Escape from New York: The Market Impact of Loosening Disclosure Requirements

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Abstract

We examine the first significant deregulation of U.S. disclosure requirements since the passage of the 1933/1934 Exchange and Securities Acts: the 2007 SEC Rule 12h-6. Rule 12h-6 has made it easier for foreign firms to deregister with the SEC and thereby terminate their U.S. disclosure obligations. We document that the market reacted negatively to the announcement by the SEC that firms from countries with weak disclosure and governance regimes could more easily opt out of the stringent U.S. reporting and legal environment. We also document that since the rule's passage, an unprecedented number of firms have deregistered, and these firms often had been previous targets of U.S. class action securities lawsuits or SEC enforcement actions. Our findings suggest that shareholders of non-U.S firms place significant value on U.S. securities regulations, especially when the home country investor protections are weak.

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By adopting these rule amendments today, we are remedying a problem that has been festering for decades. Our former deregistration rules, which required a nose-count of U.S. investors to determine if registration was required, was so beloved by our foreign brethren that it gave rise to such kindly monikers as "Hotel California," or the "roach motel" or—one of my own creations—the "Venus flytrap." Surely none of us at the SEC want to perpetuate such ill-famed requirements.

-SEC Commissioner Paul S. Atkins, March 21, 2007

Although SEC registration and the corresponding disclosure requirements are a defining feature of U.S. capital markets, the economic impact of these laws are currently under debate both theoretically and empirically.[1] Perhaps nowhere is this more evident than in the controversy surrounding the effects of SEC registration and enforcement on foreign companies cross-listed on U.S. stock exchanges, since once a firm becomes subject to U.S. regulations, these laws make it difficult, if not impossible, for it to deregister and thereby terminate its U.S. disclosure obligations. This disagreement has led both academics and policymakers alike to debate whether the recent decrease in U.S. cross-listings is evidence that the costs of U.S. regulations, which include the 2002 Sarbanes–Oxley (SOX) Act, outweigh their benefits and consequently have rendered U.S. capital markets uncompetitive.[2]

In response to this debate, the SEC commissioner Paul S. Atkins announced on March 21, 2007 the approval of Rule 12h-6. The new rule makes it considerably easier for foreign firms to deregister with the SEC and thereby terminate their U.S. disclosure obligations. It is important to note that it is deregistration, not delisting, that is required to

[1] See Coffee (1984) and Healy and Palepu (2001) for reviews of this literature. More recent evidence is found in Bushee and Leuz (2005) and Greenstone, Oyer, and Vissing-Jorgensen (2006).

[2] See Berger, Li, and Wong (2005), Doidge, Karolyi, and Stulz (2007a), Chaplinsky and Ramchand (2007), Hostak, Lys, and Yang (2006), Li (2006), Litvak (2007), Leuz, Triantis, and Wang (2008), Piotroski and Srinivasan (2008), Smith (2006), Woo (2006), and Zingales (2007).

avoid ongoing SEC reporting obligations. Thus, Rule 12h-6 represents the first significant *deregulation* of U.S. disclosure requirements since the passage of the 1933/1934 Exchange and Securities Acts.[3]

In this paper, we add to the debate on the economic consequences of SEC registration and disclosure requirements by analyzing the market reaction to SEC Rule 12h-6. By examining a rare market-wide shock in mandatory disclosure regulation, we are able to provide new evidence on how investors value the U.S. registration of foreign firms. Our evidence complements previous empirical cross-listing research, which is based on the voluntary listing and delisting decisions of firms, where self-selection and joint hypothesis difficulties are well known and often lead to debate on their interpretation (see, e.g., Doidge, Karolyi, and Stulz, 2007a). Further, because of the difficulty of deregistering with the SEC before Rule 12h-6, prior research on voluntary deregistration inevitably involved studying the relatively few atypical firms that not only self-selected to deregister, but could actually meet the stringent deregistration requirements.

