Journal of Accounting Research

DOI: 10.1111/1475-679X.12035
Journal of Accounting Research
Vol. 52 No. 2 May 2014
Printed in U.S.A.

CHICAGO BOOTH

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

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Received 29 April 2011; accepted 24 October 2013

ABSTRACT

We study the economic consequences of a recent Securities and Exchange Commission securities regulation change that grants foreign firms trading on the U.S. over-the-counter (OTC) market an automatic exemption from the reporting requirements of the 1934 Securities Act. We document that the number of voluntary (sponsored) OTC cross-listings did not increase following the regulation change, suggesting that it did not achieve its intended purpose of increasing voluntary OTC cross-listings through a reduction in

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Accepted by Christian Leuz. We wish to thank two referees for helpful comments and suggestions. We also thank Cindy Alexander, Andriy Bodnaruk, Andrew Ellul, Paolo Fulghieri, Louis Gagnon, Jean Helwege, Andrew Karolyi, Michelle Lowry, Jens Martin, David McLean, Hamid Mehran, Anna Obizhaeva, Adam Pritchard, David Reeb, Ed Rice, Ailsa Röell, Michael Schill, participants at the 2013 Journal of Accounting Research Conference, 2010 European Finance Association Meeting, 2010 American Law and Economics Association Meeting, 2010 Northern Finance Association Meeting, NY Fed/RCFS Conference on Financial Stability and Financial Intermediary Firms' Behavior, IIROC-DeGroote Annual Conference 2010, Central Bank of Brazil's Financial Crisis of 2008 Conference, University of Oregon Conference in honor of Larry Dann, and seminar participants at the Securities and Exchange Commission, HEC Montreal, HKUST, Netherlands Central Bank, Nanyang Technological University, National University of Singapore, Pennsylvania State University, Singapore Management University, Temple University, and University of Alberta for helpful comments and suggestions. Finally, we thank practitioners at Citibank, Bank of New York Mellon, the Pink Sheets, and the SEC for providing valuable institutional details of the unsponsored ADR market. An online Appendix to this paper can be downloaded at http://research.chicagobooth.edu/arc/journal-of-accounting-research/online-supplements.

compliance costs. We do find that the design of the regulation allowed financial intermediaries to create an unprecedented number of involuntary (unsponsored) OTC ADRs: 1,700 unsponsored ADR programs for 920 firms were created for companies that had previously chosen not to cross-list in the United States. Our difference-in-differences analysis based on a matched sample approach documents that foreign firms forced into the U.S. capital markets experience a significant decrease in firm value, and we further show that the decrease in firm value is related to an increase in U.S. litigation risk. We also find that depositary banks' propensity to involuntarily cross-list firms is positively related to banks' expected fee revenue, and that banks chose firms that incur high costs when involuntarily cross-listed. Our results provide evidence that securities regulation can be exploited for private gain and result in costly unintended consequences.

1. Introduction

Although regulation of firms' financial reporting and disclosure activities is a defining feature of nearly every capital market around the world, the benefits of securities regulations are theoretically unclear and heavily debated. A nascent literature also suggests that securities regulations can lead to significant costs, since these complex regulations are often difficult to design, implement, and enforce.[1] This paper shows that a recent Securities and Exchange Commission (SEC) disclosure regulation intended to increase voluntary cross-listings allowed fee-motivated financial intermediaries to *involuntarily* cross-list over 900 foreign firms, eliminating their preferred listing strategy and imposing significant costs on them. Our results provide evidence that securities regulation can be exploited for private gain and result in costly unintended consequences.

We study the recently amended SEC Rule 12g3-2(b). The regulation change was designed to benefit U.S. investors and capital markets as well as non-U.S. firms by eliminating the need for foreign firms intending to cross-list on the U.S. over-the-counter (OTC) market to formally apply for an exemption from the reporting requirements of the 1934 Securities Act. By granting an automatic exemption to firms already disclosing the required information on their Web sites, the new rule intends to reduce compliance costs and thus increase the number of *voluntary* (sponsored) OTC cross-listings. However, by designing an automatic reporting exemption into the regulation, a channel was created that enables U.S. depositary banks to create *involuntary* (unsponsored) OTC cross-listings that foreign firms cannot easily avoid or reverse.

We find that the regulation had several consequences for firms not previously cross-listed in the United States. First, only a small number of foreign firms voluntarily cross-listed after the exemption rule became effective,

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[1] Bushee and Leuz [2005], Leuz, Triantis, and Wang [2008], and Iliev [2010] investigate the costs of securities regulation. For details on the debate on securities regulations' benefits, see Mulherin [2007], Leuz and Wysocki [2009], and Zingales [2009].

suggesting that the securities regulation had relatively little effect on the net benefits of a U.S. cross-listing. Second, over 900 foreign firms were involuntarily cross-listed on the U.S. OTC market, causing significant costs in terms of a reduction in firm value. Third, involuntary cross-listing is associated with an increase in firms' litigation risk and firms with larger increases in litigation risk experienced larger declines in firm value. Finally, we find that depositary banks' propensity to involuntarily cross-list firms is positively related to banks expected fee revenue, and that banks chose firms with characteristics consistent with high net costs when involuntarily cross-listed. Overall, the results suggest that the interaction between the regulation's design and the institutional structure of the cross-listing market resulted in significant costs to a large number of foreign firms.

On September 5, 2008 the SEC amended Rule 12g3-2(b) by eliminating the requirement that foreign firms have to submit a written application for exemption from U.S. registration requirements to cross-list on the U.S. OTC market. In its place, the rule now provides an automatic exemption as long as the firm makes material disclosures available on its Web site and maintains a listing on one or more non-U.S. exchanges. The SEC stated that the intent of the 2008 amendments was to "benefit investors by increasing their access to foreign private issuers' non-U.S. disclosure documents" while simultaneously increasing the competitive position of U.S. capital markets by "reducing the issuers cost of compliance."[2]

Prior to 2008, foreign firms could choose whether or not they were cross-listed on the OTC market, since depositary banks were required to certify that the firm is either an Exchange Act reporting company or that the firm furnishes the SEC with local market disclosures pursuant to the registration exemption. Therefore, any foreign company could prevent a depositary bank from establishing unsponsored American Depositary Receipts (ADRs) by simply not applying for, or not meeting, the ongoing disclosure requirements of the Rule 12g3-2(b) exemption. The regulatory change now allows each depositary bank to rely on "its reasonable good faith belief after exercising reasonable diligence"[3] that firms' Web sites comply with the Rule 12g3-2(b) exemption. Since thousands of foreign companies provide English language versions of their home country documents on their investor relations Web pages (Jeanjean, Lesage, and Stolowy [2010]), U.S. depositary banks can now create unsponsored ADR programs without having to notify the firm or seek its approval.

The regulation change created several groups of firms that we study. Prior to the exemption rule, foreign firms that had chosen not to cross-list in the United States did so presumably because the costs exceeded the benefits. After the exemption rule, one group of these firms decided to voluntarily cross-list on the U.S. OTC market. For these firms, the regulation

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[2] See http://www.sec.gov/news/speech/2008/spch021308ebs-fhk.htm. The appendix provides a brief overview of the history of ADR regulation in the United States.

[3] SEC Final Rule No. 34-58465.

had its intended effect of inducing voluntary U.S. cross-listings, presumably by reducing the costs of regulatory compliance. Another group of firms were previously not cross-listed but were subsequently involuntarily cross-listed by depositary banks. By forcing these firms that previously did not voluntary cross-list to trade on the U.S. OTC market, the exemption rule eliminated their first-best listing strategy. A third group of firms were not chosen by depositary banks and remain unlisted in the United States after the exemption rule and provide a comparison group. Finally, as a fourth group of firms, we also study the financial intermediaries in this market since their propensity to create unsponsored ADR programs is expected to reveal their bank-specific costs and benefits. Overall, the compliance responses of these different groups as well as their valuation changes provide evidence on the economic consequences of the regulation change.

First, we document that, following the exemption rule's amendment, the number of sponsored OTC cross-listings did not increase. This suggests that the regulation did not achieve its intended purpose of increasing voluntary OTC cross-listings through a reduction in compliance costs. However, we do find that the design of the regulation that enables financial intermediaries to create unsponsored OTC ADRs had a profound effect on both U.S. capital markets and foreign firms: 1,700 unsponsored ADR programs for 920 firms were created for companies that had previously chosen not to list in the United States. This stands in sharp contrast to the 52 unsponsored ADR programs created over the decade before the amendment, and transformed what was historically one of the rarest types of cross-listings to the most common (56% of the U.S. cross-listing universe is now unsponsored).

Second, we examine the impact of new unsponsored ADR programs on foreign firm value. Using a matched sample difference-in-differences approach comparing unsponsored ADR firms with firms unaffected by the exemption rule before and after the involuntary listing, we find that firms experience a significant decrease in Tobin's q after being involuntarily cross-listed. This finding is also economically significant—the net result of the deregulation was a decline in cross-listed firms' value between 3% and 6%. These findings indicate that the regulation has significant costs for firms that are forced into a U.S. listing. To mitigate concerns that depositary banks are choosing high q firms, which subsequently mean revert, our tests match unsponsored ADR firms with unaffected firms based on firm characteristics in the year before the regulation was implemented.

We next provide evidence on one important mechanism through which the exemption regulation imposes costs on firms by investigating how an unsponsored cross-listing impacts firms' litigation risk. We first examine changes in audit fees since they have been shown to reflect cross-listed firms' litigation risk as both U.S. and foreign auditors can be held liable in the United States under U.S. securities laws (see, e.g., Seetharaman, Gul, and Lynn [2002], Choi et al. [2009]). We find that involuntary OTC cross-listings are associated with an increase in audit fees, and that firms with larger increases in audit fees have larger declines in firm value upon

cross-listing. These findings, taken together with the fact that unsponsored ADR firms do not have to change to U.S. reporting standards since firms can claim the 12g3-2(b) reporting exemption, suggest that one channel through which unsponsored ADR firms' value decreased is an increase in litigation risk. We also examine measures of ex ante litigation risk based on the models of Kim and Skinner [2012]. We find that firms that have greater ex ante litigation risk have a greater drop in firm value upon cross-listing, which also suggests that litigation risk is one of the cost channels through which unsponsored ADR firms reduce firm value.[4]

Finally, we examine banks' and firms' responses to the regulation change. For banks, we examine how proxies for depositary bank- and firm-specific costs and benefits are related to the propensity to create unsponsored ADR programs. We document that depositary banks are more likely to choose large, profitable firms that have low transactions costs, meet current New York Stock Exchange (NYSE) listing requirements, and report according to International Financial Reporting Standards (IFRS) or U.S. GAAP accounting standards. The depositary banks also target firms that are part of major stock market indices, are from countries with better investor protection laws, and have more stringent disclosure requirements, as well as firms from countries that are underrepresented in the U.S. equity markets. Consistent with the home bias literature, these results suggest that depositary banks choose firms that are most likely to be attractive to U.S. investors and result in higher fee income for the banks. Depositary banks' financial statements show that, after the rule was passed, fee income increased substantially. We further find that depositary banks avoid cross-listing firms with which they have a prior banking relationship, suggesting that they avoid firms that might impair future expected banking revenue. Moreover, we show that the firms chosen are those for which a cross-listing is likely to be costly. Banks choose firms that have relatively high firm-specific litigation risk, which suggests that depositary bank-specific net benefits are higher for firms that will incur larger firm-specific costs. We exploit the variation in the number of unsponsored ADRs per firm and show that bank-specific net benefits are negatively correlated with firm-specific benefits, that is, banks create multiple ADR programs for firms that would benefit the least from a cross-listing. We also document the difficulty firms face in avoiding the creation of unsponsored ADRs, and perform a valuation analysis that shows that, even though the involuntary cross-listing destroys value, responding by upgrading to a sponsored OTC program can result in even greater value destruction. Taken together, these results suggest that by, exploiting the regulation for their private gain, depositary banks imposed significant costs on involuntarily cross-listed firms.

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[4] As we discuss in section 2, unsponsored OTC cross-listings may impose additional costs on foreign firms, including the risk of future exchange act registration, adverse treatment of U.S. security holders, and increased difficulty in establishing a future sponsored ADR program.

Our study contributes to the limited empirical evidence on the economic consequences of securities regulations. We show that a recent disclosure deregulation intended to increase voluntary cross-listings by reducing compliance costs was exploited for private gain by fee-motivated depositary banks, which led to over 900 foreign companies being involuntarily cross-listed, causing a reduction in foreign firms' market value. In this way, our work adds to the nascent literature that focuses on the costs of securities regulation (see, e.g., Bushee and Leuz [2005], Leuz, Triantis, and Wang [2008], Iliev [2010]) as well as their unintended consequences (see, e.g., Gao, Wu, and Zimmerman [2009], Linck, Netter, and Yank [2009]).

We also contribute to our understanding of unsponsored ADRs, a market that has been largely ignored by prior research, yet is now the most prevalent way foreign firms are traded in the United States.[5] Further, we provide evidence on depositary banks that serve as financial intermediaries in the global cross-listing market. In contrast to the extensive literature on the economic consequences to firms of international cross-listing, little is known about the intermediaries that actually establish this market. We do note, however, that, while our results suggest that the regulation change benefited U.S. banks and investors while imposing costs on involuntary cross-listed foreign firms, our study does not address the broader question of whether the regulation change benefited the society as a whole.

The remainder of the paper proceeds as follows. Section 2 details the institutional setting and develops the hypotheses. Sections 3 through 5 present the results for foreign firms. Section 6 reports findings for depositary banks. Section 7 concludes.

2. *Institutional Setting and Hypothesis Development*

2.1 INSTITUTIONAL SETTING

Given that the costs and benefits of unsponsored ADR programs can differ between depositary banks and firms, the optimal strategy for banks (involuntary cross-listing) may impose costs on firms, whereas the optimal strategy for firms (remaining non-cross-listed) may leave money on the table for the banks. Viewed in a Coasian framework (Coase [1960]), the change in outcomes was driven by the regulation's shift of property rights from firms to banks. Prior to the new rule, foreign companies had the right to block any U.S. listing because the depository banks could establish a listing only through direct bargaining with the firms. Coase [1960] predicts that, when property rights are well defined, bargaining between banks and firms will lead to the first-best outcome where banks will list only firms that benefit from the listing or will compensate firms for the listing by paying

[5] The potential importance of involuntary listings is increasing globally as more countries begin to experiment with this type of listings (see, e.g., Brüggemann et al. [2009], Bris et al. [2009]).

some of the bank revenues back to the firms. The recently SEC-mandated 2008 "Foreign Issuer Reporting Enhancements" disclosures show that depositary banks pay foreign firms over $250 million per year to establish and maintain their sponsored ADR programs. However, the new regulation eliminated the clearly defined property (i.e., listing) rights since now a firm that wants to block a costly cross-listing has to negotiate with multiple parties that do not hold exclusive rights to the U.S. listing.[6] Moreover, any agreement between a firm and depository banks will suffer from a free-rider problem, because potential new entrants into the depository bank market can ask for additional payments from the firms. Therefore, firms cannot effectively block unsponsored ADRs and depository banks do not have the incentives to internalize the side effects of their decisions via payments to firms. In the absence of efficient bargaining, firms and banks trade off their own private costs and benefits when reacting to the new U.S. OTC securities regulation. Therefore, the compliance responses and market reactions are expected to reflect these tradeoffs.

