Uninvited U.S. Investors? Economic Consequences of Involuntary Cross-listings

Peter Iliev, Darius P. Miller, and Lukas Roth*

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Abstract

We study a recent SEC regulation change that grants an automatic exemption from the 1934 Securities Act for foreign firms trading on U.S. Over-The-Counter (OTC) markets, thereby making unsponsored (involuntary) cross-listings possible. We document that disclosure deregulation, combined with incentives for fee income, caused depositary banks to cross-list hundreds of foreign companies without the firms' approval or even knowledge. This caused a fundamental shift in the cross-listing landscape to where the majority of foreign firms trading in the U.S. are now here involuntarily, and trade on the OTC rather than major exchange markets. We further document positive wealth effects for the depositary banks and negative effects for many involuntary cross-listed foreign firms, such as those with high stock market liquidity, low information asymmetries, and meeting NYSE listing standards. In contrast, small, illiquid firms with greater information asymmetries and growth opportunities benefited from the unsponsored ADR facility. Our findings suggest that the amendment of Rule 12g3-2(b) interacted with existing agency problems at financial institutions which created significant externalities with unintended consequences.

* Peter Iliev is at the Pennsylvania State University, pgi1@psu.edu, Darius P. Miller is at Southern Methodist University, dpmiller@mail.cox.smu.edu, and Lukas Roth is at the University of Alberta, lukas.roth@ualberta.ca. We thank Andrew Karolyi and seminar participants at Southern Methodist University for helpful comments and suggestions.

"*What would you say if someone told you that brokers and depositaries in the United States could use your company's shares to create multiple unsponsored American Depositary Receipt ("ADR") programs without your consent, knowledge or participation? You may say that the person is out of his mind and tell him to get out of your office. Until this month, that response would have been appropriate.*"

- Clifford Chance Client Memorandum September 2008

1. Introduction

Since the passage of the Securities Exchange Act of 1933, U.S. disclosure regulations have been designed to have extraterritorial reach between any 'foreign country' and the United States. However, the passage of the 2002 Sarbanes-Oxley Act coupled with the increased internalization of capital markets has led academics, regulators, and policy makers to debate if reforms are necessary in order to maintain the global competitiveness of U.S. markets.[1]

We contribute to this debate by providing evidence on the economic consequences of recent SEC disclosure regulation reforms. We exploit a new regulation change that grants an automatic exemption from the 1934 Securities Act for foreign firms trading on U.S. Over-The-Counter (OTC) markets, thereby making unsponsored (involuntary) cross-listings possible. We investigate both depositary banks responses as well as foreign firms' market reactions.

We document that disclosure deregulation, combined with incentives for fee income, caused depositary banks to cross-list hundreds of foreign companies without legal obligation to notify the firms or obtain their consent. This caused a fundamental shift in the cross-listing landscape to where the majority of foreign firms trading in the U.S. are now here involuntarily, and trade on the OTC rather than major exchange markets. We further document large positive

[1] See, e.g., Berger, Li, and Wong (2005), Chaplinsky and Ramchand (2007), Doidge, Karolyi, and Stulz (2009a), Fernandes, Lel and Miller (2009), Hostak, Lys, and Yang (2006), Li (2006), Litvak (2007), Leuz, Triantis, and Wang (2008), Piotroski and Srinivasan (2008), Smith (2006), Woo (2006), and Zingales (2007) as well as reports by the Committee on Capital Market Regulation (November 30, 2006) and the U.S. Chamber of Commerce sponsored Commission on the Regulation of U.S. Capital Markets in the 21st Century (2007).

wealth effects for the depositary banks, and find both positive and negative effects for many involuntary cross-listed foreign firms. Our results provide evidence that seemingly innocuous regulation changes can interact with other institutional elements of an economy to lead to "surprisingly" undesirable outcomes.[2]

On September 5, 2008 the SEC amended Rule 12g3-2(b) by eliminating the requirement that foreign firms submit a written application for an exemption from U.S. registration requirements. In its place, the rule now provides an automatic exemption as long as the firm (a) makes material information available on its website and (b) maintains a listing on one or more non-U.S. exchanges. While the intent of the 2008 amendments was to make establishing a *sponsored* (voluntary) ADR program much easier and thereby increase the attractiveness of U.S. capital markets, they also created a channel that allows fee motivated depositary banks to establish *unsponsored* (involuntary) ADRs. This resulted from the regulation's stipulation that depositary banks are permitted to "rely on good faith on the adequacy of a company's website postings" in complying with the new Rule 12g3-2(b).

In this way, foreign firms are now exposed to the positive as well as the potential negative consequences of unsponsored cross-listing programs.[3] For example, once an unsponsored ADR program is established by a depositary bank, the firm becomes liable for fraudulent misstatements or omissions under anti-fraud provisions of U.S. federal or state securities laws. Further, the firm has no control over the information flow to or from its U.S. investors, and these investors are also often deprived of the right to vote. In addition, unsponsored ADR firms need to get the permission from each depositary bank before it can

[2] The potential link between disclosure regulation and Lipsey and Lancaster's (1956) "theory of second best" is highlighted in Leuz and Wysocki (2008).
[3] See Section 2 for details.

establish a future sponsored ADR program. In this way, the regulation fosters a potential conflict of interest between fee motivated depositary banks and their newly cross-listed firms.

We investigate several predictions that arise from the possible interaction between the amendment of Rule 12g3-2(b) and agency conflicts at depositary banks. We expect fee motivated depository banks to respond to the regulation change by creating unsponsored ADR programs, regardless whether these newly cross-listed firms benefit from being traded in U.S. capital markets. Similarly, we expect depositary bank stock returns around the rule's announcement to reflect the net benefits of these new listings. Conversely, we expect the market reaction for unsponsored ADR firms to provide evidence on the net costs (or benefits) of being involuntarily cross-listed. Previous research suggests that the benefits of an OTC cross-listing are more modest than major exchange cross-listings (see, e.g., Miller, 1999). Therefore, if the costs of being forced away from their preferred non-U.S. listing strategy are significant, we expect to find negative abnormal returns upon cross-listing. However, whether these externalities are positive or negative on net is likely to vary across firms, since previous research suggests the benefits and costs of cross-listing depend on firm characteristics such as size, growth opportunities, and information environment, to name a few (see, e.g., Doidge, Karolyi, and Stulz 2004).

We begin our analysis by examining if the regulation change interacted with the depositary banks' motivation for fee income. We document that 748 unsponsored ADR programs were created in the six months following the amendment for firms that had previously chosen not to sponsor a cross-listing. This stands in sharp contrast to the 69 unsponsored ADR programs created over the decade before the amendment. We investigate the determinants of the depositary banks' choice of unsponsored ADR targets and find that they are more likely to

choose large, profitable, transparent, widely held firms that are highly valued. Further, depositary banks also choose firms that have higher turnover, lower transaction costs, and meet current NYSE listing requirements. Moreover, we uncover several instances where foreign firms had formerly terminated their cross-listing program and then were subsequently cross-listed involuntarily after the new regulation was enacted. These results support the hypothesis that depositary banks choose firms that are most likely to be attractive to U.S. investors or firms most likely to convert the unsponsored program to a sponsored ADR, both of which could result in more fee income.[4]

Next, we examine how the creation of unsponsored ADR programs impacts depositary banks' market value. We find that when the first wave of unsponsored ADR programs was announced, depositary banks experienced positive and significant increases in shareholder wealth.

Finally, we examine the impact of new unsponsored ADR announcements on foreign firm value. We find that large firms with high stock market liquidity, low information asymmetries, and meeting NYSE listing criteria experienced negative announcement returns upon the establishment of new unsponsored ADRs. In contrast, small, illiquid firms with greater information asymmetries and growth opportunities benefited from the unsponsored ADR facility. The net result of the deregulation was the destruction in cross-listed firms' market value of over $23 billion. We also augment our event study analysis with valuation tests based on the change in Tobin's q and find that a new unsponsored ADR program leads to an average decrease of 7.2 percent in value. The results are consistent with the hypothesis that the regulation change forced many foreign firms away from their preferred choice of being unlisted in U.S. capital markets.

[4] Depositary banks earn income when creating or cancelling ADRs, earn custodial fees (either deducted when dividends are paid or "passed thru"), and can make arbitrage profits from trading in foreign firms' stock and their ADRs.

Taken together, our findings suggest that the amendment of Rule 12g3-2(b) interacted with existing agency problems at financial institutions which created significant externalities with unintended consequences.

Our study makes several contributions to the literature. We add to the limited empirical evidence on the economic consequences of securities regulations, including the 1933/34 Securities Acts and the 1964 Securities Act Amendments. The benefits of these regulations have been heavily debated (see, e.g., Coffee, 1984, for a survey), leading researchers to focus on more recent regulation, including 1999 Eligibility Rule, 2000 Regulation Fair Disclosure and 2002 Sarbanes Oxley Act.[5] A nascent stream of this literature documents several unintended consequences of these latest regulation increases (Bushee and Leuz, 2005, Linck, Netter, and Yang, 2009, Gao, Shuang, and Zimmerman, 2009, and Iliev, 2009), suggesting a potential need for regulation reforms. We examine a recent securities market *deregulation* and provide new evidence that deregulation can also produce significant externalities.

We also contribute to the understanding of how interactions among institutional elements of an economy can affect the desirability of securities regulation, a relatively under-researched area (Leuz and Wysocki, 2008). Our paper provides evidence that agency problems at financial intermediaries can interact with securities regulation to lead to unintended consequences. In this way, we also provide, to the best of our knowledge, the first empirical evidence on the economic consequences of international cross-listing on the financial institutions that create these important securities. We show that cross-listings have important wealth effects for depositary banks, which also creates incentives for these financial intermediaries to establish financial instruments that can force firms from their preferred listing strategy.

[5] See Healy and Palepu (2001) and Leuz and Wysocki (2008) for surveys of this literature.

Further, we contribute to the literature on the costs and benefits of international cross-listing. This literature almost exclusively examines the economic consequences of firms that self-select to voluntarily cross-list.[6] Given that firms rationally weigh the costs and benefits associated with a U.S. listing (Doidge et al. 2008), it is perhaps not surprising that, on average, cross-listings are associated with positive economic outcomes. In contrast, exploiting the large sample of involuntary cross-listings caused by the SEC regulation amending Rule 12g3-2(b), we document that cross-listing has significant consequences for many firms. In this way, we also provide new evidence on the economic impact of international cross-listings.

Our findings on the economic consequences of involuntary cross-listing are also especially relevant given that after Rule 12g3-2(b) was amended, unsponsored ADR programs have grown to represent over one third of the total U.S. cross-listing universe. Their impact on the OTC market has also for regulation changes in how OTC stocks trade.[7] Further, the potential importance of involuntary listings is increasing globally as more countries begin to experiment with this type of listings. For example, Bruggerman et al. (2009) analyze the effects IFRS adoption on the Open market at the Frankfurt Stock Exchange, a new market that allows German individual investors to trade foreign stocks. Bris et al. (2009) examine the SEAQ-I in London, a market that until 2004, allowed trading of foreign securities without the company's involvement.[8]

Finally, our study adds to the growing literature that examines how SEC regulation has created incentives for *registered* foreign firms to *leave* U.S. capital markets (see, e.g., Doidge, Karolyi, and Stulz, 2009b and Fernandes, Lel, and Miller, 2009). In contrast, our results provide

[6] See Karolyi (1998, 2006) and Benos and Weisbach (2004) for surveys of this literature.
[7] See www.adrbnymellon.com.
[8] Bruggerman et al. (2009) find IFRS adoption led to positive trading activity on the Open Market, while Bris et al. (2009) find that in contrast cross-listings on the main London Stock Exchange, abnormal returns surrounding the SEAQ-I listing date are statistically insignificant.

evidence on how (de)regulation intended to make *unregistered* foreign firms *enter* U.S. capital markets had significant unintended consequences.

