

# **The Choice of ADRs**

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### **Abstract**

We study the determinants of a firm's decision to issue one of the four available ADR programs (Level I, Level II, Level III, and Rule 144A). We find that the firm's attributes (size, income, asset growth, leverage, privatization, ownership structure, and country-of-origin) and the firm's home-country institutional variables (accounting rating and legal protection of minority shareholders) condition this choice. We also examine the issuing activity and the determinants of the ADR choice before and after the enactment of the Sarbanes-Oxley (SOX) Act. Following this structural change, we provide evidence of a reallocation between ADR programs. Compared to the pre-SOX period, we find that, after SOX, firms from emerging markets and those from countries with weak legal protection of minority shareholders show an increased probability of choosing Rule 144A and Level III, respectively.

JEL: G15, G32, G34, K00

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# 1. Introduction

Cross-listings on U.S. markets have become a major phenomenon over the past two decades (Karolyi, 2006). These cross-listings can be achieved via a direct listing, New York Registered Shares, or American Depositary Receipts (ADRs). While firms that cross-list under ADR programs come from a wide array of developed and developing countries, those under direct cross-listing are mostly Canadian.<sup>1</sup> Focusing on ADRs thus allows us to bring to light the impact of home-country variables on the cross-listing decision.

A firm that cross-lists via an ADR has *four options* to choose from: Level I, Level II, Level III, and Rule 144A programs, all of which have distinct attributes.<sup>2</sup> For instance, Level III and Rule 144A offer an access to U.S. primary capital markets (i.e., raising capital), whereas Levels I and II allow an access to U.S. secondary markets only. Moreover, the governance and disclosure requirements vary across the four ADR programs, and are more restrictive in levels II and III (listed programs) than in Level I and Rule 144A (unlisted programs). The choice of a specific ADR program will thus ultimately depend on the firm's objectives in listing abroad. For instance, if the firm wants to raise new funds, it can do so by selecting either Rule 144A (private placements) or Level III (public offerings). If the firm wishes to broaden its shareholder base, improve its stock liquidity, and is willing to comply with the U.S. Generally Accepted Accounting Principles (GAAP) and Securities Exchanges Commission's (SEC) registration, it can choose either Level II or Level III. If the firm would rather not comply with these obligations, it can choose unlisted programs (i.e., either Level I or Rule 144A). These examples suggest that firm characteristics are likely to have an impact on the choice of a specific ADR program.

The first objective of our study is to examine the characteristics of non-U.S. firms that choose a specific ADR. Specifically, we complement the literature by conducting an exhaustive analysis of the choice of an ADR that is based on firm-level variables (financial characteristics,

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<sup>1</sup> In 2003, the United Kingdom, Australia, and Japan accounted for 17%, 10%, and 6% of the ADR listings in U.S., while, South Africa, Mexico, Brazil, India, and Russia, were respectively home to 6%, 5%, 4%, 3%, and 3% of the firms issuing ADRs. In the same year, Canadian companies represented 68.2% of the foreign ordinary shares (including direct listings and New York Registered shares) that were cross-listed on U.S. markets (Karolyi, 2006).

<sup>2</sup>The ultimate decision regarding the choice of a given ADR program is taken by the firms' managers. Depository banks in this process only act as advisors to help the firms make their choice (Citibank website).

governance, and ownership structure) and home-country institutional variables as potential determinants.

To date, no previous study on cross-listing has distinguished between the four different ADRs. Instead, available studies generally oppose listed to unlisted programs, by grouping Rule 144A and Level I together (i.e., unlisted) (e.g., Reese and Weisbach, 2002; Doidge et al., 2007a), and Level II and Level III together (i.e., listed) (e.g., Reese and Weisbach, 2002; Doidge et al., 2007a, Doidge et al., 2007b; Piotroski and Srinivasan, 2007). Distinguishing among ADR programs according to their listed/unlisted nature is important, but does not take into account other differences that exist *within* these two categories. For instance, *within unlisted programs*, Rule 144A (private placements) provides access to primary U.S. capital markets among Qualified Institutional Buyers (QIBs), while Level I does not. Similarly, *within listed programs*, Level II provides no access to primary capital markets, while Level III does so through public offerings. All these differences will naturally condition the choice of a particular ADR, and we consequently consider all four options on an individual basis, i.e., Level I, Level II, Level III, and Rule 144A.

The choice of a specific ADR is of primary importance for both practical and theoretical grounds: *In practice*, the choice has an impact on the firm's future financing decisions and corporate governance: (1) More precisely, the choice of a particular ADR affects the firm's access to capital (i.e., its financing decision) considering that, as previously discussed, Rule 144A allows firms to raise fresh capital through private placements while Level III allows them to raise external finance through public offerings. (2) If the firm chooses listed programs (i.e., Level II or Level III), it explicitly commits itself to adopting higher governance, disclosure, and accounting standards, which in turn will provide minority shareholders with more protection against a potential expropriation by controlling shareholders. By choosing such listed programs, foreign firms are more likely to attract U.S. institutional ownership (Bradshaw et al., 2004), and hence to introduce better governance. Existing studies have mainly focused on the corporate governance issues related to listed versus unlisted programs. However, within these two categories, two programs allow capital raising whereas the other two do not, hence the importance of separating the ADR levels.

*On theoretical grounds*, our study contributes to the debate on the convergence of functional corporate governance, also called the bonding hypothesis (Coffee, 1999, 2002; and Stulz, 1999). This hypothesis posits that firms voluntarily cross-list on markets with more stringent legal and regulatory conditions than in the firms' home countries. By doing so, controlling shareholders/managers bond themselves to limit the expropriation of minority shareholders (i.e., private benefits of control). Several studies provide support for the bonding hypothesis (e.g., Reese and Weisbach, 2002; Doidge, 2004; Doidge et al., 2004; Doidge et al., 2007a; Doidge et al., 2007b; and Lel and Miller, 2006), which was recently questioned by Licht (2001, 2003). The author proposes in its stead the avoiding hypothesis, in which firms cross-list primarily to access cheaper financing and enhance their visibility, rather than to improve their information and corporate governance environment. By considering the four levels of ADRs that have different corporate governance implications (Coffee, 2002), we can examine whether certain ADR programs support bonding, while others support avoiding.

The results of our empirical investigation of the choice of an ADR program show that the bonding and avoiding hypotheses are not mutually exclusive. They reveal, in particular, that capital raising Level III attracts large firms, firms with high pre-tax income, those with high growth opportunities, privatized firms, and firms from weak investor protection environments. This latter result is consistent with the bonding hypothesis. We likewise find that firms from weak investor protection environments are also attracted by Rule 144A programs, which is consistent with the avoiding hypothesis. Finally, we document that firms with high ultimate control rights and excess control rights and those from emerging markets are less likely to choose Level II and more likely to choose Level I.

The second objective of the paper is to examine whether, and to what extent, the introduction of the Sarbanes-Oxley Act (SOX hereafter) in 2002 had an impact on the choice of a particular ADR. Indeed, the enactment of SOX introduced more stringent and costly corporate governance requirements for the firms listed on the major U.S. exchanges (all the more costly for emerging market firms). SOX, therefore, represents a structural change in the regulatory and legal environment surrounding ADR listings, particularly Level II and Level III programs. Except for Piotroski and Srinivasan (2007) and Doidge et al. (2007b), who examine foreign U.S. listings during the post-SOX period, we are not aware of any other study that examines the determinants of the choice of a particular ADR *after* SOX. We also examine whether the distribution of firms

across the four ADR programs has changed since SOX, and find that there is an inter-program reallocation. More precisely, after SOX, firms are more attracted by capital raising programs, either Level III or Rule 144A, and are more reluctant to issue Level II. Indeed, raising fresh capital on U.S. markets seems to be an important motivation to cross-list after SOX. By choosing Level III programs, firms subject themselves to more stringent rules but also benefit from the access to U.S. capital resources through public offerings. However, to avoid such restrictive listings, foreign firms choose to raise capital through 144A private placements, in an unlisted program that exempts them from governance and disclosure requirements and from compliance to U.S. GAAP (Zingales, 2006).

The results of a re-estimation of our multivariate model over the pre- and post-SOX periods suggest that some attributes have a larger impact on the ADR choice decision in the post-SOX period than in the pre-SOX. For instance, being an emerging market firm heightens the probability of choosing Rule 144A. Similarly, coming from a country with weak legal protection of minority shareholders increases the likelihood of cross-listing under Level III in the post-SOX period as compared to the pre-SOX period. This latter result is consistent with more bonding after the implementation of SOX.

The rest of the paper is organized as follows: the second section presents the literature related to cross-listings and the key hypotheses. The data and descriptive statistics are presented in section 3. Section 4 describes the different variables, while section 5 presents the empirical analysis. Section 6 analyzes the SOX Act and its implications on ADRs, and section 7 concludes.

## **2. Related literature and hypotheses**

In the following section, we review the literature on the reasons why foreign firms may have an incentive to cross-list. We then describe the four ADR programs available to those that consider listing on U.S. markets. Finally, we develop our hypotheses about the determinants of the choice of a specific ADR program.

### **2.1. Why do firms cross-list?**

An extensive literature examines the motivations that lead companies to cross-list. The most important ones can be summarized as follows:

**Raising capital:** Cross-listing allows firms to raise new capital at lower costs. Following their U.S. listings, foreign firms increase their capital-raising activity at home and abroad (Reese and Weisbach, 2002; Lins et al., 2005; and Doidge et al., 2007b), especially emerging market firms (Lins et al., 2005). When they list in the U.S., foreign firms explicitly mention their need to “relax” capital constraints and to access external capital markets (Lins et al, 2005).<sup>3</sup>

**Protecting minority shareholders by renting higher disclosure and governance standards:** A strand of literature (Coffee, 1999; 2002; Stulz, 1999) sustains that firms intentionally cross-list on markets that have more stringent legal and regulatory requirements than the firms' home markets in order to limit expropriation of minority shareholders by managers or controlling shareholders (i.e., private benefits of control), which should in turn facilitate the firms' access to capital markets.<sup>4</sup> This is called the bonding hypothesis. Empirical evidence on bonding appears in Reese and Weisbach (2002), Doidge (2004), Doidge et al. (2004), Doidge et al. (2007a), Doidge et al. (2007b), and LeI and Miller (2006). Licht (2001, 2003) challenges the bonding hypothesis on the grounds that, in fact, little is done by the SEC to limit expropriation activities. He puts forward the avoiding hypothesis where firms cross-list primarily to access cheaper finance and enhance their visibility, rather than to improve their information and corporate governance environment. More recently, Siegel (2005) contributes to the debate by providing evidence of low SEC enforcement against Mexican firms with ADRs and introduces what he calls the reputation bonding rather than the legal bonding, according to which firms cross-list to bond themselves to protect minority shareholders, thus acquiring a positive reputation that will subsequently allow them to raise capital on U.S. markets.

**Reducing the stake held by existing shareholders:** Pagano et al. (2002) note that current shareholders may want to sell out, and cross-listing may raise the market value of their stake. This is particularly true of privatizations where the government is the divesting shareholder. Indeed, when local stock markets are neither developed nor liquid enough, governments that privatize their state-owned firms choose liquid foreign stock markets to maximize privatization proceeds (Bortolotti et al., 2002).

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<sup>3</sup>Further, foreign firms benefit from a decline in their cost of capital following the announcement of their U.S. listing, as documented by Miller (1999), Foerster and Karolyi (1999), Errunza and Miller (2000), and Hail and Leuz (2005). Sarkissian and Schill (2006) also examine global listings and report a decrease in the cost of capital around the foreign overseas listing date.

<sup>4</sup> Benos and Weisbach (2004) and Karolyi (2006) offer a thorough literature review on private benefits and cross-listings in the U.S.

**Improving liquidity and broadening the shareholder base:** Pagano et al. (2002) argue that firms may cross-list to draw foreign investors so as to broaden their shareholder base and to increase their stock liquidity. Managers also mention improving stock liquidity as the main motivation for cross-listing (Karolyi, 2006).