As our experimental design also enables us to measure the economic consequences of SEC registration cross-sectionally, we are able to analyze specific factors argued in the literature to influence both costs (e.g., compliance costs) and benefits (e.g., improved investor protections). Further, since not all cross-listed firms are currently registered with the SEC (e.g., OTC and Rule 144a ADRs), our setting allows us to examine how a holdout sample of nonregistered firms reacts to deregulation and, therefore, we are able to control for any confounding effects of contemporaneous unobserved firm shocks.

[3] Mandatory increases in disclosure regulations have also been extremely rare since the passage of the 1933/1934 Exchange and Securities Acts (e.g., the 1964 Amendments, the OTC Eligibility Rule of 1999, and the Sarbanes–Oxley Act of 2002).

We begin our analysis by testing the market reaction to the disclosure deregulation announcement by the SEC. Our event study results document that the market reacted negatively to the ability of firms from weak investor protection regimes to easily opt out of the stringent U.S. reporting and legal environment. For example, we find that the market reaction is negative for firms located in countries with poor disclosure environments as well as for firms from countries with civil law legal origin and with low levels of judicial efficiency. The results are economically significant, with the mean (median) firm losing 0.57% (0.91%) of market value ($112 million ($32 million) respectively) on the announcement that they now have the option to revert to their less stringent home country disclosure requirements.

In contrast, we find that the market reaction was insignificant for firms located in countries with strong investor protections. Therefore, our results suggest that shareholders place the highest value on U.S. disclosure requirements when the levels of disclosure and investor protection are poor in the home country. In contrast to the country-level disclosure and investor protection results, we find much weaker evidence that proxies for compliance costs or financing needs explain the market reaction. Finally, we also find that the negative abnormal returns are concentrated in firms that are currently complying with SEC disclosure requirements (e.g., level II and III ADRs), rather than cross-listed firms exempted from registration requirements (OTC and Rule 144a ADRs). This suggests the economic impact of the rule is concentrated in firms currently subject to the SEC registration. Overall, the results support the hypothesis that U.S. disclosure and investor protection laws have significant economic benefits, especially for cross-listed firms from poor investor protection regimes.

We next examine the effect of Rule 12h-6 on the deregistration and listing behavior of foreign firms. Consistent with prior research, we find that prior to Rule 12h-6, deregistrations by non-U.S. firms were relatively rare events. However, in the 8 months since the rule took effect, 80 firms announced their intention to deregister from U.S. exchanges, the largest yearly total in history. Interestingly, we find that some of the first foreign firms to deregister were those previously investigated by the SEC. For example, E. ON AG (formally Veba AG) was sued by the SEC in 2000 for engaging "in a month-long, deliberate pattern of issuing materially false denials concerning merger negotiations with Viag AG, another large German company." E. ON settled quickly with the SEC later that year. On August 21, 2008, E. ON AG announced it was delisting and deregistering under Rule 12h-6, but noted conspicuously that "we remain committed to the highest standards of corporate governance and transparent financial reporting." Moreover, when we examine U.S. class action securities lawsuits against foreign firms, we find that 11 of the 80 firms deciding to leave the U.S. regulatory environment under Rule 12h-6 had previously been the target of private securities litigation. Finally, although one of the stated rationales of the new rule was to increase the attractiveness of U.S. capital markets, we find that the period since the rule took effect has seen, for the first time in history, there were more deregistrations than new registrations. Therefore, our results suggest that not only did Rule 12h-6 have significant economic consequences, it also materially affected the deregistration and listing behavior of foreign firms.

We also subject our analysis to a battery of robustness tests and investigate several ancillary predictions of our main findings. We find that our results are robust to alternative models of expected returns, including a global Fama and French factor model.

In addition, our results are consistent across SUR, OLS, and Sefcik and Thompson (1986) estimation methods, and also when we employ firm-level governance controls. Further, by examining alternative announcement dates as well as potential confounding announcements surrounding the event, we verify that our event window was not anticipated. Finally, we show that the economic consequences of voluntary deregistrations after the passage of Rule 12h-6 as well as the probability of subsequent deregistrations are consistent with the market reaction to Rule 12h-6.

