

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

Peter Hostak

Charlton College of Business
University of Massachusetts at Dartmouth

Emre Karaoglu

Leventhal School of Accounting
University of Southern California

Thomas Lys**

Kellogg School of Management
Northwestern University

Yong (George) Yang

Faculty of Business Administration
The Chinese University of Hong Kong

March 28, 2007

* Financial support from the Research Grants Council of the Hong Kong Special Administration Region, China (Project No. CUHK4623/06H) and the Accounting Research Center at The Kellogg School is gratefully acknowledged. We thank Mingyi Hung, Bin Ke, Gordon Richardson, TJ Wong, and workshop participants at The Chinese University of Hong Kong and Pennsylvania State University for valuable comments.

** Corresponding author. (847) 491-2673, tlys@northwestern.edu

Abstract

Passage of the Sarbanes-Oxley Act (SOX) has led to an increase in voluntarily delistings of foreign firms from US stock exchanges. We examine whether the delisting decisions of these firms were motivated by the firms' costs of complying with SOX or by the managers' or controlling shareholders' (MCOs) private costs due to loss of control rents after SOX. We take into account that many foreign firms cannot practically delist their American Depositary Receipts (ADRs) even if they wanted to do so, and we document that firms which voluntarily delisted have weaker corporate governance than firms that maintained their US listings. Consistent with these results, we find that firms suffered a significant price decline in their home-markets in the days surrounding their delisting announcements. These results suggest that foreign firms with weaker corporate governance delisted to avoid complying with the corporate governance mandates of SOX - not because of the implementation costs that would be incurred by the firm, but because of the costs associated with the loss of private benefits that would be incurred by MCOs.

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

1. Introduction

Congress passed the Sarbanes-Oxley Act of 2002 (SOX) in response to the accounting scandals starting in the late 1990's. Its main objective was to restore investor confidence in US capital markets by improving the accuracy and reliability of corporate disclosures. To this end, SOX established more stringent standards for internal control, 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 the Act are negative (Zhang, 2006, 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 (ADRs) to analyze the tradeoff between the cost of compliance with SOX and governance benefits of SOX. Because foreign firms can delist from US exchanges while still remaining public in their home countries, they can avoid complying with SOX at significantly lower cost than US-domiciled corporations (which must either comply with SOX or go private). 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 provide a more transparent metric by which to study the impact of SOX as the significant cost of going private that US firms would incur does not confound our analysis of delisting decisions by foreign firms.

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

Using foreign firms we test two hypotheses: whether foreign firms delisted 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) at the expense of shareholders at large.

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 such as lower percentage of independent directors, smaller boards, higher CEO ownership, and lower financial reporting quality. Further, the share prices of firms with bad governance characteristics rose in response to SOX – indicating that investors believed that SOX will reduce MCOs exploitation of non-controlling investors.

However, our analysis of the stock price reaction at the delisting date documents a negative stock-price response. Therefore, it appears that investors were disappointed that the firms avoided the corporate governance improvements required by SOX and that they believed the delistings to be motivated by managers who tried to maintain their rents rather than maximizing the values of their firms. Moreover, we find no evidence that delisting decisions were motivated by avoiding the costs of compliance. Finally, to the extent that investors at least partially anticipated the possibility of delistings when SOX passed, our results would only underestimate the magnitude of the true effect of agency costs in the delisting decision.

Our results add to the literature regarding the impact of SOX on US capital market participants. First, in contrast with 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, we find a positive market reaction in a small segment of the market where investors face the greatest risk of expropriation. Consistent with Cohen, Dey, and Lys (2004a) who find that earnings management decreased following SOX, we find that SOX is working towards its objective of reducing fraud and expropriation of outsiders by insiders. The results of our analysis are consistent with those of Engel, Hayes, and Wang (2006) and Leuz, Triantis, and Wang (2006) who document a significant increase in SEC deregistrations and going-private decisions after the passage of SOX. We expand their analysis in a setting where the delisting decision is decoupled from the going-private decision – a decision that independently and substantially reduces access to outside capital.

Our paper expands on other studies that examine the impact of SOX on foreign firms listed in the US in two important ways (e.g., Marosi and Massoud, 2005; 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 many firms that maintain their US listings may be doing so involuntarily because of the large costs of delisting. Accordingly, we form a control group of firms that have similar size and fraction of shares listed in the US market 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.

We also make an important 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 premiums 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 firms that 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 suggests that SOX is not adversely affecting the competitiveness of US exchanges.

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 data and our sample. Section 5 presents the empirical evidence and Section 6 concludes.