The remainder of the paper proceeds as follows. Section 2 provides a primer on ADRs and the amendments to Rule 12g3-2(b). Section 3 describes the data. Section 4 and 5 presents the results for depositary banks and foreign firms, respectively. Section 6 concludes.

2. Institutional Setting

The first-ever ADR was created by JP Morgan on April 29, 1927 for the U.K.'s Selfridges Provincial Stores Limited and was cross-listed on the New York Curb Exchange, the precursor to the American Stock Exchange. Like most early ADRs, the Selfridges ADR was "unsponsored", that is, initiated by depositary banks without company authorization. In 1983 the SEC made unsponsored programs much more difficult to create when it mandated registration form F-6, which required the firm's participation in the ADR creation. Today, unsponsored ADRs are part of the Level I ADR category, which denotes that they trade on the over-the-counter (pink sheet) market.[9]

2.1. Amendments to Rule 12g3-2(b) in 2008

Prior to September 5, 2008, any foreign firm could easily prevent a depositary bank from establishing unsponsored ADRs simply by not formally applying for, or not meeting the ongoing disclosure requirements of Rule 12g3-2(b). Rule 12g3-2(b), originally passed in 1967, remedied what the SEC saw as the unreasonable requirement that foreign firms that have even limited contact with U.S. investors, such as firms with OTC or privately placed ADR programs, often fall under the shareholder count rule of the 1934 Act and therefore are required to meet U.S.

[9] ADRs that trade on a major U.S. exchange such as the NYSE or NASDAQ are known as Level II or Level III, and ADRs that are privately placed are known as Rule 144a ADRs. See Miller (1999) for more details on ADR types.

reporting requirements. To remedy this, Rule 12g3-2(b) exempts the foreign issuer from registration if it supplies the SEC with (a) documents made available to the public under the laws of the country in which the company is incorporated, (b) documents made public according to the regulations of any stock exchange on which the company's stock is listed, and (c) documents otherwise made available to its security holders, such as annual reports, announcements of shareholder meetings and press releases relating to dividends.[10]

On September 5, 2008 the SEC issued the rule amending 12g3-2(b). The amendments eliminate the previously required written application for an exemption from the registration requirements. In its place, the rule now provides an *automatic* exemption as long as the firm (a) makes material information available on its website and (b) maintains a listing on one or more non-U.S. exchanges.

While the 2008 amendments made establishing a sponsored ADR program much easier, they also created a channel that allows depositary banks to create unsponsored ADRs without the approval or even knowledge of the issuer. This was made possible by the SEC's concurrent amendment to the registration statement that depository banks must file to create ADRs (Form F-6), to allow depositary banks to "rely on good faith on the adequacy of a company's website postings" in complying with the new Rule 12g3-2(b). Therefore, the 2008 Amendments greatly expanded the availability of the Rule 12g3-2(b) exemption given its automatic availability provisions. While the amendments do make establishing a sponsored ADR program much easier, they also permit depositary banks to establish unsponsored ADR programs, without any legal obligation to notify the issuer or obtain its consent.[11] Furthermore, firms are unlikely to respond

[10] See Appendix A for a short history of ADR regulation in the U.S.

[11] During the comment period for the new rule, depositary banks such as the Bank of New York lobbied the SEC not to require the foreign firm's notification or consent to cross listing. In contrast, Europeanlssuers, a pan European

by omitting the information on their websites since exemption from U.S. registration avoids costly compliance with the Sarbanes-Oxley Act of 2002.

2.2. Consequences of Unsponsored ADR Programs

While the benefits to a sponsored cross-listing on a major exchange are well documented, previous research shows that the benefits to an OTC cross-listing in stock price, valuation and improved governance are more modest which is often attributed to the exemption from U.S. securities regulation that Rule 12g3-2(b) affords.[12] Further, the establishment of an unsponsored OTC ADR program has several potential negative consequences for the issuing foreign firm. These include increased exposure to U.S. legal and regulatory enforcements, adverse treatment of its U.S. security holders, and increased difficulty in establishing a future sponsored ADR program. Table 1 summarizes the differences between unsponsored and sponsored OTC cross-listings.

2.2.1. Liability for Information

Once an unsponsored ADR program is established by a depositary bank, even without the participation or consent of the issuer, the issuer becomes liable for fraudulent misstatements or omissions under the anti-fraud provisions of U.S federal or state securities laws. This is because the amendments do not change the standard or scope of potential liability that foreign firms are exposed to with respect to information disclosed under Rule 12g3-2(b), even if they did not initiate the ADR program. These laws include Rule 10b-5 of the Exchange Act, which creates a private right of action against a person knowingly or recklessly making untrue or misleading

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organization that represents the vast majority of publicly quoted companies in Europe, lobbied for a more cautious approach (see, e.g., http://www.sec.gov/comments/s7-04-08/s70408.shtml.)

[12] For differences between OTC and Exchange ADRs in stock price reactions, valuation, and overall corporate governance, see, e.g., Miller (1999), Doidge, Karolyi, and Stulz (2004), and Lel and Miller (2008), respectively.

statements or omissions in connection with the purchase or sale of any security. In this way, a OTC firm becomes exposed to 10b-5 legal enforcement actions in three ways: (1) private class action securities lawsuits, (2) SEC injunctions and other equitable remedies, and (3) criminal action prosecutions by the U.S. Justice Department. One difference between OTC and exchange traded firms is that Rule 12g3-2(b) information is deemed to be "furnished to" and rather than "filed with" with the SEC, therefore violations under section 18 of the 1934 Exchange Act concerning the information filed do not apply to OTC traded firms. However, there have been at least 14 U.S. securities class action lawsuits against foreign firms with OTC ADR programs since 1998.[13]

Furthermore, as noted in a white paper by the law firm Ziegler, Ziegler & Associates, there litigation risk exposure is higher in unsponsored OTC ADR programs than in sponsored OTC programs. This is because with a sponsored program the level of risk can be mitigated through exculpatory provisions inserted into the deposit agreement to protect the foreign issuer. In contrast, the foreign issuer has no legal relationship with unsponsored ADR holders and therefore no ability to control risk with respect to such holders.[14]

2.2.2. Treatment of Investors and Issuing Firms

Since the foreign issuer is not involved in the implementation or maintenance of the unsponsored ADR program, it has little say on how its investors are treated. For example, competing ADR banks often create multiple unsponsored ADR programs for the same

[13] One example is from Roche Holding, a Swiss corporation, which had ADR program trading on the OTC pink sheets, was the target of a 1999 securities class action lawsuit in which U.S. ADR holders alleged that the trading prices of Roche Holding ADRs were artificially inflated by false and/or misleading statements concerning the competitive market for certain Roche products. In May of 2002, the United States Court of Appeals for the Third Circuit set precedence by reversing the dismissal of the securities fraud class action and rejected the contention that Roche Holding, was not liable for claims filed in the U.S. by purchases of ADRs. Roche ultimately settled for $6,350,000 and paid the plaintiff's attorney fees and expenses.

[14] See "The U.S. Legal Environment for Sponsored and Unsponsored ADR Programs" by Ziegler, Ziegler & Associates LLP and Depositary Management Corporation, April 10, 2009.

underlying stock. Even though all trading takes place with one ticker symbol and one CUSIP, each bank can charge investors different fees and apply different exchange rates on dividend payments which can result in U.S. dollar returns differing for different investors in the same security.

Further, potentially important flows between the foreign issuing firm and its new U.S. investors are hindered by the unsponsored ADR program. Unlike for sponsored ADR programs, the depositary bank of an unsponsored ADR program is not obligated to distribute shareholder communication from the firm, such as proxy information, annual reports or press releases. Investors in unsponsored ADR programs may also be deprived of valuable rights since the depositary bank is not obligated to exercise voting rights on behalf of the ADR holders or even notify ADR holders of shareholder meetings. This results in most unsponsored ADR voting rights being recorded as abstention which reduces the rights of foreign investors as well as potentially decreases corporate governance.[15] Information flow from the U.S. investors to the issuing firm is also hindered since the depositary banks operating unsponsored programs often do not provide information about the U.S. ADR holders to the issuer. Therefore, it is difficult for the foreign firm to know the composition and identity of its shareholder base, which could also impair disclosures to shareholders.[16]

2.2.3. Difficulty in Establishing a Future Sponsored ADR Program

The existence of one or more unsponsored ADR programs can also make it more difficult and costly for firms to establish a sponsored ADR program. The SEC's policy is not to allow sponsored and unsponsored programs to co-exist due to potential investor confusion and market

[15] See, e.g., "Rule 12g3-2(b) Seminar for Japanese Issuer" November 2008 by J.P. Morgan.
[16] For further discussions of legal and practical implications to an issuer of an unsponsored ADR program see Fitzgerald, Vivero, and Reyes (2009).

disorder. Therefore, before a firm can create a sponsored ADR program, it must persuade the depositary bank(s) of all unsponsored ADR(s) to terminate the unsponsored program and transfer the deposited securities and related ADR holders to the new sponsored program. This typically requires the payment of fees (usually by the newly appointed depositary bank) which can reduce the amount the bank is willing to pay the company in connection with establishing the sponsored program. Therefore the incumbent depositary bank has the ability to preclude a company from establishing a sponsored ADR program and this could give the bank leverage in determining the identity of the depositary bank for the new sponsored program.[17] This leverage may become economically significant, as some observers predict that the negative consequences of an unsponsored program will cause 50% of the new unsponsored programs to switch to sponsored programs.[18]

Overall, the creation of an unsponsored ADR program eliminates the foreign firm's ability to control how and when their shares will trade in the U.S. market. Evidence for the existence of negative consequences of involuntary cross-listing on foreign firms is some firms' recent attempt to post disclaimer statements on their websites after being involuntarily cross-listed. In these statements firms indicate that they will not publish all material information on their website required to claim an exemption under Rule 12g3-2(b).[19] For example, Wincor Nixdorf, for which an unsponsored ADR was established on November 21, 2008, states:[20]

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[17] In fact, it was suggested that the SEC amend the new rules to require any depositary bank terminate an unsponsored facility created without the issuer's consent if the issuer decides to create a sponsored, but this suggestion was ultimately rejected. See "Uninvited U.S. Investors? The Explosion of Unsponsored ADR Programs and the Implications for Foreign Private Issuers" by Gorman and Evans (2008) for Gibbons Law Firm.

[18] See Bowne Review for Dealmakers, September 2009.

[19] Presumably, most companies would not want to do this because loosing the registration exemption could trigger SOX compliance. Another strategy would be to create a sponsored ADR program as a defensive measure because the SEC's policy is also to prohibit unsponsored ADR facilities when sponsored facilities exist), although this could be contrary to firms' preferred listing strategy.

[20] www.wincor-nixdorf.com/internet/site_EN/EN/WincorNixdorf/InvestorRelations/USDisclaimer_inhalt.html.

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3. Data

3.1. Sample

We compile a sample of foreign firms cross-listed in the U.S. equity markets as of April 2009. We obtain cross-listing data from Bank of New York, and verify the information with data on cross-listed firms from Citibank, JP Morgan, and SEC filings. We classify firms into firms with sponsored and unsponsored ADR programs. Using Worldscope data, we augment our sample with foreign firms that are not cross-listed in the U.S. equity market. We include all firms from countries for which there is at least one new unsponsored ADR program established since the new rule went into effect on October 10, 2008. We exclude firms with no public equity and firms with total assets less than $10 million.