2.2 HYPOTHESIS DEVELOPMENT

We start by examining how the different groups of foreign firms are affected by the exemption rule. One group are new sponsored ADR firms that previously were not cross-listed in the United States, but after the exemption rule voluntarily created a new sponsored cross-listing on the U.S. OTC market. For these firms, the rule apparently had its intended consequences of increasing the net benefits by lowering compliance costs of a U.S. OTC cross-listing. A second group of firms are those that had chosen not to cross-list in the United States, presumably because cross-listing in the United States is still too costly, yet were involuntarily cross-listed by depositary banks. These new unsponsored ADR firms could have voluntarily cross-listed before or after the rule if it had been beneficial to them.

Important benefits of a U.S. OTC listing include increased analyst coverage (Doidge et al. [2009]), lower cost of capital (Hail and Leuz [2009]), and an enhanced information environment (Bailey, Karolyi, and Salva [2006], Fernandes and Ferreira [2008]). Important costs include reduced private benefits of control (Doidge et al. [2009]) and direct compliance costs.[7] Given that a U.S. OTC listing does not require full U.S. disclosures or entail trading on a major U.S. exchange, the cross-listing literature shows that the net benefits to a voluntary OTC cross-listing in terms of stock price, valuation, and improved governance are positive but more modest than a

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[6] See "Changes to U.S. Securities Laws Facilitate U.S. Market for Unsponsored ADRs of Listed Japanese Companies with English Web Sites," Jones Day Commentary.

[7] Regulatory compliance costs are associated with electronically publishing English translations of its non-U.S. disclosure documents. These include the annual report, including annual financial statements, interim reports that include financial statements, press releases, and all other communications and documents distributed directly to security holders of each class of securities to which the exemption relates.

major exchange cross-listing (see, e.g., Miller [1999], Doidge, Karolyi, and Stulz [2004], Lel and Miller [2008]). Moreover, the benefits to an involuntary OTC listing are likely to be smaller than a voluntary OTC listing since involuntary listings lack the signaling and commitment of a voluntary listing. Under the assumption that firms rationally weigh the costs and benefits of an international cross-listing, we expect firms to voluntarily list if the new rule reduces compliance costs enough to cause benefits to exceed costs. Alternatively, if the new rule does not alter the costs of compliance substantially, we expect that the rate of voluntary OTC cross-listings will not be affected.

Unsponsored OTC cross-listings can impose several costs on foreign firms, including increased exposure to U.S. legal and regulatory enforcements, risk of future exchange act registration, adverse treatment of U.S. security holders, and increased difficulty in establishing a future sponsored ADR program. These costs are likely to be borne by the existing shareholders of the target firm rather than by depositary banks or new ADR investors since, when banks create an ADR program, they can do so without buying any shares initially and need only to create ADRs when investor demand dictates (and in this way earn fees from investors). Once an unsponsored ADR facility is registered, it is only after an investor places an order with a broker–dealer that the dealer buys shares of the non-U.S. firm directly in the local (foreign) market, exchanges these shares for ADRs with one of the depositary banks, and then fills the order by delivering these newly created unsponsored ADRs to the investor.[8] Hence, to the extent that markets efficiently price the expected costs of unsponsored ADR programs, the majority of the loss will be imposed on existing shareholders rather than the new U.S. shareholders (who buy shares at a later date) or on depositary banks (who do not have to own shares of the foreign firm).

In terms of litigation risk, once an unsponsored ADR program is established by a depositary bank, even without the participation or consent of the issuer, it becomes liable for fraudulent misstatements or omissions under the antifraud 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 statements or omissions in connection with the purchase or sale of any security. In this way, an OTC firm becomes exposed to 10b-5 legal enforcement actions in three ways: (1) private class action

[8] We verified this mechanism by talking to officials working at the depository banks, retail brokers, and the OTC exchanges.

securities lawsuits, (2) SEC injunctions and other equitable remedies, and (3) criminal action prosecutions by the U.S. Justice Department.[9]

While the 12g3-2b regulation is fairly recent and previous research shows that securities lawsuits are filed on an average of 150 days after the violation occurs (Karpoff et al. [2012]), recently the first lawsuit was filed against an unsponsored ADR firm, Vestas Wind Systems A/S from the Netherlands. The depositary bank J.P. Morgan created an unsponsored ADR for Vestas in 2008, and in 2011 a U.S. securities class action lawsuit was filed alleging that Vestas issued materially false and misleading statements regarding the company's financial revenues and earnings, as well as its fiscal year 2010 financial guidance.

While this case is ongoing, previous actions suggest that securities class action lawsuits targeting OTC firms can result in substantial penalties. In 1999, Roche Holding, a Swiss corporation that had a Level I ADR program trading on the OTC Pink Sheets, was the target of a securities class action lawsuit in which U.S. ADR holders alleged that the trading prices of Roche ADRs were artificially inflated by false and 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 was not liable for claims filed in the United States by purchases of ADRs. Roche ultimately settled for $6,350,000 and paid the plaintiff's attorney fees and expenses. The Stanford Securities Class Action Clearinghouse (SCAC) database reports 113 securities lawsuits against OTC-traded companies (89 OTC Bulletin Board and 24 OTC Pink Sheets), 21 of which were against foreign firms.

In addition to the above securities litigation examples of OTC firms, it is perhaps even more important to emphasize that at the time of the rule change there was unprecedented uncertainty in the litigation risk facing all foreign firms cross-listed in the United States. Two out of the six largest payouts in the history of U.S. class-action securities lawsuits were from foreign firms with sponsored programs: Nortel Networks (over $2 billion) and Royal Ahold NV (over $1 billion). Further, during the time that Rule 12g3-2(b) was amended, Vivendi Universal S.A. was also engaged in a high-profile securities class-action lawsuit that ultimately resulted in a judgment estimated to be worth between $2 and $9 billion, an amount that could ultimately be larger than any previous U.S. securities case (foreign or domestic). As soon as the Rule 12g3-2(b) was amended, legal experts began publicizing their opinion that, similar to these high-profile sponsored cases, unsponsored OTC ADR programs also expose firms to liability for

[9] One difference between OTC- and exchange-traded firms is that Rule 12g3-2(b) information is deemed to be "furnished to" rather than "filed with" the SEC; therefore, violations under Section 18 of the 1934 Exchange Act concerning the information filed do not apply to OTC-traded firms.

fraudulent misstatements or omissions under antifraud provisions of U.S. federal and state securities laws.[10]

Perhaps the most extreme example of the overall uncertainty regarding foreign firms' litigation risk at the time of the rule change was the fact that even foreign firms that did not trade in the United States were being sued in U.S. courts over securities violations. These so-called "F-cubed" lawsuits are filed in U.S. courts by *foreign* domiciled investors buying shares in *foreign* companies on *foreign* exchanges. In the two years preceding the rule amendment, there were a number of F-cubed lawsuits filed in U.S. courts, leading to the much-publicized Supreme Court ruling in June of 2010 of *Morrison v. National Australia Bank Ltd.* that struck down F-cubed lawsuits while emphasizing the legal liability of foreign firms with ADR programs.[11] However, the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 was amended and approved days after the Morrison verdict. It attempted to reinstate the ability of the SEC and the Department of Justice to enforce securities violations by foreign firms (even F-cubed violations) and instructed the SEC to conduct a study to determine whether this enforcement should also extend to private class actions. While the extent of the legal liability of foreign firms not trading in the United States is still unresolved, both the Morrison verdict and the Dodd–Frank Act emphasize the rights of U.S. investors to pursue class-action lawsuits against foreign firms with ADRs.[12] Consistent with unsponsored ADR firms facing U.S. litigation risk, Gagnon and Karolyi [2012] find the price deviations between ADRs and their underlying security increased following the Morrison verdict.[13] Moreover, even if a foreign company prevails in litigation, prior research suggests that just the initiation of a securities lawsuit requires a company to incur significant costs associated with mounting a defense, negative publicity, reputational damages, and the potential for duplicate litigation in the foreign issuer's home country (see, e.g., Karpoff and Lott [1999], Karpoff, Lee, and Martin [2008], Gande and Miller [2012]).

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

[11] See Licht, Li, and Siegel [2011] for details on the *Morrison v. National Australia Bank* case.

[12] There still exists a considerable amount of uncertainty on how the proposed SEC study will affect the extraterritorial reach of U.S. securities laws. *Le Monde* noted on July 21, 2010 that "this report frightens a number of foreign capitals, including Paris, who fears the United States becoming the financial policeman for countries who choose to forgo private class actions."

[13] While not the main focus of their paper, Gagnon and Karolyi [2012] also report results for unsponsored ADRs and find that unsponsored ADR price deviations are not statistically different from sponsored ADR price deviations, which is consistent with unsponsored ADRs also facing U.S. litigation risk. However, it is important to note that the Morrison verdict did not directly address unsponsored ADRs, and hence it is an open question as to what degree the Morrison verdict resolved the uncertainty of the legal risks associated with unsponsored ADRs. Gagnon and Karolyi [2012] also show that the price deviations for unsponsored ADRs alone are not significant at conventional levels.

Besides litigation risk, a second important cost of an involuntary cross-listing is the risk of future exchange act registration. Once depositary banks establish an unsponsored ADR program, the foreign firm also acquires the Rule 12g3-2(b) exemption for its new U.S. shareholders, and, therefore, must maintain the exemption's requirements or face the risk of being forced to register and report under the Exchange Act. Moreover, foreign firms face the risk that trading in unsponsored ADRs will fall under the requirements of the Financial Industry Regulatory Authority that is now in effect in the United States, and requires real-time dissemination of trade information in foreign OTC securities.[14] Third, involuntarily cross-listed firms have no control over the information flow to or from their U.S. investors, and these investors are also often deprived of their right to vote. The fact that depositary banks can create multiple unsponsored ADR programs for the same firm can also cause investor confusion as, for example, the firm's investors may earn different rates of return on the same security (due to different currency exchange rates and fees charged by the banks). Fourth, unsponsored ADR firms need to get permission from each depositary bank before it can establish a future sponsored ADR program, and, therefore, face a potential holdup problem in future U.S. capital raising. As discussed previously, depositary banks have strong incentives to preserve control over ADR programs, as the recent SEC-mandated 2008 "Foreign Issuer Reporting Enhancements" disclosures show that depositary banks pay foreign firms over $250 million per year to establish and maintain their ADR programs. In this way, the regulation fosters a potential conflict between fee-motivated depositary banks and the newly involuntarily cross-listed firms.

Based on these costs and benefits, we form predictions for our tests. Assuming that the market correctly values the economic consequences of the exemption rule, we use the change in firm value surrounding new unsponsored cross-listings as a measure of the net costs or benefits of the regulation change. Overall, we expect new unsponsored firms to be adversely affected. These firms' preferred listing strategy is not to be traded in the United States, presumably because the costs exceed the benefits. Since involuntarily cross-listing forces these firms away from their first-best listing strategy, which is associated with the various costs discussed above, we expect the change in firm value to reflect the magnitude of these costs. Further, to the extent that litigation risk is one of the measurable channels through which costs are imposed on firms, we expect audit fees to increase after involuntary cross-listing. Prior research shows that auditors charge higher fees for cross-listed firms because of increased legal liability. For example, Seetharaman, Gul, and Lynn [2002] show that U.K. auditors charge higher fees for U.S. cross-listed firms that reflect the increase in liability risk for foreign

[14] See "Rush of Unsponsored ADRs/DRs a Headache for Japanese Companies," Darrel Whitten, Seeking Alpha (April 25, 2009). Available at http://seekingalpha.com.

firms listed in the United States. Further, Choi et al. [2009] find higher audit fees for cross-listed firms, arguing that cross-listings increase expected liability costs, which in turn raises audit fees, rather than increased audit complexity per se. An unsponsored ADR program does not require a change in reporting standards since firms are granted the 12g3-2(b) registration exemption. Therefore, auditors of unsponsored ADR firms are not required to face a change in reporting standards, which further supports the use of audit fees as a proxy for litigation risk in our setting. We also augment our analysis by examining measures of ex ante litigation risk based on the models of Kim and Skinner [2012]. If litigation risk is one of the cost channels through which unsponsored ADR firms reduce firm value, we expect that firms that have greater ex ante litigation risk will also have a greater drop in firm value upon cross-listing.

An alternative hypothesis to the above-mentioned cost hypothesis is the private benefits hypothesis: If firms are avoiding the U.S. market because a U.S. listing reduces the private benefits of control, then being involuntarily cross-listed could lead to an increase in firm value, and the value increase should be largest for the firms with the weakest governance. In this view, private class-action lawsuits (and the threat of lawsuits) that enforce U.S. securities laws are a mechanism that benefits minority investors by deterring illegal private benefits consumption (see, e.g., Coffee [1999]). However, since an OTC listing does not entail SEC registration and disclosure, the governance benefits of cross-listings are generally concentrated in major exchange programs.[15] Whether the cost or private benefits effect dominates is ultimately an empirical question, which we test.

Finally, we form predictions for the financial intermediaries' responses to the new regulation. Depositary banks benefit from fees paid by investors in unsponsored ADR programs. Banks earn income when creating or canceling 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. Depositary banks also have recently been allowed to charge several new fees to ADR investors, including an annual fee for general depositary services. The SEC concluded that ADR fees payable by investors are significant enough to warrant enhanced transparency on an annual basis and in the 2008 "Foreign Issuer Reporting Enhancements" also required firms to disclose to ADR shareholders the fees and charges they may have to pay (directly or indirectly).[16]

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[15] Doidge et al. [2009] show that proxies for private benefits of control are not related to firms' decision to cross-list on OTC exchanges, though they do show that analyst coverage (and thus potential monitoring) increases for OTC listings.

[16] For example, the 2010 Form 20-F of Chunghwa Telecom Ltd. discloses that, under the terms of the firm's depositary agreement with J.P. Morgan Chase, the ADR holder may have to pay up to $0.05 per ADR issued, $0.05 per ADR cancelled, and up to $0.05 per ADR held to receive the distribution of cash dividends, stock dividends, or rights offerings.

