641-707.

Coffee Jr., J. 2002a. The coming competition among securities markets: what strategies will dominate? Working paper, Columbia University.

Coffee Jr., J. 2002b. Racing to the top?: the impact of cross-listings and stock market competition on international corporate governance. *Columbia Law Review* 102 (7), 1757-1831.

Cohen, D.A., A. Dey, and T. Lys. 2004a. Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes Oxley periods. Working paper, Northwestern University.

Cohen, D.A., A. Dey, and T. Lys. 2004b. The Sarbanes Oxley Act of 2002: implications for compensation structure and risk-taking incentives of CEOs. Working paper, Northwestern University.

DeFond, M., M. Hung, E. Karaoglu, J. Zhang. 2006. Was the Sarbanes-Oxley Act Good News for Corporate Bond Holders? Working Paper, University of Southern California.

Doidge, C. 2004. US cross-listings and the private benefits of control: evidence from dual-class firms, *Journal of Financial Economics* 72, 519-553.

Doidge, C., G.A. Karolyi, and R. Stulz. 2003. Why are foreign firms listed in the US worth more? *Journal of Financial Economics* 68, forthcoming.

Dyck, A., and Zingales, L. 2004. Private Benefits of Control: An International Comparison. *The Journal of Finance* 59 (2), 537-600.

Engel, E., R.M. Hayes, and X. Wang. 2006. The Sarbanes-Oxley Act and firms' going-private decisions. *Journal of Accounting and Economics*, forthcoming.

Francis, J. 1984. The effect of audit firm size on audit prices. *Journal of Accounting and Economics* 6 (August): 133-151.

Jain, P.K. and Z. Rezaee. 2005. The Sarbanes-Oxley Act of 2002 and security market behavior: early evidence. Working paper, The University of Memphis.

LaPorta, R., F. Lopez-De-Silanes, A. Shleifer, and R.W. Vishny. 1998. Law and finance. *Journal of Political Economy* 106, 1113-1155.

Leuz, C., A. Triantis, and T. Wang. 2006. Why Do Firms Go Dark? Causes and Economic Consequences of Voluntary SEC Deregistrations. *Journal of Accounting and Economics, forthcoming.*

Litvak, K. 2006. The Effect of the Sarbanes-Oxley Act on Non-US Companies Cross-Listed in the US. Working paper, University of Texas.

Lovells Client Note 2004: Leaving the US: How an English Company can use a Scheme of Arrangement to Escape SEC Reporting Obligations.

Marosi, A. and N. Massoud. 2006. "You Can Enter but You Cannot Leave..." – US Securities Markets and Foreign Firms. Working paper, University of Alberta

McConnell, J. and H. Servaes, 1995. Equity Ownership and the Two Faces of Debt. *Journal of Financial Economics* 39, 131-157.

McCreevy, C., 2007. Capital Marketplace. *The Wall Street Journal*, March 5, 2007.

Miller, D., 1999. The Market Reaction to International Cross-listings: Evidence from Depository Receipts. *Journal of Financial Economics* 51, 103-123.

Mitton, T. 2002. A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis. *Journal of Financial Economics* 64, 215-241.

Pagano, M., Ailsa A. Roell, and Josef Zechner, 2002. The Geography of Equity Listing: Why

do Companies List Abroad? *The Journal of Finance*, Vol. LVII, No. 6, December 2002.

Patell, J. 1976. Corporate forecasts of earnings per share and stock price behavior: Empirical Tests. *Journal of Accounting Research* 14, 246–276.

Piotroski, J., S. Srivanasan, 2007. The Sarbanes-Oxley Act and the Flow of International Listings. The University of Chicago Working Paper.

Romano, R. 2005. The Sarbanes-Oxley Act and the making of Quack corporate governance. *The Yale Law Journal* 114: 1521-1612

Seetharam, A., F. A. Gul and S. G. Lynn. 2002. Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets. *Journal of Accounting and Economics* 33 (February): 91-115

Simunic, D.A. 1980. The pricing of audit services: theory and evidence. *Journal of Accounting Research*. 18 (Spring): 161-190

Weisbach, M. 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20, 431-460.

Witmer, J. 2005. Why do firms cross-(de)list? An examination of the determinants and effects of cross-delisting. Working paper, Queen's University.

Yermack, D., 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics* 40, 185-211.

Zhang, I.X., 2006. Economic consequences of the Sarbanes-Oxley Act of 2002. Working paper, University of Rochester.