Panel A of Table 2 summarizes the sample by country and cross-listing facility. Our sample consists of 15,169 firms from 30 countries. A total of 1,641 firms have cross-listed equity in the U.S.; 713 firms cross-list their shares via sponsored ADR programs, whereas for 928 firms, shares are available to U.S. investors through unsponsored ADR programs.[21]

[21] Compared to the population of sponsored cross-listings (i.e., including those from countries without unsponsored programs such as Canada), the unsponsored ADR programs now represents 39% of the total cross-listings, an increase of about 300% from the year before the amendment was passed.

In our analysis of the economic consequences of involuntary cross-listings, we use firm- and country-level variables to proxy for the costs and benefits of cross-listing. The firm-level variables are from Worldscope (accounting data) and Datastream (stock market data), and the country-level variables are standard measures used in the literature. Panel B of Table 2 provides variable descriptions and summary statistics.

At the firm level, we measure firm size with total assets. Firm size is positively related to investor recognition, liquidity, as well as litigation risk (Gande and Lewis, 2009). We also include a dummy variable that measures whether the firm meets the listing requirements of the NYSE, thus measuring whether the firm would be eligible to list its stock directly at the NYSE, for example, through a sponsored Level II or III ADR program. We expect the costs of unsponsored ADR program exceeding the benefits for firms eligible to list at the NYSE, as they would have done so in the first place. To the extent that new unsponsored ADRs can signal better access to the U.S. capital markets in the future, we control for the firm's financial needs. We proxy for the need of external finance with sales growth (average annual growth rate of sales over the last three years), leverage (total debt to total assets), profitability measured with return on assets, and Tobin's q (calculated as (total assets – book value of equity + market value of equity) / total assets). We also control for the degree of internationalization using a measure of foreign sales divided by total sales. For firms with concentrated ownership structures, cross-listing may reduce private benefits of control. On the other hand, ownership can proxy for the quality of firm-level governance, and this in turn is associated with lower benefits of U.S. cross-listing. We measure ownership concentration with the variable closely-held calculated as shares held by insiders, i.e. management, pension funds, trusts, and individuals who hold more than 5% of the total outstanding shares.

Firms with higher information asymmetries and low stock market liquidity may benefit from U.S. cross-listing. To examine information asymmetries and liquidity we use trading volume (average daily trading volume of a firm's stock in the domestic market over two years), and transaction cost (average daily relative bid-ask spread, calculated as (ask – bid) / 0.5 (bid + ask) over two years). We control for a firm's disclosure quality using a measure of accounting standards, IFRS/US GAAP, that equals one if the company prepares its accounting statements according to IFRS or US GAAP accounting rules, and zero otherwise.

At the country level, we use various measures of investor protection, disclosure quality, and the legal and institutional environment of a country. Previous research suggests that the benefits of a U.S. cross-listing are greatest for firms of countries with weak legal and institutional protection.

We control for the degree of investor protection with the revised anti-director index (measure of minority shareholder protection compiled by Djankov et al., 2008; the index ranges from 0 to 6, and higher values indicate better protection), and investor protection (measure of investor protection ranging from 0 to 10, with higher scores indicating more investor protection; Djankov et al., 2008). We measure the quality of disclosure with disclosure in prospectus (index of the scope of disclosure in the prospectus of an IPO; La Porta et al., 2006), and disclosure requirements (index that includes disclosure on prospectus, compensation, shareholders, inside ownership, contracts irregular, and transactions; La Porta et al., 2006).

Finally, we measure the general legal and institutional environment with property rights (index of property rights compiled by Heritage Foundation, higher scores indicate better property rights), and we group firms by common law and civil law origin, as legal origin of a country is closely associated with overall investor protection (see, e.g., La Porta et al., 1998). We also

control for a country's overall financial development with stock market cap/GDP (average of the ratio of stock market capitalization to gross domestic product for the period 1999-2003; the data is from World Development Indicators). For robustness, we employ a number of alternative country-level variables as measures for investor protection, disclosure quality, enforcement, and the general legal and institutional environment of a country. Using these alternative measures doesn't impact our conclusions.

4. Depositary Banks' Response to the 2008 Amendments to Rule 12g3-2(b)

The extensive theoretical and empirical literature on the economic consequences of international cross-listings has documented several benefits, including access to external finance (Reese and Weisbach, 2002, Lins, Strickland, and Zenner, 2005), more scrutiny by financial analysts (Baker, Nofsinger, and Weaver, 2002, Lang, Lins, and Miller, 2003), better information environments (Bailey, Karolyi, and Salva, 2005), lower cost of capital (Errunza and Miller, 2000, Hail and Leuz, 2006), an increase in shareholder wealth (Foerster and Karolyi, 1999 and Miller, 1999) and ultimately higher valuation (Doidge, Karolyi, and Stulz, 2004 and Mitton, 2002). However, these benefits also come with costs, including direct costs of listing and complying with U.S. regulations, such as the 2002 SOX act (Illiev, 2009) as well as indirect costs such as decreased private benefits of control (Doidge, Karolyi, Lins, Miller, and Stulz, 2009) and litigation risk (Coffee, 2002). In the decision to cross-list in the U.S., studies show that firms trade off these costs and benefits of cross-listing in their voluntary decision to determine if they should list in the U.S.[22]

In contrast, little is known about the depositary banks that serve as financial intermediaries in the decision to cross-list in the U.S. The 2008 amendments to Rule 12g3-2(b)

[22] See, e.g., Pagano, Röell, and Zechner (2002), Doidge, Karolyi, and Stulz (2004), and Sarkissian and Schill (2004).

provide a natural experiment to offer insights into whether depositary banks act in their agent's (i.e., foreign firm's) interest or their own interest when selecting firms to involuntary cross-list. Further, our setting also allows us to provide the first evidence into the economic consequences of cross-listing on depositary banks.

We first examine if the incentives for fee income at depositary banks interacted with the regulation change by investigating the change in the number of unsponsored ADR programs surrounding the new rule's effective date. The first three columns of Table 3 show that in the first six months since the new rule took effect, there have been a total of 748 firms cross-listed via an unsponsored ADR program. The most frequent countries are Japan, U.K., and Hong Kong with 123, 82, and 66 new unsponsored ADR programs, respectively. The large increase in unsponsored programs was picked up by the international financial press noting the potential negative effects on the numerous Japanese and French companies that had previously stayed away from U.S. capital markets.[23] Depositary banks also responded with specially targeted reports to illustrate the new liabilities for these unaware companies.[24]

Figure 1 illustrates the dramatic impact of the amendments to Rule 12b3-2(b) on the creation of unsponsored ADRs. While the number of new sponsored ADR programs was relatively constant, the number of unsponsored programs created was unprecedented: In the decade before the amendment, there was a total of 69 unsponsored programs created. In contrast, in the 6 months following the amendment to Rule 12b3-2(b), 748 new unsponsored ADR programs were created. According to a report from Reuters on April 29, 2009, Bank of New York alone issued more than $1 Billion in new unsponsored ADRs during the first quarter of

[23] "Rush of Unsponsored ADRs/DRs a Headache for Japanese Companies" by Darrel Whitten at http:/seekingalpha.com, and "EXCLUSIF Plusieurs groupes français seraient exposés à des risques de 'class action' aux Etats-Unis" by La Tribaune, Paris, March 25, 2009.
[24] See "Rule 12g3-2(b) Seminar for Japanese Issuers" by J.P. Morgan, November 2008.

2009. Trading volume for these programs is also substantial. For example, R. Cromwell Coulson, chairman and CEO of Pink OTC Markets, has indicated that almost $100 billion, or two-thirds of the dollar volume traded in the over-the-counter, "Pink Sheet" markets in 2008 was trading of unsponsored ADRs.[25] Overall, once the amendment to Rule 12g3-2(b) was passed by the SEC, the unsponsored ADR programs went from being one of the rarest category of international cross-listings to one of the most common, and also experienced an accompanying increase in investor interest via U.S. trading volume.

Table 3 further breaks down the number of unsponsored ADRs issued since October 10, 2008 by country and depositary banks. It shows that of the four major depositary banks, three were active in the creation of unsponsored ADRs following the new rule. Bank of New York issued a total of 609 new unsponsored ADRs, followed by Deutsche Bank with 308 and Citigroup with 216 issues. In contrast, JP Morgan has largely resisted creating unsponsored ADRs, citing the potentially adverse impact on some firms.[26]

The total number of unsponsored ADR facilities created by depositary banks was 1,194, which is larger than the number of cross-listed firms (748). The last three columns of Table 3 highlight that 290 firms had more than one depositary bank establish an unsponsored ADR program. As noted before, this could make it more difficult and costly for firms to convert their unsponsored ADRs into a sponsored ADR program and also cause the firm's investors to have different rates of return on the same security.

Overall, the results show depositary banks responded to the regulation change by cross-listing an unprecedented number of foreign firms such that unsponsored ADRs have gone from

[25] See Friedland Global Capital News July 31, 2009 and Bowne Review for Dealmakers September 2009.
[26] "Unsponsored ADR Programs" by J.P. Morgan, November 2008.

the rarest type of cross-listing to one of the most prevalent. Further, they often created multiple unsponsored ADRs for the same foreign firm, with potential adverse consequences.

To offer some preliminary evidence on the incentives behind depositary banks after the passage of the 2008 rule amendments, we examine unsponsored ADR creation by depositary banks for firms that recently terminated their *exchange traded* (NYSE, AMEX, NASDAQ) ADR programs. Studies by Fernandes, Lel, and Miller (2009) and Doidge, Karolyi, and Stulz (2009b) document that in recent years many firms have begun to delist and deregister their exchange traded ADR programs. Table 4 shows that ten firms that voluntarily decided that the cost of a U.S. cross-listing exceeded the benefits by delisting and deregistering, were subsequently and involuntarily "pulled back" into the U.S. market when depositary banks created unsponsored ADR programs under the new Rule 12g3-2(b). Interestingly, Table 4 also reports several instances where the same depositary bank that was asked by the firm to terminate its sponsored ADR program subsequently created an unsponsored ADR program for the same firm.[27] While the small sample size requires cautious interpretation of these results, the results in Table 4 suggest that depositary banks may be motivated to create unsponsored ADRs for firms even in instances where it is not in the firms' best economic interest. To examine this issue more comprehensively, we turn to the entire sample of unsponsored ADRs created by depositary banks.

Table 5 presents cross-sectional probit regressions of the determinates of depositary banks decision to create unsponsored ADR programs after October 10, 2008. In Panel A we present results for firm level determinates controlling for country and industry fixed effects. Across all model specifications, we find that firm size, profitability, and Tobin's q are positively

[27] We perform an event study for these subsequent involuntary cross-listings and found the average three-day stock price reaction surrounding the announcement date was -2.62%.

(and significantly) related to the decision to create an unsponsored ADR program. Therefore, depositary banks choose the largest, most profitable and highest valued firms within a particular country, which is consistent with them choosing firms most attractive to U.S. investors. We also find that firms are more likely to be involuntarily cross-listed if they adhere to the more transparent IFRS or U.S. GAAP accounting standards. Further, models 2 and 3 show that depositary banks are less likely to create ADR programs for firms with ownership structures that indicate potential firm-level agency problems (the coefficients on closely-held is negative and significant). Model 4 shows that the coefficient on foreign sales is positive and significant, suggesting that banks prefer firms with larger international presence and potential investor recognition.

Panel A of Table 5 also investigates several firm level proxies for trading volume to test if depositary banks choose firms that would generate the highest trading fee revenue. Model 4 shows that the coefficient on log of trading is positive and significant, suggesting that firms that have the highest potential for ADR fee generation are more likely to be chosen by depositary banks. Further, model 5 shows the coefficient on transaction cost is negative and significant, which indicates that firms with lower information asymmetry and cost to transact (lower bid-ask spreads), and hence more likely to trade and generate fee income, are more likely be chosen by depositary banks.[28] Finally, model 6 shows that if a firm currently meets the NYSE listing requirements, it is also more likely to be involuntarily cross-listed. This is consistent with depositary banks choosing firms that are most likely to be able to convert their unsponsored ADR program to a sponsored ADR program, which would also generate fee income to the bank.