All the above-mentioned objectives put forward to explain the decision to cross-list are not mutually exclusive: in other words, firms that cross-list their shares could pursue either one or several of these objectives. For example, firms that cross-list on U.S. markets could do so to simultaneously raise capital, improve their stock liquidity, broaden their shareholder base, and commit themselves to improving their disclosure and governance standards.

## **2.2. How do firms cross-list on U.S. markets?**

Non-U.S. firms can cross-list on U.S. markets via a direct listing, New York Registered Shares, or an American Depositary Receipt (ADR). In this paper, we focus on ADRs which are dollar-denominated negotiable certificates that represent a non-U.S. company's publicly traded equity or debt.<sup>5</sup> ADRs carry the corporate and economic rights, such as dividend and voting rights, of its underlying share.

There are four types of ADRs: Level I, Level II, Level III, and Rule 144A. Level II and Level III ADRs can be traded on the New York Stock Exchange (NYSE), the National Association of Securities Dealers Automated Quotation System (NASDAQ), or the American Stock Exchange (AMEX). Level I ADRs are traded Over The Counter (OTC), while Rule 144A ADRs, that are initially sold as a private placement, are traded through Automated Linkages (PORTAL) among Qualified Institutional Buyers (QIBs).

The four types of ADRs have different features which we discussed above and which we summarize in Table 1. For instance, they differ according to their ability to raise fresh capital on U.S. capital markets and to their degree of compliance with governance and disclosure requirements. As argued in section 2.1, firms that choose to cross-list on U.S. markets via an ADR, will select an ADR type that allows them to achieve their objectives. To date, previous

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<sup>5</sup> An ADR can be sponsored or unsponsored. A sponsored ADR is issued with the agreement and the approval of the underlying firm which works with a designated depository bank. However, an unsponsored ADR is issued in accordance with market demand and without the agreement of the underlying firm. Since 1980, new ADR programs listed on the major U.S. exchanges must be sponsored. See ADR reference guide, JPMorgan, February 2005, page 13.

studies treat the choice of a given type of ADR from a global perspective by regrouping different ADR types in one category, as if they were homogenous. Reese and Weisbach (2002) put, on the one hand, firms listed on NYSE and NASDAQ together (which includes Level II and Level III), and, on the other, Level I and Rule 144A firms in order to examine the probability that a firm cross-lists in the U.S. Similarly, Doidge et al. (2007a) assess the marginal effect of firm and home-country variables on the probability of (1) not being cross-listed, (2) choosing LSE (London Stock Exchange), (3) selecting 144A/Level I ADR, and (4) being listed on the major U.S. exchanges (which include Level II and Level III ADRs). More recently, Piotroski and Srinivasan (2007) and Doidge et al. (2007b) examine U.S. and U.K. foreign listings. For U.S. listings, they consider only firms that cross-list on major U.S. exchanges, which include Level II and Level III ADRs.

Since, as discussed above, each ADR type (1) has distinct attributes, (2) offers different benefits to firms, and (3) bears different costs and requirements, we seek to examine why a foreign issuer chooses a particular ADR from among *the four options*, controlling for the firm and their home-country characteristics.

Insert Table 1 about here

## **2.3. Hypotheses development**

We conjecture that the choice of a specific ADR depends upon variables related to the firms' attributes (e.g., size, profitability, growth opportunities, leverage, turnover volume, and country of origin), its corporate governance (privatization, ownership structure, and SOX), and home-country institutional attributes (accounting standards and investor protection). More precisely, we derive the six hypotheses presented in the following paragraphs.

### **2.3.1. Firm attributes and ADR Programs**

Larger and more profitable firms are more likely to be listed under Level II and Level III because these two ADR programs require that (1) firms pay large continuing fees and (2) meet size and earnings requirements to cross-list. Firms with high turnover volume relatively to their local



market turnover volume are more likely to opt for Level II and Level III to enhance their liquidity and circumvent their local market financial constraints. Hence,

***H1:** Larger, firms with higher relative turnover volume, and higher earning firms are more likely to choose a listed ADR (Level II or Level III).*

Firms with higher growth opportunities may require the raising of equity capital. More indebted firms are also more likely to issue equity offerings to finance their operations. Given that only Level III and Rule 144A allow capital-raising issues, we expect that the higher the leverage ratio and the higher the growth opportunities of foreign firms, the more likely they will choose Rule 144A and Level III. In the same vein, privatized firms are more likely to choose Rule 144A or Level III than Level I or Level II. The aim of privatization through ADRs is usually to raise capital for firms, and is typically done through primary issues. Since Level I does not offer any liquidity and does not allow the raising of new capital on U.S. markets, we conjecture that privatizing governments are less likely to choose this ADR. Similarly, Level II does not allow these governments to raise capital, and to divest gradually through subsequent primary offerings. Therefore, we do not expect governments to choose Level II to privatize their state-owned firms. On the basis of these arguments, we can derive the following hypothesis:

***H2:** Firms with higher growth opportunities, more indebted firms, and privatized firms are more likely to choose Rule 144A or Level III ADRs.*

Firms from emerging markets are relatively more capital constrained, and have higher needs to raise external capital (Lins et al., 2005). Therefore, these firms are more likely to choose Rule 144A and Level III. They are also less likely to choose Level II since it is costly in terms of compliance and does not allow the raising of new capital. We summarize our expectation in the following hypothesis:

***H3:** Firms from emerging markets are less likely to choose Level II and more likely to choose Rule 144A and Level III.*

The enactment of the Sarbanes-Oxley (SOX) Act is likely to have an impact on the issuer's ADR choice. After SOX, we expect firms to be more likely to issue Rule 144A ADRs which allow firms to raise capital on U.S. markets, and require no particular compliance with SEC, U.S. GAAP, or the SOX Act. In addition, we expect foreign firms to be more reluctant to list under

Level II programs after SOX, given that they require a high degree of compliance, but do not allow the raising of fresh capital. Thus, we enunciate the following hypothesis:

*H4: Firms issuing ADRs after SOX are more likely to choose Rule 144A and less likely to select Level II.*

According to Doidge et al. (2007a), when controlling shareholders have tighter control (greater voting rights) of the firm, they are more reluctant to list their firms on a U.S. major stock exchange because the costs of the extraction of private benefits of control exceed the benefits of such listings. Doidge et al. (2007a) find evidence for this conjecture. Accordingly, we would expect that controlling shareholders who control a large stake (voting rights) in one firm are more reluctant to relinquish their private benefits of control and thus would choose the less restrictive programs. Additionally, when the separation between control and cash flow rights is less pronounced, this means, according to Claessens et al. (2002), that it is less likely that controlling shareholders extract private benefits of control from minority shareholders. Doidge et al. (2007a) find that the higher this separation is in a firm, the less likely it is that this firm will list on major U.S. exchanges. Hence, we expect that the tighter the control in a firm and the larger the difference between the control and cash flow rights, the less likely it is that the firm will choose a listed ADR program, (i.e., levels II or III) as these two levels increase the costs of the extraction of the private benefits. Thus,

*H5: Firms where the largest controlling shareholder holds greater control rights, and firms with a high separation between control and cash flow rights are less likely to be listed under Level II or Level III, and more likely to select Rule 144A and Level I.*

### **2.3.2. Home-country institutional attributes and ADR programs**

In line with the bonding hypothesis introduced by Coffee (1999, 2002) and Stulz (1999), and discussed above, firms from countries with a lower level of investor protection and weak accounting standards are more likely to choose a listed ADR (i.e., Level II and Level III) to protect minority shareholders against “managerial self-dealing” and private benefit extractions (Karolyi, 2006). Therefore, firms from countries with poor investor protection and weak accounting standards are more likely to choose a listed ADR program, as they offer an additional

protection for minority shareholders compared to the two other unlisted programs (Level I and Rule 144A). We can thus conjecture that:

***H6A:** Under the bonding hypothesis, firms from countries with poor investor protection and weak accounting standards are more likely to choose a listed ADR (Level II or Level III).*

The avoiding hypothesis posits that firms cross-list primarily to access cheaper finance and enhance their visibility rather than to improve their information and corporate governance environments (Licht, 2003). Accordingly, we expect that firms from countries with lower investor protection and weak accounting standards are more likely to choose Rule 144A private placements (which allow firms to raise fresh capital among QIBs without complying with public offering requirements (Zingales, 2006)) or Level I. Consequently, we put forward the following hypothesis:

***H6B:** Under the avoiding hypothesis, firms from countries with poor investor protection and weak accounting standards are more likely to choose an unlisted ADR (Level I or Rule 144A).*

### **3. Data**

The Bank of New York (BNY), Citibank (CB), the Deutsche Bank (DB), and JP Morgan (JPM), are the major depositaries of ADRs, although BNY alone accounts for 64% of the ADR market.<sup>6</sup> We downloaded valuable information from these depositaries' websites<sup>7</sup> regarding ADRs, namely the type, the effective issuance date, the market where the ADR is traded, the sponsorship status (whether the ADR is sponsored or not), the underlying share and its country of origin, the Committee on Uniform Securities Identification Procedures (CUSIP) number of the ADR, and the International Securities Identification Number (ISIN) of the underlying share.

Our sample includes only sponsored ADRs because unsponsored ADRs are created on investors' initiatives (primarily institutional investors), independently from the manager/controlling shareholder's preferences for a particular ADR program. We also exclude the sponsored ADRs that change from their initial levels. More precisely, we exclude the firms that upgrade, downgrade, or delist from their initial programs as we cannot obtain full information about these changes, that is the first ADR type and the first date of issuance. We also disregard the

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<sup>6</sup> See "The depositary receipt markets: The year in review" - 2006, Bank of New York.

<sup>7</sup> The respective websites are as follows <http://www.adrbny.com/>, <http://www.citissb.com/adr/www/> (Universal Issuance Guide), <http://www.adr.db.com/>, and <http://www.adr.com/>.

subsequent ADRs that the firm may have issued. Moreover, we eliminate the ADRs that have a debt as an underlying security rather than equity. Finally, we exclude the “side by side” ADR programs, which were introduced in 1991. Under this program, the company establishes a public Level I ADR program as well as a private Rule 144A ADR for the same class of stock. This structure allows companies to combine the benefits of publicly traded programs with the possibility of raising capital without complying with the Securities and Exchange Commission’s (SEC) and the exchanges’ standards. As Rule 144A ADRs were introduced in April 1990, we consider only programs which were issued after 1990. We verify the ADRs’ characteristics, using Lexis-Nexis, NASDAQ, NYSE, and the firms’ websites.

We obtain the accounting and financial information on the sample firms one year before the ADR issuance date from different sources which we describe in Appendix 1. The final sample consists of 647 ADRs and spans the period from 1990 through 2006. We present summary statistics on this sample in Table 2.

Panel A of Table 2 indicates that most ADRs, namely 287 (44.4%), are issued by firms from the Asia/Pacific region. European firms follow with 263 (40.6%) ADRs.<sup>8</sup>

Panel B of Table 2 shows that firms from high income countries dominate the sample with 442 (68.3%) ADRs. Panel C presents the industry classification (Campbell, 1996) of the ADR firms, and shows that financial and real estate firms issue most ADRs with 100 (15.5%) programs. Basic industries, consumer durables, and utilities follow with 98 (15.1%), 91 (14.1%), and 85 (13.1%) ADRs, respectively.

Our sample includes 130 (20.1%) Rule 144A, 326 (50.4%) Level I, 106 (16.4%) Level II, and 85 (13.1%) Level III ADRs. The NYSE attracts more programs than NASDAQ<sup>9</sup> (146 (22.6%) versus 45 (7%) ADRs respectively). The distribution of our sample across ADR programs is close to the universe of sponsored ADRs, since, over our study period, Rule 144A accounted for 26.1% of ADRs, Level I for 44.2%, Level II for 17.1%, and Level III for 12.6%.

Insert Table 2 about here

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<sup>8</sup> Appendix 2 presents the distribution of ADRs by country of origin, and shows that, in our sample, 72 (11.1%) ADRs are issued by the United Kingdom. Hong Kong and Australia follow with 52 (8%) and 47 (7.3%) ADRs, respectively.

<sup>9</sup> Note that our sample does not include firms listed on the AMEX because of the unavailability of data for these firms. The Bank of New York reports that only four ADRs are traded on the AMEX.