Estimation of the cross-listing premium for audit fees

To capture the impact of cross-listing fees on a firm's delisting decision, we measure the relative importance of cross-listing audit fees as the ratio of the estimated cross-listing premium to the estimated total audit fees. Drawing on Simunic (1980), Francis (1984), Seethamaran et al. (2002), Choi and Wong (2006), and Choi et al. (2006) we model audit fees as a function of the client's size, the client's audit complexity, and the auditor's litigation risk. The auditor's litigation risk for cross-listed clients is defined as a function of the domestic litigation environment, client-specific risk factors, and the incremental effect of the US litigation environment.

To control for client size and the volume of a client's business transactions, we utilize the natural log of total assets and the asset turnover ratio (*ATURN*). Similar to Simunic (1980) and Choi et al. (2006), we include the leverage ratio (*LEV*), return on assets (*ROA*), and a dummy variable for negative net income (*LOSS*) to proxy for the auditor's client-specific litigation risk. La Porta's (1998) home-country scores for judiciary system efficiency (*EFFIJUD*) and rule of law (*RULELAW*) are employed to control for auditors' domestic litigation risk while the difference between US and home-country La Porta scores (*EFFIJUDCHGXL*, *RULELAWCHGXL*) serves as a proxy for additional litigation risk borne by auditors with cross-listed clients. Our controls for audit complexity include dummy variables for the client's industry (*INDUSTRY1-INDUSTRY9*), measures for the relative size of accounts receivable and inventories (*INVREC*), measures for the relative size of intangible assets (*INTANGIBLES*), the current ratio (*CURRATIO*), and a dummy variable for clients that raised new external capital (*NEWCAPITAL*). Lastly, we incorporate an indicator variable that is equal to one if the client is cross-listed after the passage of SOX and zero otherwise (*SOX*). The following equation presents the general specification of the audit fee model:

$$AUDITFEE_{it} = \alpha_0 + \sum_{j=1}^{2} \beta_{1j} Size_{it} + \sum_{k=1}^{4} \varphi_{1k} AuditComplexity_{it} + \sum_{l=1}^{3} \gamma_{1l} ClientLitigationRisk_{it}$$

$$+ \sum_{l=4}^{5} \gamma_{1l} DomesticLitigationRisk_{it} + \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=1}^{2} \beta_{2j} XL_{it} * Size_{it} + \sum_{k=1}^{4} \varphi_{2k} XL_{it} * AuditComplexity_{it}$$

$$+ \sum_{l=1}^{3} \gamma_{2l} XL_{it} * ClientLitigationRisk_{it} + \sum_{l=4}^{5} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + \sum_{m=1}^{9} \delta_m * Industry_{it} + \varepsilon_{it}$$

Further, we define the portion of the audit fees that result from a cross-listing define the cross-listing premium as follows:

$$CrossListing\ Pr\ emium_{it} = \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=1}^{2} \beta_{2j} XL_{it} * Size_{it} + \sum_{k=1}^{4} \varphi_{2k} XL_{it} * Audit\ Complexity_{it}$$
$$+ \sum_{l=1}^{3} \gamma_{2l} XL_{it} * ClientLitigation\ Risk_{it} + \sum_{l=4}^{5} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + v_{it}$$

.

Table 1. Variable definitions

Variable	Definition
ADRPCT	Percentage of common shares owned by US residents (20F-Item 8).
CEO_CHAIRMAN	Dummy variable that is equal to one if chief executive officer and chairman of the board of directors is same person (20F-Item 6).
CEOOWN	Percentage of common shares owned by the CEO (20F-Item 6 or Item 7).
CHAIRMANOWN	Percentage of common shares owned by the chairman (20F-Item 6 or Item 7).
CORR_NI_OCF	Firm-level correlation between the accruals and the operating cash flow (Global COMPUSTAT & Datastream)
DEBTPCT	Debt percentage, defined as Total Liabilities divided by Total Assets (Datastream).
FIVEOWN	Percentage of common shares owned by the five largest shareholders.
MEDIANACC_OCF	Firm-level median of the absolute value of accruals divided by the operating cash flow (Global COMPUSTAT & Datastream)
MTB	Market-to-book ratio, defined as the book value of the firm's common equity divided by the market value of the firm (Datastream).
NORTHAMSALES	North American sales, defined as sales in North America divided by total sales (20F-Segment Information).
OUTDRTPCT	Outside directors percentage, measured as number of outside directors divided by total number of directors. Outside director is director without current or past employment affiliation with the company slightly different from the new Sarbanes-Oxley definition of outside directors that include business or family relationships (20F-Item 6).
ROA	Return on assets (Datastream).
SIZE_B	Size, defined as the natural logarithm of total assets in US dollars (Datastream or COMPUSTAT).
SOX_FEER	Ratio of estimated cross-listing audit premium to total estimated audit fee.
STDRATIO	Firm-level standard deviation of net income divided by the standard deviation of the operating cash flow (Global COMPUSTAT & Datastream)
Wi_0109	Average cumulative abnormal returns over event 1 to event 3 prior to the passage of SOX.
Wi_0113	Average cumulative abnormal returns over event 1 to event 5 surrounding the passage of SOX.