2. Institutional Background

Foreign firms have two options to be listed on US exchanges. First, just as with any US firm, they can issue shares by registering them with the SEC while still being traded on foreign exchanges (e.g., in their home country). Alternatively, a depository institution, acting as a custodian, issues American Depository Receipts (ADRs) backed by shares issued in the home country.²

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

² A foreign company may also privately place ADRs with Qualified Institutional Buyers under Rule 144A.

issuance of new stock. 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.

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 (Form 20-F).

We examine the recent delisting 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 25.³ The SEC can then impose additional terms if necessary to protect investors, but has not done so for many years.⁴ The delisting can be effective after 10 days from the filing date. Moreover, to deregister completely and to be freed from all filing requirements, the company needs to have fewer than 300 shareholders. If the number of outstanding ADRs is large, reducing the shareholder to fewer than 300 is costly.

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 share liquidity. Additional benefits include an increased visibility and reputation of a firm's products in the US and in other countries. Further, many

³ 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.

⁴ 70 FR 42456, July 22, 2005.

foreign firms benefit from the imposition of the US legal system which provides better investor protection and corporate governance, actions that could lower firms' cost of capital. We denote these benefits by B .

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. Finally, we consider that the MCOs' decision to list in the US is likely to be affected by the private benefits that they derive due to agency problems of the kind described in prior research (see, for example, in Jensen and Meckling, 1976). We denote these control rents by A .

In what follows, we derive a set of simple equations that demonstrate the conditions under which the MCOs decide to list or delist their firm's shares in the US before and after SOX. We assume that MCOs own a fraction α of shares of a firm that has a market value of V , representing the present value of the firm's cash flows absent agency and listing costs. Based on prior literature (e.g. Dyck and Zingales (2004)), A is an increasing function of α . We then derive the total wealth of the MCOs including their private benefits. When the firm is listed only in its domestic market, the MCOs' wealth is given by:

$$A_F + \alpha \times (V - A_F) \quad (1)$$

where the subscript F denotes the home country of the firm. If the firm is listed in the US prior to SOX, the MCOs' wealth would be

$$A_{US,preSOX} + \alpha \times (V + B_{US,preSOX} - C_{US,preSOX} - A_{US,preSOX}) \quad (2a)$$

including private benefits. After SOX, the MCOs' wealth would become

$$A_{US,postSOX} + \alpha \times (V + B_{US,postSOX} - C_{US,postSOX} - A_{US,postSOX}) \quad (2b)$$

Hence the MCOs will decide to list the shares of the firm in the US if (2a) before SOX or (2b) after SOX is larger than (1):

$$A_{US,preSOX} - A_F + \alpha \times (B_{US,preSOX} - C_{US,preSOX} - A_{US,preSOX} + A_F) > 0 \quad (3a)$$

Consequently, the change in firm value due to the listing as an ADR will be

$$\Delta ADR_{F \rightarrow US} = (B_{US,preSOX} - C_{US,preSOX} - A_{US,preSOX} + A_F) \quad (3b)$$

Because a US listing is generally viewed as resulting in lower agency costs (i.e., $A_{US,preSOX} - A_F < 0$), equation (3a) implies that $\Delta ADR_{F \rightarrow US} > 0$ for listed firms.

After SOX, a firm would delist if

$$A_{US,postSOX} - A_F + \alpha \times (B_{US,postSOX} - C_{US,postSOX} - A_{US,postSOX} + A_F) < 0 \quad (4a)$$

and the change in firm value when the firm delists will be

$$\Delta ADR_{US \rightarrow F} = -(B_{US,postSOX} - C_{US,postSOX} - A_{US,postSOX} + A_F) \quad (4b)$$

Based on equation (4a), the probability of a voluntary delisting will be decreasing in the governance effects of SOX, decreasing in the magnitude of the other benefits of a US listing, and increasing in the costs of compliance with SOX, i.e., we conjecture that the likelihood of delisting will be

$$prob(\text{delisting}) = f(B_{US,postSOX}, C_{US,postSOX}, A_{US,postSOX} - A_F) \quad (5)$$

where the first partial derivative is negative, the second positive, and the third negative.

For firms that delisted, the sign of $\Delta ADR_{US \rightarrow F}$ can be either positive or negative, depending on the governance benefits of SOX, the MCOs' private benefits, and the cost of complying with the requirements of SOX. However, $\Delta ADR_{US \rightarrow F}$ will be declining in the impact of SOX on governance and increasing in the costs of compliance with SOX. This observation constitutes the basis of our empirical analysis.

We expect a higher quality of corporate governance to result in lower control rents (i.e., lower private benefits) appropriated by MCOs from other investors. In other words, corporate governance quality is negatively associated with the decrease in control rents following SOX ($A_{US,postSOX} - A_F$). Since the loss of control rents is positively related to the delisting likelihood based on equation (5), we have our first main hypothesis:

H1: Corporate governance quality is negatively associated with the probability of delisting.