Our study makes several contributions to the literature. First, we provide, to the best of our knowledge, the first empirical evidence, foreign or domestic, on the economic impact of disclosure *deregulation*. In this way, we contribute to the empirical research on the costs and benefits of disclosure regulation in general, a literature that Healy and Palepu (2001) note is surprisingly sparse.[4] We also contribute to the literature that examines the impact of U.S. laws and regulations on cross-listed firms. Although a large number of studies have found significant economic benefits for cross-listed firms, the debate in a more recent literature centers on whether the costs of U.S. regulations, including the 2002 SOX Act, outweigh the benefits.[5] Our paper provides evidence on how the market values a reduction in mandated disclosure, and therefore we are able to gain insights into the economic consequences of one of the most important aspects of international cross-listing.[6]

[4] In contrast, there is a large literature that examines the impact of mandated accounting standards changes (see Bushee and Leuz (2005) and citations contained therein).

[5] Karolyi (1998, 2006) and Benos and Weisbach (2004) provide comprehensive surveys of the earlier studies.

[6] See Lang, Lins, and Miller (2003, 2004) and Lang, Raedy, and Wilson (2006) for reviews on the disclosure implications of cross-listing.

The remainder of the paper proceeds as follows. Section I provides a primer on Rule 12h-6. Section II reviews prior literature. Section III describes the data. Section IV presents the event study methodology and results on the market reaction to Rule 12h-6. Section V presents multivariate regression results. Section VI presents robustness tests. Section VII analyzes delistings and deregistrations surrounding the passage of Rule 12h-6. Section VIII concludes the paper and points to some avenues for further research.

I. A Primer on Rule 12h-6

On March 21, 2007, the SEC approved its new rules for deregistration by foreign firms, which took effect on June 4, 2007. These rules amended the regulations governing when a foreign firm may terminate the registration of a class of its equity or debt securities and the corresponding obligation to file reports as required by the U.S. Securities and Exchange Act of 1934.

A. Existing Registration and Deregistration 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 a class of the firm's securities is held by more than 300 security holders in the U.S. 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 12(g) of the Exchange Act. Finally, if the foreign firm issues new public equity or debt securities, they must be registered under the Securities Act of 1933, and the foreign firm is required to file reports under Section 15(d) of the Exchange Act.

With the globalization of capital markets around the world, delisting from U.S. stock exchanges has become a relatively straightforward process. In contrast, *deregistering* from the SEC is a considerably more difficult, if not an impossible proposition. It is important to note that it is deregistration, not delisting, that is required to avoid ongoing SEC reporting obligations, including the provisions of the SOX that apply. Under the existing rules, a U.S.-registered foreign firm can only deregister a class of its securities if that class is held by fewer than 300 U.S. residents (record holders), or fewer than 500 U.S. record holders for foreign firms with less than $10 million in assets. A particularly onerous part of this rule is the counting method, which requires the firm to "look through" the accounts of brokers, banks, and other nominees on a worldwide basis and count the number of separate accounts of U.S. customers to determine the number of U.S. record holders.[7] Moreover, even if the firm meets all the conditions, it may only suspend, rather than terminate, its reporting obligations and, as a result, must determine each year if it meets the reporting exemption criteria.