Table 2. Country and year distributions of the sample firms
Panel A: Country distribution of foreign firms that voluntarily delisted over the 2001-2006 period

Country	Delisting Firms				All Level II and III ADR Listings		Delisting rate (starting sample)
	Starting Sample		Final Sample*				
	N	Percent.	N	Percent.	N	Percent.	
Finland	1	1.12%	1	1.33%	6	1.11%	16.67%
France	4	4.49%	3	4.00%	33	6.12%	12.12%
Germany	4	4.49%	3	4.00%	22	4.08%	18.18%
Ireland	3	3.37%	2	2.67%	14	2.60%	21.43%
Italy	2	2.25%	2	2.67%	15	2.78%	13.33%
Luxembourg	1	1.12%	1	1.33%	6	1.11%	16.67%
Netherlands	3	3.37%	3	4.00%	31	5.75%	9.68%
Norway	1	1.12%	1	1.33%	6	1.11%	16.67%
Portugal	1	1.12%	1	1.33%	3	0.56%	33.33%
Spain	1	1.12%	0	0.00%	7	1.30%	14.29%
Sweden	11	12.36%	10	13.33%	14	2.60%	78.57%
Switzerland	1	1.12%	1	1.33%	12	2.23%	8.33%
UK	17	19.10%	17	22.67%	94	17.44%	18.09%
Other - Europe	0	0.00%	0	0.00%	19	3.15%	0.00%
EUROPE	50	56.18%	45	60.00%	282	52.32%	17.73%
Hong Kong	6	6.74%	5	6.67%	27	5.01%	22.22%
India	1	1.12%	0	0.00%	12	2.23%	8.33%
Indonesia	1	1.12%	1	1.33%	2	0.37%	50.00%
Israel	7	7.87%	5	6.67%	12	2.23%	58.33%
Japan	3	3.37%	2	2.67%	35	6.49%	8.57%
Singapore	3	3.37%	2	2.67%	9	1.67%	33.33%
Other - Asia	0	0.00%	0	0.00%	16	2.97%	0.00%
ASIA	21	23.60%	15	20.00%	113	20.96%	18.58%
Chile	1	1.12%	0	0.00%	20	3.71%	5.00%
Mexico	8	8.99%	7	9.33%	28	5.19%	28.57%
Peru	1	1.12%	1	1.33%	2	0.37%	50.00%
Other - South America	0	0.00%	0	0.00%	52	9.65%	0.00%
SOUTH AMERICA	10	11.24%	8	10.67%	102	18.92%	9.80%
Australia	4	4.49%	3	4.00%	23	4.27%	17.39%
New Zealand	4	4.49%	4	5.33%	6	1.11%	66.67%
OCEANIA	8	8.99%	7	9.33%	29	5.38%	27.59%
AFRICA	0	0.00%	0	0.00%	13	2.41%	0.00%
Total	89	100%	75	100%	539	100%	16.51%

* We cannot find complete corporate governance and other data for 14 of the 89 firms that delisted.

Table 2. Country and year distributions of the sample firms

Panel B: New ADR listings and voluntary delistings over the period from 1990 to 2005

Year	Total ADR Listings	Level I	Level II & III	Level I Rate	Level II & III Rate	Voluntary Delistings
1990	22	17	5	77.27%	22.73%	
1991	32	23	9	71.88%	28.13%	
1992	40	33	7	82.50%	17.50%	
1993	72	57	15	79.17%	20.83%	
1994	180	156	24	86.67%	13.33%	0[*]
1995	98	81	17	82.65%	17.35%	
1996	160	127	33	79.38%	20.63%	
1997	180	138	42	76.67%	23.33%	
1998	160	123	37	76.88%	23.13%	
1999	155	116	39	74.84%	25.16%	
2000	157	92	65	58.60%	41.40%	1[**]
2001	137	93	44	67.88%	32.12%	2[***]
2002	120	91	29	75.83%	24.17%	17
2003	96	82	14	85.42%	14.58%	18
2004	134	109	25	81.34%	18.66%	24
2005	128	106	22	82.81%	17.19%	24
1-5/2006	77	68	9	88.31%	11.69%	4

Data about the new listings are from the same information sources used to identify the sample, as described in Section 4.

[*],[**],[***]: Marosi and Massoud (2006) report 4, 3, and 4 voluntary non-Canadian delistings for these periods respectively.