We consider several dimensions of corporate governance quality 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 to be of better quality (Weisbach, 1988). Accordingly we have our first testable hypothesis.

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

Second, we consider the entrenchment effect of controlling shareholders and private benefits of control. 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 degree to which the firm is closely controlled is positively associated with the probability of delisting.

However, there is a caveat with this prediction. Both control rents (A) and benefits (B) in equations (2a-2b) are likely to change with SOX simultaneously. Therefore, whether costs or benefits dominate is an empirical issue.⁵

⁵ Theoretical derivation shows that the prediction actually depends on the marginal effect of controlling ownership on agency rents and on other benefits as well as the level of the controlling ownership itself. However, it is very

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: Financial reporting quality is negatively associated with the likelihood of delisting.

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 (4b), 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 cumulative abnormal return for events surrounding the passage of SOX is positively associated with the probability of delisting.

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: Compliance costs are positively associated with the probability of delisting.

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 depository banks, the Bank of New York, JP Morgan, and Citibank.⁶ 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

difficult to use our small sample to disentangle these different effects; thus we have to rely on the more gross measure of level of controlling ownership.

⁶ These three banks sponsor more than 90% of ADRs in the US (http://www.adrbny.com/dr_directory.jsp).

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 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.⁷ 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 88 firms that voluntarily delisted from January 2001 to May 2006. We match this delisting sample with 88 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, industry.⁸

We obtain home-country stock prices and market indices from Datastream and Yahoo! Finance and cross-validate across these data sources.⁹ When price series are available from multiple exchanges (e.g., Germany) we select the one with the highest trading volume or price volatility.

⁷ 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).

⁸ 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 two observations. First, the majority of our sample firms that have not deregistered have deregistration as their goal in their delisting announcements. Second, there does not seem to be any direct benefit for firms to be registered with the SEC but not to participate in trading in the US.

⁹ In one case, we obtain the data from the firm's own website.

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 1 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 75 firms identified above represent 13.9% of the 539 Level II and Level III ADR programs that were active as of May 2006. 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 few South American firms voluntarily delisted in these years.

Panel B of Table 1 and Figure 1 document the over-time pattern of US ADR listings and delistings. 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 occurring 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. Further, non tabulated results indicate that the slowdown in Level II and Level III ADRs is steeper than that of the Level I ADRs.¹⁰

¹⁰ Marosi and Massoud (2006) find several 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.

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 2 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*)¹¹ and (ii) the number of directors (*NUMDRT*). We conjecture that it would be more difficult for the board to collude or be complacent and act against shareholders' interests when there are more directors relative to firm size.¹²

Second, for H1b, we adopt four 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*),¹³ (ii) the CEO's ownership in the firm (*CEOOWN*), and (iii) the chairman's ownership (*CHAIRMANOWN*).

Third, 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 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 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,

¹¹ Outside directors are identified as those who have no employment record with the firm according to Item 6 of Form-20F.

¹² We control for firm size in all our regressions.

¹³ As a robustness check we also examine the ownership controlled by the top three owners (*THREEOWN*).

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):

$$Wi_0109 = \sum_{t=1}^9 \frac{u_{i,t}}{s_i \sqrt{LC_{i,t}}}, \quad (6)$$

where,

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

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 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 need to reach out of their home markets to raise capital. They are also more likely to derive their 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.¹⁴ In addition, because of the large US investor base, larger firms may also find that it is more difficult for them 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 (*NORTHMSALES*): Prior research suggests that foreign firms derive benefits from cross-listing because it enhances the sale of their products in the US. 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,¹⁵ 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

¹⁴ 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.

¹⁵ In very few cases, when that information is not available, we use the percentage of foreign sales as a substitute.

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 be less liquid. In addition those firms are also likely to benefit less from cross-listing (ability to raise capital or product market reputation spillover). 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 desired 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's target debt level has increased since its ADR listing, it may not be interested in issuing new equity and, hence, the ADR listing is irrelevant. Consequently, since target debt level is not observable, we cannot predict the direction of the association. Our empirical leverage proxy is the ratio of total liabilities to total assets.

Compliance costs (*SOX_FEER*): Our proxy for compliance costs is the audit fee premium that a firm pays as a consequence of US cross-listing. We assume that the audit fee premium for cross-listing is highly correlated with the overall cross-listing costs because both are highly correlated with business complexity.