## 4. Variables

We consider two categories of variables to examine the choice of an ADR program: those applying to the underlying firms (section 4.1) and to the home country's institutions (section 4.2). Appendix 1 describes the data sources for these variables.

### 4.1. Firm attributes

- **SIZE**: The natural logarithm of the total assets (in thousands of U.S. dollars) of an ADR firm. As previously argued, larger firms are more likely to be listed on Level II and Level III.
- **INCOME**: The pre-tax income (in billions of U.S. dollars) of the ADR firm. Firms with a higher pre-tax income are more likely to choose Level II or Level III ADR programs.
- **ASSETGR**: The annual asset growth rate of the ADR firm. This variable is a proxy for the firm's growth opportunities, and may condition the choice of a given ADR on the grounds that when growth opportunities are greater, there is a greater need to raise new capital, and thus it is more likely that a firm will choose Level III or Rule 144A.
- **LEV**: The leverage ratio is defined as total debt divided by total assets. To reduce their leverage and to decrease their cost of capital, firms need to raise new capital. As only Level III and Rule 144A allow firms to do this, we expect that the higher the leverage ratio, the more likely foreign firms will choose either one of these two programs.
- **RELTOV**: The underlying firm's annual turnover volume divided by the country of origin's annual stock market turnover volume. We expect that firms with a relatively high turnover volume ratio will opt for Level II or Level III to enhance their liquidity and circumvent their local market financial constraints.
- **EMC**: A dummy variable that is equal to 1 if the home country is an emerging market (using the Standard and Poor's Emerging Market Database classification), and 0 otherwise. Firms from emerging markets are more capital constrained and have greater need to raise external capital (Lins et al., 2005). Therefore, they are more likely to choose Rule 144A and Level III. Additionally, firms from emerging markets are less likely to choose Level II.

- **PRIVA**: A dummy variable that is equal to 1 when a government privatizes a state-owned firm using an ADR program and 0 otherwise. As discussed above, governments are less likely to choose Level I or Level II since they offer no possibilities for privatized firms to raise new capital, and are more likely to choose Level III or Rule 144A instead.
- **ULOW**: The percentage of total ultimate control rights of the ADR firm. This variable measures the ability of the controlling shareholder to extract private benefits of control (Doidge et al., 2007a). Accordingly, the higher are the ultimate control rights, the less likely it is that this firm will choose a listed ADR (i.e., Level II or Level III) which makes consuming private benefits more costly compared to Level I and Rule 144A.
- **ULOWDIF**: The percentage point difference between the ultimate control rights and the ultimate cash flow rights of the underlying firm, i.e., the excess control rights. This is a proxy of the separation between control and cash flow rights held by the ultimate owner, which measures the controlling shareholder's incentive to extract private benefits of control (Doidge et al., 2007a). Accordingly, we expect that the larger *ULOWDIF* is, the less likely it is that the firm will choose a listed ADR program, i.e., Level II or Level III.<sup>10</sup>
- **SOX**: The SOX dummy variable is equal to 1 if the firm issues its ADR after April 24, 2002 and 0 otherwise. This date corresponds to the report of the Oxley bill in the House (Litvak, 2007). We expect that firms which issue ADRs after SOX are more likely to issue Rule 144A programs since they allow firms to raise capital on U.S. markets and do not require any compliance with SEC, U.S. GAAP, or the SOX Act. Moreover, we expect that foreign firms are less likely to issue Level II after SOX.

## 4.2. Home-country institutional attributes

- **SELFDEAL**: The difference in the anti-self dealing indexes of the ADR home country and the United States. This index, introduced by Djankov et al. (2006), measures the legal protection of minority shareholders against insider expropriation and allows us to test the bonding/avoiding hypotheses. If bonding prevails, the controlling shareholders/managers

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<sup>10</sup> To calculate the ultimate cash flow rights and ultimate control rights, we follow La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002).

who wish to offer more protection for their minority shareholders will select listed programs. If, instead, avoiding prevails, we expect controlling shareholders/managers to select unlisted programs, which allow them to enjoy benefits from their U.S. cross-listing without committing themselves to improving the protection of their minority shareholders.

- **ACRAT**: The difference in the accounting ratings of the ADR country of origin and the United States. On the one hand, under the bonding hypothesis, controlling shareholders who are willing to follow the strict disclosure and high accounting standards of the U.S. will choose listed programs to offer more protection for their minority shareholders. On the other hand, under the avoiding hypothesis, those that wish to avoid such requirements will select Rule 144A or Level I instead. This variable thus offers us the opportunity to test the bonding/avoiding hypotheses.

In short, our model takes the following form:

$$ADR\ Choice = F(\text{firm attributes and home-country institutional variables}),$$

where the firm attributes are: *SIZE*, *INCOME*, *ASSETGR*, *LEV*, *RELTOV*, *EMC*, *PRIVA*, *ULOW*, *ULOWDIF*, and *SOX*. The home-country institutional variables are: *SELFDEAL*, and *ACRAT*.

## 5. Empirical analysis

In Table 3, we summarize the predicted relations between the explanatory variables and the probability of choosing a given type of ADR.

Insert Table 3 about here

In Section 5.1, we examine whether the explanatory variables differ across the four ADR programs. We then perform a multivariate analysis in Section 5.2 and present sensitivity tests in Section 5.3.

## 5.1. Univariate analysis

Table 4 presents the means of the explanatory variables for the different types of ADRs. Differences in the means of these variables between the three types of ADRs and Level I (the base outcome) are then tested using a two-tailed t-test of means.

Table 4 shows that Level II and Level III firms are larger and have a higher pre-tax income than those choosing Level I. This result, significant at the 1% level, is expected since both the NYSE and NASDAQ impose minimum size and earnings requirements for non-U.S. firms that list on U.S. exchanges. Although they are smaller than Level II and Level III, Rule 144A firms are larger, at the 5% level, than Level I firms. These results are consistent with Doidge et al.'s (2007a) evidence that foreign firms that choose unlisted programs (Rule 144A/Level I) are smaller than those that are listed on a U.S. exchange.

Rule 144A and Level III firms have higher asset growth rates than Level I firms. This result supports our prediction presented in Table 3. In fact, as Rule 144A and Level III allow firms to raise new capital on U.S. markets, firms with relatively high growth opportunities will opt for these two programs. Moreover, Rule 144A firms have a higher leverage than Level I firms, a result which is in line with the predicted relation as Rule 144A allows firms to raise capital on U.S. markets.

Non-U.S. firms that choose Level III exhibit a high relative turnover ratio compared to Level I firms, a difference that is significant at the 1% level. Such a result is expected for these firms, which are more likely to seek an ADR that allows them to circumvent the narrowness and illiquidity of their home market (i.e., the financing constraints).

Privatizing governments are more likely to choose Rule 144A, Level II, and Level III than Level I. Of the first three, privatizing governments are more likely to choose Rule 144A and Level III than Level II.<sup>11</sup> These results are consistent with the predicted relation, presented in Table 3, since Rule 144A and Level III are the two ADR programs that allow governments to divest gradually through subsequent primary share offerings.

After SOX, we find more Rule 144A listings, and fewer Level II and Level III listings than Level I. The Rule 144A result is consistent with Zingales' (2006) evidence. He points out the large

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<sup>11</sup> This result is statistically significant at the 1% level.



increase in the number of 144A registrations by foreign firms after SOX which, by allowing them to avoid U.S. legal liability, helps them tap the U.S. markets via the “back door.” The results for Level II and Level III are in agreement with Piotroski and Srinivasan’s (2007) findings of a decrease in the average number of NYSE/NASDAQ foreign listings per month after the enactment of SOX as compared to the period preceding SOX.

Firms that list under Rule 144A and Level III have larger ultimate control rights compared to those opting for Level I. In contrast, Level II firms have lower ultimate control rights than Level I firms. As argued previously, the tighter the control of the firm, the more likely that controlling shareholders will extract private benefits of control, and hence the less likely that these shareholders will choose a listed program. In this respect, the univariate results for Level III appear somewhat surprising. In an attempt to provide an explanation for these results, we take a closer look at the data and find that the largest shareholder of many firms listed under Level III is the State. To the extent that governments pursue different objectives from private controlling shareholders, we exclude firms with the State as the largest shareholder from our sample. We find that the ultimate control rights of Level I firms are larger than Level II firms and lower than Rule 144A firms. Moreover, we find that level III firms no longer have higher ultimate control rights than Level I firms. This result is consistent with evidence in Doidge et al. (2007a) who find that firms that cross-list on the major U.S. exchanges have lower ultimate control rights than those that choose Level I or Rule 144A.

Emerging market firms are more likely to choose Rule 144A and less likely to choose Level II than Level I. This is in keeping with evidence in Lins et al. (2005) that firms from emerging markets are capital constrained, and seek access to U.S. markets through a capital-raising issue that is not allowed under Level II.

Furthermore, as described previously in section 4.3, anti-self dealing (*SELFDEAL*) represents the difference in the anti-self dealing indexes of the ADR’s home country and the U.S. This difference is generally negative since the U.S has a higher index. We find that firms choosing Rule 144A, Level II, and Level III ADRs present a higher difference in the anti-self dealing index than firms which choose Level I, i.e., these firms originate from countries with poorer investor protection compared to the U.S. This result is consistent with Reese and Weisbach (2002) who document that firms from French civil law countries are more likely to list on the

NYSE/NASDAQ than those from English common law countries. Moreover, the difference in the accounting ratings (*ACRAT*) (between the home country and the U.S.) is higher for Rule 144A and Level III firms than Level I firms, i.e., firms from countries with weaker accounting standards than the U.S. opt for Rule 144A and Level III.

Insert Table 4 about here

## 5.2. Multivariate analysis

### 5.2.1. Model presentation

Once the decision of cross-listing via an ADR is taken, the firm's manager must decide which type of ADR program to choose. His set of choices includes the four different ADR programs, namely, Rule 144A, Level I, Level II, and Level III.

As the choice set has more than two outcomes, we opt for the multinomial choice model.

Suppose that the utility of the individual  $i$  from choosing the alternative  $j$  is as follows:

$$U_{ij} = X_{ij}\beta + \varepsilon_{ij} \quad j = 0, 1, 2, \dots, J \quad (2)$$

Where

$X_{ij}$ : is  $1 \times K$  vector that differs across individuals with first-element unity.

$\varepsilon_{ij}$  :  $j = 0, 1, 2, \dots, J$  are the non-observables affecting the tastes.

Let  $Y_i$  denote the choice of the individual  $i$  that maximizes his/her utility:

$$Y_i = \operatorname{argmax} (U_{i0}, U_{i1}, U_{i2}, \dots, U_{iJ}) \quad (3)$$

McFadden (1974) shows that if the  $\varepsilon_{ij}$ ,  $j=0, 1, 2, \dots, J$ , are independently and identically distributed (IID hereafter) with a cumulative distribution function  $F(a) = \exp[-\exp(-a)]$ , then the response probabilities are as follows:

$$P(Y_i = j / X_i) = \frac{\exp(X_{ij}\beta)}{[\sum_{k=0}^J \exp(X_{ik}\beta)]} \quad (4)$$

The IID hypothesis for the unobserved terms  $\varepsilon_{ij}$  has an equivalent behavioral property which is known as the Independence of Irrelevant Alternatives (IIA, hereafter). The IIA implies that adding another alternative or changing the characteristics of a third alternative does not affect the relative probability for any two alternatives. In other words, the IIA implies that all pairs of alternatives are equally similar or dissimilar (Hensher et al., 2005).

To test the IIA hypothesis, Hausman and McFadden (1984) (noted hereafter as Hausman) offer a test which compares the estimation of the parameters' vector,  $\beta$ , using different subsets of alternatives. If the IIA is true, the use of any subset of alternatives will consistently estimate  $\beta$ .

In a multinomial logit model, we cannot estimate all the coefficients for all the choices. In other words, the model is unidentified. To remove this indeterminacy,<sup>12</sup> we have to assume a base outcome or a base choice for which all the coefficients are set to 0, and then interpret the estimated coefficients as measuring the change relative to the base outcome for the same variable. The choice of the base outcome is arbitrary and does not affect the predicted probabilities (Greene, 2003).