Panel C: Yearly distribution of foreign firms that voluntarily delisted over the 2002-2006 period

	Starting sample		**Final sample**	
Year	N	Percent	N	Percent
2001	2	2.25	0	0.00
2002	17	19.10	15	20.00
2003	18	20.22	14	18.67
2004	24	26.97	21	28.00
2005	24	26.97	21	28.00
1-5/2006	4	4.60	4	5.33
Total	89	100.00	75	100.00

Table 3. Market-adjusted returns around major events surrounding the Sarbanes-Oxley Act

The event windows are chosen according to the work by Ivy Zhang (JAE,2006), Litvak (WP, 2005), and Rezaee and Jain (WP, 2005). The criterion is that there should be significant price reactions over the event window consistently in the three studies.

	Window (all in 2002)	Event description	Types of firms	Mean of CARs across firms	Zw-stat (Patell, 1976)
Event 1	7/8 - 7/10	Senate debated Sarbanes' bill; passage of Sarbanes' bill likely; Senate passed a tough amendment to strengthen criminal penalties.	control	-0.007	**-1.570***
			sample	-0.005	-0.610
Event 2	7/18 - 7/21	House republican leaders reportedly retreated from efforts to dilute the Senate's tough bill; Conference committee started negotiations regarding the form and contents of the bill.	control	0.004	**1.637***
			sample	0.009	**1.947***
Event 3	7/24 - 7/26	Senate and House agreed on the final rule and passed SOX.	control	-0.033	**-5.220 ***
			sample	-0.017	**-2.290***
Event 4	8/2 - 8/4	The SEC issued a proposed rule, Certification of Disclosure in Companies' Quarterly and Annual Reports with foreign issuers not exempted.	control	-0.024	**-5.118***
			sample	-0.007	**-2.273***
Event 5	10/22 - 10/23	The SEC issued a proposed rule, disclosure Required by Sections 404, 406, and 407 of SOX requiring a number of new disclosures. The rule has no significant exemptions for foreign issuers.	control	0.003	1.047
			sample	0.006	**1.782***
Events 1 - 3	Prior to SOX	*Wi_0109*	control	-0.035	**-3.662***
			sample	-0.012	-0.972
Events 4 - 5	Post SOX		control	-0.021	**-2.878***
			sample	-0.001	-0.356
Events 1 - 5	All events	*Wi_0113*	control	-0.055	**-4.602***
			sample	-0.013	-1.004

*: Significant at 10% level.

Table 4. Comparison of mean statistics between sample firms and control firms

Variables	Sample firms	Control firms	Difference	Pr>|t|	N
Board Independence (H1a)					
OUTDRTPCT	61.60	68.34	-6.74	**0.04**	150
NUMDRT	9.00	11.28	-2.28	**0.00**[*]	150
Private Benefits of Control (H1b)					
FIVEOWN	48.06	36.99	11.07	**0.01**	150
CHAIRMANOWN	11.50	7.05	4.45	0.18	150
CEOOWN	6.94	3.38	3.56	0.15[*]	150
Financial Reporting Quality (H1c)					
STDRATIO	1.28	1.06	0.22	0.47	123
MEDIANACC_OCF	0.56	0.58	-0.02	0.81[*]	123
CORR_NI_OCF	0.26	0.33	-0.07	0.42	128
Other Factors					
CEOTENURE	7.54	6.61	0.92	0.54	146
CHAIRMANTENURE	8.08	6.49	1.60	0.23[*]	147
SIZE_B	6.63	8.27	-1.65	**<.0001**	150
SOX_FEER	0.58	0.46	0.12	**<.0001**	146
ASSETS_USD	3,593	17,484	-13,890	**0.03**[*]	150
ROA	-4.51	2.31	-6.81	**0.01**	150
MTB	1.04	1.47	-0.43	0.83	150
DEBTPCT	27.15	28.99	-1.84	0.62[*]	150
NORTHAMSALES	0.18	0.27	-0.09	**0.02**	150
FRNSALESPCT	60.13	61.89	-1.76	0.75	116

All variables are defined in Table 1.

[*]: Groups with unequal variances. Satterthwaite's (1946) approximation is used to compute the degrees of freedom associated with the approximate t for these groups.