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.

$$\begin{aligned}
AUDITFEE_{it} = & \alpha_0 + \sum_{j=1}^2 \beta_{1j} Size_{it} + \sum_{k=1}^4 \phi_{1k} Audit_Complexity_{it} + \sum_{l=1}^3 \gamma_{1l} ClientLitigationRisk_{it} \\
& + \sum_{l=4}^5 \gamma_{1l} DomesticLitigationRisk_{it} + \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=3}^4 \beta_{2j} XL_{it} * Size_{it} + \sum_{k=5}^8 \phi_{2k} XL_{it} * AuditComplexity_{it} \quad (8) \\
& + \sum_{l=6}^8 \gamma_{2l} XL_{it} * ClientLitigationRisk_{it} + \sum_{l=9}^{10} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + \sum_{m=1}^9 \delta_m * Industry_{it} + \varepsilon_{it}
\end{aligned}$$

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

$$SOX_FEER_{it} = \frac{E[CrossListing\ Pr\ emium_{it}]}{E[AUDITFEE_{it}]} \quad (9)$$

where

$$\begin{aligned}
E[CrossListing\ Pr\ emium_{it}] = & \hat{\alpha}_1 XL_{it} + \hat{\alpha}_2 SOX_{it} + \sum_{j=3}^4 \hat{\beta}_{2j} XL_{it} * Size_{it} + \sum_{k=5}^8 \hat{\phi}_{2k} XL_{it} * AuditComplexity_{it} \quad (11) \\
& + \sum_{l=6}^8 \hat{\gamma}_{2l} XL_{it} * ClientLitigationRisk_{it} + \sum_{l=9}^{10} \hat{\gamma}_{2l} XL_{it} * CrossListingLitigationRisk_{it}
\end{aligned}$$

and

$$\begin{aligned}
E[AuditFee] = & \hat{\alpha}_0 + \sum_{j=1}^2 \hat{\beta}_{1j} Size_{it} + \sum_{k=1}^4 \hat{\phi}_{1k} AuditComplexity_{it} + \\
& \sum_{l=1}^3 \hat{\gamma}_{1l} ClientLitigationRisk_{it} + \sum_{l=4}^5 \hat{\gamma}_{1l} DomesticLitigationRisk_{it} + \\
& \sum_{m=1}^9 \hat{\delta}_m * Industry_{it} + E[CrossListing\ Pr\ emium_{it}] \quad (10)
\end{aligned}$$

Further details of this model are provided in Appendix 1.

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. Our evidence shows that share prices of the delisting firms first increased in response to the passage of SOX and then declined in response to the delisting announcement. 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 positive reaction to the passage of SOX is a predictor of subsequent delisting. Together, the evidence suggests that investors were anticipating 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. 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 (Tables 3 and 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). 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 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*, -.25 between *MEDIANACC_OCF* and *CORR_NI_OCF*, and -.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 -.44, .24, .16, and .21 respectively. Firm size is also correlated with the same four variables, in the opposite direction (.56, -.20, -.15, and -.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.¹⁷

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 figure is seldom disclosed by the firm. 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.¹⁸ Because it is generally not possible to match further on firm size, we also include firm size in our regression.¹⁹ We then perform our regression analysis in the matched sample as follows.

$$\log\left(\frac{\Pr(SAMPLE = 1 | X, Z)}{1 - \Pr(SAMPLE = 1 | X, Z)}\right) = \alpha + XB_1 + ZB_2, \quad (12)$$

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

¹⁷ 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.

¹⁸ When it is not possible to match on country, we require that the control firm be from the same legal origin.

¹⁹ 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."

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 ($p < .05$). The percentage of outside directors 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 ($p < .05$). 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 ($p < .05$). 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.

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, $p < .05$). 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, $p < .01$). 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, $p = .12$). One of the other proxies standard deviation of net income to standard deviation of cashflows 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 ($p < .01$). 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 returns – event study

In this section, we examine the abnormal returns to the news announcement of a firm's intention to terminate its US cross-listing voluntarily. These announcement returns provide a measure of the change in investors' assessment of the expected *net* benefits of delisting. 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. Figure 2 depicts the daily cumulative abnormal returns for our sample firms starting from 30 days before the news announcement to 30 days after.

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. 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 returns – multivariate analysis

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

$$\log\left(\frac{\Pr(\text{POSITIVE} = 1 | X, Z)}{1 - \Pr(\text{POSITIVE} = 1 | X, Z)}\right) = \alpha + XB_1 + ZB_2 \quad (13)$$

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.²⁰

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 firms.) 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

²⁰ The difficulty in characterizing the valuation implication of value-relevant variables is manifested by the low R^2 s 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.

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.

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 so 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

We use CEO tenure (*CEOTENURE*) and chairman tenure (*CHAIRMAN-TENURE*) in all tests but they are not statistically significant at conventional levels. Since *CEOTENURE* and *CHARIMANTENURE* are hand collected and have many missing observations, we exclude these variables from the reported results, to avoid further loss of observations and hence statistical power.