Panel B of Table 5 examines country level determinates of the depositary banks cross-listing decision. Previous research suggests that firms from poor investor protection countries

[28] See Lesmond, Trzcinka, and Ogden (1999) for a model of trading under transaction costs.

have the most to gain from the announcement of a cross-listing in the U.S. (see, e.g., Miller, 1999). Therefore, if banks have the firm's interest in mind we expect to see these firms more likely to be cross-listed. However, the results are largely consistent with the alternative hypothesis, that firms from better investor protection regimes are more likely to be cross-listed. For example, model 1 shows that firms from common law countries are more likely to be chosen by banks for unsponsored ADR programs. Since common law is generally seen as providing overall better investor protection and enforcement (see, e.g., La Porta et al., 1997), it is consistent with banks choosing firms that would be most attractive to U.S. investors (that generates fee income) rather than the kinds of firms more likely to benefit the most. Consistent with this hypothesis, we also find the coefficients on anti-director rights, investor protection, property rights, and stock market cap/GDP to be positive and significant.

Overall, the results in Table 5 suggest that depositary banks choose large, profitable, transparent, widely held firms that are highly valued and therefore would be most attractive to U.S. investors. Furthermore, depositary banks also choose firms from countries with strong investor protection environments that have higher turnover, lower transaction costs, and meet current NYSE listing requirements. Taken together, the findings are consistent with the hypothesis that depositary banks choose firms that would maximize their own fee-based revenue.

We next directly test if the depositary banks actions led to economic gains upon the new amendments passage. We examine the market reaction to the *depositary banks'* stock price surrounding the news that new unsponsored ADR programs would be created under the amendments to Rule 12g3-2(b). Our dependent variable is an equally weighted portfolio of the four major depositary banks: Bank of New York, Citigroup, JP Morgan, and Deutsche Bank. We use the Keefe, Bruyette, and Woods (KBW) Bank index to adjust for industry performance.

Table 6 shows that during the three-day window surrounding the rule's effective date of October 10, 2008, the average abnormal return was 6.64%. Prior to the rule effective date it was not clear if the banks would use the loophole to create new programs. However, this uncertainty was resolved when 117 new unsponsored ADR programs were created on the first day the rule became operational. Therefore, the results suggest that the loophole that allowed depositary banks to create unsponsored ADR programs resulted in a large positive wealth gain to these financial institutions.

While a 6% market increase in shareholder wealth is undoubtedly large, it is important to note that fees due to depositary services represent an important revenue source for these institutions. For example, Table 7 reports statements found in the 2008 annual reports of the depositary banks which prominently mention the depositary fee generation as a large part of the business revenues. For example, the Bank of New York noted that:

> *Total fee and other revenue increased $191 million, or 12%, in 2008 compared with 2007, reflecting growth in Depositary Receipts, Corporate Trust and Shareowner Services fees. Depositary Receipts benefited from increased corporate actions and new business. (p. 34)*

If we assume that 50% of the $191 million increase is due to ADR fees, at a five percent discount rate the present value of this perpetual cash flow is 1.9 billion dollars, or roughly 6% of the 30 billion dollar market capitalization of Bank of New York at the time. Overall, the economic impact of the unintended consequences of the deregulation was economically large and significant.

5. The Economic Consequences of Involuntary Cross-listings for Foreign Firms

5.1. Event Study Methodology

To quantify the effect of establishing an unsponsored ADR program on foreign firm value, we perform an event study that measures the change in shareholder wealth in a three day window surrounding the ADR announcement. In later robustness tests we report changes in value based on Tobin's *q*. The announcement date is the day when the firm's first unsponsored ADR program is established by a depository bank filing Form F-6 with the SEC. The announcements of new unsponsored ADR programs are clustered in calendar time, which leads to cross-correlation in the error terms from the market model (MacKinlay, 1997). Therefore, to measure the stock market reaction of individual firms to the initiation of unsponsored ADRs, and to adjust for the correlation structure of the error terms, we use a seemingly unrelated regressions (SUR) approach (see Schipper and Thompson, 1983). We estimate the following system of equations:

$$R_{i,t} = \alpha_i + \beta_{i1} \cdot R_{Local,t} + \beta_{i2} \cdot R_{US,t} + \gamma_i \cdot D_i + \varepsilon_{i,t} \tag{1}$$

where:

$R_{i,t}$	=	daily stock return on firm *i* in its local market, *i* = 1, 2, …, N, and N is the total number of firms;
$R_{Local,t}$	=	daily return on the domestic market index;
$R_{US,t}$	=	daily return on the U.S. market index;
D_i	=	dummy variable equal one for the three-day window surrounding the ADR effective date, and zero otherwise;
$\varepsilon_{i,t}$	=	error term that can be contemporaneously correlated across firms.

The event parameter γ_i measures the average three-day impact of the establishment of an unsponsored ADR program for firm *i*.

5.2. Univariate Analysis

Table 8 presents the average market reaction to the announcement of unsponsored ADR creation across several proxies for the costs and benefits of U.S. listings. Panel A shows that the average three-day market reaction is positive and significant (0.35%, *p*-value < 0.01). However, as reported in Table 2, the firms in our sample differ significantly in terms of their size. To gauge the overall economic significance of an unsponsored ADR program, Panel A also reports that the market-value weighted average three-day market reaction is negative and significant (-0.47%, *p*-value < 0.01). Consistent with the hypothesis that the market reaction to unsponsored cross-listing varies substantially across firms, Panel A shows the 25th to 75th percentile market reaction ranged from -4.45% to 4.06%, with the hypothesis that the coefficients are jointly equal to zero rejected at the 1 percent significance level.

To examine the heterogeneity in the market reaction, Panel B of Table 8 presents the market reaction across several proxies for the costs and benefits of an U.S. listing. We find that the largest foreign firms that were cross-listed without their approval were negatively affected. For example, firms with above median total assets had a three-day market reaction of -0.53% (*p*-value < 0.01). Similar results are found when we measure firm size using market capitalization. This negative market reaction for involuntary (unsponsored) cross-listing stands in contrast to the large literature on voluntary (sponsored) cross-listings in the U.S., which find that cross-listings increase shareholder wealth.[29] The result is, however, consistent with the hypothesis that involuntary cross-listing imposed significant costs on large firms, suggesting that these firms had calculated that the cost of cross-listing exceed the benefits and therefore were subjected to negative consequences upon involuntary cross-listing. We also find that the firms that had high

[29] For example, Miller (1999) finds that the average three-day announcement effect for Level I OTC ADRs is 1.27%.

stock market liquidity and low bid-ask spreads in their local market also reacted negatively to being involuntary cross-listed. For example, for liquid firms with above median trading volume, the three-day announcement effect was -0.50% (p-value < 0.01).

In contrast, for small firms the stock price reaction to unsponsored cross-listing was positive and significant: firms with below median total assets had a three-day market reaction of 0.84% (p-value < 0.01). Further, firms with lower liquidity (below median trading volume and bid-ask spreads) also had positive market reactions. Firms that do not meet current NYSE listing standards also benefited from the unsponsored ADR program.

Overall, the results presented in Table 8 suggest that while small, illiquid firms benefit from the unsponsored ADR programs, the new rule led to significant shareholder wealth destruction for the largest, most liquid firms. The overall economic effect of the securities deregulation can be measured by multiplying each individual firm's three-day market reaction with its stock maket capitalization. Sorting our sample into large and small firms by median market capitalization, large firms' shareholders lost a total of $29.3 billion. In contrast, small firms' shareholders gain from unsponsored ADRs as shareholder wealth increased by $6.0 billion. The overall effect is a destruction of foreign firms' market capitalization of $23.3 billion.

5.3. Multivariate Analysis

To examine the economic impact of the new securities regulation in a multivariate setting, we estimate the determinants of the three-day event returns using the following cross sectional regression:

$$\hat{\gamma}_i = \theta \cdot X_i + \mu_{industry} + \nu_{country} + \eta_i \tag{2}$$

where:

$\hat{\gamma}_i$ = three-day market reaction of firm i to unsponsored ADR program based on Eq. (1);

X_i = vector of firm level covariates;

$\mu_{industry}$ = full set of industry level fixed effects;

$v_{country}$ = full set of country level fixed effects;

η_i = heteroscedastic error term clustered at the country level.

The effects estimated in Eq. (2) are conditional on firms being selected by depository banks as unsponsored ADR targets. Therefore, we also estimate an additional model variant of Eq. (2) based on the Heckman (1979) two-stage estimator.[30]

Panel A of Table 9 presents evidence on the determinates of the market reaction to unsponsored ADR programs, controlling for country and industry fixed effects. Across all models, we find that market size is significantly related to the market reaction. Even after controlling for country and industry fixed effects as well as other firm-level characteristics, we find that the largest (smallest) firms that were involuntarily subjected to U.S. capital markets experienced a decrease (increase) in shareholder wealth. In terms of economic significance, we use regression specification 1 of Panel A and find that for large firms, evaluated at the average firm size plus one standard deviation, the announcement of an unsponsored ADR program is associated with a -2.3% abnormal return. For small firms, evaluated at the average firm size minus one standard deviation, the three-day announcement return is 2.6%. These findings are consistent with our univariate results. Model 7 of Table 9 also examines the impact of the home country legal and institutional environment using an indicator variable that denotes if the firm is located in a common law country. The home country legal and institutional environment is not significantly related to the market reaction, while firm size continues to be significant.[31]

[30] We instrument the depository banks' unsponsored ADR decisions with the average daily trading volume of a firm's stock in its domestic market. Depository banks will be more likely to select firms that have high trading volume because these firms will likely generate more fees for depositary banks.

[31] Other proxies for the firm's institutional environment produce similar results.

Since firm size can proxy for a number of important firm characteristics, Panel B of Table 9 reports several tests where we replace firm size with a proxy for firm size that has been orthogonalized with respect to the dependent variables in each model. In this way, we remove the effect of the dependent variables from firm size. This allows us to control for the unique attributes of firm size but also to measure the effect of each dependent variable and therefore to examine what is driving the size effect.[32] Important to note that in these models, the explanatory power does not change as we continue to control for the same degree of cross-sectional variation in the dependent variables.

Models 1 to 8 show that across all specifications, the coefficient on orthogonalized firm size proxy is negative and significant, consistent with the Panel A results. We also find that several variables now have significant explanatory power. For example, model 3 shows that the coefficient on sales growth is positive and statistically significant, which is consistent with previous studies that find that firms with higher growth opportunities have more to gain from cross-listing (see, e.g., Doidge, Karolyi, and Stulz, 2004). Model 4 shows that the coefficient on trading volume is negative and significant, indicating that firms with higher (lower) trading volume in their home market had lower (higher) stock market reactions. Further, model 5 shows that the coefficient on transaction cost is positive and significant, indicating that firms with low (high) bid-ask spreads in their home market also are negatively (positively) affected by involuntary cross-listing. Finally, model 6 shows that the coefficient on NYSE listing eligibility (listing NYSE) is negative and significant (-2.751, p-value < 0.01). Firms that already could meet major exchange listing requirements but had chosen not be listed in the U.S. experienced a 271 basis points lower return than those that did not meet these listing standards. Therefore, the results in Panel B suggest that large, liquid, low information asymmetry firms that do not have a

[32] Alternatively, we drop firm size from the regressions and find similar results.

need for capital were adversely affected by being involuntarily cross-listed. Conversely, small, illiquid firms with greater information asymmetries and growth opportunities benefited from the unsponsored ADR facility. Similarly, large, profitable firms that already met major exchange listing requirements but chose not to cross-listed were also adversely affected.