Table 5. Pearson and Spearman correlation coefficients*

	CEO_CHAIRMAN	NUMDRT	OUTDRTPCT	FIVEOWN	CEOOWN	CHAIRMANOWN	CORR_NI_OCF	MEDIANACC_OCF	STDRATIO	Wi_0109	SOX_FEER	ROA	SIZE_B	MTB	DEBTPCT	NORTHAMSALES
CEO_CHAIRMAN		0.08	**-0.19**	0.10	**0.27**	**0.22**	0.08	-0.11	-0.13	-0.01	0.01	0.05	0.01	-0.04	0.00	0.06
NUMDRT	0.11		**-0.21**	-0.04	0.00	0.01	0.05	**-0.17**	-0.06	-0.11	**-0.45**	0.13	**0.54**	0.01	**0.27**	-0.03
OUTDRTPCT	**-0.20**	**-0.15**		-0.01	-0.01	-0.04	-0.09	0.06	-0.05	0.13	0.03	-0.09	-0.05	0.07	0.08	0.02
FIVEOWN	0.11	-0.08	0.00		0.05	**0.20**	-0.02	0.00	0.10	-0.11	**0.33**	-0.02	**-0.26**	-0.08	0.03	**-0.31**
CEOOWN	**0.52**	0.05	**-0.18**	**0.28**		**0.51**	0.00	-0.01	0.12	0.01	**0.31**	**-0.18**	**-0.30**	-0.08	-0.12	**0.20**
CHAIRMANOWN	**0.29**	0.01	-0.08	**0.44**	**0.66**		-0.07	0.01	0.07	0.13	**0.31**	-0.09	**-0.29**	-0.04	-0.07	0.12
CORR_NI_OCF	0.07	0.07	-0.07	-0.01	0.06	-0.12		**-0.22**	**-0.19**	-0.05	-0.13	**0.19**	0.14	0.06	**-0.23**	-0.06
MEDIANACC_OCF	-0.12	-0.11	0.06	0.03	-0.11	-0.06	**-0.25**		**0.21**	0.09	0.08	**-0.50**	-0.13	-0.08	-0.09	-0.13
STDRATIO	-0.13	-0.08	0.06	0.02	-0.07	-0.03	-0.11	**0.24**		0.02	**0.27**	**-0.43**	**-0.32**	**-0.21**	0.09	0.00
Wi_0109	0.00	-0.09	0.05	-0.10	0.07	-0.05	-0.04	0.04	0.00		0.06	0.01	-0.08	0.07	-0.13	-0.08
SOX_FEER	0.00	**-0.44**	0.04	**0.24**	**0.16**	**0.21**	-0.10	0.13	0.08	0.08		**-0.28**	**-0.93**	**-0.14**	**-0.16**	-0.12
ROA	**0.13**	**0.23**	-0.08	-0.01	0.04	-0.05	**0.25**	**-0.41**	**-0.27**	0.01	**-0.39**		**0.36**	**0.29**	-0.11	-0.03
SIZE_B	0.02	**0.56**	-0.03	**-0.20**	**-0.15**	**-0.17**	0.12	**-0.18**	-0.14	-0.09	**-0.92**	**0.47**		0.11	**0.23**	-0.03
MTB	0.02	-0.04	-0.03	0.07	0.00	-0.05	-0.02	0.06	0.04	0.09	0.03	-0.18	-0.03		-0.11	**0.16**
DEBTPCT	-0.04	**0.18**	0.13	0.06	-0.11	0.02	**-0.23**	-0.03	0.01	-0.11	-0.10	-0.13	**0.15**	-0.14		-0.11
NORTHAMSALES	0.00	-0.08	0.07	**-0.22**	-0.01	-0.12	-0.11	0.01	0.10	-0.10	-0.03	-0.07	-0.08	0.05	-0.11	

*: All variables are defined in Table 1. Pearson coefficients: lower left triangle; Spearman coefficients: upper right triangle. Boldfaced: significant at 10% level. N values for each variable are reported in Table 4.

Table 6. Corporate governance characteristics and voluntary delisting decisions

	Predicted sign	Hypothesis	I		II	
			Coef.	Pr>ChiSq	Coef.	Pr>ChiSq
INTERCEPT			**14.93**	*0.00*	**17.68**	*0.01*
CEO_CHAIRMAN	+		-0.19	*0.80*	-0.30	*0.73*
NUMDRT	-	H1a	**-0.21**	*0.02*	-0.18	*0.12*
OUTDRTPCT	-		**-3.78**	*0.00*	**-4.32**	*0.02*
FIVEOWN	+		**0.03**	*0.02*	**0.03**	*0.05*
CEOOWN	+	H1b	0.02	*0.31*	0.04	*0.19*
CHAIRMANOWN	+		-0.02	*0.12*	**-0.05**	*0.03*
CORR_NI_OCF	-				**-1.57**	*0.03*
MEDIANACC_OCF	+	H1c			-1.34	*0.12*
STDRATIO	+				-0.16	*0.37*
Wi_0109	+	H1d	**0.59**	*0.03*	**0.91**	*0.02*
SOX_FEER	+	H2	**-7.03**	*0.04*	-6.32	*0.21*
ROA	-		-0.01	*0.71*	**-0.10**	*0.05*
SIZE_B	-		**-0.97**	*0.01*	**-1.01**	*0.04*
MTB	?	Control variables	-0.01	*0.34*	-0.02	*0.23*
DEBTPCT	?		0.01	*0.33*	-0.01	*0.50*
NORTHAMSALES	-		**-3.29**	*0.00*	-2.38	*0.15*
Number of Obs.			134		94	
Pseudo-R^2			.35		.39	
Percent Concordant			84.7		87.8	
LR ChiSq			57.8	*0.00*	46.5	*0.00*