In addition, we use a continuous variable of cumulative abnormal returns (CARs) as the dependent variable. We still find a significant result for *OUTDRTPCT*, which alone explains 7% of the variation of CARs. Other variables are not significant. Lastly, to control for the impact of the sell-off pressure on the delisting returns, we include the ADR percentage (*ADRPCT*) as an independent variable. It does not change any of the above results.

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 SOX, reversing a previous trend of large increases in the ADRs (see Figure 1). We seek to answer why these firms voluntarily delisted from the perspective of control rents of MCOs and SOX compliance costs.

We first examine the corporate governance characteristics of the delisting firms compared to those of control firms matched on the size of their ADR programs, country, and industry. We then examine the average home-country market response to the earliest delisting announcement and explore how this response is related to the corporate governance characteristics. Our findings can be summarized as follows. First, 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. In addition, we use investors' price response to SOX-related events as a proxy for investors' assessment of their firm's corporate governance quality provides additional evidence

consistent with this conclusion. Second, the delisting firms on average experience a negative price reaction to the 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. Rather, the evidence suggests that investors understand the agency costs involved in the delisting decision and react accordingly.

References

- 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*.
- 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.
- Marosi, A. and N. Massoud. 2006. "You Can Enter but You Cannot Leave..." – US Securities Markets and Foreign Firms. Working paper, University of Alberta
- 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.
- Patell, J. 1976. Corporate forecasts of earnings per share and stock price behavior: Empirical Tests. *Journal of Accounting Research* 14, 246–276.
- 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.
- Zhang, I.X., 2006. Economic consequences of the Sarbanes-Oxley Act of 2002. Working paper, University of Rochester.

Appendix 1.

Estimation of the cross-listing premium for audit fees

Compliance costs directly affect the cost-benefit trade-off in the delisting decision. 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 to as much as 20 years' imprisonment and \$5,000,000 from 10 years and \$1,000,000.

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), Seethamaram 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:

$$\begin{aligned}
AUDITFEE_{it} = & \alpha_0 + \sum_{j=1}^2 \beta_{1j} Size_{it} + \sum_{k=1}^4 \varphi_{1k} Audit_Complexity_{it} + \sum_{l=1}^3 \gamma_{1l} ClientLitigationRisk_{it} \\
& + \sum_{l=4}^5 \gamma_{1l} DomesticLitigationRisk_{it} + \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=3}^4 \beta_{2j} XL_{it} * Size_{it} + \sum_{k=5}^8 \varphi_{2k} XL_{it} * Audit\ Complexity_{it} \\
& + \sum_{l=6}^8 \gamma_{2l} XL_{it} * ClientLitigationRisk_{it} + \sum_{l=9}^{10} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + \sum_{m=1}^9 \delta_m * Industry_{it} + \varepsilon_{it}
\end{aligned}$$

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

$$\begin{aligned}
CrossListing\ Premium_{it} = & \alpha_1 XL_{it} + \alpha_2 SOX_{it} + \sum_{j=3}^4 \beta_{2j} XL_{it} * ClientSize_{it} + \sum_{k=5}^8 \varphi_{2k} XL_{it} * Audit\ Complexity_{it} \\
& + \sum_{l=6}^8 \gamma_{2l} XL_{it} * FirmSpecificLitigation\ Risk_{it} + \sum_{l=9}^{10} \gamma_{2l} XL_{it} * CrossListingLitigationRisk_{it} + v_{it}
\end{aligned}$$

Table1. Country and year distributions of the sample firms
Panel A: Country distribution of foreign firms that voluntarily delisted over the 2001-2006 period

Country	Starting sample		Final Sample		ADR UNIVERSE (Level II and III)		Delisting rate (starting 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%			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%			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%			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%			16	2.97%	0.00%
ASIA	21	23.60%	15	20.00%	113	20.96%	18.58%
Chile	1	1.12%			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%			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%			13	2.41%	0.00%
Total	89	100%	75	100%	539	100%	16.51%

Table 1. Country and year distributions of the sample firms

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

	ADR Listings	Level II and Level III ADR Listings	Voluntary Delistings
1990	22	5	
1991	32	9	
1992	40	7	
1993	72	15	
1994	180	24	
1995	98	17	0*
1996	160	33	
1997	180	42	
1998	160	37	
1999	155	39	
2000	157	65	1**
2001	137	44	2***
2002	120	29	17
2003	96	14	18
2004	134	25	24
2005	77	14	24

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

Year	Starting sample		Final sample	
	N	Percent	N	Percent
2002	17	19.54	15	20.00
2003	18	19.54	14	18.67
2004	24	27.27	21	28.00
2005	24	27.27	21	28.00
2006	4	4.60	4	5.33
Total	87	100.00	75	100.00

Table 2. 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 event3 prior to the passage of SOX.