5.4. Valuation (Tobin's q) Analysis

Our previous analysis measured the market impact to involuntary cross-listing using abnormal returns surrounding the three-days of the cross-listing announcement. As an alternative test, we measure the change in firm's Tobin's q for the year before and after the regulation change . This allows us to examine the valuation impact over a longer time period as well as to employ an alternative valuation measure.

The sample for this analysis includes all firms available in the Datastream/Worldscope database for countries for which there had been at least one new unsponsored ADR program established since October 10, 2008. We follow Doidge, Karolyi, and Stulz (2004) and exclude firms that don't have publicly traded equity and total assets less than $10 million and employ controls for firm size (log (sales)) and sales growth. We also control for firms that have sponsored ADR programs. All variables are measured at the end of 2007 (the year before the change in regulation) and at the end of 2008 (the year-end after the regulation change) and are winsorized at 1% and 99%. Regressions are estimated with firm fixed-effects, year dummies are included, and standard errors are clustered by firm. The dependent variable is industry adjusted Tobin's q, but we obtain similar results when we use unadjusted Tobin's q and control for median global industry Tobin's q. Table 10 reports the results.

Model 1 shows that firms that were cross-listed involuntarily experienced a statistically significant decrease in firm value of 7.8 percent (p-value < 0.05) on average. Consistent with

Doidge, Karolyi, and Stulz (2004, 2007), we find sales growth (firm size) is positively (negatively) related to value and that new sponsored ADR programs lead to an increase in firm value. Therefore, the results suggest that the involuntary cross-listing lead to a decrease in firm value of over 7 percent. This stands in contrast to the positive effects of voluntary cross-listing. To put this valuation decrease in perspective, Doidge, Karolyi, and Stulz (2009) document a statistically significant valuation premium of 5% for OTC cross-listings prior to the new regulation change.

Model 2 excludes firms with sponsored ADRs from the sample to ensure the previously documented cross-listing premium of Doidge, Karolyi, and Stulz (2004) is not driving our results. We continue to find that involuntary cross-listing leads to lower value. Finally, model 3 excludes all non-ADR firms and again shows the unsponsored ADRs valuation decline when benchmarked to sponsored ADR firms. Overall, the results in Table 10 are consistent with our previously documented announcement effects and further support the hypothesis that the regulation change led to significant value destruction.

5.5. Robustness

We consider a number of tests to check the robustness of our findings in Table 9 to alternative firm-level measures, for different subsamples, and for different time periods (available upon request).

First we check if our results are driven by the measure of firm size we use, i.e., the logarithm of total assets. We use the log of market value of equity as an alternative measure of firm size and find similar results—firm size is negatively associated with the market reaction to the establishment of new unsponsored ADRs. A one standard deviation change of log of market

value of equity is associated with a market reaction of -2.13%, consistent with a -2.63% change estimated using log of total assets.

We also run regressions in which we interact firm size with various country-level variables. None of these country-level characteristics or their interaction terms with firm size are significant. Only the variable stock market cap/GDP is positive and significant and the interaction term with firm size is negative and significant. This suggests that large firms from countries with high domestic stock market capitalization per capita experience greater negative market reactions.

Our main sample of cross-listed firms with a new unsponsored ADR includes firms from all industries. For robustness, we consider a subsample excluding firms from regulated industries, such as financials (SIC 6000-6999; 37 obs.) and utilities (SIC 4900-4999; 28 obs.). This reduces our sample by 65 firms, but does not affect our results. We also experiment excluding each individual country, and again find little impact on our results—they are not driven by any one particular country experience.

The new regulation took effect on October 10, 2008 with a total of 119 newly established unsponsored ADRs. Until November 1, 2008, depositary banks created 433 new unsponsored ADRs, more than 50% of the 748 unsponsored ADRs created until April 2009. To control for cross-sectional differences between the first three weeks and the rest of the time, we include dummy variables equal one if the unsponsored ADR was established on October 10, 2008, and zero otherwise. In alternative specification, we also include a dummy variable equal one if the ADR was created between October 10 and November 1, 2008. Finally, we also interact these two dummies with firm size. Neither of these additional variables are significant.

The robustness tests confirm our results that large firms with high stock market liquidity, low information asymmetries, and meeting NYSE listing criteria experienced negative announcement returns upon the establishment of new unsponsored ADRs. In contrast, small, illiquid firms with greater information asymmetries and growth opportunities benefited from the unsponsored ADR facility.

6. Conclusions

We study a SEC regulation change that grants an automatic exemption from the 1934 Securities Act for foreign firms trading on U.S. Over-The-Counter (OTC) markets, thereby making unsponsored (involuntary) cross-listings possible. While the intent of the 2008 amendments was to make establishing a sponsored (voluntary) ADR program much easier and thereby increase the attractiveness of U.S. capital markets, they also created a channel that allows fee motivated depositary banks to establish unsponsored (involuntary) ADRs. The regulation fosters a potential conflict of interest between fee motivated depositary banks and their newly cross-listed firms which we exploit to examine the externalities that can result from the interaction between securities regulation and agency problems at financial institutions.

We document that 748 unsponsored ADR programs were created in the six months following the amendment for firms that had previously chosen not to sponsor a cross-listing. This stands in sharp contrast to the 69 unsponsored ADR programs created over the decade before the amendment. We also investigate the determinants of the depositary banks' choice of unsponsored ADR targets and find that they are more likely to choose large, profitable, transparent, widely held firms that are highly valued. Further, depositary banks also choose firms that have higher turnover, lower transaction costs and meet current NYSE listing requirements. Moreover, we uncover several instances where foreign firms had formerly terminated their cross-

listing and were subsequently cross-listed involuntarily after the new regulation was enacted. These results support the hypothesis that depositary banks choose firms that are most likely to be attractive to U.S. investors or firms most likely to convert the unsponsored program to a sponsored ADR, both of which could result in more fee generated income. Further, we find that when the creation of unsponsored ADR programs is announced, depositary banks experience positive and significant increases in shareholder wealth.

Finally, we examine the impact of new unsponsored ADR announcements on foreign firm value. We find that large firms with high stock market liquidity, low information asymmetries, and meeting NYSE listing criteria experienced negative announcement returns upon the establishment of new unsponsored ADRs. In contrast, small, illiquid firms with greater information asymmetries and growth opportunities benefited from the unsponsored ADR facility. The net result of the deregulation was the destruction in cross-listed firms' market value of over $23 billion. We also augment our event study analysis with valuation tests based on the change in Tobin's q and find that a new unsponsored ADR program leads to an average decrease of 7.2 percent in firm value.

Our results are consistent with the hypothesis that the regulation change forced many foreign firms away from their preferred choice of being unlisted in U.S. capital markets. Further, our findings suggest that the amendment of Rule 12g3-2(b) interacted with existing agency problems at financial institutions which created significant externalities with unintended consequences.

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Table 1
Comparison between Unsponsored ADR Programs and Sponsored Level I (OTC) ADR Programs

	Unsponsored ADR	Sponsored Level I (OTC) ADR
Litigation risk exposure	No control over litigation risk exposure.	Control over litigation risk exposure through exculpatory provisions inserted into the deposit agreement.
Rights of holders	Determined solely by depositary, typically no voting rights.	Determined jointly by depositary and issuer; typically voting rights granted, Deposit Agreement entered into setting forth rights and limitations of holders of ADRs.
Investor relations	Not applicable	Issuer can communicate with ADR holders and promote the program.
Trading	OTC exchanges	OTC exchanges
Registration	Form F-6 filed unilaterally by depositary.	Form F-6 filed jointly by issuer and depositary.
Exchange Act reporting	Not applicable, provided Rule 12g3-2(b) exemption is maintained.	Not applicable, provided Rule 12g3-2(b) exemption is maintained.
Disclosure	Post home country disclosure documents on website.	Post home country disclosure documents on website.
Financial reporting	Governed by home country requirements; no reconciliation to US GAAP.	Governed by home country requirements; no reconciliation to US GAAP.

Table 2
Summary Statistics

The table reports summary statistics by country. Panel A shows the number of sample firms, Panel B displays firm-level and country-level descriptive statistics. Accounting data are from Worldscope, other market data are from Datastream. *Firm size* is measured with total assets (in billion of US$). *Market capitalization* is the market value of publicly available common stock (in billion of US$). *Profitability* measures return on assets. Tobin's *q* calculated as [(total assets – book value of equity + market value of equity) / total assets]. *Closely-held* represent shares held by insiders, i.e. management, pension funds, trusts, individuals who hold more than 5%, as a fraction of total outstanding shares. *Leverage* is total debt to total assets. *Sales growth* is the average annual growth rate of sales over the last three years. *Foreign sales* is measured as the fraction of foreign sales to total sales. *Trading volume* is the average daily trading volume of a firm's stock in the domestic market for the period October 2006 to October 2008 in million of US$. *Transaction cost* is the average daily relative bid-ask spread calculated as (ask – bid) / 0.5 (bid + ask) for the period October 2006 to October 2008. *Listing NYSE* is a dummy variable equal 1 if the firm meets the listing criteria of the NYSE, and 0 otherwise. *IFRS/US GAAP* is a dummy variable equal 1 if the company prepares its accounting statements according to IFRS or US-GAAP, and 0 otherwise. *Common law* is a dummy variable equal 1 for countries with common-law origin, and 0 otherwise. *Investor protection* is a measure of investor protection ranging from 0 to 10, with higher scores indicating more investor protection (Djankov et al., 2008). *Revised anti-director index* is a measure of minority shareholder protection (Djankov et al., 2008). The index ranges from 0 to 6, and higher values indicate better protection. *Disclosure in prospectus* is an index of the scope of disclosure in the prospectus of an IPO (La Porta et al., 2006). *Disclosure requirements* is an index that includes disclosure on prospectus, compensation, shareholders, inside ownership, contracts irregular, and transactions (La Porta et al., 2006). *Property rights* is an index of property rights compiled by Heritage Foundation, higher scores indicate better property rights. *Stock market cap/GDP* is the average of the ratio of stock market capitalization to gross domestic product for the period 1999 to 2003 (World Development Indicators). We include all firms available in Datastream/Worldscope for countries for which there had been at least one new unsponsored ADR program established since October 10, 2008. We exclude firms that don't have publicly traded equity and total assets less than $10 million. The ADR data are from Bank of New York, JP Morgan, and Citigroup, as of April 10, 2009.