### 5.2.2. Estimation results

The results of the Hausman test suggest that we cannot reject the IIA assumption for all the specifications; we therefore estimate multinomial logit models, correcting for clustering at the country level.

To gauge the power and fit of each estimated model, we rely on two characteristics, namely McFadden's pseudo R-squared, and the percentage of the correctly classified observations predicted by each model.<sup>13</sup> Table 5 summarizes the results of our estimations.

Panel A of Table 5 shows that larger firms (*SIZE*) are more likely to choose Level II and Level III and less likely to select Level I. These results are respectively significant at the 10%, 5%, and 1% levels. More specifically, an increase of one unit in the log of total assets (which is equivalent to an increase of \$2,718 in total assets) increases the probability of choosing Level III by 0.0203 and selecting Level II by 0.0168, and decreases the probability of choosing Level I by 0.0373. Moreover, this panel shows that the higher the firm's pre-tax income (*INCOME*), the

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<sup>12</sup> See Greene (2003), page 721.

<sup>13</sup> See Hensher et al. (2005).

more likely that it will choose Level II. More precisely, a one billion U.S. Dollar increase in pre-tax income increases the probability of choosing Level II by 0.0344. These results are consistent with the predicted relations shown in Table 3. Indeed, to be listed as Level II or Level III, firms have to meet minimum size and earnings requirements.

Results in Panel A of Table 5 also suggest that highly-leveraged firms (*LEV*) are more likely to issue a Rule 144A ADR that allows them to raise new capital. Furthermore, having a high asset growth rate (*ASSETGR*) increases the probability of selecting Level III and decreases the probability of choosing Level I. More precisely, because firms with high growth in their investment opportunities generally need to raise fresh capital to finance them, they are less likely to choose Level I since it does not offer this possibility.

The fact that a firm comes from an emerging market (*EMC*) decreases the probability of choosing Level II by 0.1591, and increases the probability of choosing Rule 144A by 0.2993. This result stems from the fact that Level II ADRs require that listed firms observe partial compliance with U.S. GAAP and SEC rules, and does not offer the possibility of raising fresh capital. Therefore, choosing Level II is costly for firms from emerging markets and does not allow them to raise capital on U.S. markets.

Issuing a privatization ADR (*PRIVAT*) increases the probability of choosing Level III and Rule 144A by 0.3181 and 0.3103, respectively, and decreases the probability of choosing Level I and Level II by 0.5509 and 0.0775, respectively. These findings bear out our prediction that governments are less likely to choose Level I and Level II to privatize their firms on U.S. markets. In addition, by privatizing the firm under Level III or Rule 144A ADRs, the government provides firms with the option of raising capital on U.S. markets, which is particularly valuable in the case of gradual privatization, where subsequent equity issues are needed.

The Sarbanes-Oxley dummy variable (*SOX*) in Panel A of Table 5 shows that a firm that issues an ADR after April 24, 2002 is more likely to issue Rule 144A and less likely to choose Level II, which is in line with our predicted relation. More precisely, issuing an ADR after April 24, 2002 increases the probability of selecting Rule 144A by 0.1055 and decreases the probability of selecting Level II by 0.0616. These results are significant at the 5% level. The first result is also consistent with Zingales' (2006) claim that foreign firms, after SOX, tend to issue more Rule

144A ADRs than previously so as to avoid U.S. legal liability and tap the U.S. primary market via the “back door”. Additionally, SOX increased the costs of issuing Level II programs as they require virtually the same compliances as Level III, without the benefit of raising capital on the U.S. markets.

In Panels B and C, we report two specifications that control for the level of investor protection, and, to this end, we respectively introduce the accounting rating (*ACRAT*) and the anti-self dealing variables (*SELFDEAL*). Panel B shows that a unit decrease in the accounting rating difference increases the probability of choosing Level III by 0.0081. Panel C shows that a unit decrease in the anti-self dealing difference increases the probability of choosing Rule 144A and Level III by 0.2477 and 0.2292, respectively, and decreases the probability of choosing Level I by 0.4323. The results for Level III and Level I corroborate the bonding hypothesis, while the Rule 144A result provides support for the avoiding hypothesis. We thus show that the two hypotheses are not mutually exclusive. Previous studies test bonding by regrouping listed versus unlisted programs. We demonstrate here the importance of considering each program individually, since, within unlisted programs, Level I supports bonding while Rule 144A supports avoiding. The rest of the variables in Panels B and C exhibit virtually the same results as in Panel A.

In panel D, we introduce the relative turnover ratio (*RELTOV*) for which we have a smaller number of observations. We find that a unit increase in a firm’s relative turnover ratio increases the probability of choosing Level III by 0.5524. This result is consistent with the argument that firms which dominate their local capital markets, and therefore being faced with the financial constraints of their markets of origin, choose U.S. liquid markets in order to improve their liquidity.

Panels E and F control for the firm ownership structure. They add the ultimate control rights (*ULOW*) and the difference between the ultimate control rights and the ultimate cash flow rights (*ULOWDIF*) to the specifications reported in Panels B and C. Panel E shows that firms with high ultimate control rights are more likely to choose Level I. This result is expected and supports our prediction since Level I virtually does not increase the costs of extracting private benefits, and does not require compliance with SEC and U.S. GAAP. In fact, a one percent increase in the ultimate control rights increases the probability of choosing Level I by 0.0032. Moreover, Panel

F shows that a one percent increase in the ultimate control rights increases the probability of choosing Level I by 0.0026, and decreases the probability of selecting Level II by 0.0020.

In Panel G and H, we add the relative turnover ratio variable (*RELTOV*) to panels E and F. Panel H shows that the higher the relative turnover ratio (*RELTOV*) in a firm is, the less likely it is that this firm will opt for Rule 144A. More precisely, a one percent increase in the relative turnover ratio decreases the probability of selecting Rule 144A by 0.0144. This result is consistent with the predicted relations in Table 3.

Moreover, Panel H shows that the higher the percentage point difference between the ultimate control and cash flows rights, the lower the probability of choosing Level III and the higher the probability of choosing Level I. These results are in line with the literature on private benefits of control in so far as the higher the control stake held by the ultimate owner and the higher the difference between the ultimate control and cash flow rights are, the lower the probability that the controlling shareholder will choose a listed program. The rationale behind this result is that the higher regulatory and governance standards required by these programs will increase the costs of extracting private benefits by controlling shareholders from minority ones.

In general, the results of the multinomial logit models corroborate the evidence from the univariate analysis as well as the predicted relations between the explanatory variables and the probability of choosing a given type of ADR.

Insert Table 5 about here

### **5.2.3. Sensitivity tests**

#### *a- Sample composition and corporate governance*

Our initial sample includes financial and real estate firms whose financial characteristics may be different from those of non-financial firms (e.g., leverage). Therefore, we perform a sensitivity test that excludes the former firms by re-estimating the baseline model of Table 5, Panel A. The reported results in Table 6, Panel A that exclude financial and real estate firms are generally the same as those that we find in Table 5, Panel A for the whole sample.

In addition, since we have ownership data for 286 firms (out of an initial sample of 647 firms), one may question whether the results that we find for the entire sample still hold for the sub-sample for which we have ownership data. Accordingly, we re-estimate in Table 6, Panel B the

same model as in Table 5, Panel B, but only for those firms with data on ownership. The estimated model shows that the results for this sub-sample are generally consistent with those of the whole sample.

The univariate results, shown in Panels A and B of Table 4, suggest that the ultimate control rights of Level III firms are higher than those under Level I, which stems from the fact that there are some state-owned firms that are listed under Level III. We therefore perform an additional test in Table 6, Panel C, by excluding those firms in which the State is the largest shareholder. After we re-estimate the same model as in Table 5, Panel H, we find that higher ultimate cash flow rights increase the probability of choosing Level I, and decrease the probability of selecting Level II. These results are consistent with the predicted relations in Table 3, and are in line with those that we found previously.

Insert Table 6 about here

The literature on private benefits suggests that the presence of a second blockholder in the firm could limit the consumption of private benefits by the largest shareholder.<sup>14</sup> As a result, minority shareholders can free-ride on the protection that is offered by the presence of this second blockholder. This, in turn, could affect the choice of a given ADR program. More precisely, we expect that the presence of a second blockholder increases the probability of choosing Level II and Level III, and decreases the probability of choosing Level I and Rule 144A. To examine this conjecture, we re-estimate the models that appear in Panels E and F of Table 5 by adding a dummy variable (*2BLOC*) which is equal to 1 if there is a second blockholder who holds more than 10% in the firm. The unreported results show that *2BLOC* does not significantly affect the choice of any given ADR program.<sup>15</sup>

Finally, we test whether the type of the largest shareholder may have an impact on the future consumption of private benefits of control, and then the choice of the ADR program. More precisely, we introduce a dummy variable (*SHTYPE*) which is equal to 1 if the largest shareholder is either a family or management or unlisted firm, and then we re-estimate the models of Panel E and F of Table 5. The unreported results show that *SHTYPE* does not affect

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<sup>14</sup> Note that the second blockholder could also, in certain cases, share some private benefits of control with the largest shareholder. Bennedsen and Wolfenzon (2000) and Gomes and Novaes (1999) discuss the role of the second largest shareholders.

<sup>15</sup> The unreported results that we discuss in this section are available from the authors upon request.

the choice of a given ADR program. The presence of a foreign largest shareholder does not seem to alter our previous results either. When we add a new dummy variable (*FORGN*) which is equal to 1 if the largest shareholder is foreign, 0 otherwise, we find that *FORGN* does not significantly affect the probability of choosing any given ADR program.

*b- Visibility and transparency*

In this section, we seek to examine whether visibility or transparency have any explanatory power in the choice of an ADR program. According to Baker et al. (2002), international cross-listing increases the visibility of firms by increasing analyst and media coverage. Lang et al. (2003, 2004), Doidge et al. (2007a), and Bailey et al. (2006) find that after foreign firms cross-list on U.S. markets, the number of analysts who follow these firms increases and their forecast accuracy improves. We first consider analyst following as a proxy for visibility. Indeed, one may argue that whether or not the firm has been followed and monitored by analysts prior to ADR issuance may affect its choice of a given ADR program. We verify this conjecture by matching our sample with the I/B/E/S (Institutional Brokers' Estimate System) database. We find that some firms in our sample were followed by analysts before they issued an ADR. We therefore re-run our tests that appear in Table 5, Panel A, and add a dummy variable (*IBES*) which is equal to 1 if a firm had analyst coverage before issuing an ADR, and zero otherwise. The unreported results show that *IBES* has no significant effect on the probability of choosing any given ADR program.

We then test for a potential effect of the firm's transparency on the choice of a given ADR program. We use the auditor choice as a proxy for the firm's transparency. Prior studies have shown that large international auditors have a higher quality of audit. We thus expect that firms that choose international auditors before cross-listing are more willing to choose an ADR program that requires high accounting standards, namely Level II and Level III. To do so, we re-estimate our baseline model in Table 5, Panel A, and add a dummy variable (*BIG4*) which is equal to 1 if the firm had one of the big four auditors<sup>16</sup> before issuing its ADR, and 0 otherwise.

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<sup>16</sup> The big four auditors are as follows: Deloitte Touche Tohmatsu, Ernst & Young, KPMG, and PricewaterhouseCoopers. This dummy variable is also equal to 1 if the audit company is one of the big-four affiliates or one of the former auditor firms that merged together to constitute one of these big four firms (example: Price Waterhouse and Coopers & Lybrand merged together in July 1998 to form PricewaterhouseCoopers).



The unreported results show that *BIG4* has no significant impact on the probability of selecting any given ADR program.

In the next section, we provide a more in-depth analysis of the impact of SOX on the ADR issuing activity.

## **6. Does SOX affect ADR issuance?**

A number of recent studies focused on the costs and benefits associated with SOX compliance. For instance, Engel et al. (2007) report that 94% of the respondents of a March 2005 survey of 217 public companies by the Financial Executives Institute believe that the costs of SOX compliance exceed its benefits.