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	<i>Wi_0109</i>	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	<i>Wi_0113</i>	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
<i>Board Independence (H1a)</i>					
OUTDRTPCT	61.60	68.34	-6.74	0.04	150
NUMDRT	9.00	11.28	-2.28	0.00 *	150
<i>Private Benefits of Control (H1b)</i>					
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
<i>Financial Reporting Quality (H1c)</i>					
STDRTATIO	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
<i>Other Factors</i>					
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
DEBTPTCT	27.15	28.99	-1.84	0.62*	150
NORTHMSALES	0.18	0.27	-0.09	0.02	150
FRNASSETSPCT	30.86	34.34	-3.49	0.54	88
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	NORTHMSALES
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
NORTHMSALES	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

	PredictedHypothesis sign		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
STDRTATIO	+				-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
DEBTTPCT	?		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.

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 Appendix 2. 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.

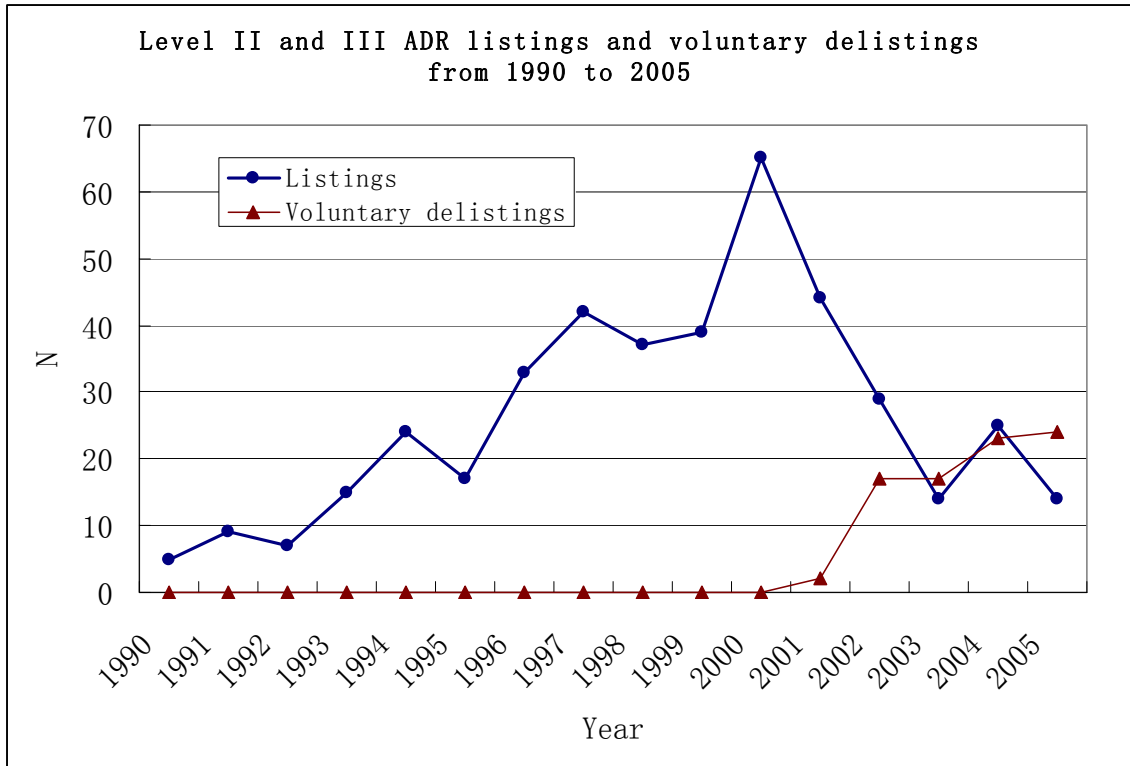
WINDOW	CAR	Z_w	N
(-1, 0)	-0.005	-1.32	75
(0, 1)	-0.005	-1.44	75
(-1, 1)	-0.005	-1.55	75
(-2, 0)	-0.014	-2.49	75
(0, 2)	-0.011	-2.69	75
(-2, 2)	-0.019	-3.48	75
(-5, 0)	-0.025	-2.82	75
(0, 5)	-0.027	-3.08	75
(-5, 5)	-0.046	-3.99	75