Panel A: Number of firms by country and ADR level

Country	All	Firms with ADRs				
		All	Sponsored			Unsponsored
			All	Level II/III	Level I/144a	All
Australia	1,199	151	92	12	80	59
Austria	83	19	12	0	12	7
Belgium	129	23	5	1	4	18
China	1,677	119	91	66	25	28
Cyprus	4	1	0	0	0	1
Denmark	153	21	2	2	0	19
Finland	120	22	5	1	4	17
France	634	83	31	11	20	52
Germany	748	65	32	10	22	33
Greece	257	18	5	3	2	13
Hong Kong	1,013	177	90	6	84	87
Indonesia	332	16	4	2	2	12
Ireland	59	26	17	10	7	9
Israel	128	16	9	6	3	7
Italy	273	41	13	5	8	28
Japan	3,861	278	61	23	38	217
Luxembourg	26	7	2	1	1	5
Mexico	120	42	41	20	21	1
Netherlands	131	16	10	3	7	6
New Zealand	111	27	2	1	1	25
Norway	187	24	9	1	8	15
Portugal	50	17	4	0	4	13
Singapore	699	67	17	1	16	50
South Africa	306	58	31	7	24	27
Spain	145	36	7	4	3	29
Sweden	287	41	11	1	10	30
Switzerland	246	28	9	4	5	19
Thailand	483	6	5	0	5	1
Turkey	229	22	6	1	5	16
U.K.	1,479	174	90	33	57	84
Total	15,169	1,641	713	235	478	928

Panel B: Firm-level and country-level descriptive statistics

	Not cross-listed			Sponsored, Level II/III			Sponsored, Level I/144a			Unsponsored, Level I		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
A. Firm-level variables												
Firm size	2.23	0.17	40.97	129.71	4.50	443.65	36.06	2.17	167.34	26.62	4.56	110.90
Market capitalization	0.69	0.13	4.12	44.28	15.77	65.32	8.80	2.32	17.49	8.17	3.83	16.02
Profitability	0.03	0.04	0.20	0.05	0.07	0.21	0.04	0.05	0.16	0.08	0.07	0.09
Tobin's *q*	1.67	1.17	1.67	1.91	1.49	1.25	1.74	1.37	1.35	1.84	1.36	1.47
Closely-held	0.48	0.49	0.24	0.37	0.31	0.28	0.37	0.35	0.25	0.39	0.36	0.25
Leverage	0.22	0.17	0.27	0.20	0.17	0.19	0.23	0.21	0.18	0.25	0.22	0.19
Sales growth	0.21	0.10	0.82	0.24	0.12	0.65	0.19	0.11	0.54	0.24	0.12	0.75
Foreign sales	0.34	0.20	0.59	0.47	0.49	0.36	0.49	0.49	0.33	0.43	0.44	0.31
Trading volume	3.23	0.19	19.92	137.87	27.93	239.69	41.77	4.80	105.38	34.81	16.45	56.09
Transaction cost	0.04	0.02	0.06	0.01	0.00	0.05	0.02	0.01	0.05	0.01	0.00	0.01
Listing NYSE	0.21	0.00	0.41	0.92	1.00	0.28	0.59	1.00	0.49	0.79	1.00	0.40
IFRS/US GAAP	0.41	0.00	0.49	0.86	1.00	0.34	0.62	1.00	0.49	0.61	1.00	0.49
B. Country-level variables												
Common law	0.36	0.00	0.48	0.33	0.00	0.47	0.59	1.00	0.49	0.40	0.00	0.49
Investor protection	6.52	7.00	1.49	6.19	5.70	1.46	6.81	6.70	1.62	6.78	7.00	1.60
Revised anti-director index	3.82	4.00	1.25	3.21	3.50	1.59	4.02	4.00	1.10	4.06	4.50	1.00
Disclosure in prospectus	0.73	0.75	0.16	0.69	0.75	0.14	0.74	0.75	0.17	0.71	0.75	0.16
Disclosure requirements	0.73	0.75	0.16	0.69	0.75	0.14	0.74	0.75	0.17	0.71	0.75	0.16
Property rights	4.06	4.00	1.03	3.66	4.00	1.25	4.43	5.00	0.91	4.37	5.00	0.79
Stock market cap/GDP	1.02	0.69	0.81	0.85	0.67	0.68	1.43	1.01	1.12	1.19	0.77	0.92

Table 3
Depositary Banks

The table reports the number of established unsponsored ADRs for the period October 10, 2008 to April 3, 2009. We include all firms available in Datastream/Worldscope for countries for which there had been at least one new unsponsored ADR program established since October 10, 2008. We exclude firms that don't have publicly traded equity and total assets less than $10 million. The ADR data are from Bank of New York, JP Morgan, and Citigroup, as of April 10, 2009.

Country	Firms cross-listed via an unsponsored ADR program by time			Unsponsored ADRs established by depositary banks (post 10/10/08)				Firms cross-listed via an unsponsored ADR program by the number of depositary banks (post 10/10/08)		
	All	Pre 10/10/08	Post 10/10/08	Bank of New York	Deutsche Bank	Citigroup	JP Morgan	One	Two	Three or more
Australia	59	8	51	50	17	19	1	22	22	7
Austria	7	1	6	6	1	0	0	5	1	0
Belgium	18	0	18	18	6	2	0	11	6	1
China	28	2	26	18	16	8	0	14	8	4
Cyprus	1	0	1	1	0	0	0	1	0	0
Denmark	19	9	10	10	6	1	0	3	7	0
Finland	17	0	17	17	6	6	0	8	6	3
France	52	15	37	36	11	27	1	11	15	11
Germany	33	5	28	27	9	8	3	17	4	7
Greece	13	0	13	13	0	0	0	13	0	0
Hong Kong	87	5	82	53	45	25	1	51	21	10
Indonesia	12	0	12	12	0	1	0	11	1	0
Ireland	9	1	8	8	1	0	0	7	1	0
Israel	7	0	7	7	0	0	0	7	0	0
Italy	28	3	25	24	2	3	1	21	3	1
Japan	217	94	123	46	103	65	5	59	35	29
Luxembourg	5	0	5	5	0	0	0	5	0	0
Mexico	1	0	1	1	0	0	0	1	0	0
Netherlands	6	1	5	5	5	2	1	0	2	3
New Zealand	25	0	25	25	0	2	0	23	2	0
Norway	15	0	15	13	8	2	0	8	6	1
Portugal	13	0	13	13	0	1	0	12	1	0
Singapore	50	6	44	43	7	7	1	34	7	3
South Africa	27	7	20	19	2	2	0	18	1	1
Spain	29	0	29	29	8	1	1	20	8	1
Sweden	30	3	27	27	7	2	0	20	5	2
Switzerland	19	2	17	17	6	8	5	8	3	6
Thailand	1	0	1	1	0	1	0	0	1	0
Turkey	16	0	16	16	4	7	0	7	7	2
U.K.	84	18	66	49	38	16	1	41	13	12
Total	928	180	748	609	308	216	21	458	186	104

Table 4
Unsponsored ADR Programs of Firms that Voluntarily Terminated a Sponsored ADR Program after 2002

The table reports newly established unsponsored ADR programs of firms that voluntarily terminated their sponsored ADR programs after 2002. The data are from Citibank's ADR website. Citibank provides a comprehensive list of inactive ADR programs (whereas Bank of New York reports only its own terminated ADR programs, and JP Morgan's list of terminated ADRs is incomplete). We verify the Citibank data with SEC filings and include only those firms for which we find a corresponding SEC filing and termination date.

Firm	Country	Exchange	SEC deregistration date	Effective date of unsponsored ADR	Depositary bank(s)	
					Sponsored ADR	Unsponsored ADR
Adecco SA	Switzerland	NYSE	6/5/2007	10/17/2008	JPM	JPM, BoNY, DB, CITI
Scania Aktiebolag	Sweden	NYSE	1/29/2003	10/17/2008	CITI	BoNY
Swedish Match	Sweden	NASDAQ	6/5/2007	10/17/2008	BoNY	BoNY
Tele2 AB	Sweden	NASDAQ	6/29/2006	10/17/2008	BoNY	BoNY, DB
TeliaSonera AB	Sweden	NASDAQ	6/7/2007	10/17/2008	CITI	BoNY, DB
Fisher & Paykel Healthcare	New Zealand	NASDAQ	2/28/2003	10/24/2008	JPM	BoNY, CITI
Vivendi SA	France	NYSE	11/6/2007	10/27/2008[33]	BoNY	BoNY, JPM, CITI, DB
Alstom SA	France	NYSE	6/21/2007	10/15/2008	BoNY	BoNY
Cable & Wireless Plc	U.K.	NYSE	7/12/2007	10/10/2008	JPM	BoNY, DB, CITI
Mitchells & Butlers Plc	U.K.	NYSE	6/6/2007	10/10/2008	BoNY	BoNY, DB, CITI

[33] Terminated on 12/30/2008 and converted into a sponsored ADR program with Deutsche Bank as depositary bank.

Table 5
Cross-sectional Probit Regressions: Determinants of Unsponsored ADRs

The probit regressions estimate the probability that a firm has an unsponsored ADR program in the U.S. The dependent variable is a dummy variable that equals one if unsponsored ADRs are established for a particular firm, and zero otherwise. The table reports marginal effects evaluated at the mean of the independent variables. Panel A reports results for firm-level determinants and Panel B shows numbers for country-level determinants. We include all firms available in Datastream/Worldscope for countries for which there had been at least one new unsponsored ADR program established since October 10, 2008. Firms that are cross-listed via a sponsored ADR program or that have an unsponsored ADR that was established before October 10, 2008 are excluded from the analysis. We also exclude firms that don't have publicly traded equity and total assets less than $10 million. ADR data are from Bank of New York, JP Morgan, and Citigroup, as of April 10, 2009. Accounting data are from Worldscope, other data are from Datastream. All variables are described in Table 2. Two-digit industry dummies and country dummies are included but not reported. The *z*-statistics reported in parentheses are adjusted for clustering on countries. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

Panel A: Firm-level determinants of unsponsored ADRs

	Unsponsored ADR indicator					
	(1)	(2)	(3)	(4)	(5)	(6)
Log (Firm size)	0.0067	0.0234	0.0251	0.0079	0.0003	0.0184
	(15.88)***	(14.77)***	(11.20)***	(7.52)***	(10.57)***	(10.00)***
Profitability	0.0027	0.0092	0.0081	0.0066	0.0003	0.0070
	(2.26)**	(2.31)**	(2.94)***	(3.14)***	(6.10)***	(2.22)**
Tobin's *q*	0.0010	0.0035	0.0029	0.0009	0.0001	0.0029
	(3.26)***	(3.01)***	(3.36)***	(2.45)**	(4.20)***	(3.04)***
IFRS/US GAAP	0.0051	0.0159	0.0166	0.0121	0.0005	0.0137
	(2.92)***	(3.36)***	(4.94)***	(2.36)**	(2.52)**	(3.51)***
Closely-held		-0.0234	-0.0273			
		(-3.30)***	(-3.42)***			
Leverage		-0.0072	-0.0173			
		(-1.19)	(-2.42)**			
Sales growth		-0.0002	-0.0019			
		(-0.26)	(-1.48)			
Foreign sales			0.0025			
			(1.65)*			
Log (Trading)				0.0042		
				(3.65)***		
Transaction cost					-0.0234	
					(-4.04)***	
Listing NYSE						0.0267
						(4.31)***
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	13,764	7,886	5,588	12,248	12,777	8,076
Pseudo R^2	0.479	0.430	0.444	0.431	0.508	0.441