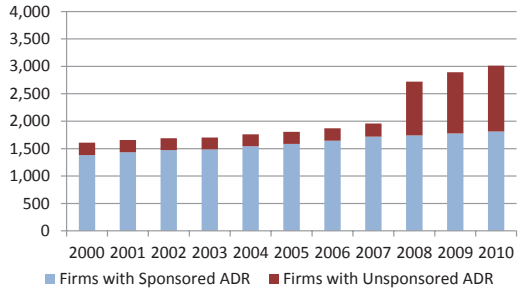
Investors purchase unsponsored and sponsored ADRs since many U.S. institutional investors, such as foundations, pension funds, endowments, insurance companies, and specially managed accounts, face restrictions on holding the underlying foreign security but can legally hold the ADR. For example, Ahearne, Griever, and Warnock [2004] study the U.S. home bias and note that U.S. insurance companies are limited by state law to holding a maximum of 3% of their assets overseas and that having an ADR is one of the most important determinants of U.S. investors' holdings of non-U.S. securities. Therefore, ADRs are an important instrument of international diversification for many U.S. investors.

Since fee income will be an increasing function of U.S. investors' demand for the ADR, we expect that depositary banks will choose firms that U.S. investors will find the most attractive. The home bias literature suggests several proxies for the benefits and costs of foreign stock ownership by U.S. investors, including inclusion in a major stock index, U.S. investor recognition, firm size, leverage, growth opportunities, insider control, home country investor protection laws, and transactions costs (see, e.g., Kang and Stulz [1997], Dahlquist and Robertson [2001], Leuz, Lins, and Warnock [2009]).

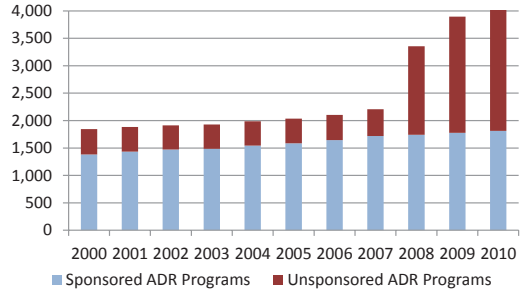
In addition, to the extent that an involuntary cross-listing imposes costs on foreign firms, depositary banks may incur losses in future business with involuntary cross-listed firms. Therefore, we expect banks to be less likely to cross-list firms for which there exists a prior underwriting relationship. Further, our valuation analysis suggests that banks on average cross-list firms that have high firm-specific costs of being cross-listed, a hypothesis we test using measures of firm-specific costs and benefits.

3. Sponsored and Unsponsored ADR Creation Surrounding the Exemption Rule

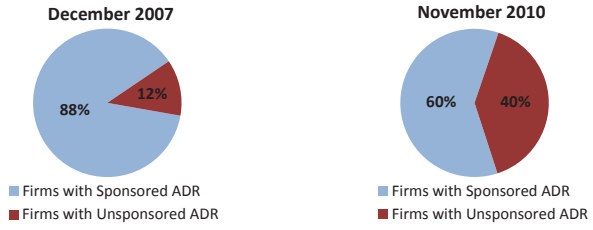
In this section, we examine the exemption rule's effect on foreign firms previously not cross-listed in the United States. Data on cross-listed firms are obtained from the Bank of New York, J.P. Morgan, Citigroup, CRSP files, and SEC Form F-6 filings. Using the full universe of U.S. cross-listings as of November 2010, figure 1 illustrates the impact that the amendments to Rule 12b3-2(b) had on the creation of sponsored and unsponsored ADRs. Panel A shows that the number of sponsored ADRs was relatively unchanged surrounding the new rule. For example, in the two years prior to the exemption rule, 78 new sponsored OTC ADRs were created by firms. In the two years following the exemption rule's amendment, 36 new unsponsored OTC ADRs were created by firms. Therefore, only a small number of firms voluntarily chose to cross-list after the exemption rule became effective. These findings are consistent with the hypothesis that the exemption rule did not significantly affect the net benefits of an OTC cross-listing. In contrast, figure 1 also shows the dramatic impact the exemption rule had on the unsponsored ADR market. In the decade before the amendment



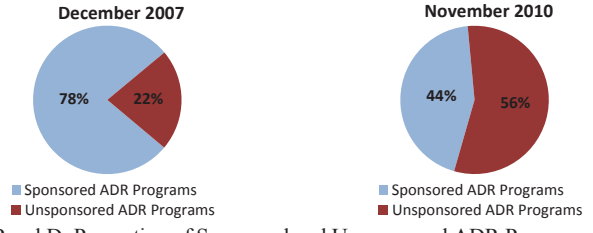
Panel A: Number of Firms



Panel B: Number of ADR Programs



Panel C: Proportion of Firms with Sponsored and Unsponsored ADRs before and after the amendment of Rule 12b3-2(b)



Panel D: Proportion of Sponsored and Unsponsored ADR Programs before and after the amendment of Rule 12b3-2(b)

FIG. 1.—Panel A reports the number of firms with ADR programs, panel B shows the number of existing ADR programs, panel C reports the proportion of firms with ADR programs, and panel D reports the proportion of sponsored and unsponsored ADR programs. The data are from various sources, including DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings.

year, only 52 new unsponsored ADR programs were created. In contrast, in the two years following the amendment, 920 firms were involuntarily cross-listed. Panel B shows that the impact is even more dramatic when the amendment's effect of creating multiple unsponsored programs for a single firm is considered. More than 1,700 new unsponsored cross-listings were created for the 920 foreign firms after the rules passage. Panel C shows that it caused a fundamental shift in the cross-listing landscape, where now 40% of foreign firms trading in the United States are here involuntarily and trade on the OTC rather than on major exchange markets, compared to 12% in the year before the change. Panel D shows that, as of November 2010, involuntary cross-listings make up over half (56%) of all ADR programs in existence. Overall, unsponsored ADR programs went from being one of the rarest categories of international cross-listings to one of the most common types.

Table 1 presents the sample by country and cross-listing status. A total of 2,624 firms in our sample have cross-listed equity in the United States. Of those, 758 firms are cross-listed on a major U.S. exchange (NYSE, American Stock Exchange (AMEX), or NASDAQ), 812 firms trade on the OTC markets as sponsored ADRs, and 1,054 firms are cross-listed through an unsponsored ADR program. The last column of table 1, panel A shows that, in our sample, a total of 888 non-U.S. firms from 35 countries were cross-listed via an unsponsored ADR after the regulation change.[17] The most new unsponsored cross-listings are from Japan, the United Kingdom, Hong Kong, and China with 119, 89, 76, and 76 new unsponsored ADR programs, respectively.

The experience of Japanese companies is noteworthy since Japan has by far the largest number (91) of unsponsored ADRs prior to the exemption rule as well as the largest number thereafter (119). The reason for so many unsponsored ADRs in the preperiod is that Japanese firms have historically chosen not to voluntarily cross-list in the United States (see, e.g., Sarkissian and Schill [2004]), which presumably created a latent demand for Japanese firms trading in the United States. Prior to the SEC creating Form F-6 in 1983, depositary banks could create unsponsored ADRs, and most of the involuntary ADRs from Japan in the preperiod were created prior to 1983. In fact, two-thirds of the 91 unsponsored Japanese ADRs listed before 2008 were actually created in 1983 right before the SEC-mandated Form F-6 that made unsponsored ADRs impossible without the firm's agreement (see the appendix for a discussion of the history of ADR regulation). The large increase in unsponsored programs was picked up by the international financial press, noting the potential negative effects on the numerous Japanese companies that had previously stayed away from U.S. capital markets. Depositary banks also responded with specially

[17] We lose 32 firms due to data limitations.

TABLE 1
Summary Statistics

Panel A: Number of Firms by Country

		Cross-Listed Firms					
					OTC Unsponsored		
Country	All	All	Exchange Traded	OTC Sponsored	All	Apr. 1927–Oct. 9, 2008	Oct. 10, 2008–Nov. 4, 2010
Argentina	81	23	17	6	0	0	0
Australia	1,365	168	14	85	69	9	60
Austria	93	21	1	13	7	0	7
Bahrain	41	2	0	2	0	0	0
Belgium	147	25	1	3	21	0	21
Bermuda	75	34	30	1	3	0	3
Brazil	360	72	27	43	2	0	2
Canada	1,358	183	183	0	0	0	0
Cayman Is.	19	4	4	0	0	0	0
Chile	174	21	16	5	0	0	0
China	2,156	201	102	22	77	1	76
Colombia	34	3	1	2	0	0	0
Czech Rep.	23	2	0	1	1	0	1
Denmark	178	20	3	0	17	6	11
Egypt	91	9	0	9	0	0	0
Finland	125	23	4	1	18	0	18
France	729	79	20	12	47	9	38
Germany	790	68	16	15	37	4	33
Greece	295	33	15	5	13	0	13
Hong Kong	982	195	18	90	87	11	76
Hungary	33	8	2	6	0	0	0
Iceland	10	0	0	0	0	0	0
India	1,935	81	14	67	0	0	0
Indonesia	349	28	2	3	23	0	23
Ireland	72	27	9	9	9	1	8
Israel	216	68	58	3	7	0	7
Italy	291	42	8	6	28	2	26
Japan	3,886	271	26	35	210	91	119
Jordan	44	3	0	3	0	0	0
Kuwait	177	0	0	0	0	0	0
Lithuania	14	1	0	1	0	0	0
Luxembourg	43	13	5	2	6	0	6
Malaysia	953	15	0	12	3	3	0
Mexico	125	46	19	26	1	0	1
Morocco	37	1	0	1	0	0	0
Netherlands	182	41	28	5	8	2	6
New Zealand	122	29	1	1	27	1	26
Norway	234	24	4	5	15	0	15
Pakistan	144	7	0	7	0	0	0
Peru	86	6	2	3	1	0	1
Philippines	201	19	3	9	7	0	7
Poland	314	26	0	11	15	0	15

(Continued)

TABLE 1 —*Continued*

Panel A: Number of Firms by Country

		Cross-Listed Firms					
					OTC Unsponsored		
Country	All	All	Exchange Traded	OTC Sponsored	All	Apr. 1927–Oct. 9, 2008	Oct. 10, 2008–Nov. 4, 2010
Portugal	57	18	2	3	13	0	13
Qatar	39	0	0	0	0	0	0
Russia	248	61	4	57	0	0	0
Saudi Arabia	107	0	0	0	0	0	0
Singapore	631	64	3	19	42	1	41
Slovakia	13	1	0	1	0	0	0
South Africa	337	72	10	29	33	8	25
South Korea	1,116	28	13	15	0	0	0
Spain	157	38	6	4	28	0	28
Sri Lanka	31	1	0	1	0	0	0
Sweden	341	41	2	8	31	2	29
Switzerland	273	36	9	4	23	0	23
Taiwan	1,518	54	11	43	0	0	0
Thailand	514	17	0	14	3	0	3
Turkey	235	36	1	17	18	0	18
UA Emirates	78	0	0	0	0	0	0
U.K.	1,946	204	43	57	104	15	89
Venezuela	36	11	1	10	0	0	0
Total	26,261	2,624	758	812	1,054	166	888

(Continued)

targeted reports to illustrate the new liabilities for these unaware Japanese companies.[18]

Panel B of table 1 compares the characteristics of firms with unsponsored ADR programs to other firms in our sample. Unsponsored ADR firms, as well as exchange- and OTC-traded ADR firms, are significantly larger than firms that are not cross-listed in the United States. Consistent with prior research (Doidge, Karolyi, and Stulz [2004]), foreign firms trading on the major U.S. exchanges are often the largest firms from a particular country. Unsponsored ADR firms also have higher market-to-book ratios, are more profitable, have lower bid–ask spreads, and are more likely to be eligible to list on a major U.S. stock exchange than firms that are not cross-listed. Unsponsored ADR firms do not differ systematically in terms of country-level characteristics.

Overall, the results show that the regulation change had little effect on the number of new voluntary cross-listings. In contrast, the regulation caused an unprecedented number of foreign firms to be forced into the U.S. capital market such that unsponsored ADRs have gone from the rarest type of cross-listing to one of the most prevalent.

[18] See "Rush of Unsponsored ADRs/DRs a Headache for Japanese Companies," Darrel Whitten, (available at http://seekingalpha.com) and "Rule 12g3-2(b) Seminar for Japanese Issuers," J.P. Morgan, November 2008 (available at https://www.adr.com).

TABLE 1—*Continued*

Panel B: Firm- and Country-Level Descriptive Statistics

	Not Cross Listed			Exchange Traded			OTC Sponsored			OTC Unsponsored		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
Firm-Level Variables												
Audit Fees	0.56	0.18	2.03	6.12	1.78	8.24	3.07	0.70	5.36	3.24	1.19	5.05
Bid–ask Spread	4.33	1.63	7.89	1.81	0.45	6.18	2.45	0.68	4.80	0.75	0.39	1.41
Country Industry q	1.65	1.45	0.80	2.06	1.75	0.98	1.69	1.54	0.70	1.69	1.47	0.86
Gov_{41}	0.45	0.42	0.10	0.55	0.54	0.12	0.46	0.45	0.08	0.43	0.41	0.07
IFRS/U.S. GAAP Reporting	0.31	0.00	0.46	0.62	1.00	0.49	0.47	0.00	0.50	0.62	1.00	0.48
Insider Control	0.47	0.48	0.25	0.34	0.30	0.28	0.41	0.40	0.25	0.41	0.40	0.25
Issuer	0.71	1.00	0.46	0.91	1.00	0.28	0.94	1.00	0.24	0.95	1.00	0.23
Leverage	0.22	0.18	0.20	0.20	0.18	0.20	0.23	0.21	0.18	0.24	0.22	0.19
Log (# *Business Segments*)	1.03	1.10	0.61	1.15	1.10	0.60	1.17	1.39	0.66	1.40	1.61	0.55
Log (# *Geographic Segments*)	0.54	0.69	0.63	1.08	1.10	0.73	0.97	1.10	0.69	1.18	1.39	0.71
Log (*Sales*)	4.49	4.57	1.93	6.29	6.58	2.81	6.49	6.87	2.49	7.64	7.84	1.68
Market-to-book	2.27	1.38	2.86	3.08	2.13	3.40	2.51	1.90	2.65	3.19	2.13	3.20
Member of a Major Index	0.23	0.00	0.42	0.48	0.00	0.50	0.56	1.00	0.50	0.82	1.00	0.38
NYSE Listing Eligible	0.14	0.00	0.34	0.46	0.00	0.50	0.54	1.00	0.50	0.78	1.00	0.42
Profitability	0.04	0.05	0.15	0.02	0.06	0.20	0.05	0.06	0.14	0.08	0.07	0.09
Receivables and Inventories	0.32	0.30	0.22	0.19	0.15	0.16	0.26	0.23	0.19	0.27	0.26	0.18
Sales Growth	0.52	0.21	1.34	0.59	0.24	1.40	0.51	0.25	1.27	0.43	0.25	0.91
Tobin's q	1.62	1.17	1.37	2.06	1.50	1.72	1.69	1.37	1.14	1.88	1.39	1.47
Total Assets	1.72	0.15	26.22	55.89	1.42	278.89	25.99	1.74	143.00	21.88	3.92	81.77
U.S. Assets to Total Assets	0.02	0.00	0.10	0.13	0.00	0.25	0.03	0.00	0.13	0.02	0.00	0.08
U.S. Sales to Total Sales	0.03	0.00	0.12	0.15	0.00	0.26	0.03	0.00	0.14	0.02	0.00	0.09