B. The New Deregistration Amendment

Rule 12h-6 has three main provisions. First, it permits a simplified termination based on U.S. investor interest in the foreign firm's securities, rather than the firm's ownership record. This new rule establishes a non–record holder benchmark: Average Daily Trading Volume. The foreign firm may, regardless of the number of U.S. securities holders or its asset size, terminate its registration and reporting obligations if the U.S. average daily trading volume has been no greater than 5% of the worldwide average daily trading

[7] The head count criterion is different for U.S. firms. When a U.S. firm wants to deregister with the SEC, it can count each institutional investor as one investor, whereas a foreign firm will have to look through the accounts of each institutional investor to determine the exact number of U.S. investors holding its securities.

volume of the same class of securities during the previous 12-month period.[8] In order to deregister under the trading volume rule, the foreign firm must (1) meet the trading volume standard at the time of delisting from the U.S. stock exchange (or the termination of its sponsored ADR program) or (2) wait 12 months after delisting or ADR termination in order to calculate the trading volume benchmark.[9]

Second, Rule 12h-6 allows, for the first time, a foreign firm to terminate rather than just suspend the registration of a class of its equity securities and the resulting reporting obligations. This covers equity securities under Section 12(b) of the Exchange Act as well as equity or debt securities under Section 15(d) of the Exchange Act resulting from issuing securities under the Securities Act. Finally, Rule 12h-6 allows an alternative to the trading volume rule by allowing the firm to terminate its Exchange Act reporting obligations when the class of securities has fewer than 300 U.S. record holders. Further, the firm will no longer have to "look through" the worldwide banker, broker, and other nominee accounts to determine the head count. Rather, the new rule allows a revised counting method in which the firm can limit its search to accounts located in the U.S. and its home country of incorporation.[10]

In order to take advantage of the new rule, a foreign firm must meet three additional conditions designed to ensure that U.S. investors are given appropriate information regarding the company's securities. The *Prior Exchange Act Reporting Condition* requires that the firm must have been an Exchange Act reporting company for at least 1

[8] Equity-linked securities, such as warrants, options, and other convertible securities are not included in the calculation.
[9] Form 15F is used to notify the SEC of the foreign firm's decision to terminate its registration under Rule 12h-6.
[10] This revised counting method would also be the provision that the foreign firm with registered debt securities could terminate SEC registration.

year, filed or submitted all Exchange Act reports required for this period, and have filed at least one annual report. The *One Year Dormancy Condition* requires that the foreign firm must not have sold securities in the U.S. in a registered offering during the 12-month period prior to its termination from the Exchange Act.[11] Finally, to ensure the firm is subject to non-U.S. regulation, the *Foreign Listing Condition* requires that for the 12-month period prior to the filing of its Form 15F, the firm must have maintained a listing for at least 1 year in a foreign jurisdiction that constitutes its primary trading market.

C. Implications of the New Rule

Before Rule 12h-6, it often could be difficult to meet the security holder minimums, given the difficulty in finding all the U.S. security holders and getting the final few to sell their securities, which prompted the monikers "roach motel," "Hotel California," and "Venus flytrap."[12] Under Rule 12h-6, the trading volume rule makes firms that meet the benchmark immediately eligible to deregister. Perhaps more importantly, given that U.S. trading volume will go to zero when the firm delists its securities from the U.S. exchange, the new rule effectively makes all U.S.-registered foreign firms eligible for deregistration within 1 year of voluntary delisting.

D. Dating the Announcement

The announcement of the approval of Rule 12h-6 by the SEC on March 21, 2007 resolved 2 years of uncertainty regarding whether the SEC would revise its deregistration rules for foreign firms. The first indication that the SEC was considering a rule change was in a speech on January 25, 2005 by then SEC Chairman William Donaldson, but he

[11] Exceptions include offerings to the foreign firm's employees, non-underwritten offerings, offerings due to the exercise of rights granted pro rata to all existing security holders, dividend or reinvestment plan offerings, or offerings due to conversion of outstanding convertible securities or warrants.

[12] These were echoed in Commissioner Paul Atkins' speech given on March 21, 2007. See http://www.sec.gov/news/speech/2007/spch032107psa.htm.

declined to say what options the SEC was considering or when it would propose any new rules. Nearly a year later, on December 14, 2005, the SEC announced a proposal to significantly ease foreign firms' deregistration rules, but only for a subset of very large firms called well-known seasoned issuers (WKSI).[13] A year later, on December 13, 2006, a new "re-proposal" was drafted that eliminated the WKSI limitation. This re-proposal's future was also in question, as it would be voted on only after a public commenting period that would end in late February 2007, after which it could be accepted, rejected, or modified again.