p-values are based on Wald ChiSq statistic. All variables are defined in Table 1. H1 is the agency conflict hypothesis. H2 is the compliance cost hypothesis. Number of observations of 134 (94) firms represent 67 (47) sample and 67 mathcing firms.

Table 7. Cumulative abnormal returns (*CAR*) around delisting announcements for sample firms

The statistic Z_W follows Patell (1976). The calculation formula is shown in Equation (7a-b). It tests the significance of the cumulative abnormal returns measured over the event window. *CAR* is the cumulative daily abnormal returns based on residuals from the market model.

WINDOW	CAR	Z_W	N
(-1, 0)	-0.005	-1.32	75
(0, 1)	-0.005	-1.44	75
(-1, 1)	-0.005	**-1.55**	75
(-2, 0)	-0.014	**-2.49**	75
(0, 2)	-0.011	**-2.69**	75
(-2, 2)	-0.019	**-3.48**	75
(-5, 0)	-0.025	**-2.82**	75
(0, 5)	-0.027	**-3.08**	75
(-5, 5)	-0.046	**-3.99**	75

Table 8. Delisting announcement returns and corporate governance characteristics*

	Predicted sign	Hypothesis	I		II	
			Coeff.	Pr>ChiSq	Coeff.	Pr>ChiSq
INTERCEPT			-4.06	0.46	20.88	0.28
CEO_CHAIRMAN	-		**2.45**	**0.10**	4.54	0.28
NUMDRT	+	H1a	**0.26**	**0.05**	0.72	0.15
OUTDRTPCT	+		**7.31**	**0.00**	10.26	0.13
FIVEOWN	-		0.03	0.15	0.00	0.92
CEOOWN	-	H1b	0.01	0.85	0.43	0.38
CHAIRMANOWN	-		0.00	0.86	-0.45	0.35
CORR_NI_OCF	+				-2.74	0.11
MEDIANACC_OCF	-	H1c			**-11.88**	**0.01**
STDRATIO	-				0.57	0.38
Wi_0109	-	H1d	-0.43	0.31	0.63	0.45
SOX_FEER		H2	-4.47	0.31	-20.68	0.30
ROA			-0.03	0.21	**-0.19**	**0.07**
SIZE_B			-0.46	0.34	-2.67	0.21
MTB		Control variables	**0.20**	**0.07**	**0.83**	**0.04**
DEBTPCT			-0.01	0.30	-0.02	0.68
NORTHAMSALES			**-3.58**	**0.08**	-8.93	0.13
Number of Obs.			71		53	
Pseudo-R^2			**.37**		.69	
Percent Concordant			**82.4**		**94.6**	
LR ChiSq			**20.92**	**.07**	**33.33**	**.01**

*: *p*-values are based on Wald ChiSq statistic. All variables are defined in Table 1. H1 is the agency conflict hypothesis. H2 is the compliance cost hypothesis.

Figure 1. Time series of new listings and voluntary delistings of Level II and Level III ADR programs over the period from 1990 to 2006.[*]
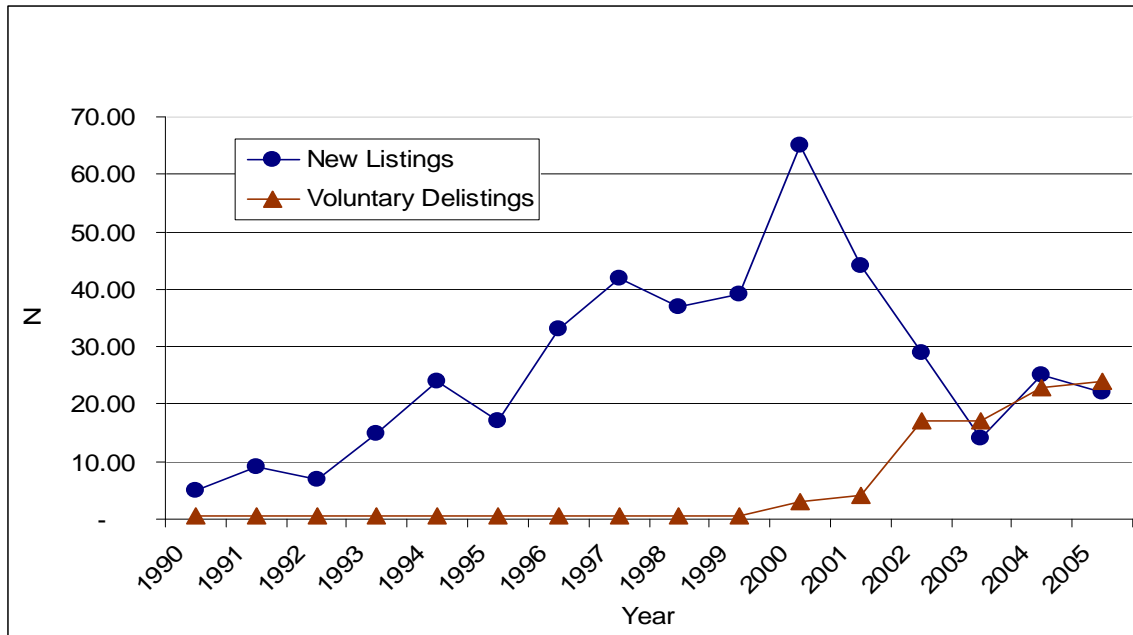
* Data about the new listings are from the same information sources used to identify the sample, as mentioned in Section 4.