(Continued)

TABLE 1—*Continued*

Panel B: Firm- and Country-Level Descriptive Statistics

	Not Cross Listed			Exchange Traded			OTC Sponsored			OTC Unsponsored		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
Country-Level Variables												
Percentage Cross-list	0.30	0.29	0.15	0.42	0.51	0.18	0.41	0.38	0.17	0.31	0.30	0.14
Anti-self-dealing Index	0.61	0.58	0.22	0.59	0.64	0.22	0.59	0.58	0.27	0.62	0.50	0.25
Disclosure Index	7.74	7.00	1.99	7.61	8.00	2.14	7.57	8.00	2.11	7.83	8.00	2.28

The table reports summary statistics by country. Panel A shows the number of firms, panel B displays firm- and country-level descriptive statistics. If not otherwise stated, firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. *Audit Fees* is measured in million US$. *Bid–ask Spread* is the average daily relative bid–ask spread calculated as ((ask – bid)/0.5 (bid + ask)) measured over one year. *Country Industry q* is the average *Tobin's q* across all firms in a given year, country, and industry. Gov_{41} includes 41 governance attributes for the categories board, audit, antitakeover provisions, compensation, and ownership. It ranges from 0 to 1, with higher values indicating better governance, and is obtained from Aggarwal et al. [2011]. *IFRS/U.S. GAAP Reporting* is a dummy variable equal to one if the firm reports according to IFRS or U.S. GAAP accounting standards, zero otherwise. *Insider Control* is the percentage of closely held shares. This measure captures insider holdings and specifically excludes shares held in a fiduciary capacity by institutional investors. It includes: (1) shares held by officers, directors, and their immediate families; (2) shares held in trust; (3) shares of the company held by any other corporation (except shares held in a fiduciary capacity by banks or other financial institutions); (4) shares held by pension/benefit plans; and (5) shares held by individuals who hold 5% or more of the outstanding shares. *Issuer* is a dummy variable equal to one if the firm has issued long-term debt or equity securities in the past three years, zero otherwise. We use the Worldscope items "Long Term Borrowings" and "Sales or Issue of Stocks" to measure issuance behavior. *Leverage* is total debt to total assets. Log (*Number of Business Segments*) is the logarithm of one plus the number of business segments. Log (*Number of Geographic Segments*) is the logarithm of one plus the number of geographic segments. We use the Worldscope segment data to calculate the number of business and geographic segments. Log (*Sales*) is the logarithm of net sales in million US$. *Market-to-book* is market value of equity divided by book value of equity. *Member of a Major Index* is a dummy variable equal to one if the firm is a member of a major country stock market index, zero otherwise. *NYSE Listing Eligible* is a dummy variable equal to one if the firm meets the listing criteria of the NYSE, and zero otherwise. We follow the NYSE Listing Standards for foreign private issuers to determine NYSE listing eligibility; the minimum listing criteria are: 5,000 shareholders worldwide, 2.5 million public shares, $100 million market value of public shares, and $100 million pretax earnings in the aggregate for the last three fiscal years with a minimum of $25 million in each of the most recent two fiscal years. Specifically, the number of shareholders is measured with the number of common shareholders as indicated in the firm's annual report. *Profitability* measures the return on assets. *Receivables and Inventories* is total receivables plus inventories over total assets. *Sales Growth* is the average two-year sales growth. *Tobin's q* is ((total assets – book value of equity + market value of equity)/total assets). *Total Assets* is measured in billions of US$. *U.S. Assets to Total Assets* is assets in the United States in US$ divided by total world assets in US$. *U.S. Sales to Total Sales* is sales/revenues in US$ realized in the U.S. market divided by total world sales in US$. We use the Worldscope segment data to measure the assets or sales a non-U.S. firm has in the United States. Assets are held and sales are realized in the United States if the segment description contains: America, United States, United States of America, U.S.A., and U.S. Summary statistics are based on the latest fiscal-year-end data reported prior to October 10, 2008. *Percentage Cross-list* is measured as the market capitalization of cross-listed firms in the U.S. capital markets from a particular country to the total market capitalization of firms listed on the domestic stock exchange. The cross-listing data are obtained from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. The *Anti-self-dealing Index* measures the average of ex ante and ex post private control of self-dealing; it potentially ranges from 0 to 1 with higher values indicating better shareholder protection (Djankov et al. [2008]). *Disclosure Index* measures the degree to which investors are protected through disclosures of ownership and financial information. It ranges from 0 to 10, with higher values indicating more disclosure (Djankov et al. [2008]). We include all non-U.S. firms available in Worldscope. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. We drop countries with less than 10 observations.

4. The Economic Consequences of Involuntary Cross-Listings for Foreign Firms

In this section, we examine the economic consequences of new unsponsored ADR programs on foreign firms. We focus on firms with unsponsored ADRs since very few sponsored ADRs were created after the exemption rule.

4.1 UNSPONSORED ADRS AND FIRM VALUE

We quantify the effect of an unsponsored ADR program on firm value by measuring the change in a firm's Tobin's q for years surrounding the firm's involuntary cross-listing. In focusing on Tobin's q, we follow the valuation methodology of Doidge, Karolyi, and Stulz [2009] and Gozzi, Levine, and Schmukler [2008], among others. Examining Tobin's q changes allows us to study the valuation impact over a multiyear time period as well as compare our findings to numerous voluntary cross-listing studies that employ Tobin's q (see Karolyi [2006] for a survey of this literature).

We employ a difference-in-differences framework, where we compare Tobin's q before and after the unsponsored ADR program is established. The difference-in-differences methodology quantifies the change in firm value of firms that experience a new unsponsored ADR program relative to the firms that are not affected by the wave of unsponsored ADRs. To mitigate the potential concern that banks are choosing high q firms, which subsequently mean revert, in our tests we match unsponsored ADR firms with unaffected firms on Tobin's q, country, and two-digit SIC codes measured in the year before the new regulation was implemented.[19] We also create a matched sample using a propensity score matching technique. We use firm size, insider control, market-to-book, leverage, profitability, bid–ask spread, whether the firm is a member of a major index, country, and industry dummies as matching variables for the propensity score approach. All variables are measured in the year before the new regulation took effect. We perform a one-to-one match without replacement for each unsponsored ADR firm in our sample. Following the recent cross-listing literature, we estimate all our models with firm fixed effects to control for time-invariant unobserved factors at the firm level. Since firms rarely change their primary industries, firm fixed effects also pick up time-invariant differences in the dependent variable at the industry level. More specifically, we estimate the following model over the three-year period surrounding the rule change:

$$\begin{aligned} \textit{Tobin's } q_{i,t} = {} & \beta_1 \textit{Unsponsored ADR Firm After Cross-listing}_{i,t} \\ & + \theta\ \textit{Controls}_{i,t} + \mu_{firm} + \lambda_{year} + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

where *Tobin's* $q_{i,t}$ is measured as the sum of total debt plus market value of equity over total assets as in Doidge, Karolyi, and Stulz [2009]. In alternative specifications, we follow Gozzi, Levine, and Schmukler [2008] and replace

[19] We would like to thank an anonymous referee for this suggestion.

Tobin's $q_{i,t}$ with *Relative Tobin's* $q_{i,t}$, calculated as Tobin's q over the average Tobin's q of all firms within the same industry and country. *Unsponsored ADR Firm After Cross-listing*$_{i,t}$ is a dummy variable equal to one if firm i has an unsponsored ADR in year t, zero otherwise. The coefficient on *Unsponsored ADR Firm After Cross-listing* represents a difference-in-differences change in Tobin's q around unsponsored ADR cross-listing relative to firms that do not experience an involuntary cross-listing.[20] *Controls*$_{i,t}$ is a vector of firm-level covariates, μ_{firm} and λ_{year} are firm and year fixed effects, respectively, and $\varepsilon_{i,t}$ is a heteroskedastic error term clustered at the country–industry group level. Following standard specifications in the literature (see, e.g., Doidge, Karolyi, and Stulz [2004, 2009], Gozzi, Levine, and Schmukler [2008]), we include as firm-level controls the log of *Sales*, *Sales Growth*, and *Country Industry q*.[21]

Table 2 shows the regression results. In our first regression model, which is based on a matched sample on Tobin's q, we find that involuntarily cross-listed firms experienced a statistically significant average decrease in Tobin's q of 0.127 (p-value less than 0.01). Given that the average Tobin's q of unsponsored ADR firms prior to cross-listing is 1.98, this represents a decrease of 6.40% in firm value. Consistent with Doidge, Karolyi, and Stulz [2004, 2007], we find that log of *Sales* is negatively related and *Sales Growth* is positively related to Tobin's q. Using relative Tobin's q, model 2 of table 2 shows that firms that were involuntary cross-listed experienced a 4.99% decrease in firm value (p-value less than 0.01). Models 3 and 4 report results based on a propensity score matching. These models suggest a similar drop in Tobin's q and relative Tobin's q of 4.11% and 4.85%, respectively. Models 5 and 6 report additional robustness tests based on the specification of model 3. In model 5, we calculate for each matched firm-pair the difference in the change in Tobin's q pre- and post-cross-listing and drop the top and bottom 1%. In model 6, we include three-month pre-cross-listing stock return momentum as an additional variable in the propensity score matching. The results of both models confirm our findings and show a valuation decline of 3.29% and 3.55%, respectively, upon cross-listing with an unsponsored ADR (please see the online appendix for additional specifications of these models).[22]

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[20] Since we include firm fixed effects, we do not include a dummy variable that identifies unsponsored ADR firms, the treatment group. Such a dummy would be dropped from the regressions.

[21] We also replace the log of *Sales* with the log of *Total Assets* as in Gozzi, Levine, and Schmukler [2008]. This has little impact on our results.

[22] In additional robustness tests, we follow Fahlenbrach, Prilmeier, and Stulz [2012] and examine buy-and-hold abnormal returns as an additional variable to measure capital market consequences of the exemption rule on unsponsored ADR firms. We measure buy-and-hold returns over the September 2008 to September 2010 period to capture the wave of unsponsored ADRs. To adjust for risk, we first estimate betas based on five years of data prior to September 2008 using a market model with value-weighted home country index returns. We then calculate the buy-and-hold abnormal return as the difference

TABLE 2
Firm Valuation Effects for Firms with Unsponsored ADRs

	Matched on Tobin's *q*, Industry, and Country		Propensity Score Matching			
	Tobin's q	*Relative Tobin's q*	*Tobin's q*	*Relative Tobin's q*	*Tobin's q* Drop Outlier Firm-Pairs	*Tobin's q* Add Momentum to Propensity Score Matching
	(1)	(2)	(3)	(4)	(5)	(6)
Unsponsored ADR Firm After Cross-listing	−0.127***	−0.055***	−0.084***	−0.054***	−0.066**	−0.072**
	(−3.67)	(−3.16)	(−2.65)	(−3.86)	(−2.26)	(−2.18)
Country Industry q	0.934***		0.981***		0.984***	1.019***
	(12.77)		(13.96)		(13.77)	(11.84)
Log (*Sales*)	−0.176**	−0.061	−0.243**	−0.077	−0.113	−0.343***
	(−1.99)	(−1.30)	(−2.17)	(−1.31)	(−1.56)	(−3.41)
Sales Growth	0.064**	0.027*	0.098***	0.042***	0.079**	0.090**
	(2.12)	(1.87)	(2.78)	(2.72)	(2.22)	(2.17)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	3,810	3,810	4,122	4,122	4,038	4,056
Adjusted R^2	0.41	0.01	0.49	0.02	0.52	0.49
Average Change in Tobin's *q*	−6.40%	−4.99%	−4.11%	−4.85%	−3.29%	−3.55%

The table shows firm valuation effects for firms with unsponsored ADRs using matched samples. In models 1 and 2, we match firms based on Tobin's *q*, country, and two-digit SIC codes measured in the year before the new regulation was implemented. In models 3 through 6, we match firms based on a propensity score approach using firm size, insider control, market-to-book, leverage, profitability, bid–ask spread, whether the firm is a member of a major index, country, and industry dummies as matching variables. In model 5, we calculate for each matched firm-pair the difference in the change in Tobin's *q* pre- and post-cross-listing and drop the top and bottom 1%. In model 6, we include three-month pre-cross-listing stock return momentum as an additional variable in the propensity score matching. We use difference-in-differences regressions to measure the valuation effect for firms with unsponsored ADRs for the three-year period surrounding the rule change. The dependent variables are *Tobin's q* and *Relative Tobin's q*. *Tobin's q* is ((total assets – book value of equity + market value of equity)/total assets) and *Relative Tobin's q* is Tobin's *q* divided by the average Tobin's *q* in a given year of all domestic firms within the same industry in the firm's home country. *Unsponsored ADR Firm After Cross-listing* is a dummy variable equal to one if the firm is cross-listed via an unsponsored ADR in a particular year, zero otherwise. *Country Industry q* is the average Tobin's *q* across all firms in a given year, country, and industry. Log (*Sales*) is the logarithm of net sales in million US$. *Sales Growth* is the average two-year sales growth. We include all non-U.S. firms available in Worldscope. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. All variables are winsorized at 1% and 99% levels. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. All models are estimated with firm fixed effects and include year dummies (not reported). Standard errors are robust to heteroskedasticity and clustered at the country–industry group level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The last row of the table shows the average change in Tobin's *q* upon cross-listing implied by the coefficient estimate of *Unsponsored ADR Firm After Cross-listing* and firms' Tobin's *q* prior to cross-listing.