Although our empirical analysis focuses on March 21, 2007, in later robustness tests we show that the market did not view the information released on these earlier dates as significantly resolving the uncertainty regarding the proposal. We focus on a three-day window centered on March 22, 2007 because the first day of newspaper coverage was on March 22 and most national exchanges where firms in our sample were traded were closed at the time of SEC's approval on March 21.

II. Prior Research

Previous research on the economic impact of U.S. disclosure regulation focuses on the relatively rare instances when mandated disclosure laws are enacted. The first major U.S. disclosure regulations, the 1933 and 1934 Securities Acts, are the focus of several studies (e.g., Stigler, 1964; Friend and Herman, 1964; Robbins and Werner, 1964; Benston, 1969 and 1973; Jarrell, 1981). However, the results contained in these early

[13] A well-known seasoned issuer is defined in Securities Act Rule 405 (17 CFR 230.405). Such an issuer must have a worldwide market value of its outstanding voting and nonvoting common equity held by nonaffiliates of $700 million or more, and must satisfy the other requirements of the definition in Securities Act Rule 405.

studies and their implications for the costs and benefits of mandatory disclosure laws are heavily debated (see Coffee, 1984 for a survey). The next significant disclosure regulation was the 1964 Securities Act. Greenstone et al. (2006) find that its mandated increase in disclosure for OTC firms was associated with an increase in firm value. In 1999, the "eligibility rule" was passed, which required domestic firms trading on the OTC Bulletin Board to comply with the 1934 Securities Act. Bushee and Leuz (2005) find evidence that the imposition of this disclosure requirement results in both costs and benefits for the affected firms.

More recently, Regulation Fair Disclosure (Reg FD) and the 2002 SOX Act were implemented. Francis, Nanda, and Wang (2006) study the effects of Reg FD using cross-listed firms (exempt from Reg FD) as a control sample and argue that Reg FD reduced analyst report informativeness. Duarte, Han, Harford, and Young (2008), however, find that, on average, Regulation FD had no impact on the cost of capital. Zhang (2007) investigates the market reactions around the legislative events surrounding the passage of SOX and argues that SOX imposed net costs on complying firms. Chhaochharia and Grinstein (2007) find that SOX costs are concentrated on firms that are less compliant with the provisions of the new rules, and also on small firms. Engel et al. (2007) suggest that some small firms deregistered after SOX as a result of the compliance costs imposed by SOX. Leuz et al. (2008) investigate firms' going dark decisions, and find that SOX drives some poor performing firms out of the stock market as insiders are exposed to greater legal liabilities. Our results add to this literature by providing evidence on the economic consequences of the first significant U.S. disclosure deregulation, SEC Rule 12h-6 of 2007.

Another recent stream of literature examines the voluntary delisting and/or deregistration decisions of foreign firms to provide evidence for the debate regarding whether the costs of U.S. regulations, including the 2002 SOX Act, outweigh their benefits. For example, Marosi and Massoud (2008) document that the 148 deregistration announcements by foreign firms from 1990 to 2006 were accompanied by a negative market reaction that became less negative and less significant post-SOX. They argue that deregistrations prior to Rule 12h-6 were motivated by SOX compliance costs rather than potential governance benefits of U.S. registration. In contrast, Hostak, Lys, and Yang (2006) contend that there were fewer deregistrations that were truly voluntary (75) during the pre-12h-6 period and find opposite results, in that the stock price reaction to deregistration is positive in the post-SOX period and that governance-related factors, rather than compliance costs, play a role in the deregistration decision. Witmer (2006) finds 71 firms deregistering with the SEC during the 2002–2004 period and documents a negative stock price reaction for these deregistration announcements post-SOX.