Panel B: Country-level determinants of unsponsored ADRs

	Unsponsored ADR indicator						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Common law	0.0287						
	(2.62)***						
Revised anti-director index		0.0095					
		(2.59)***					
Investor protection			0.0086				
			(2.87)***				
Disclosure in prospectus				0.0201			
				(0.68)			
Disclosure requirements					0.0193		
					(0.65)		
Property rights						0.0139	
						(2.86)***	
Stock market cap/GDP							0.0095
							(2.13)**
Log (Firm size)	0.0131	0.0116	0.0113	0.0099	0.0099	0.0107	0.0124
	(6.22)***	(6.37)***	(6.72)***	(4.57)***	(4.57)***	(6.41)***	(5.56)***
Profitability	0.0092	0.0103	0.0078	0.0097	0.0098	0.0096	0.0111
	(2.84)***	(2.70)***	(2.60)***	(2.53)**	(2.53)**	(2.62)***	(3.15)***
Tobin's *q*	0.0020	0.0024	0.0020	0.0028	0.0028	0.0021	0.0019
	(2.81)***	(3.34)***	(3.16)***	(3.00)***	(3.01)***	(3.08)***	(2.35)**
IFRS/US GAAP	0.0128	0.0221	0.0240	0.0148	0.0147	0.0090	0.0194
	(1.98)**	(2.22)**	(2.66)***	(1.45)	(1.45)	(1.10)	(2.52)**
Closely-held	0.0161	0.0224	0.0160	0.0183	0.0183	0.0211	0.0124
	(1.68)*	(1.92)*	(1.84)*	(1.51)	(1.50)	(2.10)**	(1.29)
Leverage	0.0061	0.0089	0.0066	0.0123	0.0122	0.0089	0.0091
	(0.97)	(1.49)	(1.25)	(2.04)**	(2.04)**	(1.51)	(1.66)*
Sales growth	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
	(0.06)	(0.10)	(0.10)	(0.13)	(0.13)	(0.04)	(0.02)
Log (Trading)	0.0106	0.0119	0.0099	0.0128	0.0128	0.0121	0.0113
	(4.09)***	(4.94)***	(4.33)***	(5.48)***	(5.50)***	(5.55)***	(4.24)***
Listing NYSE	0.0196	0.0190	0.0163	0.0185	0.0185	0.0203	0.0206
	(3.19)***	(3.10)***	(3.09)***	(2.93)***	(2.92)***	(3.13)***	(3.15)***
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7,420	7,420	7,420	7,028	7,028	7,421	7,421
Pseudo R^2	0.424	0.418	0.435	0.427	0.427	0.422	0.413

Table 6
Event Study Analysis for Depositary Banks

The table reports coefficient estimates for an equal weighted portfolio of depositary banks' industry adjusted stock returns on the event parameter (γ) obtained from the following equation: $R_{p,t} = \alpha + \beta_1 \cdot MKTRF_t + \beta_2 \cdot SMB_t + \beta_3 \cdot HML_t + \beta_4 \cdot UMD_t + \gamma \cdot D + \varepsilon_t$, where R_{pt} is the daily portfolio return, D equals one for the three-day window surrounding the event date, and zero otherwise, and MKTRF, SMB, HML, and UMD are the return on the market, the Fama-French size, book-to-market, and momentum factors, respectively. The portfolio consists of the following four banks: Bank of New York, Citigroup, JP Morgan, and Deutsche Bank. We use the KBW Bank Index to adjust for industry performance. Daily stock returns are measured between Jan 1, 2007 and Dec 31, 2008. The event parameter (γ) estimate corresponds to the average abnormal return for bank *i* in the (-1, +1) event window, and is multiplied by 300 to reflect the cumulative abnormal return (CAR) in percentage over the three-day period. *t*-statistics are reported in parentheses. *, **, and *** indicate two-sided statistical significance at 10%, 5%, and 1%, respectively.

Event date	Event description	Cumulative abnormal return (CAR) of depositary banks
Oct 10, 2008	Rule effective date. 117 unsponsored ADRs issued at that date.	6.64% (2.91)***
Feb 19, 2008	SEC proposes the rule allowing unsponsored ADRs. Release 34-57350.	-1.33 (-0.58)
Aug 27, 2008	SEC adopts the final rule allowing unsponsored ADRs. Release 34-58465.	-0.48% (-0.21)

Table 7
Depositary Banks' Disclosure of Revenue from Depositary Receipts

The table reports statements found in annual reports of 2008 of depositary banks regarding the importance of revenue/fee generation of their ADR business. The annual reports are from the banks' websites.

Bank	Text
Bank of New York	Highlights of Our Businesses. Issuer Services (17 percent of 2008 total revenue). Despite the challenging global markets of 2008, Issuer Services experienced increased earnings and market expansion due, in great part, to our reputation for quality, our balanced business model serving the equity and fixed income markets, and our strong global footprint. We continued to focus on product innovation, as evidenced by the extension of our leading market position with the launch of a new series of ADR indices. (p. 3)
	Issuer services revenue totaled $1.7 billion in 2008 compared with $1.6 billion in 2007. The increase primarily reflects growth in Depositary Receipts and Corporate Trust fees. (p. 7).
	Total fee and other revenue increased $191 million, or 12%, in 2008 compared with 2007, reflecting growth in Depositary Receipts, Corporate Trust and Shareowner Services fees. Depositary Receipts benefited from increased corporate actions and new business. (p. 34)
JP Morgan	Worldwide Securities Services holds, values, clears and services securities, cash and alternative investments for investors and broker-dealers and manages depositary receipt programs globally. (p. 34)
	Worldwide Securities Services posted record net revenue of $4.6 billion, an increase of $647 million, or 16%, from the prior year. The growth was driven by wider spreads in securities lending, foreign exchange and liability products, increased product usage by new and existing clients (largely in custody, fund services, alternative investment services and depositary receipts) and higher liability balances, reflecting increased client deposit activity resulting from recent market conditions. (p. 68)
Deutsche Bank	Global Transaction Banking (GTB) delivers commercial banking products and services for corporate clients and financial institutions, including domestic and cross-border payments, professional risk mitigation and financing for international trade as well as the provision of trust, agency, depositary, custody and related services. Business units include Cash Management for Corporates and Financial Institutions, Trade Finance and Trust & Securities Services. Despite the financial crisis, 2008 was another record year for Global Transaction Banking. The business grew across all regions, with particularly strong growth in our European home market and the Asia-Pacific region alongside solid performance in the Americas, even under difficult market conditions. (p. 32)
Citigroup	No specific information about the depositary business.

Table 8
Market Reaction to the Initiation of Unsponsored ADRs: Univariate Analysis

The table reports summary statistics and joint test results of the stock market reaction of individual firms to the initiation of unsponsored ADRs. The stock market reaction is measures with the event parameter (γ) obtained from the following SUR system: $R_{i,t} = \alpha_i + \beta_{i1} \cdot R_{Local,t} + \beta_{i2} \cdot R_{US,t} + \gamma_i \cdot D_i + \varepsilon_{i,t}$, where $R_{i,t}$ is the daily return on firm *i* in its local market, D_i equals one for the three-day window surrounding the ADR effective date, and zero otherwise, and $R_{Local,t}$ and $R_{US,t}$ are the return on the domestic and U.S. market index, respectively. Daily stock returns are measured between April 10, 2006 and April 10, 2009. The event parameter (γ) estimate corresponds to the average abnormal return for firm *i* in the (-1, +1) event window, and is multiplied by 300 to reflect the CAR in percentage over the three-day period. We consider all unsponsored ADRs that were issued in the period October 10, 2008 (effective date of new SEC rule) to April 3, 2009. Standard errors take into account the contemporaneous correlation of residuals. *, **, and *** denote two-sided statistical significance at 10%, 5%, and 1%, respectively.

Panel A: Full sample

	N	Average CAR	Average market-value weighted CAR	25th percentile of CAR	Median CAR	75th percentile of CAR	*p*-value of χ^2-test H_0: $\gamma_i = 0 \ \forall$ i
Announcement effect (CAR)	673	0.35***	-0.47***	-4.45	0.48	4.06	0.000***

Panel B: Sub-samples, sorting firms in two groups (by median)

Large/High	N	Average CAR	Small/Low	N	Average CAR
Firm size	336	-0.53***	Firm size	337	0.84***
Market capitalization	323	-0.61***	Market capitalization	324	1.28***
Trading volume	336	-0.50***	Trading volume	337	1.09***
Transaction cost	320	0.94***	Transaction cost	325	-0.24
Listing NYSE	525	-0.07	Listing NYSE	113	2.04***

Table 9
Market Reaction to the Initiation of Unsponsored ADRs: Multivariate Analysis

This table presents multivariate regression results of the determinants of the stock market reaction of the individual firms to the initiation of unsponsored ADRs. The dependent variable is the coefficient estimate on the event parameter (γ), multiplied by 300 to reflect the CAR in percentage over the three-day period. In Panel A, column 1 to 7 presents OLS estimates; column 8 shows estimates using a Heckman correction for sample selection. In addition to the dependent variables of the second stage (as reported in column 8), we include the log of trading volume as an additional variable in the first stage; we also include two-digit industry and country dummies in both stages. Panel B replicates Panel A while Log (Firm size) is replaced with ⊥ Log (Firm size), which are the residuals of a regression of Log (Firm size) on all other independent variables of each specification. Profitability and Tobin's *q* are winsorized at 1% and 99%. All variables are described in Table 2. The ADR data are from Bank of New York, JP Morgan, and Citigroup, as of April 10, 2009. Standard errors are clustered at the country level, and associated *t*-statistics are reported in parentheses. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

Panel A: Determinants of CARs

	Cumulative abnormal return (CAR)							
	OLS							Heckman
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log (Firm size)	-1.637	-1.885	-1.720	-1.950	-1.700	-1.744	-1.325	-1.860
	(-4.57)***	(-4.99)***	(-2.78)***	(-4.79)***	(-4.72)***	(-4.45)***	(-3.08)***	(-5.04)***
Profitability	0.934	2.511	5.845	-0.617	1.153	2.342	-0.262	0.897
	(0.23)	(0.60)	(1.02)	(-0.16)	(0.27)	(0.55)	(-0.06)	(0.30)
Tobin's *q*	-0.026	-0.056	-0.490	-0.140	-0.063	-0.046	0.098	-0.135
	(-0.10)	(-0.18)	(-1.80)*	(-0.60)	(-0.23)	(-0.16)	(0.33)	(-0.61)
IFRS/US GAAP	-1.374	-0.643	0.380	-1.352	-1.438	-0.639	0.018	-1.368
	(-0.66)	(-0.29)	(0.16)	(-0.64)	(-0.67)	(-0.29)	(0.02)	(-0.65)
Closely-held		-0.852	-0.827				0.057	
		(-0.54)	(-0.55)				(0.04)	
Leverage		3.217	1.652				2.774	
		(1.79)*	(0.90)				(1.48)	
Sales growth		0.377	0.854				0.410	
		(1.01)	(3.14)***				(1.07)	
Foreign sales			2.666					
			(1.37)					
Log (Trading volume)				0.387				
				(1.87)*				
Transaction cost					21.238			
					(0.88)			
Listing NYSE						-0.902	-0.500	
						(-1.00)	(-0.60)	
Common law							-0.488	
							(-0.50)	
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
N	671	636	479	671	643	637	634	13,051
Adjusted R^2	0.096	0.105	0.127	0.096	0.103	0.104	0.061	
Censored obs.								12,380
Uncensored obs.								671
Log Pseudolikelihood								-4,003

Panel B: Orthogonalizing Log (Firm size)

	Cumulative abnormal return (CAR)							
	OLS							Heckman
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
⊥ Log (Firm size)	-1.637	-1.885	-1.720	-1.950	-1.700	-1.744	-1.325	-1.860
	(-4.57)***	(-4.99)***	(-2.78)***	(-4.79)***	(-4.72)***	(-4.45)***	(-3.08)***	(-5.04)***
Profitability	5.136	7.721	10.845	6.641	6.194	8.875	6.050	-4.638
	(1.22)	(1.81)*	(1.99)*	(1.55)	(1.45)	(2.00)*	(1.32)	(-1.47)
Tobin's *q*	0.372	0.388	-0.095	0.450	0.358	0.305	0.312	0.206
	(1.51)	(1.23)	(-0.31)	(1.90)*	(1.35)	(1.04)	(1.03)	(0.92)
IFRS/US GAAP	-2.676	-2.180	-1.062	-2.221	-2.686	-1.891	-0.130	-4.195
	(-1.16)	(-0.90)	(-0.39)	(-0.99)	(-1.15)	(-0.77)	(-0.15)	(-1.66)*
Closely-held		-0.061	-0.748				0.413	
		(-0.04)	(-0.50)				(0.26)	
Leverage		2.316	0.457				2.046	
		(1.29)	(0.27)				(1.12)	
Sales growth		0.428	0.716				0.317	
		(1.15)	(2.54)**				(0.82)	
Foreign sales			2.442					
			(1.28)					
Log (Trading volume)				-0.777				
				(-3.25)***				
Transaction cost					123.219			
					(5.40)***			
Listing NYSE						-2.751	-2.148	
						(-3.03)***	(-2.27)**	
Common law							0.459	
							(0.54)	
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
N	671	636	479	671	643	637	634	13,051
Adjusted R^2	0.096	0.105	0.127	0.096	0.103	0.104	0.061	
Censored obs.								12,380
Uncensored obs.								671
Log Pseudolikelihood								-4,003