The results in table 2 suggest that foreign firms experienced a significant wealth destruction of 3.3–6.4% (depending on specification) upon being forced into the U.S. capital markets. As mentioned above, in our online appendix we report results from additional specifications and show a valuation loss in the range of 3.3–5.2%. This is consistent with the hypothesis that, for these firms, the costs of being involuntarily cross-listed in the United States exceeded the benefits.[23] By eliminating their preferred listing strategy, the exemption rule had a significant negative effect on those firms. This finding of wealth destruction for involuntary cross-listing stands in sharp contrast to the positive effects of voluntary cross-listing. In comparison, Doidge, Karolyi, and Stulz [2009] document a statistically significant valuation premium in Tobin's q of 4% for voluntary OTC cross-listings. Overall, our results are consistent with involuntary cross-listings imposing significant costs on firms, rather than the alternative hypothesis of involuntary cross-listings lowering the private benefits of control.[24]

4.2 AUDIT FEES, LITIGATION RISK, AND UNSPONSORED ADRS

As discussed above, the expected costs associated with an increase in litigation risk is one of the most often cited drawbacks of an unsponsored ADR program. To provide further evidence on the role of litigation risk as a potential channel through which unsponsored ADRs impose costs on firms, we investigate changes in audit fees as well as the role of ex ante litigation risk in explaining the valuation change surrounding involuntary cross-listing.

In examination of audit fees, we follow Choi et al. [2009] and gather audit fee data from the Worldscope database. We exploit a difference-in-differences framework similar to the one previously employed in our Tobin's q analysis, including firm fixed effects. We compare audit fees before and after an unsponsored ADR program to audit fees for firms that were

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between the firm's buy-and-hold return (in excess of the risk-free rate) and the firm's CAPM-beta times the value-weighted home country index return (in excess of the risk-free rate). Following Fahlenbrach, Prilmeier, and Stulz [2012], we regress buy-and-hold abnormal returns on a dummy variable that identifies unsponsored ADR firms and controls for firm size, market-to-book ratio, leverage, and past stock returns. The findings are consistent with our prior results based on Tobin's q—unsponsored ADR firms experience on average a –3.7% annualized return relative to the control firms over the period when the unsponsored ADRs were created. An online appendix to this paper can be downloaded at http://research.chicagobooth.edu/arc/journal/onlineappendices.aspx.

[23] In the next section, we further provide a back of the envelop calculation showing that these valuation changes can result from reasonable unsponsored ADR cost estimates.

[24] In additional unreported tests, we examine whether the change in Tobin's q after involuntary cross-listing depends on the level of expected agency problems in the firm. Using the Gov_{41} index (Aggarwal et al. [2011]), we do not find that changing Tobin's q after involuntary cross-listing is significantly related to expected agency problems, again consistent with the cost rather than the private benefits hypothesis for our sample firms. This finding holds when we look at the full sample and when we focus our analysis on the firms with the highest growth prospects only.

not involuntary cross-listed during the three-year period surrounding the rule change. As firm-level control variables, we use the log of *Total Assets*, *Leverage*, *Profitability*, *Receivables and Inventories*, an *Issuer* dummy capturing whether the firm issued any debt or equity in the past three years, and the log of the *Number of Business Segments* and the *Number of Geographic Segments*,[25] as Choi et al. [2009] find these to be important in explaining audit fee premiums for cross-listed firms.

Table 3 presents the results. Model 1 uses a matched sample based on preregulation Tobin's *q*, industry, and country, and model 2 uses a matched sample based on a propensity score matching technique. In both models, the coefficient on *Unsponsored ADR Firm After Cross-listing* is positive and significant, indicating that an unsponsored ADR program is associated with an increase in audit fees. In model 1, for example, the coefficient estimate shows that audit fees increase, on average, by 6.6% upon an unsponsored ADR cross-listing. This increase is consistent with the cross-listing audit premium prior research has documented in sponsored (voluntary) cross-listings. Choi et al. [2009] report that cross-listed firms are charged a 12% premium, while Seetharaman, Gul, and Lynn [2002] document that U.K. firms with exchange-traded ADRs pay a 20% audit premium over non-cross-listed U.K. firms. Given the previously documented link between audit fees and litigation risk, our results suggest that firms involuntarily cross-listed experience an increase in U.S. litigation risk.

To test the link between litigation risk and firm valuation decline for unsponsored ADR firms, we regress the *Change in Tobin's q* on the *Change in Audit Fees* for firms with unsponsored ADRs. Table 4 shows the results. In model 1, we include firm controls, industry dummies, and country controls. The *Change in Audit Fees* is significantly negatively associated with the *Change in Tobin's q* for unsponsored ADR firms, which indicates that an increase in audit fees is correlated with a decrease in Tobin's *q*. In model 2, we show that our results hold when we also control for the change in risk over the regulation change period, since a potential concern is that the change in audit fees could be driven by a risk change in the firms that also drives the decline in Tobin's *q*. The *Change in Risk* is the log of the standard deviation of monthly stock returns measured in 2009 divided by the standard deviation of monthly stock returns measured in 2007. Further, in unreported tests, we find that our results hold when we measure risk with the Capital Asset Pricing Model (CAPM) beta or idiosyncratic risk.

Finally, since we cannot completely rule out the hypothesis that firms increased the amount of audit services resulting in greater audit fees (instead of auditors responding to greater litigation risk by increasing the audit fees, without increasing the audit service amount per se), we investigate a measure of ex ante litigation risk and test whether firms that had greater ex ante

[25] We use the Worldscope segment data to calculate the number of business and geographic segments.

TABLE 3
Unsponsored ADRs and Audit Fees

	Matched on Tobin's *q*, Industry, and Country	Propensity Score Matching
	(1)	(2)
Unsponsored ADR Firm After Cross-listing	0.066**	0.061**
	(2.28)	(1.97)
Log (*Total Assets*)	0.444***	0.347***
	(8.19)	(5.24)
Leverage	0.272*	0.399*
	(1.66)	(1.81)
Profitability	−0.050	0.248
	(−0.41)	(0.61)
Receivables and Inventories	−0.050	0.564***
	(−0.23)	(2.76)
Issuer	−0.210**	−0.179*
	(−2.12)	(−1.88)
Log (*Number of Business Segments*)	−0.062	−0.092**
	(−1.48)	(−2.11)
Log (*Number of Geographic Segments*)	−0.002	0.090
	(−0.06)	(1.58)
Firm Fixed Effects	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	2,196	2,898
Adjusted R^2	0.12	0.07

The table shows difference-in-differences regression estimates of the effect of unsponsored ADRs on a firm's audit fees for the three-year period surrounding the rule change. We perform the analysis based on matched samples. In model 1, we match firms base on Tobin's *q*, country, and two-digit SIC codes measured in the year before the new regulation was implemented. In model 2, we match firms based on a propensity score approach using firm size, insider control, market-to-book, leverage, profitability, bid–ask spread, whether the firm is a member of a major index, country, and industry dummies as matching variables. The dependent variable is the logarithm of *Audit Fees* in million US$ obtained from Worldscope at the firm's fiscal year end. *Unsponsored ADR Firm After Cross-listing* is a dummy variable equal to one if the firm is cross-listed via an unsponsored ADR in a particular year, zero otherwise. Log (*Total Assets*) is the logarithm of total assets in million US$. *Leverage* is total debt to total assets. *Profitability* measures the return on assets. *Receivables and Inventories* is total receivables plus inventories over total assets. *Issuer* is a dummy variable equal to one if the firm has issued long-term debt or equity securities in the past three years, zero otherwise. We use the Worldscope items "Long Term Borrowings" and "Sales or Issue of Stocks" to measure issuance behavior. Log (*Number of Business Segments*) is the logarithm of one plus the number of business segments. Log (*Number of Geographic Segments*) is the logarithm of one plus the number of geographic segments. We use the Worldscope segment data to calculate the number of business and geographic segments. We include all non-U.S. firms available in Worldscope. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. All variables are winsorized at the 1% and 99% levels. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. All models are estimated with firm fixed effects and include year dummies (not reported). Standard errors are robust to heteroskedasticity and clustered at the country–industry group level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

litigation risk experienced a greater drop in Tobin's *q* upon cross-listing. We calculate the variable *Litigation Risk* as the probability of litigation estimated based on the coefficients in model 3 of table 7 of Kim and Skinner [2012] and firm-level variables measured prior to the regulation change and standardized to reflect the same mean and standard deviation as the variables

TABLE 4
Firm Value, Audit Fees, and Litigation

	Change in Tobin's q			
	(1)	(2)	(3)	(4)
Change in Audit Fees	−0.047**	−0.054***		
	(−2.15)	(−3.10)		
Litigation Risk			−0.606**	−0.633**
			(−2.49)	(−2.54)
Change in Risk		−0.048***		−0.040**
		(−2.96)		(−2.49)
Log (*Sales*)	0.026***	0.026***	0.046***	0.049***
	(4.51)	(2.72)	(3.38)	(3.42)
Sales Growth	−0.040	−0.038	−0.051	−0.051
	(−1.45)	(−0.89)	(−1.60)	(−1.59)
Country Industry q	−0.074***	−0.070***	−0.030	−0.035*
	(−3.14)	(−2.94)	(−1.56)	(−1.70)
Industry Dummies	Yes	Yes	Yes	Yes
Number of Observations	504	472	642	642
R^2	0.25	0.25	0.29	0.29

The table shows regression estimates of the *Change in Tobin's q* on the *Change in Audit Fees* between the years 2007 and 2009. The dependent variable is the *Change in Tobin's q* calculated as Log (*Tobin's* q_{2009} / *Tobin's* q_{2007}). The *Change in Audit Fees* is measured as Log (*Audit Fees*$_{2009}$ / *Audit Fees*$_{2007}$). Tobin's *q* is [(total assets – book value of equity + market value of equity)/total assets]. The *Change in Risk* is the log of the standard deviation of monthly stock returns measured in 2009 divided by the standard deviation of monthly stock returns measured in 2007. *Litigation Risk* is the probability of litigation estimated based on the coefficients in model 3 of table 7 of Kim and Skinner [2012] and firm-level variables measured prior to the regulation change and standardized to reflect the same mean and standard deviation as the variables reported in table 6 of Kim and Skinner [2012]. Log (*Sales*) is the logarithm of net sales in million US$. *Sales Growth* is the average two-year sales growth. *Country Industry q* is the average Tobin's *q* across all firms in a given year, country, and industry. We include all firms for which an unsponsored ADR was established. All variables are winsorized at the 1% and 99% levels. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. Industry dummies and random country effects are included (not reported). We verify that the Hausman test does not reject the null that country effects are random. Standard errors are robust to heteroskedasticity and clustered at the country level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

reported in table 6 of Kim and Skinner [2012]. Since the ex ante litigation risk proxy is estimated based on variables measured prior to the cross-listing event, the measure of litigation risk is not affected by the drop in firm value. The results of models 3 and 4 in table 4 show that firms that have greater ex ante litigation risk have a greater drop in firm value upon cross-listing. This result is also robust when we use a litigation risk measure that sorts firms into 10 groups based on the variable *Litigation Risk*, where the variable ranges from 1 to 10 with higher values indicating greater litigation risk (not shown).

Overall, we find that audit fees increase when firms are involuntarily cross-listed and the audit fee increase is significantly associated with the market value decline. Further, we show that the decline in firm value is correlated with greater ex ante litigation risk. Taken together, the findings suggest that litigation risk is one of the channels through which the regulation

change imposed costs on foreign firms. In addition to the above tests, a simple back of the envelope calculation suggests that the magnitude of the effect we document is within reason. If we make the potentially aggressive assumption that the probability of a lawsuit is independently and identically distributed each year, and employ an annual probability of a U.S. securities lawsuit for foreign firms of 2.16% and an associated valuation loss of 15.7% (numbers are from Cheng, Srinivasan, and Yu [2012] and Gande and Miller [2012], respectively), then the present value of these annual expected litigation costs as a percentage of firm value ranges from 2.3% to 6.8% using a 15% and 5% discount rate, respectively.[26]

5. *Firms' Responses to Unsponsored ADR Programs*

An important approach when determining whether a regulatory act has been costly or beneficial is to examine firms' responses to the regulation change (Bushee and Leuz [2005]). Our finding that there was no increase in voluntary cross-listings is consistent with the hypothesis that the benefits of the regulation change to foreign firms were minimal. Moreover, our valuation and litigation risk tests suggest that the costs imposed by the regulation change were significant. Therefore, we next investigate firms' responses to the imposition of costs by the new regulation.

How can firms respond to an involuntary cross-listing? The most likely response would be to try to reverse the involuntary cross-listing in order to remain a non-cross-listed firm. Such a response, however, is nearly impossible. If firms simply remove their Web site disclosures to fight the unsponsored ADR programs, firms may become subject to full SEC registration and disclosure (as well as compliance with the Sarbanes-Oxley Act of 2002) under the 1933/34 Securities and Exchange acts. This is because firms avoid registration by having less than 300 U.S. shareholders or by maintaining the 12g3-2b exemption and fulfilling the Web site disclosure requirements on a continuous basis. Once an unsponsored ADR is created, it is likely that the firm will have more than 300 U.S. shareholders and, therefore, will have to maintain its Web site disclosures. While firms can negotiate with depositary banks to cancel the unsponsored ADR, the depositary is under no obligation to follow firms' wishes. Further, as discussed in section 2.1, because of a change in (listing) property rights, firms cannot effectively resolve this situation and revert to the non-cross-listing state by making side payments to depositary banks. Overall, firms cannot easily avoid the creation of unsponsored ADRs.

While the regulation makes it difficult for firms to continue with their preferred listing strategy of not having a U.S. cross-listing, firms can

[26] The valuation effect will be in the range of 1.3–3.8% if we use the most conservative estimate for legal penalties of 8.8% as reported in Karpoff, Lee, and Martin [2008]. They find that firms lose 38% of their value when news of misconduct is reported, and they estimate that 8.8% reflects losses due to SEC and Department of Justice fines and settlements.

respond to the unsponsored ADR program by converting (upgrading) to a sponsored OTC cross-listing, a move several law firms have suggested to foreign firms to control their litigation risk.[27] However, while firms can partially limit their litigation risk exposure by upgrading to a sponsored ADR program through exculpatory provisions inserted into the deposit agreement, this approach can further increase their U.S. shareholder base and commitment to U.S. listings, which presumably the firm had avoided in the first place because the costs exceeded the benefits. We find only 29 cases in which a company with unsponsored ADRs "upgraded" its listing to a sponsored ADR program during our sample period, suggesting that the costs of a sponsored OTC listing outweigh the benefits for these firms and that they could actually be worse off responding to the involuntary cross-listing with a sponsored program.