Perhaps most important to note is that these inferences regarding the economic effects of deregistration are drawn from the firms that could meet the stringent pre-12h-6 deregistration requirements. These firms were very small, poorly performing, and predominantly owned by insiders. For example, the average deregistering firm in Marosi and Massoud (2008) is less than 1% the size of the average registered foreign firm (based on total assets). After the passage of Rule 12h-6 in March 2007, the rate of deregistrations has increased, but the number of firms deregistering to date is still relatively small. For example, a recent paper by Doidge et al. (2008) provides a detailed analysis of the 44 firms, primarily from European countries, that delisted and deregistered

under the trading volume provision of 12h-6. They find that the stock price reaction to the deregistration announcement is, on average, negative but insignificant and varies with the level of growth opportunities.

In contrast, our experiment design abstracts from the voluntary registration or deregistration decisions of firms and allows us to draw inferences about the economic consequences of registration with the SEC from the population of cross-listed firms. Therefore, we are able to avoid many of the sample selection and endogeneity limitations inherent in the pre- and post-Rule 12h-6 periods to focus on the role of firms' home country institutions in explaining the economic consequences of leaving the relatively stringent U.S. regulatory environment.

III. Data and Summary Statistics

We obtain a list of all foreign firms with equity shares registered and reporting with the SEC from the SEC's Web site.[14] We augment this list with data on nonregistered cross-listed firms from the depositary banks (Bank of New York and Citibank). We use the Thomson Financial Datastream database to calculate daily returns in the local (non-U.S.) market for these firms. We also employ the Datastream database to compute the U.S. trading volume relative to the worldwide trading volume for each stock. We gather firm-specific financial information from the Worldscope database.

The sample, detailed in Table 1, consists of 638 firms from 36 countries. Panel A shows that Canada has the largest number of firms (260).[15] Panel B reports that 536 of the firms are traded on major U.S. exchanges (AMEX, NASDAQ, and NYSE) and are

[14] Available at http://www.sec.gov/divisions/corpfin/internatl/foreignalpha2006.pdf.
[15] In untabulated tests, we find our main results robust to the exclusion of Canadian firms.

therefore subject to the SEC registration and reporting requirements, whereas 102 are traded on the OTC market and are therefore exempt from most SEC requirements.

Panel C reports summary statistics for the firm- and country-level variables used to proxy for the costs and benefits of SEC registration. At the firm level, we use *Total Assets* to proxy for the relative size of compliance costs, since it is often noted that SEC registration, including the costs of filing U.S. GAAP accounting statements, are relatively high for small firms. We also control for the need for external finance, as the benefits of a U.S. listing could be larger for firms that need access to U.S. capital (see, e.g., Reese and Weisbach, 2002; Lins, Strickland, and Zenner, 2003). We proxy for capital needs using *Sales Growth* rate as well as firms' *Leverage* ratio (long-term debt divided by total assets) and profitability (*ROA*). Since the governance benefits of U.S. registration may be lower for more internationalized firms (e.g., through joint ventures in other countries, as described in Siegel, 2007), we employ a proxy for the degree of internationalization using the percentage of the firm's sales outside of its home country (*Foreign Sales Ratio*). Likewise, the benefits of U.S. disclosure standards may be less when the firm voluntarily adopts the International Financial Reporting Standards (IFRS) rather than their home country standards. We compute the variable *IFRS Adoption*, which equals one if the firm has adopted IFRS from Worldscope.

We also gather firm-level ownership data, since the benefits of U.S. registration may be lower for better-governed firms. We examine the percentage of shares held by both financial institutions and company insiders (gathered from 13f filings and the *Worldscope* database).[16] We also examine two variables directly related to the implementation of the

[16] In later robustness tests, we also employ firm-level governance indicators from the Institutional Shareholder Services database.

new rule: The first is a variable that notes if the firm filed a comment with the SEC during the commenting period before the rule was voted on. *Comment* equals one for firms that commented on any of the SEC's deregistration proposals, obtained from the SEC's Web site, and zero otherwise. This variable may capture firms with expected net benefits from the passage of the new rule. We also compute a variable, *Eligible*, that is equal to one for firms for which the U.S. stock market accounts for at most 5% of their worldwide trading volume, and zero otherwise. ADR ratios are taken into account when calculating the relative trading volume, as ADRs often represent claims on the underlying ordinary shares in a ratio different from one-to-one (Baruch, Karolyi, and Lemmon, 2008). However, since firms can shrink their U.S. trading volume to zero by delisting, it is not clear *ex ante* how important this aspect of the new rule will be.