As a result of the additional costs associated with SOX compliance, a considerable number of U.S. public firms delisted from U.S. exchanges, deregistered from the SEC and “went dark” (Leuz et al., 2006; Engel et al., 2007). Similarly, voluntary delistings of foreign firms that are listed on U.S. markets increased significantly after 2002 (Marosi and Massoud, 2007; Witmer, 2006). In contrast, the inflow of ADR cross-listings showed no signs of slowing down in the post-SOX period, compared to the pre-SOX period.<sup>17</sup> SOX may have, however, led to a reallocation among the four ADR programs since this new regulation did not affect all ADR programs alike. Only firms issuing Level II and Level III ADR programs, which require a registration with the SEC, have to comply with the new SOX rules of disclosure and governance. Level I and Rule 144A ADRs, which are both unlisted programs, are exempt from SOX requirements.

In what follows, we examine whether and to what extent SOX affected the ADR issuance activity. Specifically, we investigate the following issues: (1) Did SOX lead to a reallocation across ADR programs? (2) Did the issuing firms’ characteristics change around the implementation of SOX? Since our sample spans the period 1990 through 2006 and includes the four ADR programs, it provides us with a unique opportunity to examine these issues.

In the following sections, we investigate the impact of SOX on ADR activity, the choice of a given ADR program, and the determinants of the probability of choosing a specific ADR program.

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<sup>17</sup> See “The post SOX challenge for ADRs,” JPMorgan, March/April 2006.

## **6.1. Is there any reallocation between the different ADR programs before and after SOX?**

We draw from the universe of ADRs those that were issued between 1998 and 2001 (the pre-SOX period), and between 2003 and 2006 (the post-SOX period), and we compare the percentage of each ADR program from these two periods. We find that the share of capital-raising programs (i.e., Rule 144A and Level III) increases in the post-SOX compared to the pre-SOX period. Indeed, in the post-SOX period, 30.4% of all ADRs are issued as Rule 144A as compared to 12.7% in the pre-SOX period, and Level III programs attract 15.7% of the total ADRs in the post-SOX period compared to 10.3% in the pre-SOX. We also find that the proportion of Level II ADRs decreased in the post-SOX period, dropping from 27.1% to 14.4%. Likewise, firms issue relatively fewer Level I ADRs in the post-SOX period, decreasing from 41.9% to 39.5%.

This evidence suggests that SOX induced a reallocation among ADR programs, as firms tend to issue more Rule 144A and Level III and fewer Level II ADRs in the post-SOX than in the pre-SOX period. Zingales (2006) also documents a significant increase in the number of 144A registrations after SOX. The advantage of Rule 144A is that it allows issuing firms to raise external capital on U.S. markets among Qualified Institutional Buyers, without having to comply with the full SEC disclosure, accounting obligations, and public offering requirements. In other words, they are exempt from the mandatory governance and accounting requirements imposed on the major U.S. exchanges after SOX, and still benefit from access to U.S. external capital resources via “the back door” (Zingales, 2006). As for Level II, it became more costly after SOX as this program requires virtually the same compliances as Level III without the access to new capital, hence explaining the reluctance of firms to seek Level II ADRs, and therefore opting for Level III in the post-SOX period.

## **6.2. Are the characteristics of issuing firms different before and after SOX?**

We rely on our sample firms to discuss this issue. Table 7 reports the results of the univariate analysis that compares the firms’ characteristics over the pre- and post-SOX periods. The results show that firms issuing Rule 144A in the post-SOX period have lower growth opportunities

(*ASSETGR*) and relative turnover ratio (*RELTOV*) than before SOX. After SOX, firms from emerging markets issue more Rule 144A programs than before. The absolute value of the difference in accounting rating standards (*ACRAT*) in the post-SOX period is higher than in the pre-SOX period for those firms issuing Rule 144A. More precisely, firms that opt for Rule 144A after SOX originate from countries that present weaker investor protection. Moreover, Rule 144A firms present a lower wedge between the ultimate control and cash flow rights in the post-SOX period.

Firms that choose Level I after SOX are smaller, and have lower growth opportunities (*ASSETGR*), leverage (*LEV*), and relative turnover ratio (*RELTOV*). The results for *SIZE* and *LEV* are consistent with Doidge et al.'s (2007b) findings. Also, the percentage of emerging market firms selecting Level I is smaller in the post-SOX period. The absolute values of the differences in accounting ratings (*ACRAT*) and investor protection (*SELFDEAL*) indices are higher. Finally, the ultimate control rights and the difference between the excess control rights are unexpectedly smaller for firms that choose Level I after SOX.

Level II firms have a higher pre-tax income (*INCOME*), a higher difference in accounting ratings and lower leverage ratios after SOX compared to the period before SOX. These results are statistically significant at the 10% level.

Finally, for Level III firms, the only difference is in the firms' leverage, which is lower in the post-SOX than in the pre-SOX period.

Insert Table 7 about here

Overall, these univariate results suggest that SOX had an impact on the characteristics of the firms that choose a given ADR program. In the next section, we perform a multivariate analysis that allows us to simultaneously control for all these determinants.

### **6.3. SOX and ADRs: multivariate analysis**

To examine whether the impact of our explanatory variables on the probability of choosing a given ADR program differs across the pre- and post-SOX periods, we re-estimate the multinomial logit models (reported in Table 5) for each sub-period independently. We separately re-estimate Panels A, E, and F of Table 5 for each sub-period. The results of these estimations are summarized in Table 8.

Table 8 shows that, generally, the estimated marginal effects are in accordance with those that we report in Table 5, and are consistent with the predicted relations in Table 3. We find that the Level I marginal effects for the asset growth variable (*ASSETGR*) exhibit a significant and different sign.

Table 8 shows that while they have the same sign, some marginal effects are higher or lower in the post-SOX period compared to the pre-SOX. When we examine, for example, the emerging market country dummy, firms from emerging market countries are more likely to choose Rule 144A in the post-SOX period. More precisely, Panels A, B, and C of Table 8 show that being an emerging market firm increases the probability of choosing Rule 144A in the post-SOX period by, respectively, 0.6869, 0.3913, and 0.6729. In the pre-SOX period, this variable is statistically significant only in Panel A, and the increase in the probability of choosing Rule 144A for an emerging market firm is only 0.1191.<sup>18</sup> The evidence that firms from emerging markets are more willing to issue Rule 144A ADRs after SOX was enacted is consistent with Lins et al.'s (2005) and Zingales' (2006) findings that emerging market firms that are faced with more financial constraints than are developed country firms need to raise more external capital on U.S markets, and are able to do so through Rule 144A (private placements) or Level III (public offerings). As Level III becomes costly after SOX, especially for emerging markets firms, these latter become more inclined to issue a Rule 144A ADR (a relatively less costly program), and raise external capital on U.S. markets among Qualified Institutional Buyers.

For the difference in anti-self dealing index (*SELFDEAL*), Panel C shows that a unit decrease in this difference increases the probability of choosing Level III by 0.1904 and 0.2862<sup>19</sup> in the pre and post-SOX periods, respectively. This result corroborates the bonding hypothesis, and shows that firms from countries where the legal protection of minority shareholders is weak (compared to the U.S.) are more willing to issue Level III programs in the post-SOX period than in the pre-SOX one, despite the additional costs implied by the SOX Act for this level.

Insert Table 8 about here

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<sup>18</sup> For Panel A, Table 8, we test whether the estimated marginal effect of the emerging market dummy (*EMC*) in the post-SOX period is higher than in the pre-SOX period using a Wald test. This test shows that the difference between the estimated marginal effects is statistically significant at the 1% level.

<sup>19</sup> For Panel C, Table 8, we test whether the estimated marginal effect of the anti-self dealing variable (*SELFDEAL*) in the post-SOX period is lower than in the pre-SOX period using a Wald test. This test shows that the difference between the estimated marginal effects is statistically significant at the 1% level.

## **7. Conclusion**

In this paper, we examine the determinants of firms' decisions to issue one of the four available ADR programs on an individual basis (Level I, Level II, Level III, and Rule 144A). These four options have distinct attributes. On the one hand, only Level III and Rule 144A offer an access to U.S. primary capital markets (i.e., raising capital) through public offerings and private placements, respectively. On the other hand, Level II and Level III (listed programs) are more restrictive in terms of governance and disclosure requirements as compared to Level I and Rule 144A (unlisted programs).

Our empirical evidence shows that capital raising Level III programs attract large firms with high pre-tax income, firms with high growth opportunities, privatized firms, and firms from weak investor protection environments, which is consistent with the bonding hypothesis. We likewise find that firms from weak investor protection environments are also attracted to Rule 144A programs, which is consistent with the avoiding hypothesis. Finally, we document that firms with high ultimate control rights and excess control rights and those from emerging markets are less likely to choose Level II and more likely to choose Level I.

We also examine whether the introduction of SOX in 2002 had an impact on the choice of a particular ADR. We find that after SOX, firms are more attracted by capital-raising programs, either Level III or Rule 144A, and are more reluctant to issue Level II. Indeed, this inter-program reallocation shows that raising fresh capital on U.S. markets seems to be an important motive to cross-list after SOX. Our multivariate analysis shows that being an emerging market firm heightens the probability of choosing Rule 144A after SOX compared to the period before. Similarly, coming from a country with weak legal protection of minority shareholders increases the likelihood of cross-listing under Level III in the post-SOX period as compared to the pre-SOX. This latter result is consistent with more bonding after the implementation of SOX. Indeed, the corporate governance requirements of SOX strengthen the bonding characteristics of the listed programs (Level II and Level III).

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**Table 1**  
**Main features of ADRs<sup>20</sup>**

	<b>Level I (unlisted)</b>	<b>Level II (listed)</b>	<b>Level III (listed)</b>	<b>Rule 144A (unlisted)</b>
Raising capital on U.S. markets	No	No	Yes, through public offerings	Yes, through private placements among Qualified Institutional Buyers (QIB)
Objective	Develop and broaden U.S. investor base with existing shares	Develop and broaden U.S. investor base with existing shares	Develop and broaden U.S. investor base with existing/new shares	Tap QIB (institutional investors)
Disclosure/ accounting	Home market	Partial reconciliation with U.S. GAAP	Ful reconciliation with U.S. GAAP	Home market
U.S. reporting requirements	Exempt from filing form 20-F under Rule 12g3-2(b)	Form 20-F	Form 20-F	Exempt from filing form 20-F under Rule 144
SEC registration	Form F-6	Form F-6	Form F-1 and F-6	None
Trading	Over The Counter (OTC)	NYSE, NASDAQ, or AMEX	NYSE, NASDAQ, or AMEX	Private Offerings, Resales, and Trading through Automated Linkages (PORTAL)
Sarbanes-Oxley Act (SOX) 2002	Non-applicable	Applicable	Applicable	Non-applicable
Listing Fees	Low	High	High	Low
Size and earnings requirements	None	Yes	Yes	None

<sup>20</sup> Sources: (1) ADR reference guide, JPMorgan, February 2005, (2) Depository Receipts Information Guide, Citibank, 2005, and (3) Bank of New York, NYSE and NASDAQ websites.

**Table 2**  
**Descriptive statistics**

This table presents descriptive statistics for a sample of 647 ADRs issued between 1990 and 2006. Based on the World Bank country group classifications, Panel A and B respectively provide the distribution of the issuing firms' home-countries by geographic location and income category. Panel C presents the industry classifications of these firms according to Campbell (1999).