Table 8. Delisting returns and corporate governance characteristics*

	Predicted sign	Hypothesis	I		II	
			Coeff.	Pr>ChiSq	Coeff.	Pr>ChiSq
INTERCEPT			-4.06	<i>0.46</i>	20.88	<i>0.28</i>
CEO_CHAIRMAN	-		2.45	0.10	4.54	<i>0.28</i>
NUMDRT	+	H1a	0.26	0.05	0.72	<i>0.15</i>
OUTDRTPCT	+		7.31	0.00	10.26	<i>0.13</i>
FIVEOWN	-		0.03	<i>0.15</i>	0.00	<i>0.92</i>
CEOOWN	-	H1b	0.01	<i>0.85</i>	0.43	<i>0.38</i>
CHAIRMANOWN	-		0.00	<i>0.86</i>	-0.45	<i>0.35</i>
CORR_NI_OCF	+				-2.74	<i>0.11</i>
MEDIANACC_OCF	-	H1c			-11.88	0.01
STDRATIO	-				0.57	<i>0.38</i>
Wi_0109	-	H1d	-0.43	<i>0.31</i>	0.63	<i>0.45</i>
SOX_FEER		H2	-4.47	<i>0.31</i>	-20.68	<i>0.30</i>
ROA			-0.03	<i>0.21</i>	-0.19	0.07
SIZE_B			-0.46	<i>0.34</i>	-2.67	<i>0.21</i>
MTB		Control variables	0.20	0.07	0.83	0.04
DEBTPCT			-0.01	<i>0.30</i>	-0.02	<i>0.68</i>
NORTHMSALES			-3.58	0.08	-8.93	<i>0.13</i>
Number of Obs.			71		53	
Pseudo-R ²			.37		.69	
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 2005.*



- 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

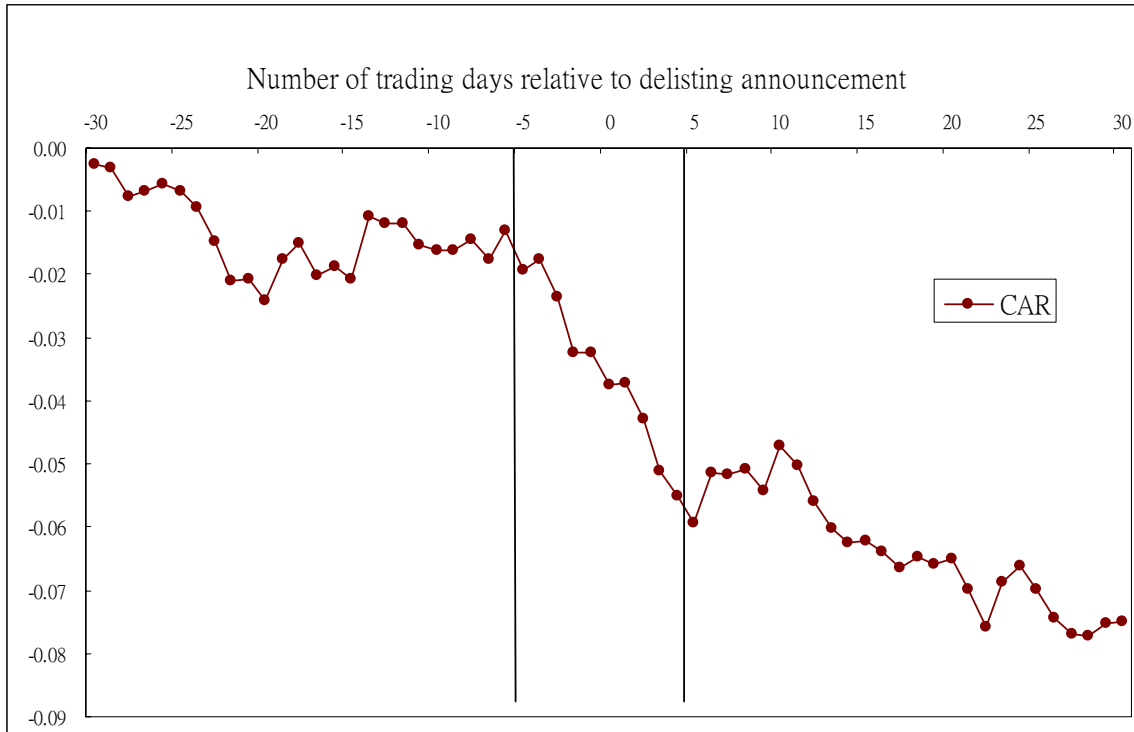
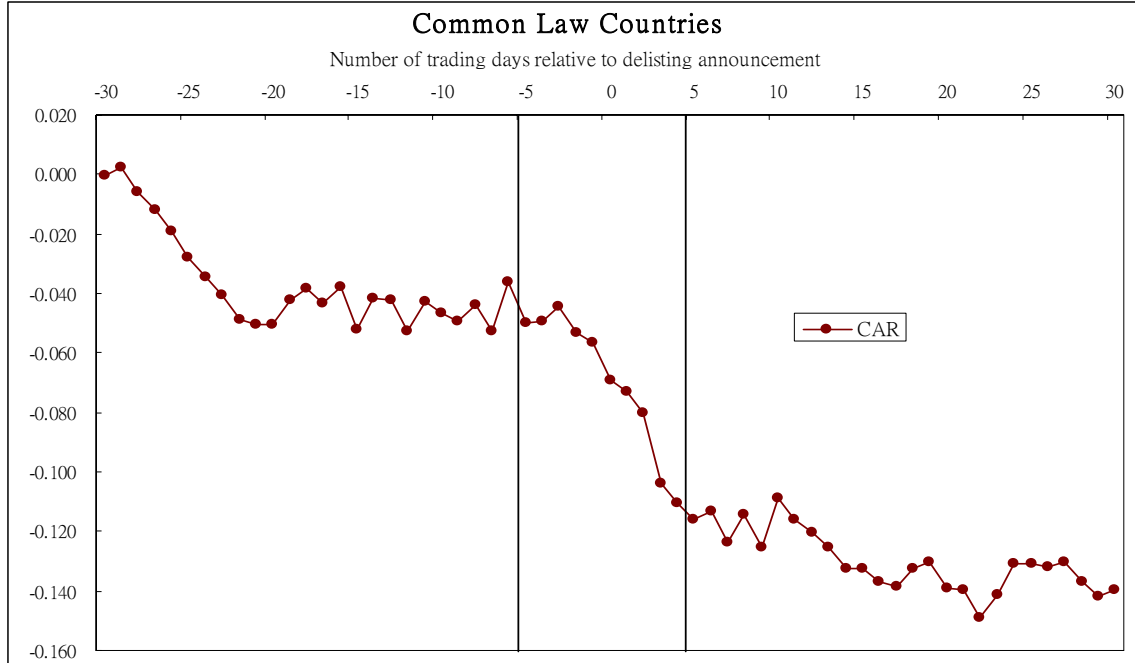