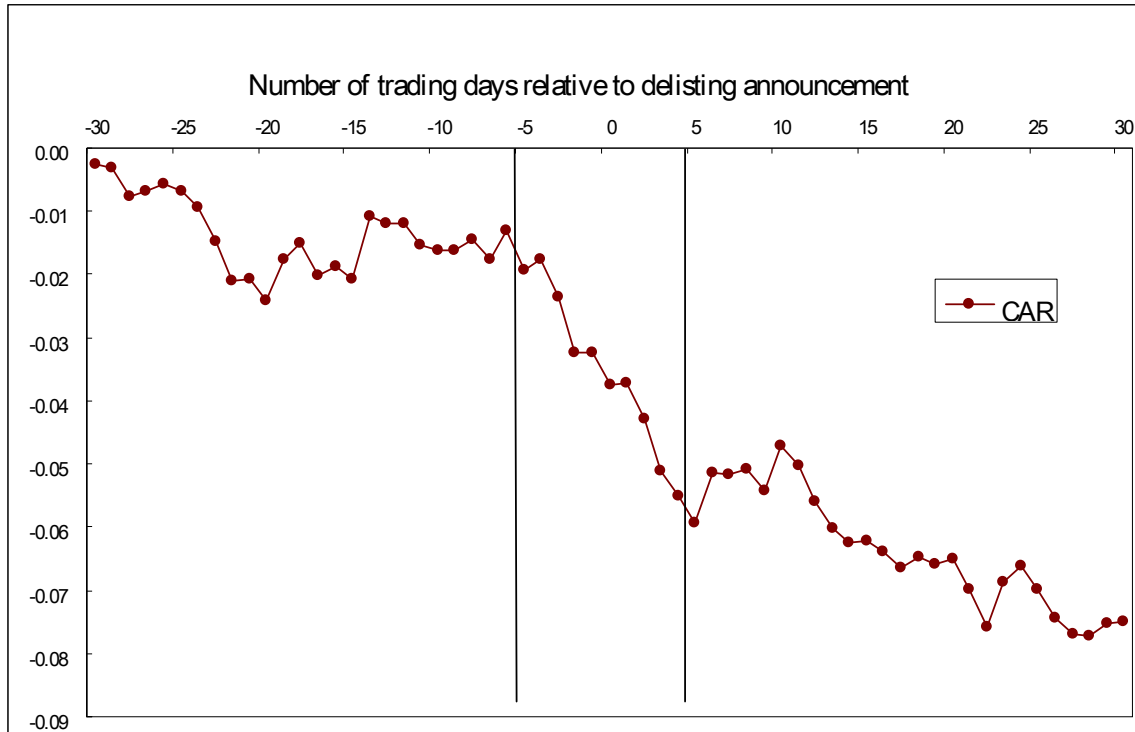**Figure 2.** Cumulative market-adjusted excess returns around voluntary delisting announcements
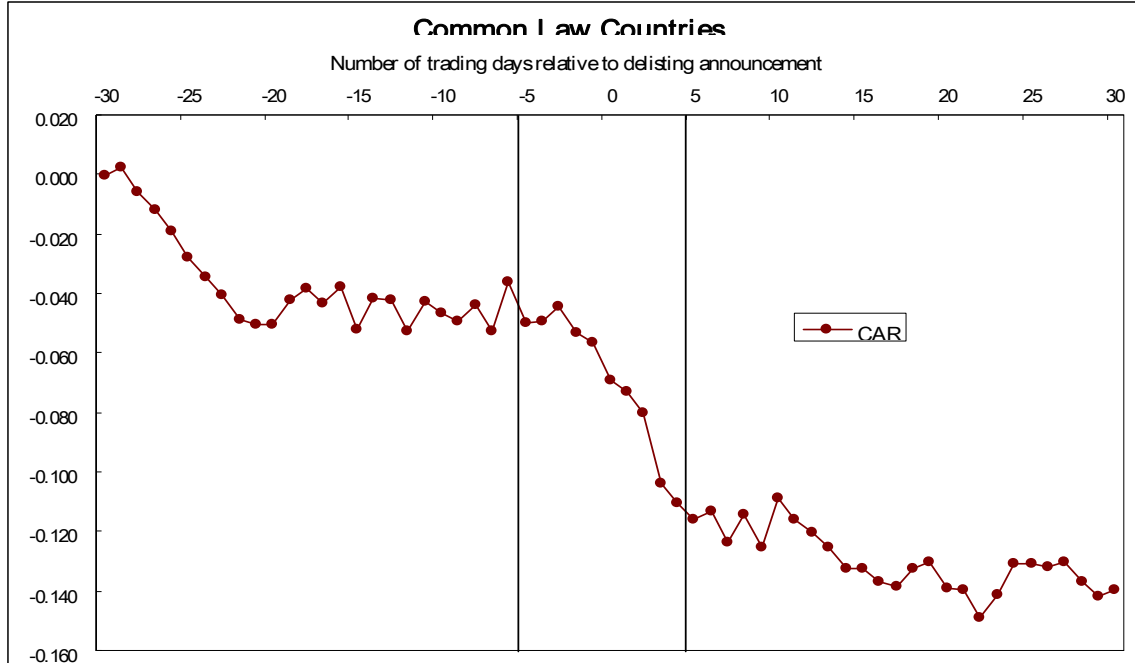
Figure 3. Cumulative market-adjusted returns around voluntary delisting announcements in different legal origins