**Panel A: Geographic location**

Geographic location (countries)	Type of ADR				Total	Percentage
	144A	Level I	Level II	Level III		
Asia/Pacific (13)	77	152	25	33	287	44.4%
Europe (20)	35	129	63	36	263	40.6%
Latin America (7)	14	31	15	16	76	11.7%
Middle East/Africa (3)	4	14	3	0	21	3.2%
<b>Total (43)</b>	130	326	106	85	647	100.0%
<b>Percentage</b>	20.1%	50.4%	16.4%	13.1%	100.0%	

**Panel B: Income category**

Income category (countries)	Type of ADR				Total	Percentage
	144A	Level I	Level II	Level III		
High income (23)	65	235	84	58	442	68.3%
Upper middle income (9)	31	56	13	9	109	16.8%
Lower middle income (9)	10	35	7	12	64	9.9%
Low income (2)	24	0	2	6	32	4.9%
<b>Total</b>	130	326	106	85	647	100.0%
<b>Percentage</b>	20.1%	50.4%	16.4%	13.1%	100.0%	

**Panel C: Industry classifications**

Industry classification	Type of ADR				Total	Percentage
	144A	Level I	Level II	Level III		
Basic industries	19	53	21	5	98	15.1%
Capital goods	11	20	4	2	37	5.7%
Consumer durables	30	38	14	9	91	14.1%
Construction	3	9	2	2	16	2.5%
Finance/Real estate	18	51	15	16	100	15.5%
Food/Tobacco	7	21	8	3	39	6.0%
Leisure	4	17	4	0	25	3.9%
Petroleum	7	11	5	3	26	4.0%
Services	6	33	8	11	58	9.0%
Textiles/Trade	5	21	3	2	31	4.8%
Transportation	8	16	2	2	28	4.3%
Utilities	8	33	20	24	85	13.1%
Miscellaneous	4	3	0	6	13	2.0%
<b>Total</b>	130	326	106	85	647	100.0%
<b>Percentage</b>	20.1%	50.4%	16.4%	13.1%	100.0%	

**Table 3**  
**The determinants of an issuer's ADR choice**

This table reports the predicted signs of the variables that we include in our model of ADR choices, namely, Rule 144A, Level I, Level II, and Level III. The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); the total debt divided by the total assets (**LEV**); and the yearly turnover volume of the firm divided by the yearly turnover volume of its country of origin's market (**RELTOV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the Sarbanes-Oxley dummy (**SOX**), which is equal to 1 if the firm issues an ADR after April 24, 2002, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variables are: the difference in the accounting ratings of the firm's home-country and the U.S., as proposed by La Porta et al. (1998) (**ACRAT**); and the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **SOX** and **PRIVA**, are taken one year before the issuing of the ADR.

<b>Probability of choosing an ADR</b>					
<b>Variables</b>	<b>Label</b>	<b>Rule 144A</b>	<b>Level I</b>	<b>Level II</b>	<b>Level III</b>
<b>Firm</b>	<b>SIZE</b>	-	-	+	+
	<b>INCOME</b>	-	-	+	+
	<b>ASSETGR</b>	+	-	-	+
	<b>LEV</b>	+	-	-	+
	<b>RELTOV</b>	-	-	+	+
	<b>EMC</b>	+	+/-	-	+
	<b>PRIVA</b>	+	-	-	+
	<b>SOX</b>	+	+/-	-	+/-
	<b>ULOW</b>	+	+	-	-
	<b>ULOWDIF</b>	+	+	-	-
<b>Institutional</b>	<b>ACRAT</b>	+/-	+/-	+/-	+/-
	<b>SELFDEAL</b>	+/-	+/-	+/-	+/-

**Table 4**  
**Comparison between ADR programs**

This table presents the mean of the different variables for the different types of ADRs, namely Rule 144A, Level I, Level II, and Level III. Our sample consists of 647 ADRs issued between 1990 and 2006. The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); the total debt divided by the total assets (**LEV**); and the yearly turnover volume of the firm divided by the yearly turnover volume of its country of origin's market (**RELTOV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the Sarbanes-Oxley dummy (**SOX**), which is equal to 1 if the firm issues an ADR after April 24, 2002, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variables are: the difference in the accounting ratings of the firm's home-country and the U.S., as proposed by La Porta et al. (1998) (**ACRAT**); and the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **SOX** and **PRIVA**, are taken one year before the issuing of the ADR. Differences in the means of the variables between the different types of ADRs and Level I (the base outcome) are tested using two-tailed t-test of means. P-values of this test are reported in parentheses. Panel A includes all firms, while Panel B excludes firms with the State as the largest shareholder. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Panel A: univariate analysis of the entire sample**

		Type of ADR								
		144A		Level I		Level II		Level III		
Variables	Label	N of Obs.	Mean	N of Obs.	Mean	N of Obs.	Mean	N of Obs.	Mean	
Firm	<b>SIZE</b>	130	14.08 (0.04)**	326	13.56	106	15.26 (0.00)***	85	14.92 (0.00)***	
	<b>INCOME</b>	130	0.24 (0.91)	326	0.24	106	1.43 (0.00)***	85	0.67 (0.00)***	
	<b>ASSETGR</b>	130	33.28 (0.02)**	326	22.67	106	20.34 (0.64)	85	33.71 (0.04)**	
	<b>LEV</b>	130	27.97 (0.01)***	326	22.66	106	24.29 (0.47)	85	22.64 (0.99)	
	<b>RELTOV</b>	71	0.01 (0.46)	239	0.02	79	0.02 (0.70)	43	0.05 (0.00)***	
	<b>EMC</b>	130	0.88 (0.00)***	326	0.47	106	0.26 (0.00)***	85	0.55 (0.16)	
	<b>PRIVA</b>	130	0.12 (0.00)***	326	0	106	0.04 (0.00)***	85	0.18 (0.00)***	
	<b>SOX</b>	130	0.57 (0.03)**	326	0.45	106	0.34 (0.04)**	85	0.35 (0.09)*	
	<b>ULOW</b>	41	42.02 (0.00)***	157	31.19	58	22.12 (0.00)***	30	42.08 (0.02)**	
	<b>ULOWDIF</b>	41	1.41 (0.56)	157	1.95	58	1.67 (0.74)	30	3.79 (0.14)	
	Institutional	<b>ACRAT</b>	114	-10.37 (0.00)***	286	-2.71	103	-3.47 (0.46)	78	-8.81 (0.00)***
		<b>SELFDEAL</b>	130	-0.17 (0.00)***	326	-0.01	106	-0.08 (0.03)**	85	-0.19 (0.00)***

**Table 4**  
**Comparison between ADR programs (continued)**

**Panel B: ownership structure excluding firms with the State as the largest shareholder**

Label	Type of ADR							
	144A		Level I		Level II		Level III	
	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean
<i>ULOW</i>	36	34.58 (0.08)*	139	29.06	54	19.53 (0.00)***	19	30.22 (0.83)
<i>ULOWDIF</i>	36	0.89 (0.24)	139	1.96	54	1.56 (0.64)	19	3.79 (0.21)

**Table 5**  
**Multinomial logit estimations: the choice between the four ADR programs**

This table reports the multinomial logit estimations of the choice between the four ADRs programs, namely Rule 144A, Level I, Level II, and Level III. This table reports the marginal effects evaluated at the mean of the explanatory variables for the issued ADRs between 1990 and 2006. The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); the total debt divided by the total assets (**LEV**); and the yearly turnover volume of the firm divided by the yearly turnover volume of its country of origin's market (**RELTOV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the Sarbanes-Oxley dummy (**SOX**), which is equal to 1 if the firm issues an ADR after April 24, 2002, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variables are: the difference in the accounting ratings of the firm's home-country and the U.S., as proposed by La Porta et al. (1998) (**ACRAT**); and the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **SOX** and **PRIVA**, are taken one year before the issuing of the ADR. To gauge the power and the fit of each estimated model, we rely on the Pseudo-R<sup>2</sup> and the percentage of correctly classified observations predicted by the model. For **PRIVA**, **SOX**, and **EMC**, the marginal effect is calculated as a discrete change from 0 to 1. The reported results use Level I as the base outcome and are corrected for clustering at the country level. Values between parentheses represent the P-values of the t test for the null hypothesis that the coefficient is equal to zero. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel	Type of ADR	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	SOX	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL	Number of obs.	Pseudo R2	Correctly classified obs.
Panel A	144A	0.0001 (0.99)	-0.0043 (0.92)	0.0004 (0.25)	0.0025 (0.01)***		0.3103 (0.02)**	0.1055 (0.04)**			0.2993 (0.00)***			647	15.48%	57.34%
	Level I	-0.0373 (0.01)***	-0.0475 (0.20)	-0.0012 (0.01)***	-0.0005 (0.73)		-0.5509 (0.00)***	-0.0214 (0.64)			-0.1561 (0.16)					
	Level II	0.0168 (0.06)*	0.0344 (0.03)**	-0.0001 (0.91)	-0.0008 (0.56)		-0.0775 (0.10)*	-0.0616 (0.03)**			-0.1591 (0.00)***					
	Level III	0.0203 (0.04)**	0.0174 (0.35)	0.0009 (0.04)**	-0.0013 (0.12)		0.3181 (0.01)***	-0.0226 (0.61)			0.0158 (0.73)					
Panel B	144A	-0.0105 (0.56)	-0.0611 (0.51)	0.0003 (0.58)	0.0034 (0.02)**		0.4198 (0.00)***	0.1533 (0.02)**			0.3680 (0.00)***	-0.0023 (0.64)		581	17.77%	59.38%
	Level I	-0.0331 (0.01)***	-0.0288 (0.46)	-0.0009 (0.07)*	0.0004 (0.78)		-0.5790 (0.00)***	-0.0026 (0.95)			-0.0801 (0.49)	0.0095 (0.14)				
	Level II	0.0149 (0.38)	0.0624 (0.14)	-0.0005 (0.56)	-0.0014 (0.52)		-0.0837 (0.18)	-0.1009 (0.06)*			-0.2640 (0.00)***	0.0010 (0.86)				
	Level III	0.0287 (0.06)*	0.0275 (0.41)	0.0010 (0.11)	-0.0024 (0.04)**		0.2429 (0.01)***	-0.0498 (0.46)			-0.0239 (0.68)	-0.0081 (0.01)***				

**Table 5 (continued)**  
**Multinomial logit estimations: the choice between the four ADR programs**

Panel	Type of ADR	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	SOX	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL	Number of obs.	Pseudo R2	Correctly classified obs.
Panel C	144A	-0.0024 (0.83)	-0.0044 (0.91)	0.0004 (0.23)	0.0021 (0.01)***		0.3043 (0.03)**	0.1013 (0.04)**			0.2953 (0.00)***		-0.2477 (0.06)*	647	18.04%	57.96%
	Level I	-0.0326 (0.02)**	-0.0484 (0.22)	-0.0012 (0.02)**	0.0000 (1.00)		-0.5461 (0.00)***	-0.0196 (0.67)			-0.1633 (0.15)		0.4323 (0.03)**			
	Level II	0.0176 (0.05)**	0.0357 (0.03)**	-0.0001 (0.88)	-0.0007 (0.59)		-0.0653 (0.24)	-0.0628 (0.03)**			-0.1618 (0.00)***		0.0446 (0.65)			
	Level III	0.0174 (0.08)*	0.0171 (0.34)	0.0009 (0.04)**	-0.0014 (0.07)*		0.3071 (0.01)***	-0.0190 (0.65)			0.0298 (0.43)		-0.2292 (0.01)***			
Panel D	144A	0.0023 (0.75)	0.0127 (0.27)	0.0002 (0.32)	0.0014 (0.02)**	-0.6811 (0.31)	0.1658 (0.47)	0.0619 (0.15)			0.3220 (0.01)***			432	18.21%	61.34%
	Level I	-0.0399 (0.00)***	-0.0585 (0.09)*	-0.0007 (0.31)	-0.0004 (0.84)	0.6427 (0.50)	-0.4837 (0.01)***	0.0471 (0.34)			-0.1683 (0.21)					
	Level II	0.0134 (0.13)	0.0359 (0.04)**	-0.0002 (0.80)	-0.0001 (0.96)	-0.5140 (0.52)	-0.0059 (0.98)	-0.0996 (0.00)***			-0.1754 (0.00)***					
	Level III	0.0243 (0.01)***	0.0098 (0.45)	0.0006 (0.07)*	-0.0010 (0.90)	0.5524 (0.05)**	0.3238 (0.11)	-0.0094 (0.76)			0.0218 (0.53)					
Panel E	144A	-0.0021 (0.91)	-0.1219 (0.31)	-0.0004 (0.47)	0.0001 (0.97)		0.2978 (0.24)	0.1117 (0.04)**	0.0005 (0.70)	-0.0063 (0.30)	0.3538 (0.01)***	-0.0049 (0.21)		254	23.91%	64.96%
	Level I	-0.0532 (0.01)***	-0.0008 (0.99)	-0.0007 (0.41)	0.0003 (0.83)		-0.6464 (0.00)***	-0.0368 (0.67)	0.0032 (0.03)**	0.0020 (0.73)	-0.0899 (0.42)	0.0074 (0.22)				
	Level II	0.0159 (0.56)	0.1277 (0.18)	0.0005 (0.61)	0.0007 (0.75)		-0.1906 (0.02)**	-0.0892 (0.38)	-0.0027 (0.22)	0.0003 (0.97)	-0.3071 (0.00)***	0.0041 (0.62)				
	Level III	0.0394 (0.04)**	-0.0049 (0.92)	0.0005 (0.50)	-0.0010 (0.43)		0.5392 (0.05)**	0.0143 (0.84)	-0.0010 (0.60)	0.0041 (0.36)	0.0432 (0.32)	-0.0066 (0.03)**				