Figure 3. Cumulative market-adjusted returns around voluntary delisting announcements in different legal origins

A. Common Law countries



B. French Law countries

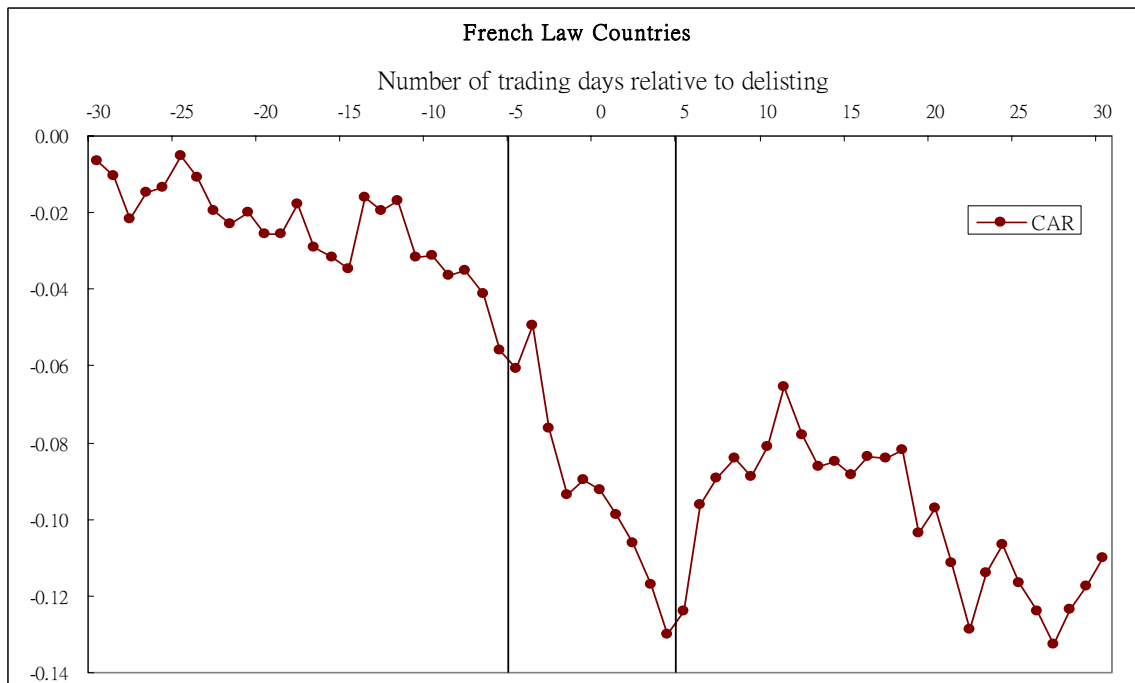


Figure 3. Cumulative market-adjusted returns around voluntary delisting announcements

C. German and Scandinavian countries