We test this hypothesis using a valuation model to estimate the potential valuation impact of a sponsored program to a firm with an unsponsored program.[28] We start with the standard cross-listing valuation regression as in Doidge, Karolyi, and Stulz [2009] for sponsored OTC ADR firms in 2009 (after the creation of unsponsored ADRs). We then use the estimated coefficients for sponsored firms to form a predicted Tobin's q for all firms that became unsponsored ADR firms. This fitted value is an estimate of the value the unsponsored ADR firm would have if it chose to create a sponsored OTC-listed ADR. We then take the difference between this predicted value and the actual (observed) value for the sample of unsponsored ADRs to measure the change in value for these unsponsored ADR firms if they elected to become sponsored OTC-listed ADRs. As table 5 reports, we find that the average difference between the predicted and observed Tobin's q is –0.10 to –0.18, corresponding to a –12% to –7.3% difference (depending on specification). Therefore, unsponsored firms do indeed have higher average Tobin's q than the predicted Tobin's q if they chose to convert to a sponsored ADR program in response. This suggests that unsponsored firms will lose relatively more value if they upgrade to a sponsored ADR program in 2009. This is also consistent with the low number of firms that choose to upgrade their unsponsored ADR to a sponsored program.[29]

The evidence in this section highlights the difficulty firms face in avoiding the creation of unsponsored ADRs. Our valuation analysis suggests that, even though the involuntary cross-listing destroys value, responding by creating a sponsored OTC program would result in even greater value destruction.

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[27] See "ADR Programs: Impact of Unsponsored Programs on Non-U.S. Issuers." PLC Corporate & Securities.

[28] We would like to thank the editor for suggesting this test.

[29] We obtain similar results if we run the "as-if" analysis in 2008 on the subset of firms that were involuntarily listed after 2008 and, therefore, were in a position at the end of 2008 to respond with a sponsored ADR program to "immunize" against an eventual unsponsored ADR program.

TABLE 5
Firm Valuation Predictions from a Sponsored OTC ADR Model

	Tobin's q		
	(1)	(2)	(3)
Log (*Sales*)	−0.043	−0.058*	−0.084**
	(−1.47)	(−1.75)	(−2.25)
Sales Growth	−0.015	−0.032	−0.075
	(−0.29)	(−0.57)	(−0.28)
Global Industry q	1.063***	1.009***	0.990***
	(4.87)	(4.54)	(3.59)
Insider Control		0.105	
		(0.67)	
Gov_{41}			0.038
			(0.08)
Country Dummies	Yes	Yes	Yes
Number of Sponsored ADR Firms	841	760	228
Adjusted R^2	0.08	0.08	0.19
Number of Unsponsored ADR Firms	758	733	387
Predicted Tobin's q – Effective Tobin's q	−0.18	−0.18	−0.10

The table estimates a standard cross-listing valuation regression (as in Doidge, Karolyi, and Stulz [2009], including country fixed effects) for sponsored OTC ADR firms in the year after the creation of unsponsored ADRs. The dependent variable is *Tobin's q* defined as ((total assets – book value of equity + market value of equity)/total assets). Log (*Sales*) is the logarithm of net sales in million US$. *Sales Growth* is the average two-year sales growth. *Global Industry q* is the median Tobin's *q* across all firms in a given year and industry. *Insider Control* is the percentage of closely held shares. Gov_{41} includes 41 governance attributes for the categories board, audit, antitakeover provisions, compensation, and ownership. It ranges from 0 to 1, with higher values indicating better governance, and is obtained from Aggarwal et al. [2011]. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. Standard errors are robust to heteroskedasticity and clustered at the country–industry group level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. We use the estimated coefficients for sponsored OTC ADR firms (reported in the table) to form predicted Tobin's *q* for all unsponsored ADR firms, and report the average difference between the predicted Tobin's *q* and the effective (observed) Tobin's *q* for the unsponsored ADR firms.

6. *Depositary Banks' Responses to the Exemption Rule*

Table 6 reports the number of unsponsored ADR programs created by depositary banks.[30] Depositary banks created 1,608 unsponsored ADR facilities for 888 cross-listed firms. The last three columns of table 1 highlight that 507 firms had more than one depositary bank establish an unsponsored ADR program. Three of the four major depositary banks were active in the creation of unsponsored ADRs following the new rule. Bank of New York issued a total of 819 new unsponsored ADRs, followed by Deutsche Bank with 425, and Citigroup with 317. In contrast, J.P. Morgan has largely resisted creating unsponsored ADRs, citing the potentially adverse impact on some firms.[31] To assess the trading activity of these programs, we obtain U.S. unsponsored ADR trading volume data for

[30] Those numbers are based on the sample firms with Worldscope coverage.

[31] "Some depositary banks have unilaterally opened unsponsored ADR programs based solely on an issue for qualifying for automatic registration and reporting exemption, among

TABLE 6

Number of Unsponsored ADR Programs by Depositary Banks

Country	Number of Unsponsored ADR Programs Established by Depositary Banks (October 10, 2008–November 4, 2010)					Number of Unsponsored ADR Programs per Firm (October 10, 2008–November 4, 2010)		
	All	Bank of New York	Deutsche Bank	Citigroup	J.P. Morgan	One	Two	Three or Four
Australia	111	59	28	23	1	20	29	11
Austria	11	7	4	0	0	3	4	0
Belgium	34	21	9	3	1	10	9	2
Bermuda	5	3	2	0	0	1	2	0
Brazil	2	2	0	0	0	2	0	0
China	161	73	46	35	7	19	34	23
Czech Republic	1	1	0	0	0	1	0	0
Denmark	20	11	7	2	0	3	7	1
Finland	33	18	9	6	0	8	5	5
France	85	37	17	27	4	10	12	16
Germany	67	32	15	16	4	12	10	11
Greece	15	13	0	2	0	11	2	0
Hong Kong	158	72	46	38	2	19	33	24
Indonesia	29	23	2	4	0	18	4	1
Ireland	10	8	2	0	0	6	2	0
Israel	15	7	1	7	0	0	6	1
Italy	48	24	11	11	2	8	15	3
Japan	245	74	101	61	9	40	41	38
Luxembourg	9	5	2	2	0	4	1	1
Mexico	1	1	0	0	0	1	0	0
Netherlands	10	6	2	1	1	3	2	1
New Zealand	29	26	1	2	0	23	3	0
Norway	23	14	8	1	0	8	6	1
Peru	1	1	0	0	0	1	0	0

(Continued)

TABLE 6—*Continued*

Country	Number of Unsponsored ADR Programs Established by Depositary Banks (October 10, 2008–November 4, 2010)					Number of Unsponsored ADR Programs per Firm (October 10, 2008–November 4, 2010)		
	All	Bank of New York	Deutsche Bank	Citigroup	J.P. Morgan	One	Two	Three or Four
Philippines	7	7	0	0	0	7	0	0
Poland	16	15	1	0	0	14	1	0
Portugal	18	13	2	3	0	9	3	1
Singapore	73	41	24	7	1	15	21	5
South Africa	37	25	2	8	2	16	6	3
Spain	41	28	9	3	1	17	9	2
Sweden	41	28	9	4	0	20	6	3
Switzerland	49	23	7	14	5	8	9	6
Thailand	4	3	0	1	0	2	1	0
Turkey	33	18	7	8	0	7	7	4
United Kingdom	166	80	51	28	7	35	36	18
Total	1,608	819	425	317	47	381	326	181

The table reports the number of established unsponsored ADR programs. We include all non-U.S. firms available in Worldscope. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. The cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings.

our sample firms we were able to match to Datastream. The U.S. trading volume of new unsponsored ADRs increased from $0 in 2007, to $2 billion in 2008 (October–December), to almost $10 billion in 2010. In contrast, trading volume in sponsored OTC ADRs decreased from $59 billion in 2008 to $43 billion in 2010.

Preliminary evidence on benefits to depositary banks of creating unsponsored ADR programs is available by examining unsponsored ADR creation for firms that recently terminated their sponsored ADR programs. Studies by Fernandes, Lel, and Miller [2010] and Doidge, Karolyi, and Stulz [2010] document that in recent years many firms have begun to delist and deregister their ADR programs. Table 7 shows 22 firms that had delisted and deregistered (thus, voluntarily deciding to exit the U.S. market presumably because the costs of a U.S. cross-listing exceeded the benefits) were subsequently "pulled back" into the U.S. market when depositary banks created unsponsored ADR programs under the new Rule 12g3-2(b).[32] Interestingly, table 7 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. The new rule, therefore, further limits the flexibility of foreign firms in their choice to leave the U.S. market. Taken together with the valuation results presented in table 2, this suggests that depositary banks are motivated to create unsponsored ADRs that will attract ADR investors and, therefore, increase depositary fees, even in instances where it is not in the firms' best economic interest. We next test this by examining how proxies for depositary bank- and firm-specific costs and benefits are related to their propensity to create unsponsored ADR programs. Our tests employ cross-sectional probit regressions of the determinants of depositary banks' decision to create unsponsored ADR programs after the exemption rule was passed.

For depositary banks, one essential benefit from creating unsponsored ADRs is fee income.[33] Since fee income is an increasing function of U.S. investor demand, we employ proxies from the home bias literature that

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other requirements for the recently amended Rule 12g3-2(b). However, ADR programs are not appropriate for all issuers in our opinion. The potential to attract U.S. investors is one of several factors to consider before initiating an ADR program. Additionally J.P. Morgan believes that an ADR program—even one that is unsponsored—should be a product of partnership and understanding." See "Unsponsored ADR programs," J. P. Morgan, November 2008.

[32] There are other examples of firms that instructed the depositary bank to cancel their sponsored ADR programs, but have not yet *deregistered* from the SEC. Instead of simply canceling the sponsored ADR program and letting the firm exit the U.S. market, depositary banks terminated the sponsored program, and instantly created an involuntary cross-listing for the same firms and offered shareholders an opportunity to exchange the old sponsored ADR for the new unsponsored ADR.

[33] Consistent with fee income being a benefit to the banks, the CEO of Bank of New York Mellon stated regarding its plans for the creation of unsponsored ADRs that, of the thousands of non-U.S. companies without ADR programs, Bank of New York Mellon selected those likely to attract the most interest from investors. These included companies that are constituents of local indexes that investors like to benchmark and companies that were suggested by major

TABLE 7

Unsponsored ADR Programs of Firms that Voluntarily Terminated a Sponsored ADR Program

Firm	Country	Exchange	SEC Deregistration Date	Effective Date of Unsponsored ADR	Depositary Bank(s)	
					Sponsored ADR	Unsponsored ADR
Adecco	Switzerland	NYSE	6/4/2007	10/10/2008	JPMC	JPMC, BoNY, DB, Citi
Alstom	France	NYSE	6/21/2007	10/15/2008	BoNY	BoNY, Citi, JPMC, DB
Autonomy Corporation	United Kingdom	OTC	7/13/2007	8/25/2010	BoNY	Citi, DB
Banco Comercial Portugues	Portugal	NYSE	10/16/2003	10/22/2008	BoNY	BoNY
Banco Espirito Santo	Portugal	OTC	6/30/2004	10/22/2008	BoNY	BoNY, DB
Brilliance China Automotive	China	OTC	3/2/2009	2/3/2010	BoNY	BoNY
Cable & Wireless	United Kingdom	NYSE	7/12/2007	10/10/2008	Citi	BoNY, DB, Citi
Cookson Group	United Kingdom	OTC	7/31/2007	10/22/2009	Citi	DB, BoNY
CSR Limited	Australia	OTC	7/27/2004	11/3/2008	JPMC	BoNY, DB,
Fisher & Paykel Healthcare	New Zealand	NASDAQ	2/28/2003	10/22/2008	JPMC	BoNY, Citi
Fletcher Challenge Building	New Zealand	NYSE	5/8/2008	10/22/2008	Citi	BoNY, Citi
Groupe Pernod Ricard	France	OTC	6/6/2007	10/10/2008	BoNY	BoNY, Citi
Louis Vuitton, Moet Hennessy	France	OTC	3/8/2004	11/24/2008	BoNY	Citi
Mitchells & Butlers	United Kingdom	NYSE	6/6/2007	10/10/2008	BoNY	BoNY, DB, Citi
Modern Times Group	Sweden	NASDAQ	1/9/2004	9/30/2010	BoNY	Citi
RSA Insurance	United Kingdom	NYSE	9/27/2007	10/16/2008	Citi	BoNY, DB, Citi
Scania Aktiebolag	Sweden	NYSE	1/29/2003	10/16/2008	Citi	BoNY
Swedish Match	Sweden	NASDAQ	6/5/2007	10/16/2008	BoNY	BoNY
Tele2	Sweden	NASDAQ	6/29/2006	10/16/2008	BoNY	BoNY, DB
Teliasonera	Sweden	NASDAQ	6/7/2007	10/16/2008	Citi	BoNY, DB, Citi
Vivendi	France	NYSE	11/6/2007	10/10/2008	BoNY	BoNY, JPMC, Citi, DB
Wharf Holdings	Hong Kong	OTC	5/31/2005	10/17/2008	BoNY	BoNY, DB

The table reports newly established unsponsored ADR programs of firms that voluntarily terminated their sponsored ADR programs and deregistered from the SEC. The data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings.

are important for explaining U.S. investor holdings of non-U.S. securities (see, e.g., Kang and Stulz [1997], Dahlquist and Robertson [2001], Leuz, Lins, and Warnock [2009]). These include proxies at the firm level (firm size, leverage, growth opportunities, insider control, transactions costs, percentage of U.S. sales/assets,[34] and member of a major stock market index) and at the country level (number of cross-listed firms and proxies for home country investor protection laws). The home bias literature suggests that investors, and, therefore, fee-motivated depositary banks, will choose firms that are larger, more profitable, have lower transactions costs, meet current NYSE listing requirements, have a higher percentage of U.S. sales and assets, and are a member of a major stock index. Since investor demand and banks' fees are also likely to be increasing in a countries' scarcity of stocks for purchase in ADR form, we also include in our tests a variable that is the percentage of market capitalization of firms in a country that are available in the United States to U.S. investors.

Table 8 presents the results. In the baseline model 1, we find that firm size and *Market-to-book* are positively and significantly related to the decision to create an unsponsored ADR program. Therefore, depositary banks choose the largest and highest valued firms, which is consistent with them choosing firms most attractive to U.S. investors. We also find that the coefficient on *Bid–ask Spread* is negative and significant, which indicates that depositary banks choose firms with lower information asymmetry and lower costs to transact, and hence are more likely to trade and generate fee income. Moreover, the results show that, if a firm currently meets the NYSE listing requirements and prepares financial statements in compliance with IFRS or U.S. GAAP standards, it is also more likely to be involuntarily cross-listed. This is consistent with depositary banks choosing firms that are eligible to upgrade their unsponsored ADR program to a sponsored ADR program, which would also generate fee income to the bank. The coefficient on *Insider Control* is significantly negative, suggesting that depositary banks choose firms with fewer potential governance problems.

In models 2 through 5, we find that greater U.S. presence, index membership, and smaller proportion of firm availability to U.S. investors are all significantly associated with the probability of being involuntary cross-listed. Models 6 and 7 show that firms from poor investor protection and disclosure regimes are less likely to be cross-listed by depositary banks.