**Table 5 (continued)**  
**Multinomial logit estimations: the choice between the four ADR programs**

Panel	Type of ADR	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	SOX	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL	Number of obs.	Pseudo R2	Correctly classified obs.
Panel F	144A	0.0041 (0.73)	-0.0475 (0.43)	-0.0000 (0.96)	0.0000 (1.00)		0.1777 (0.35)	0.0783 (0.02)**	0.0002 (0.77)	-0.0041 (0.19)	0.2586 (0.01)***		-0.2022 (0.02)**	286	22.63%	65.38%
	Level I	-0.0444 (0.01)***	-0.0235 (0.69)	-0.0009 (0.25)	0.0003 (0.81)		-0.5866 (0.00)***	-0.0551 (0.46)	0.0026 (0.10)*	0.0010 (0.86)	-0.1166 (0.36)		0.2967 (0.10)*			
	Level II	0.0221 (0.14)	0.0697 (0.13)	0.0004 (0.51)	0.0003 (0.80)		-0.1477 (0.03)**	-0.0495 (0.42)	-0.0020 (0.08)*	0.0020 (0.82)	-0.1849 (0.00)***		0.1250 (0.35)			
	Level III	0.0182 (0.07)*	0.0014 (0.96)	0.0005 (0.32)	-0.0006 (0.38)		0.5567 (0.01)***	0.0263 (0.50)	-0.0008 (0.45)	0.0017 (0.43)	0.0429 (0.26)		-0.2195 (0.02)**			
Panel G	144A	0.0003 (0.92)	0.0036 (0.68)	-0.0001 (0.44)	-0.0004 (0.41)	-1.0044 (0.19)	0.1681 (0.60)	0.0152 (0.15)	-0.0006 (0.27)	-0.0048 (0.21)	0.2661 (0.05)**	-0.0023 (0.24)		196	30.29%	69.90%
	Level I	-0.0233 (0.21)	-0.0794 (0.28)	-0.0007 (0.33)	0.0007 (0.63)	0.1121 (0.93)	-0.7409 (0.00)***	0.0911 (0.31)	0.0070 (0.00)***	0.0111 (0.19)	-0.1704 (0.22)	0.0074 (0.26)				
	Level II	0.0123 (0.47)	0.0701 (0.28)	0.0007 (0.33)	-0.0002 (0.91)	0.8408 (0.44)	-0.2340 (0.00)***	-0.1194 (0.16)	-0.0061 (0.00)***	-0.0001 (0.98)	-0.1197 (0.09)*	-0.0036 (0.57)				
	Level III	0.0107 (0.09)*	0.0057 (0.48)	0.0001 (0.49)	-0.0002 (0.63)	0.0515 (0.69)	0.8068 (0.01)***	0.0131 (0.30)	-0.0003 (0.55)	-0.0064 (0.12)	0.0239 (0.18)	-0.0015 (0.18)				
Panel H	144A	-0.0027 (0.51)	0.0106 (0.39)	0.0000 (0.85)	0.0000 (0.99)	-1.4389 (0.05)**	0.6452 (0.08)*	0.0169 (0.24)	-0.0005 (0.35)	-0.0023 (0.23)	0.2771 (0.02)**		-0.0790 (0.17)	214	25.72%	70.10%
	Level I	-0.0146 (0.35)	-0.0820 (0.15)	-0.0003 (0.68)	0.0002 (0.84)	1.5318 (0.13)	-0.7405 (0.00)***	0.0577 (0.39)	0.0045 (0.00)***	0.0059 (0.08)*	-0.2021 (0.10)*		0.0829 (0.46)			
	Level II	0.0067 (0.57)	0.0550 (0.21)	0.0004 (0.46)	0.0001 (0.94)	0.5225 (0.44)	-0.1940 (0.00)***	-0.0960 (0.09)*	-0.0037 (0.01)***	0.0018 (0.31)	-0.1099 (0.02)**		0.0559 (0.56)			
	Level III	0.0105 (0.27)	0.0163 (0.27)	0.0000 (0.95)	-0.0003 (0.59)	-0.6154 (0.12)	0.2893 (0.37)	0.0214 (0.35)	-0.0003 (0.62)	-0.0054 (0.08)*	0.0349 (0.18)		-0.0599 (0.23)			



**Table 6**  
**Robustness tests**

This table reports the multinomial logit estimations of the choice between the four ADRs programs, namely Rule 144A, Level I, Level II, and Level III. This table reports the marginal effects evaluated at the mean of the explanatory variables for ADRs issued between 1990 and 2006. The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); the total debt divided by the total assets (**LEV**); and the yearly turnover volume of the firm divided by the yearly turnover volume of its country of origin's market (**RELTOV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the Sarbanes-Oxley dummy (**SOX**), which is equal to 1 if the firm issues an ADR after April 24, 2002, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variable is the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **SOX** and **PRIVA**, are taken one year before the issuing of the ADR. For **PRIVA**, **SOX**, and **EMC**, the marginal effect is calculated as a discrete change from 0 to 1. Panel A excludes all financial and real estate firms from the sample of 647 ADRs. Panel B excludes firms for which there is no ownership data from the sample of 647 ADRs. Panel C excludes state-owned firms. The reported results use Level I as the base outcome and are corrected for clustering at the country level. Values between parentheses represent the P-values of the t test for the null hypothesis that the coefficient is equal to zero. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel	Type of ADR	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	SOX	ULOW	ULOWDIF	EMC	SELFDEAL	Number of obs.	Pseudo R2
Panel A	144A	-0.0077 (0.54)	0.0318 (0.33)	0.0003 (0.30)	0.0032 (0.00)***		0.3077 (0.03)**	0.1112 (0.02)**			0.3302 (0.00)***		547	17.56%
	Level I	-0.0394 (0.02)**	-0.1096 (0.05)**	-0.0011 (0.02)**	0.0000 (0.99)		-0.5483 (0.00)***	-0.0461 (0.36)			-0.1965 (0.08)*			
	Level II	0.0349 (0.00)***	0.0420 (0.05)**	0.0002 (0.73)	-0.0027 (0.13)		-0.0849 (0.07)*	-0.0572 (0.06)*			-0.1654 (0.00)***			
	Level III	0.0123 (0.32)	0.0358 (0.10)*	0.0007 (0.09)*	-0.0006 (0.50)		0.3254 (0.01)***	-0.0079 (0.88)			0.0317 (0.50)			
Panel B	144A	0.0046 (0.70)	-0.0507 (0.41)	-0.0001 (0.68)	0.0004 (0.66)		0.2991 (0.14)	0.0938 (0.01)***			0.2430 (0.01)***		286	18.95%
	Level I	-0.0476 (0.01)***	-0.0300 (0.63)	-0.0007 (0.36)	-0.0003 (0.84)		-0.5645 (0.00)***	-0.0710 (0.38)			-0.0628 (0.58)			
	Level II	0.0189 (0.25)	0.0722 (0.15)	0.0004 (0.55)	0.0004 (0.75)		-0.1715 (0.00)***	-0.0536 (0.38)			-0.2017 (0.00)***			
	Level III	0.0241 (0.05)**	0.0084 (0.80)	0.0004 (0.39)	-0.0005 (0.61)		0.4369 (0.02)**	0.0309 (0.53)			0.0216 (0.64)			

**Table 6**  
**Robustness tests (continued)**

Panel	Type of ADR	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	SOX	ULOW	ULOWDIF	EMC	SELFDEAL	Number of obs.	Pseudo R2
	<b>144A</b>	-0.0018 (0.47)	0.0079 (0.31)	-0.0001 (0.48)	0.0000 (0.98)	-0.7757 (0.20)		0.0108 (0.32)	-0.0002 (0.51)	-0.0036 (0.26)	0.2980 (0.02)**	-0.0481 (0.27)		
	<b>Level I</b>	-0.0160 (0.36)	-0.0870 (0.17)	-0.0006 (0.48)	0.0004 (0.78)	-0.0252 (0.98)		0.1041 (0.24)	0.0077 (0.00)***	0.0058 (0.47)*	-0.2044 (0.11)	0.0402 (0.77)	197	27.54%
<b>Panel C</b>	<b>Level II</b>	0.0107 (0.49)	0.0662 (0.25)	0.0006 (0.36)	-0.0002 (0.87)	1.0866 (0.22)		-0.1363 (0.09)*	-0.0068 (0.00)***	0.0017 (0.84)	-0.1143 (0.08)*	0.0601 (0.69)		
	<b>Level III</b>	0.0071 (0.24)	0.0128 (0.22)	0.0000 (0.98)	-0.0002 (0.71)	-0.2857 (0.36)		0.0214 (0.36)	-0.0007 (0.34)	-0.0039 (0.15)	0.0208 (0.29)	-0.0522 (0.25)		

**Table 7**  
**Comparison of the firms' and home-country's attributes before and after SOX**

In this table, we use two periods: the period between 1998 and 2001, i.e., the period before the enactment of Sarbanes-Oxley (**Pre-SOX**) and the period between 2003 and 2006, i.e., the period after the enactment of Sarbanes-Oxley (**Post-SOX**). The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); the total debt divided by the total assets (**LEV**); and the yearly turnover volume of the firm divided by the yearly turnover volume of its country of origin's market (**RELTOV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variables are: the difference in the accounting ratings of the firm's home-country and the U.S., as proposed by La Porta et al. (1998) (**ACRAT**); and the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **PRIVA**, are taken one year before the issuing of the ADR. Differences in the means of the variables between the pre-SOX and post-SOX period of our sample are tested using a two-tailed t-test of means. P-values of this test are reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Type of ADR	Period	N. of firms	SIZE	INCOME	ASSETGR	LEV	RELTOV	PRIVA	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL
Rule 144A	Pre-SOX	28	14.00	0.09	52.92	22.03	0.02	0.18	51.66	5.42	0.89	-8.50	-0.17
	Post-SOX	71	13.92	0.36	30.64	28.40	0.01	0.08	38.91	0.70	0.97	-13.60	-0.17
	P-value		(0.85)	(0.20)	(0.03)**	(0.13)	(0.00)***	(0.18)	(0.24)	(0.05)**	(0.09)*	(0.02)**	(0.95)
Level I	Pre-SOX	78	14.01	0.24	30.86	25.75	0.03	0.01	35.23	3.32	0.53	-4.07	-0.06
	Post-SOX	123	12.84	0.32	18.40	19.90	0.01	0.00	28.19	0.86	0.34	-1.09	0.02
	P-value		(0.00)***	(0.51)	(0.08)*	(0.06)*	(0.00)***	(0.21)	(0.04)**	(0.01)***	(0.01)***	(0.03)**	(0.05)**
Level II	Pre-SOX	55	15.19	0.98	24.57	27.05	0.01	0.07	17.90	1.67	0.29	-3.76	-0.06
	Post-SOX	27	15.09	2.86	14.94	16.97	0.03	0.00	27.68	2.92	0.15	0.04	-0.04
	P-value		(0.86)	(0.09)*	(0.41)	(0.06)*	(0.14)	(0.15)	(0.19)	(0.50)	(0.16)	(0.09)*	(0.71)
Level III	Pre-SOX	35	14.77	0.72	33.64	24.89	0.05	0.17	42.01	1.24	0.49	-7.85	-0.21
	Post-SOX	23	13.82	0.30	43.67	14.96	0.02	0.22	42.16	5.31	0.70	-10.47	-0.15
	P-value		(0.20)	(0.23)	(0.51)	(0.02)**	(0.20)	(0.67)	(0.99)	(0.31)	(0.12)	(0.19)	(0.29)