Table 10
Valuation of Firms with Unsponsored ADRs

The table shows firm fixed-effects regression estimates of the valuation effect of establishing unsponsored ADRs. The dependent variable is industry adjusted Tobin's *q*, calculated as Tobin's *q* (= total assets – book value of equity + market value of equity) / total assets) – median global industry Tobin's *q*. Unsponsored ADR is a dummy variable equal one if the firm has an unsponsored ADR at the end of 2008, zero otherwise; this variable is zero for the year 2007 as the regulation change took effect on October 10, 2008. Sponsored ADR is a dummy variable equal one if the firm has a sponsored ADR, zero otherwise. Sales is in millions of dollars, and sales growth is two-year sales growth. We include all firms available in Datastream/Worldscope for countries for which there had been at least one new unsponsored ADR program established since October 10, 2008. We exclude firms that don't have publicly traded equity and total assets less than $10 million. All variables are measured at the end of 2007 (the year before the change in regulation) and at the end of 2008 (the year-end after the regulation change). All variables are winsorized at 1% and 99%. Regressions are estimated with firm fixed-effects, year dummies are included, standard errors are clustered by firm, and *t*-statistics are reported in parentheses. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

	Firm fixed-effects regressions Dependent variable: Industry adjusted Tobin's *q*		
	All firms	Firms with sponsored ADRs excluded	Firms with no ADRs excluded
	(1)	(2)	(3)
Unsponsored ADR	-0.078	-0.073	-0.180
	(-2.44)**	(-2.28)**	(-4.50)***
Sponsored ADR	0.229		
	(2.15)**		
Log (Sales)	-0.217	-0.240	-0.216
	(-7.86)***	(-8.12)***	(-2.90)***
Sales growth	0.022	0.041	-0.018
	(2.36)**	(3.60)***	(-1.37)
Year dummies	Yes	Yes	Yes
N	27,174	25,829	2,615
Number of firms	14,270	13,578	1,340
R^2	0.093	0.096	0.114

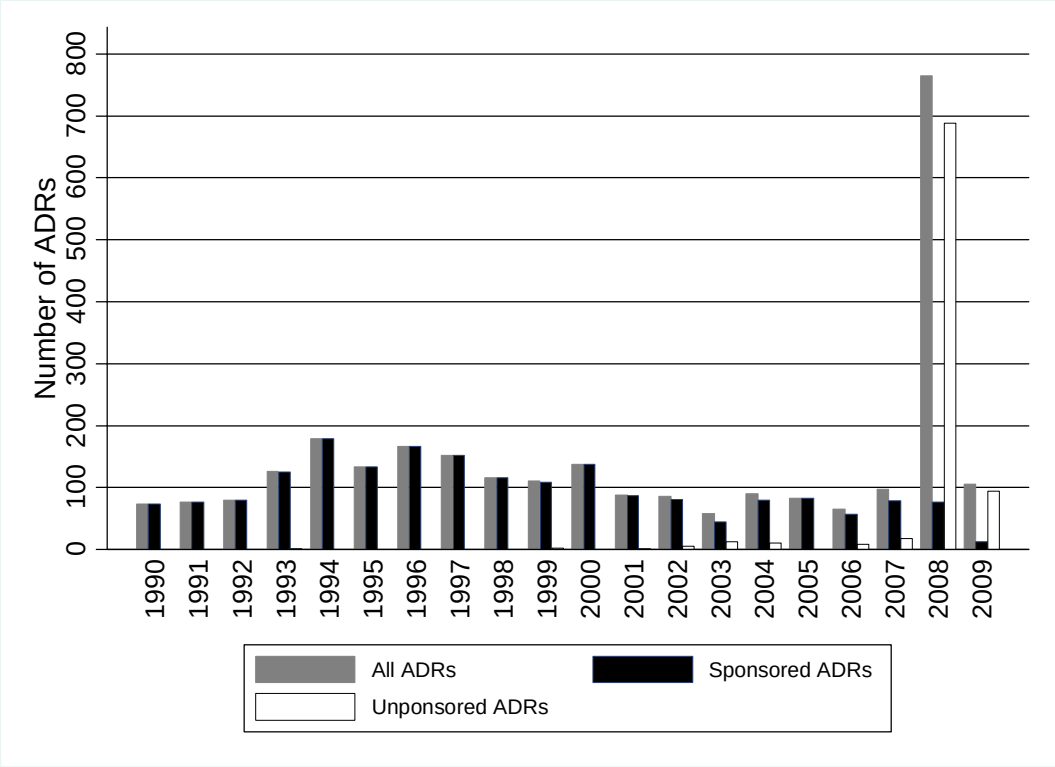

Figure 1. The figure reports the number of new ADR issues for the January 1990 to April 2009 period. The ADR data are from Bank of New York, JP Morgan, and Citigroup, as of April 2009.

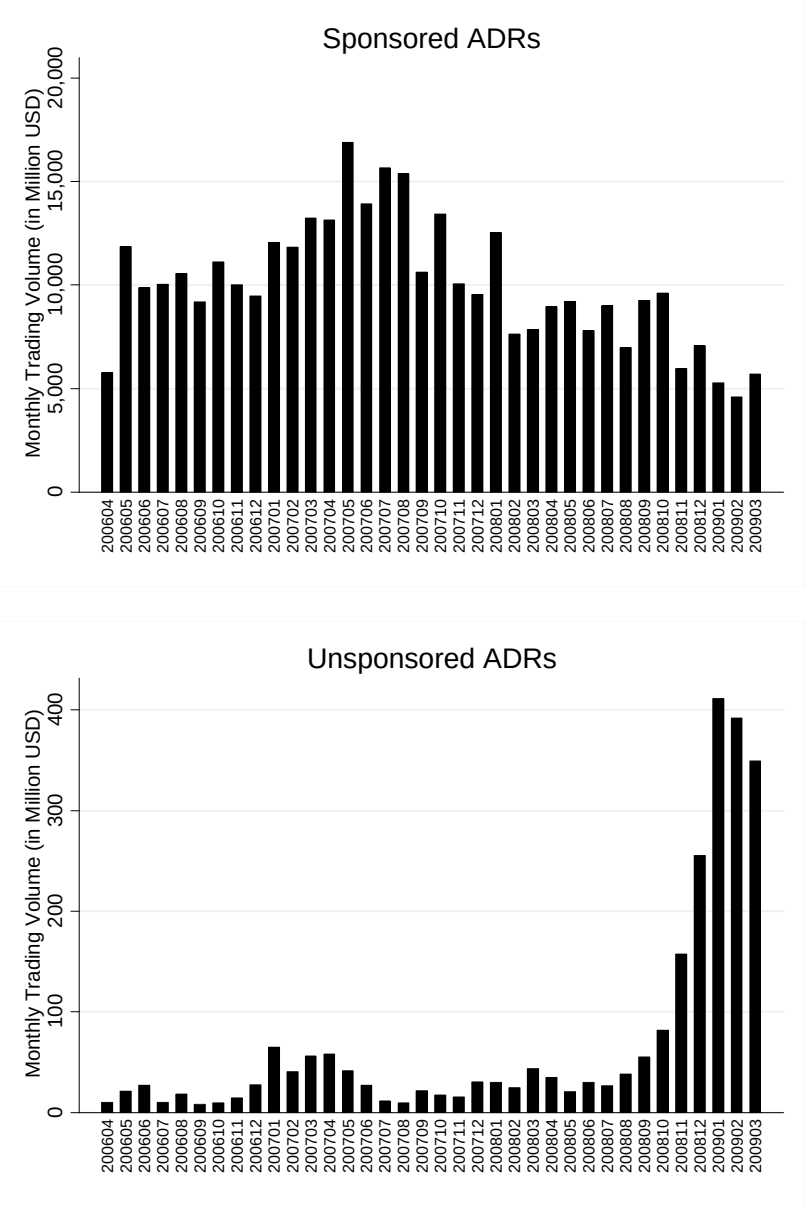

Figure 2. The two graphs show monthly trading volume (in million U.S. dollars) on OTC exchanges for sponsored and unsponsored ADRs. The analysis includes 170 unsponsored ADRs. The data are from Datastream. Average monthly trading volume for unsponsored ADRs for the period January 2008 to September 2008 was $34 million, whereas average monthly trading volume in the period October 2008 to March 2009 is $275 million, almost ten times higher.

Appendix A
History of ADR Regulation in the US until 2008 and Comparison between Unsponsored ADR Programs and Sponsored Level I ADR Programs

Following the stock market crash of 1929 and the subsequent economic depression, Congress enacted the Securities Act of 1933 and the Securities Exchange Act of 1934. These Acts created the Securities and Exchange Commission as well as the stringent registration and disclosure requirements that are often considered the defining feature of U.S. capital markets. The Acts were written to have extraterritorial reach to cover securities activities between any 'foreign country' and the United States, therefore the SEC registration and reporting requirements have also been applied to non-U.S. firms that interact with U.S. investors.

Under these regulations, a foreign firm becomes subject to SEC registration in three ways. First, if the firm lists a class of its equity securities on a major U.S. exchange, it is required to register the securities under Section 12(b) of the 1934 Exchange Act. Second, if the foreign firm issues new public equity or debt securities, they must be registered under the Securities Act of 1933, and the foreign firm is required to file reports under Section 15(d) of the Exchange Act. Finally, if a class of the firm's securities is held by more than 300 security holders in the U.S. and either (a) more than 500 security holders worldwide or (b) its assets exceed $10 million, the firm must register with the SEC that class of equity securities under Section 12(g) of the Exchange Act. This last condition is the provision that most often applies to OTC ADR programs. Overall, the purpose of SEC registration is to ensure that U.S. investors have access to detailed information on the companies that are offering securities for sale to U.S. investors or are trading on U.S. exchanges.

In 1967, the SEC passed Rule 12g3-2. The new rule remedied what the SEC saw as the unreasonable requirement that foreign firms that have even limited contact with U.S. investors, such as firms with OTC or privately placed ADR programs, often fall under the shareholder count rule of the 1934 Act and therefore are required to meet U.S. reporting requirements. To remedy this, Rule 12g3-2(b) exempts the foreign issuer from registration if it supplies the SEC with (a) documents made available to the public under the laws of the country in which the company is incorporated, (b) documents made public according to the regulations of any stock exchange on which the company's stock is listed, and (c) documents otherwise made available to its security holders, such as annual reports, announcements of shareholder meetings and press releases relating to dividends.

It is important to note that since 1983, in order to establish an OTC ADR program the depositary bank is required to state on Form F-6 that the issuer is either an Exchange Act reporting company or that it furnishes the SEC with the local market disclosures pursuant to Rule 12g3-2(b).[34] Therefore, any foreign firm can easily prevent a depositary bank from establishing unsponsored ADRs simply by not formally applying for, or not meeting the ongoing disclosure requirements of Rule 12g3-2(b). On September 5, 2008 the SEC issued amendments to rule 12g3-2(b) eliminating the previously required written application for an exemption from the registration requirements. In its place, the rule now provides an *automatic* exemption as long as the firm (a) makes material information available on its website and (b) maintains a listing on one or more non-U.S. exchanges.

[34] This requirement was instituted in 1983.