While the results of these tests show that banks choose firms that are most likely to be of interest to U.S. investors, the benefits of the heightened demand could incur not only to the depository banks but also to the foreign firms underlying the unsponsored ADR programs. Therefore, in our next

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investor clients of the bank (see, "The Lure of Foreign Shares" by Gordon Platt, *Global Finance* 23, 2009).

[34] We use the Worldscope segment data to measure the assets or sales a non-U.S. firm has in the United States. Assets are held and sales are realized in the United States if the segment description contains: America, United States, United States of America, U.S.A., and U.S.

TABLE 8

Cross-Sectional Probit Regressions: Determinants of Unsponsored ADRs

	Unsponsored ADR									*Multiple Unsponsored ADRs*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log (*Total Assets*)	0.046***	0.047***	0.049***	0.041***	0.034***	0.036***	0.035***	0.037***	0.042***	0.043**
	(16.61)	(14.57)	(15.02)	(15.43)	(15.96)	(16.37)	(16.28)	(8.41)	(12.15)	(2.18)
Insider Control	−0.040***	−0.040***	−0.037***	−0.035***	−0.002	0.012	0.001	−0.042***	−0.044***	−0.138
	(−3.69)	(−3.13)	(−2.62)	(−3.30)	(−0.26)	(1.43)	(0.15)	(−3.52)	(−3.66)	(−1.47)
Market-to-book	0.006***	0.005***	0.006***	0.005***	0.005***	0.004***	0.004***	0.007***	0.007***	0.005
	(5.97)	(4.70)	(5.85)	(5.55)	(6.79)	(6.06)	(6.31)	(6.34)	(6.34)	(0.84)
Leverage	−0.035***	−0.040**	−0.041**	−0.026**	−0.015	−0.015	−0.017	−0.016	−0.017	−0.179*
	(−2.58)	(−2.29)	(−2.26)	(−1.96)	(−1.31)	(−1.33)	(−1.48)	(−1.04)	(−1.07)	(−1.75)
Profitability	0.057	0.035	0.023	0.057	0.116***	0.086**	0.101***	0.050	0.050	0.327
	(1.45)	(0.81)	(0.54)	(1.40)	(3.07)	(2.49)	(2.76)	(1.21)	(1.06)	(1.56)
Bid–ask Spread	−0.010***	−0.021***	−0.012**	−0.008**	−0.006***	−0.008***	−0.006***	−0.011**	−0.011**	−0.028**
	(−2.79)	(−3.21)	(−2.04)	(−2.39)	(−3.04)	(−3.44)	(−3.26)	(−2.53)	(−2.45)	(−1.96)
NYSE Listing Eligible	0.037***	0.038***	0.038***	0.031***	0.031***	0.030***	0.031***	0.045***	0.042***	0.008
	(6.14)	(5.45)	(5.09)	(5.30)	(6.80)	(6.58)	(6.71)	(6.32)	(5.95)	(0.14)
IFRS/U.S. GAAP Reporting	0.042***	0.041***	0.039**	0.035***	0.042***	0.046***	0.043***	0.030**	0.030**	0.120
	(3.69)	(2.76)	(2.43)	(3.18)	(7.63)	(8.99)	(8.57)	(2.04)	(2.05)	(1.29)
U.S. Sales to Total Sales		0.081***								
		(2.94)								
U.S. Assets to Total Assets			0.099***							
			(3.59)							
Member of a Major Index				0.045***						
				(6.70)						
Percentage Cross-list					−0.031*					
					(−1.69)					
Anti-self-dealing Index						0.079***				
						(7.26)				

(Continued)

TABLE 8—*Continued*

	Unsponsored ADR									*Multiple Unsponsored ADRs*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Disclosure Index							0.006***			
							(5.49)			
Litigation Risk								0.278***		
								(2.66)		
Litigation Risk Group									0.006*	
									(1.85)	
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Number of Observations	9,361	6,859	6,083	9,361	11,942	11,858	11,903	7,591	7,591	665
Pseudo-R^2	0.47	0.48	0.48	0.48	0.40	0.41	0.40	0.48	0.48	0.23

The table reports probit regression results. Models 1–9 estimate the probability that a firm has an unsponsored ADR program established after the new SEC regulation became effective (October 10, 2008). The dependent variable *Unsponsored ADR* is a dummy variable equal to one if unsponsored ADR programs were established for a particular firm, zero otherwise. Model 10 estimates the probability that depositary banks create multiple unsponsored ADR programs for a firm. The dependent variable is *Multiple Unsponsored ADRs*, a dummy variable equal to one if multiple ADR programs we established, and zero otherwise. Log (*Total Assets*) is the logarithm of total assets in million US$. *Insider Control* is the percentage of closely held shares. *Market-to-book* is market value of equity divided by book value of equity. *Leverage* is total debt to total assets. *Profitability* measures the return on assets. *Bid–ask Spread* is the average daily relative bid–ask spread. *NYSE Listing Eligible* is a dummy variable equal to one if the firm meets the listing criteria of the NYSE, zero otherwise. *IFRS/U.S. GAAP Reporting* is a dummy variable equal to one if the firm reports according to IFRS or U.S. GAAP accounting standards, zero otherwise. *U.S. Sales to Total Sales* is sales/revenues in US$ realized in the U.S. market divided by total world sales in US$. *U.S. Assets to Total Assets* is assets in the United States in US$ divided by total world assets in US$. We use the Worldscope segment data to measure the assets or sales a non-U.S. firm has in the United States. Assets are held and sales are realized in the United States if the segment description contains: America, United States, United States of America, U.S.A., and U.S. *Member of a Major Index* is a dummy variable equal to one if the firm is a member of a major country stock market index, zero otherwise. *Percentage Cross-list* is measured as the market capitalization of cross-listed firms in the U.S. capital markets from a particular country to the total market capitalization of firms listed on the domestic stock exchange. The *Anti-self-dealing Index* measures the average of ex ante and ex post private control of self-dealing; it potentially ranges from 0 to 1 with higher values indicating better shareholder protection (Djankov et al. [2008]). *Disclosure Index* measures the degree to which investors are protected through disclosures of ownership and financial information. It ranges from 0 to 10, with higher values indicating more disclosure (Djankov et al. [2008]). *Litigation Risk* is the probability of litigation estimated based on the coefficients in model 3 of table 7 of Kim and Skinner [2012] and firm-level variables measured prior to the regulation change and standardized to reflect the same mean and standard deviation as the variables reported in table 6 of Kim and Skinner [2012]. *Litigation Risk Group* sorts firms into 10 groups based on the variable *Litigation Risk*; *Litigation Risk Group* ranges from 1 to 10 with higher values indicating greater litigation risk. The table reports marginal effects evaluated at the mean of the independent variables. We include all non-U.S. firms available in Worldscope. Cross-listed firms trading on a major U.S. stock exchange, firms with sponsored ADR programs, and firms with unsponsored ADRs that were established before October 10, 2008 are excluded from the analysis. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. All variables are winsorized at the 1% and 99% levels. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup, CRSP files, and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. Models 1–4 and 8–10 include industry and country dummies, and models 5–7 include industry dummies (not reported). Standard errors are robust to heteroskedasticity and clustered at the country–industry group level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

series of tests, we identify proxies for bank- and firm-specific costs and benefits in order to further understand how banks choose firms and how this may impose costs on these foreign firms. In our first tests, we exploit the threat of litigation as a proxy for firm-specific costs. We use the previously discussed ex ante litigation risk proxies from Kim and Skinner [2012]. We include these litigation risk measures together with other control variables in the probit regressions to estimate the probability of having an unsponsored ADR program. Models 8 and 9 of table 8 report the results. Our findings show that litigation risk is positively associated with being cross-listed with an unsponsored ADR. Thus, banks choose firms that have relatively high firm-specific costs, which is consistent with the notion that depositary bank-specific net benefits are higher for firms with larger firm-specific costs.

Next, we exploit the variation in the number of unsponsored ADRs depositary banks created per firm. We expect that depository bank-specific net benefits are higher for firms with multiple ADR programs. The results in model 10 show that bank-specific net benefits are negatively correlated with firm-specific benefits, that is, banks create multiple ADR programs for firms that are large, are not capital constrained, and are liquid in their domestic market, and thus would benefit the least from a cross-listing. Therefore, in addition to our initial tests of the benefits to the depository institutions, these tests show that (1) firms with greater firm-specific costs have a higher likelihood of being cross-listed with an unsponsored ADR, and (2) bank-specific benefits are negatively associated with firm-specific benefits.

Another possible test to identify if banks are choosing firms that have relatively high costs of being cross-listed in the United States is to examine the likelihood of banks selecting firms whose managers/owners have large private benefits of control but still face substantial market demand from U.S. investors. However, a potential drawback to this reasoning is the countervailing evidence that U.S. investors hold significantly less shares of foreign firms with poor corporate governance, suggesting that U.S. investor demand is actually lower for firms with greater private benefits of control (see, e.g., Leuz, Lins, and Warnock [2009]). We find that *Insider Control* is significantly negatively related to the propensity of being cross-listed as previously found in table 8, consistent with the alternative hypothesis that depositary banks are less likely to cross-list firms with greater private benefits of control. None of the interactions of insider control with home bias measures are statistically different from zero (results are not tabulated for brevity).

Finally, we proxy for bank-specific costs by examining how the existence of a past bank–firm relationship influences the propensity to establish unsponsored ADRs. Since an unsponsored ADR is associated with significant costs for foreign firms, those firms may seek other financial intermediaries for their future business, causing a loss of future revenues for depositary banks. We use data from Thomson Reuters SDC Database on whether the depositary banks were involved as an underwriter in any debt or equity

issuances for a given firm in the five years prior to the regulation change. Based on the full Worldscope sample of non-U.S. firms, we find that Bank of New York has no underwriting relationships to international firms, whereas Deutsche Bank, Citibank, and J.P. Morgan have relationships with about 2.5% of all non-U.S. firms. Based on this finding and given the business model of those four banks, we classify Bank of New York as a *nonrelationship* bank, and Deutsche Bank, Citibank, and J.P. Morgan as *relationship* banks. Therefore, the financial intermediary with no relationships created by far the most unsponsored ADRs compared to the banks with relationships. Bank of New York created unsponsored ADRs for 92% of all unsponsored ADR firms, whereas Deutsche Bank, Citibank, and J.P. Morgan created unsponsored ADRs for only 48%, 36%, and 5% of all unsponsored ADR firms, respectively.

We employ probit models to examine how past bank–firm relationships are related to depositary banks' propensity to create unsponsored ADR programs. The dependent variable is a dummy variable that equals one if a particular depositary bank created an unsponsored ADR, zero otherwise. The independent variable of interest is a dummy variable that equals one if the depositary bank has a past relationship with the unsponsored ADR firm, zero otherwise. We run regressions separately for Deutsche Bank and Citibank, but not for Bank of New York and J.P. Morgan. The Bank of New York had no relationships with firms and created the most unsponsored ADRs, whereas J.P. Morgan created only a trivial number of unsponsored ADRs and directly stated that they will base their decisions on the principles of partnership and understanding with the firms.

Table 9 shows that past relationships is negatively associated with creating unsponsored ADRs for Deutsche Bank (p-value of 0.01). We do not, however, find such a relation for Citibank as the coefficient is not significantly different from zero.[35] Taken together, the evidence suggests that bank–firm relationships are related to the propensity to involuntarily cross-list firms in three of the four depositary banks. This is consistent with the hypothesis that depositary banks are less likely to involuntarily cross-list firms for which they expect that the creation of unsponsored ADRs will increase costs by impairing future expected banking business.

Overall, the results in tables 8 and 9 show that depositary banks target firms that are the most attractive to U.S. investors and avoid cross-listing firms that could impair future banking business. This is consistent with the hypothesis that depositary banks choose firms based on their expected benefit in terms of fee income. Moreover, we find that firms with greater firm-specific costs have a higher likelihood of being involuntarily cross-listed, which is consistent with unsponsored ADRs imposing costs on these firms.

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[35] The number of observations is different between models 1 and 2 since, when including country dummies, some observations are dropped because of perfect classification. Dropping country dummies has no impact on the results.

TABLE 9
Cross-Sectional Probit Regressions: Bank–Firm Relationships

	Unsponsored ADR Created by	
	Deutsche Bank	Citibank
	(1)	(2)
Relationship to Deutsche Bank	−0.151***	
	(−2.67)	
Relationship to Citibank		0.053
		(1.02)
Log (*Total Assets*)	0.021	0.100***
	(1.05)	(4.67)
Insider Control	−0.148*	−0.232**
	(−1.73)	(−2.49)
Market-to-book	0.002	0.016**
	(0.32)	(2.53)
Leverage	−0.057	−0.310***
	(−0.53)	(−2.95)
Profitability	0.408*	−0.442
	(1.79)	(−1.48)
Bid–ask Spread	−0.021	−0.180***
	(−1.59)	(−2.85)
NYSE Listing Eligible	−0.021	0.052
	(−0.42)	(1.00)
IFRS/U.S. GAAP Reporting	0.016	0.137
	(0.20)	(1.55)
Industry Dummies	Yes	Yes
Country Dummies	Yes	Yes
Number of Observations	639	640
Pseudo R^2	0.23	0.29

The table reports probit regression estimates for the sample of firms with unsponsored ADRs. The dependent variable *Unsponsored ADR* is a dummy variable equal to one if an unsponsored ADR program was established for a particular firm by Deutsche Bank (model 1) or Citibank (model 2), zero otherwise. *Relationship to Deutsche Bank* (*Relationship to Citibank*) is a dummy variable that equals one if Deutsche Bank (Citibank) was involved in a debt or equity issuance of a particular firm over the five years prior to the regulation change, zero otherwise. The deal data are obtained from the SDC database. Log (*Total Assets*) is the logarithm of total assets in million US$. *Insider Control* is the percentage of closely held shares. *Market-to-book* is market value of equity divided by book value of equity. *Leverage* is total debt to total assets. *Profitability* measures the return on assets. *Bid–ask Spread* is the average daily relative bid–ask spread. *NYSE Listing Eligible* is a dummy variable equal to one if the firm meets the listing criteria of the NYSE, zero otherwise. *IFRS/U.S. GAAP Reporting* is a dummy variable equal to one if the firm reports according to IFRS or U.S. GAAP accounting standards, zero otherwise. The table reports marginal effects evaluated at the mean of the independent variables. We exclude firms that do not have publicly traded equity or have total assets less than $10 million. All variables are winsorized at 1% and 99% levels. Cross-listing data are from DR lists from Bank of New York, J.P. Morgan, and Citigroup; CRSP files; and SEC Form F-6 filings. Firm-level data are obtained from Thomson Reuters Worldscope and Thomson Reuters Datastream. All models include industry dummies and country dummies (not reported). Standard errors are robust to heteroskedasticity and clustered at the country–industry group level; *t*-statistics are reported in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Finally, the 2008 and 2009 annual reports of the depositary banks support the benefits of unsponsored ADRs to banks (see table 10 for excerpts). Depositary fee generation constitutes a sizable part of the banks' business, suggesting that banks benefit substantially from unsponsored listings. For example, the Bank of New York notes in its 2008 annual report that "Total

TABLE 10

Depositary Banks' Disclosures of Revenue from Depositary Receipts

Bank	Text
Bank of New York	From Annual Report 2008: Highlights of Our Businesses. Issuer Services (17% 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) From Annual Report 2009: Issuer Services (19% of 2009 total revenue). Despite significant market headwinds in 2009, Issuer Services made impressive gains in its debt- and equity-linked businesses through a focus on innovative product and service initiatives that will serve the long-term interests of our clients. (p. 3) During a year in which the world experienced the largest historical outflow of equity capital, Depositary Receipts established 750 new "unsponsored" DR programs across 35 countries, attracting more than $2 billion in inflows as U.S. investors sought ways to diversify their portfolios. (p. 4)

(Continued)

TABLE 10—*Continued*

Bank	Text
J.P. Morgan	From Annual Report 2008: 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	From Annual Report 2008: 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 their depositary business.