**Table 8****Structural change: multinomial logit estimations before and after the enactment of Sarbanes-Oxley Act**

This table reports the multinomial logit estimations of the choice between the four ADRs programs, namely Rule 144A, Level I, Level II, and Level III, before and after SOX. This table reports the marginal effects evaluated at the mean of the explanatory variables. For **PRIVA** and **EMC**, the marginal effect is calculated as a discrete change from 0 to 1. The reported results use Level I as the base outcome and are corrected for clustering at the country level. In this table, we use two periods: the period between 1998 and 2001, i.e., the period before the enactment of Sarbanes-Oxley (**Pre-SOX**) and the period between 2003 and 2006, i.e., the period after the enactment of Sarbanes-Oxley (**Post-SOX**). The firm variables are: the natural logarithm of the total assets in thousands of U.S. Dollars (**SIZE**); the pre-tax income in billions of U.S. Dollars (**INCOME**); the one year total assets growth (**ASSETGR**); and the total debt divided by the total assets (**LEV**). The governance and ownership variables are: the privatization dummy (**PRIVA**), which is equal to 1 if the firm was privatized by ADR, and 0 otherwise; the ultimate control rights (**ULOW**); the difference between the ultimate control and cash flows rights (**ULOWDIF**); and an emerging market dummy (**EMC**), which is equal to 1 if the country of origin of the ADR is an emerging market based on Standard and Poor's Emerging Market Database, and 0 otherwise. The institutional variables are: the difference in the accounting ratings of the firm's home-country and the U.S., as proposed by La Porta et al. (1998) (**ACRAT**); and the difference in the anti-self dealing index, introduced by Djankov et al. (2006), between the firm's home-country and the U.S. (**SELFDEAL**). All the firm variables, except for **PRIVA**, are taken one year before the issuing of the ADR. Values between parentheses represent the P-values of the t test for the null hypothesis that the coefficient is equal to zero. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel	Period	Type of ADR	SIZE	INCOME	ASSETGR	LEV	PRIVA	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL	Number of obs.	Pseudo R2
Panel A	Pre-SOX	144A	0.0035 (0.60)	-0.0864 (0.01)***	0.0004 (0.18)	-0.0005 (0.45)	0.1094 (0.32)			0.1191 (0.04)**			196	12.86
		Level I	-0.0099 (0.61)	-0.0817 (0.45)	-0.0002 (0.83)	0.0007 (0.74)	-0.3907 (0.00)***			0.0552 (0.62)				
		Level II	0.0081 (0.74)	0.1009 (0.15)	-0.0008 (0.37)	0.0001 (0.96)	-0.0306 (0.78)			-0.1930 (0.02)**				
		Level III	-0.0017 (0.94)	0.0672 (0.20)	0.0006 (0.46)	-0.0004 (0.73)	0.3118 (0.03)**			0.0187 (0.86)				
	Post-SOX	144A	-0.0087 (0.67)	0.0336 (0.22)	0.0000 (0.97)	0.0072 (0.00)***	0.2387 (0.18)			0.6869 (0.00)***			244	29.76
		Level I	-0.0191 (0.32)	-0.0118 (0.73)	-0.0013 (0.13)	-0.0009 (0.69)	-0.7041 (0.00)***			-0.5485 (0.00)***				
		Level II	0.0113 (0.00)***	0.0023 (0.38)	0.0001 (0.72)	-0.0013 (0.00)***	-0.0845 (0.00)***			-0.1067 (0.00)***				
		Level III	0.0164 (0.24)	-0.0242 (0.53)	0.0012 (0.12)	-0.0050 (0.01)***	0.5499 (0.00)***			-0.0317 (0.65)				

**Table 8 (continued)**

**Structural change: multinomial logit estimations before and after the enactment of Sarbanes-Oxley Act**

Panel	Period	Type of ADR	SIZE	INCOME	ASSETGR	LEV	PRIVA	ULOW	ULOWDIF	EMC	ACRAT	SELFDEAL	Number of obs.	Pseudo R2						
Panel A	Pre-SOX	144A	0.0017 (0.56)	-0.0028 (0.50)	0.0000 (0.79)	-0.0003 (0.45)	0.0010 (0.83)	0.0001 (0.48)	-0.0000 (0.83)	-0.0009 (0.54)	0.0000 (0.75)		78	41.35						
		Level I	0.0544 (0.19)	-0.1142 (0.25)	0.0030 (0.02)**	0.0012 (0.52)	-0.7090 (0.00)***	0.0114 (0.08)*	-0.0123 (0.13)	0.0114 (0.94)	-0.0030 (0.56)									
		Level II	-0.0820 (0.27)	0.1550 (0.41)	-0.0025 (0.17)	0.0035 (0.47)	0.0218 (0.96)	-0.0108 (0.11)	0.0157 (0.22)	-0.0653 (0.75)	0.0081 (0.36)									
		Level III	0.0259 (0.77)	-0.0380 (0.86)	-0.0005 (0.75)	-0.0044 (0.45)	0.6863 (0.15)	-0.0007 (0.95)	-0.0033 (0.73)	0.0548 (0.81)	-0.0051 (0.51)									
		144A	0.0000 (0.49)	0.0000 (0.77)	0.0000 (0.67)	0.0000 (0.66)	0.0000 (0.63)	0.0000 (0.59)	0.0000 (0.61)	0.3913 (0.02)**	0.0000 (0.65)				111	46.19				
		Level I	-0.0449 (0.03)**	-0.0341 (0.56)	-0.0013 (0.07)*	0.0010 (0.67)	-0.8362 (0.00)***	-0.0014 (0.49)	-0.0065 (0.43)	-0.2916 (0.14)	-0.0053 (0.37)									
		Level II	0.0368 (0.07)*	0.0354 (0.55)	0.0011 (0.11)	-0.0014 (0.54)	-0.1590 (0.01)***	0.0011 (0.61)	0.0063 (0.44)	-0.1077 (0.13)	0.0059 (0.31)									
		Level III	0.0081 0.15	-0.0013 (0.85)	0.0002 (0.38)	0.0004 (0.32)	0.9952 (0.00)***	0.0004 (0.20)	0.0002 (0.85)	0.0082 (0.53)	-0.0006 (0.57)									
		Panel B	Pre-SOX	144A	0.0004 (0.56)	-0.0006 (0.55)	0.0000 (0.73)	-0.0001 (0.56)	0.0306 (0.50)	0.0000 (0.56)	0.0000 (0.85)	-0.0007 (0.52)					0.0009 (0.56)		82	36.44
				Level I	0.0739 (0.16)	-0.1870 (0.11)	0.0046 (0.00)***	0.0004 (0.90)	-0.6062 (0.00)***	0.0126 (0.01)***	-0.0017 (0.89)	0.2191 (0.16)					-0.1905 (0.43)			
				Level II	-0.0727 (0.21)	0.1826 (0.21)	-0.0039 (0.00)***	0.0009 (0.73)	0.2151 (0.46)	-0.0121 (0.02)**	0.0031 (0.79)	-0.1844 (0.20)					0.3800 (0.12)			
				Level III	-0.0015 (0.97)	0.0049 (0.96)	-0.0007 (0.39)	-0.0012 (0.71)	0.3604 (0.16)	-0.0004 (0.88)	-0.0014 (0.80)	-0.0341 (0.70)					-0.1904 (0.05)**			
Panel C	Post-SOX			144A	0.0000 (0.49)	0.0000 (0.95)	0.0000 (0.73)	0.0000 (0.85)	0.0000 (0.70)	0.0000 (0.63)	0.0000 (0.55)	0.6729 (0.00)***	0.0000 (0.58)				130	41.12		
				Level I	-0.0401 (0.05)*	-0.0317 (0.67)	-0.0016 (0.07)*	0.0030 (0.26)	-0.8204 (0.00)***	0.0001 (0.97)	-0.0090 (0.27)	-0.5331 (0.00)***	0.1815 (0.29)							
				Level II	0.0224 (0.11)	0.0318 (0.43)	0.0006 (0.15)	-0.0013 (0.34)	-0.1213 (0.02)**	0.0005 (0.69)	0.0053 (0.13)	-0.1504 (0.00)***	0.1048 (0.37)							
				Level III	0.0176 (0.23)	-0.0001 (1.00)	0.0010 (0.23)	-0.0018 (0.48)	0.9417 (0.00)***	-0.0006 (0.75)	0.0037 (0.60)	0.0107 (0.86)	-0.2862 (0.07)*							

**Appendix 1**  
**Variables, definitions, and sources**

<b>Variables</b>	<b>Definition</b>	<b>Sources</b>
<b>SIZE</b>	The natural logarithm of total assets in thousands of U.S. Dollars one year before issuing an ADR	Worldscope Disclosure, Economatica (for Latin America), Amadeus (for Europe), Orbis, country-specific company handbooks, firms' websites, and firms' financial reports
<b>INCOME</b>	The pre-tax income in billions of U.S. Dollars one year before issuing an ADR	
<b>ASSETGR</b>	The annual asset growth of the ADR firm one year before issuing an ADR	
<b>LEV</b>	The leverage ratio, which is equal to total debts divided by total assets one year before issuing an ADR	
<b>RELTOV</b>	The ratio between the turnover volume of the underlying firm and the turnover volume of its local market one year before issuing an ADR	DataStream
<b>PRIVA</b>	A dummy variable that is 1 when the firm was privatized by issuing ADR, and 0 otherwise	World Bank, Privatization Barometer website, firms' websites, and the Bank of New York website
<b>SOX</b>	A dummy variable for the Sarbanes-Oxley Act which is equal to 1 if one firm issues its ADR after April 24, 2002, and 0 otherwise	Bank of New York, Citibank, Deutsche Bank, and JPMorgan websites, Lexis/Nexis, NYSE website, and Litvak (2007)
<b>ULOW</b>	The percentage of the total ultimate control rights held by the ultimate owner of the ADR firm one year before issuing an ADR	Worldscope Disclosure, Economatica (for Latin America: Brazil, Chile, Colombia, Peru, and Venezuela), Amadeus (for Europe), Orbis, country-specific company handbooks, firms' websites, and firms' financial reports
<b>ULOWDIF</b>	The percentage point difference between the ultimate control rights and the ultimate cash flow rights of the ultimate owner of the ADR firm one year before issuing an ADR	
<b>EMC</b>	A dummy variable that is equal to 1 if the firm's country of origin is an emerging market, and 0 otherwise	Standard and Poor's Emerging market Database (EMDB)
<b>ACRAT</b>	The difference in the accounting ratings between the firm's country of origin and the U.S.	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998)
<b>SELFDEAL</b>	The difference in the anti-self dealing index between the firm's country of origin and the U.S.	Djankov, La Porta, Lopes-de-Silanes, and Shleifer (2006)

## Appendix 2

### Distribution of ADRs by country of origin

Country	Total	Percentage
Argentina	7	1.1%
Australia	47	7.3%
Austria	14	2.2%
Belgium	3	0.5%
Brazil	25	3.9%
Chile	10	1.5%
China	21	3.2%
Colombia	1	0.2%
Denmark	1	0.2%
Egypt	3	0.5%
Finland	3	0.5%
France	27	4.2%
Germany	30	4.6%
Greece	7	1.1%
Hong Kong	52	8.0%
India	30	4.6%
Indonesia	3	0.5%
Ireland	10	1.5%
Italy	8	1.2%
Japan	40	6.2%
Jordan	1	0.2%
Korea (South)	23	3.6%
Luxembourg	2	0.3%
Malaysia	8	1.2%
Mexico	28	4.3%
Netherlands	15	2.3%
Norway	6	0.9%
Pakistan	2	0.3%
Peru	1	0.2%
Philippines	5	0.8%
Poland	7	1.1%
Portugal	3	0.5%
Russian Federation	20	3.1%
Singapore	10	1.5%
South Africa	17	2.6%
Spain	8	1.2%
Sweden	10	1.5%
Switzerland	9	1.4%
Taiwan	42	6.5%
Thailand	4	0.6%
Turkey	8	1.2%
United Kingdom	72	11.1%
Venezuela	4	0.6%
<b>Total</b>	<b>647</b>	<b>100.0%</b>
<b>Percentage</b>	<b>100.0%</b>	