A. Common Law countries
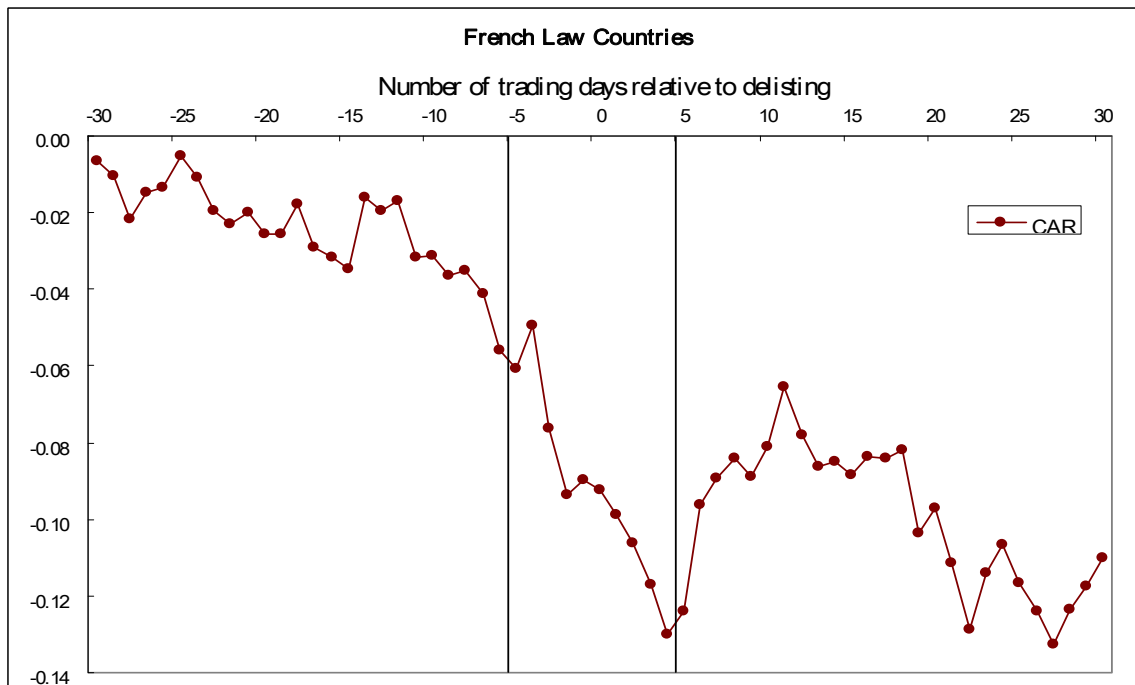

B. French Law countries

Figure 3. Cumulative market-adjusted returns around voluntary delisting announcements

C. German and Scandinavian countries