The table reports statements found in annual reports of depositary banks. The data are from the banks' Web sites (available at http://www.bnymellon.com/investorrelations/annualreport/, http://investor.shareholder.com/jpmorganchase/annual.cfm, and https://www.db.com/ir/en/content/reports_2008.htm).

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" (p. 34).[36] Moreover, the Bank of New York states in its 2009 report that "During a year in which the world experienced the largest historical outflow of equity capital, Depositary Receipts established 750 new 'unsponsored' DR programs across 35 countries, attracting more than $2 billion in inflows as U.S. investors sought ways to diversify their portfolios" (p. 4).

7. *Conclusions*

This paper examines the economic consequences of securities regulation. We analyze a recent SEC disclosure deregulation that grants an automatic exemption from the reporting requirements of the 1934 Securities Act for foreign firms trading on the U.S. OTC markets. Prior to 2008, foreign firms could choose whether or not they were cross-listed on the U.S. OTC market. The amendment of rule 12g3-2(b) eliminated this possibility by giving depositary banks the right to establish unsponsored (involuntary) OTC cross-listings. We exploit this regulatory event, and the groups of firms and financial intermediaries affected by it, to document the economic consequences of securities regulation.

We show that following the exemption rule's amendment, the number of sponsored OTC cross-listings did not increase, suggesting that the regulation did not achieve its intended purpose of increasing voluntary OTC cross-listings through a reduction in compliance costs. The exemption rule did have a large impact on the unsponsored ADR market: 1,700 unsponsored ADR programs for 920 firms were created for companies that had previously chosen not to cross-list in the United States. This stands in sharp contrast to the 52 unsponsored ADR programs created over the decade before the amendment and transformed what was historically one of the rarest types of cross-listings to the most common one.

We find that firms experience a significant decrease in Tobin's q after being involuntarily cross-listed. These findings indicate that the exemption regulation has significant cost for firms that are forced into the U.S. regulatory environment. To provide evidence on an important mechanism through which the exemption regulation affects firms, we examine how an unsponsored cross-listing impacts litigation risk. We find that an involuntary OTC cross-listing is associated with an increase in audit fees, and that the change in audit fees as well as proxies for ex ante litigation risk are negatively related to firm value. This suggests that one channel through which unsponsored ADR firms' value declined is an increase in litigation risk.

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[36] Available at Bank of New York: http://www.bnymellon.com/investorrelations/annualreport/.

Depositary banks target firms that are the most attractive to U.S. investors and avoid cross-listing firms that could impair future banking business. This suggests that depositary banks choose firms based on their expected benefit in terms of fee income. We find that firms with greater firm-specific costs have a higher likelihood of being involuntarily cross-listed, which is consistent with unsponsored ADRs imposing costs on these firms. Moreover, we document the difficulty firms face in avoiding the creation of unsponsored ADRs and perform a valuation analysis that shows that, even though the involuntary cross-listing destroys value, responding by creating a sponsored OTC program would result in even greater value destruction. Overall, our results provide evidence that securities regulation can be exploited for private gain and result in costly unintended consequences.

APPENDIX

History of ADR Regulation in the United States Until 2008

The first-ever ADR was created by J.P. Morgan on April 29, 1927 for the United Kingdom'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 Securities and Exchange Commission (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.[37] Today, unsponsored ADRs are part of the Level I ADR category, which denotes that they trade on the over-the-counter (OTC; Pink Sheet) market.[38]

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 SEC 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

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[37] Specifically, no depositary bank since then has been able to establish an unsponsored ADR program unless the issuer had either (1) registered a class of equity or debt security with the SEC and, therefore, was subject to the reporting requirements of the 1934 Securities Act or (2) requested and obtained an exemption from these reporting requirements under Rule 12g3-2(b). Only a small number of companies that (1) were already reporting companies without a prior sponsored ADR, such as those with only U.S.-traded public debt, or (2) had filed for an 12g3-2(b) exemption but not issued an sponsored OTC ADR, were candidates for an unsponsored ADR.

[38] 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.

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, it 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 United States and either (1) more than 500 security holders worldwide or (2) 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 (1) documents made available to the public under the laws of the country in which the company is incorporated, (2) documents made public according to the regulations of any stock exchange on which the company's stock is listed, and (3) 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). Therefore, prior to the 2008 amendments 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).

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 (1) makes material information available on its Web site and (2) maintains a listing on one or more non-U.S. exchange.

While the 2008 amendments eliminated some of the paperwork associated with creating a sponsored ADR program, more importantly, they also created a channel that allows depositary banks to create unsponsored ADRs

without any legal obligation to notify the issuer or obtain its consent.[39] This was made possible by the SEC's concurrent amendment to the registration statement that depositary banks, who must file to create ADRs (Form F-6), are allowed to "rely on good faith on the adequacy of a company's web site postings" in complying with the new Rule 12g3-2(b). Furthermore, firms are unlikely to respond by omitting the information on their Web sites since exemption from U.S. registration avoids costly compliance with the Sarbanes–Oxley Act of 2002.

REFERENCES

AGGARWAL, R.; I. EREL; M. FERREIRA; AND P. MATOS. "Does Governance Travel Around the World? Evidence from Institutional Investors." *Journal of Financial Economics* 100 (2011): 154–81.

AHEARNE, A.; W. GRIEVER; AND F. WARNOCK. "Information Costs and Home Bias: An Analysis of U.S. Holdings of Foreign Equities." *Journal of International Economics* 62 (2004): 313–36.

BAILEY, W.; A. KAROLYI; AND C. SALVA. "The Economic Consequences of Increased Disclosure: Evidence from International Cross-Listings." *Journal of Financial Economics* 81 (2006): 175–213.

BRIS, A.; S. CANTALE; E. HRNJIC; AND G. NISHIOTIS. "The Value of Information in Cross-Listing." Working paper, IMD, 2009.

BRÜGGEMANN, U.; H. DASKE; C. HOMBURG; AND P. POPE. "How Do Individual Investors React to Global IFRS Adoption?" Working paper, Lancaster University, 2009.

BUSHEE, B., AND C. LEUZ. "Economic Consequences of SEC Disclosure Regulation: Evidence from the OTC Bulletin Board." *Journal of Accounting and Economics* 39 (2005): 233–64.

CHENG, B.; S. SRINIVASAN; AND G. YU. "Securities Litigation Risk for Foreign Companies Listed in the U.S." Working paper, Harvard Business School, 2012.

CHOI, J.; J. KIM; X. LIU; AND D. SIMUNIC. "Cross-Listing Audit Fee premiums: Theory and Evidence." *The Accounting Review* 84 (2009): 1429–63.

COASE, R. "The Problem of Social Cost." *Journal of Law and Economics* 3 (1960): 1–44.

COFFEE, J. C. "The Future as History: The Prospects for Global Convergence in Corporate Governance and Its Implications." *Northwestern University Law Review* 93 (1999): 641–708.

DAHLQUIST, M., AND G. ROBERTSON. "Direct Foreign Ownership, Institutional Investors, and Firm Characteristics." *Journal of Financial Economics* 59 (2001): 413–40.

DJANKOV, S.; R. LA PORTA; F. LOPEZ-DE-SILANES; AND A. SHLEIFER. "The Law and Economics of Self-Dealing." *Journal of Financial Economics* 88 (2008): 430–65.

DOIDGE, C.; A. KAROLYI; K. LINS; D. MILLER; AND R. STULZ. "Private Benefits of Control, Ownership, and the Cross-Listing Decision." *Journal of Finance* 64 (2009): 425–66.

DOIDGE, C.; A. KAROLYI; AND R. STULZ. "Why Are Foreign Companies Listed in the U.S. Worth More?" *Journal of Financial Economics* 71 (2004): 205–38.

DOIDGE, C.; A. KAROLYI; AND R. STULZ. "Why Do Countries Matter So Much for Corporate Governance?" *Journal of Financial Economics* 86 (2007): 1–39.

DOIDGE, C.; A. KAROLYI; AND R. STULZ. "Has New York Become Less Competitive than London in Global Markets? Evaluating Foreign Listing Choices over Time." *Journal of Financial Economics* 91 (2009): 253–87.

[39] 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, EuropeanIssuers, a pan European 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).

DOIDGE, C.; A. KAROLYI; AND R. STULZ. "Why Do Foreign Firms Leave U.S. Equity Markets? An Analysis of Deregistrations Under SEC Exchange Act Rule 12h-6." *Journal of Finance* 65 (2010): 1507–53.

FAHLENBRACH, R.; R. PRILMEIER; AND R. STULZ. "This Time Is the Same: Using Bank Performance in 1998 to Explain bank Performance During the Recent Financial Crisis." *Journal of Finance* 67 (2012): 2139–85.

FERNANDES, N., AND M. FERREIRA. "Does International Cross-Listing Improve the Information Environment." *Journal of Financial Economics* 88 (2008): 216–44.

FERNANDES, N.; U. LEL; AND D. MILLER. "Escape from New York: The Market Impact of Loosening Disclosure Requirements." *Journal of Financial Economics* 95 (2010): 129–47.

GAGNON, L., AND A. KAROLYI. "The Economic Consequences of the U.S. Supreme Court's *Morrison v. National Australia Bank* Decision for Foreign Stocks Cross-Listed in U.S. Markets" Working paper, Cornell University, 2012.

GANDE, A., AND D. MILLER. "Why do U.S. Securities Laws Matter to Non-U.S. firms? Evidence from Private Class-Action Lawsuits." Working paper, Southern Methodist University, 2012.

GAO, F.; J. WU; AND J. ZIMMERMAN. "Unintended Consequences of Granting Small Firms Exemptions from Securities Regulation: Evidence from the Sarbanes-Oxley Act." *Journal of Accounting Research* 47 (2009): 459–506.

GOZZI, J.; R. LEVINE; AND S. SCHMUKLER. "Internationalization and the Evolution of Corporate Valuation." *Journal of Financial Economics* 88 (2008): 607–32.

HAIL, L., AND C. LEUZ. "Cost of Capital Effects and Changes in Growth Expectations Around U.S. Cross Listings." *Journal of Financial Economics* 93 (2009): 428–54.

ILIEV, P. "The Effect of SOX Section 404: Costs, Earnings Quality and Stock Prices." *Journal of Finance* 65 (2010): 1163–96.

JEANJEAN, T.; C. LESAGE; AND H. STOLOWY. "Why Don't You Speak English (in Your Annual Report)." *International Journal of Accounting* 45 (2010): 200–23.

KANG, J., AND R. STULZ. "Why Is There a Home Bias? An Analysis of Foreign Portfolio Equity Ownership in Japan." *Journal of Financial Economics* 46 (1997): 3–28.

KAROLYI, A. "The World of Cross-Listings and Cross-Listings of the World: Challenging Conventional Wisdom." *Review of Finance* 10 (2006): 99–152.

KARPOFF, J.; A. KOESTER; S. LEE; AND G. MARTIN. "An Analysis of Database Challenges in Financial Misconduct Research." Mays Business School Research Paper no. 2012–73, 2012.

KARPOFF, J.; S. LEE; AND G. MARTIN. "The Consequences to Managers for Cooking the Books." *Journal of Financial Economics* 88 (2008): 193–215.

KARPOFF, J., AND J. LOTT. "On the Determinants and Importance of Punitive Damages Awards." *Journal of Law and Economics* 62 (1999): 527–73.

KIM, I., AND D. SKINNER. "Measuring Securities Litigation Risk." *Journal of Accounting and Economics* 53 (2012): 290–310.

LEL, U., AND D. MILLER. "International Cross-Listing, Firm Performance, and Top Management Turnover: A Test of the Bonding Hypothesis." *Journal of Finance* 63 (2008): 1897–937.

LEUZ, C.; K. LINS; AND F. WARNOCK. "Do Foreigners Invest Less in Poorly Governed Firms?" *Review of Financial Studies* 2 (2009): 3245–85.

LEUZ, C.; A. TRIANTIS; AND Y. WANG. "Why Do Firms Go Dark? Causes and Economic Consequences of Voluntary SEC Deregistrations." *Journal of Accounting and Economics* 45 (2008): 181–208.

LEUZ, C., AND P. WYSOCKI. "Economic Consequences of Financial Reporting and Disclosure Regulation: A Review and Suggestions for Future Research." Working paper, MIT Sloan School of Management, 2009.

LICHT, A.; X. LI; AND J. SIEGEL. "What Makes the Bonding Stick? A Natural Experiment Involving the Supreme Court and Cross-Listed Firms." Working paper 11–072, Harvard Business School, 2011.

LINCK, J.; J. NETTER; AND T. YANG. "Effects and Unintended Consequences of the Sarbanes-Oxley Act on Corporate Boards." *Review of Financial Studies* 22 (2009): 3287–328.

MILLER, D. "The Market Reaction to International Cross-Listings: Evidence from Depositary Receipts." *Journal of Financial Economics* 51 (1999): 103–23.

MULHERIN, H. "Measuring the Costs and Benefits of Regulation: Conceptual Issues in Securities Markets." *Journal of Corporate Finance* 13 (2007): 421–37.

SARKISSIAN, S., AND M. SCHILL. "The Overseas Listing Decision: New Evidence of Proximity Preference." *Review of Financial Studies* 17 (2004): 769–809.

SEETHARAMAN, A.; F. GUL; AND S. LYNN. "Litigation Risk and Audit Fees: Evidence from U.K. Firms Cross-Listed on U.S. Markets." *Journal of Accounting and Economics* 33 (2002): 91–115.

ZINGALES, L. "The Future of Securities Regulation." *Journal of Accounting Research* 47 (2009): 391–425.