The country-level variables consist of various disclosure and legal environment proxies to test the hypothesis that the value of U.S. registration is highest when investor protection is weakest. The first transparency measure, *Disclosure Requirements*, is an index that ranks prospectus disclosures, including compensation, shareholders, inside ownership, irregular contracts, and transactions. It is obtained from La Porta et al. (2006). The second measure, *Disclosure*, obtained from Bushman et al. (2004), is an index based on the disclosures of R&D, capital expenditure, subsidiaries, segment-product, segment-geographic, and accounting policy. *World Bank Disclosure* is an index based on disclosures of seven items, including ownership, voting agreements between shareholders, and audit committees. It is obtained from the World Bank's Cost of Doing Business survey in 2005. *Disclosure in Periodic Filings* is an index of disclosures required in periodic reports and is obtained from Djankov et al. (2008). Higher values of

these disclosure indexes represent better transparency. Finally, *Earnings Management* is an aggregate earnings management score based on earnings smoothing and discretion measures, and is obtained from Leuz et al. (2003). Higher values of this index refer to higher levels of earnings management.

We also partition firms by civil and common law, since legal origin has been shown to be closely associated with overall investor protection in a country (La Porta et al. (LLSV), 1998). We further examine the market reaction based on the efficiency of the firm's home country legal system (LLSV, 1998), since one of the most often-cited advantages of U.S. registration is that the firm becomes subject to U.S. laws and U.S. courts (Coffee, 1999, 2002). While these country-level disclosure and investor protection variables are commonly used in the literature, it is, however, important to note that they may proxy for more fundamental institutions (see, e.g., Acemoglu et al., 2001). Finally, we include a measure of overall economic development, *Stock Market Cap/GDP*, defined as the domestic stock market capitalization divided by GDP and obtained from the World Development Indicators database.

IV. Market Reaction to the Announcement of Rule 12h-6

A. Event Study Methodology

Firms in our sample are subject to the same event date, which leads to a clustering of events in calendar time. It is well known that in such cases error terms across firms from the market model are likely to be correlated, and this contemporaneous cross-correlation violates the independent error terms assumption across firms (MacKinlay, 1997). Thus,

we cannot use the standard event study methodology in testing for the impact of announcements related to the SEC's deregistration rule on stock returns.[17]

Instead, we use a methodology developed by Schipper and Thompson (1983) to measure the stock market reaction of individual firms to Rule 12h-6.[18] This method involves estimating a seemingly unrelated regression (SUR) that explicitly accounts for the cross-correlation of error terms across equations. In this approach, all sample firms are put into a system of equations, and the following regression system is estimated simultaneously in a SUR framework:

$$R_i = \alpha_i + \beta_i R_m^{Local} + \lambda_i R_m^{US} + \gamma_i D + \varepsilon_i \qquad (1)$$

where:

R_i = return series on the individual firm *i*, $i = 1, 2, \ldots, N$ and N is the total number of firms,

R_m^{Local} = return series on the domestic market index,

R_m^{US} = return series on the U.S. market index,

D = a dummy variable that equals one for the three-day window surrounding March 22, 2007, and zero otherwise, and

ε_i = error term series that are allowed to be contemporaneously correlated across firms.

Daily stock returns are measured in local currency between June 1, 2004, and June 1, 2007 (782 observations per firm), and are obtained from the Datastream database to

[17] For surveys on regression-based event studies, see Thompson (1985), Binder (1998), and Kothari and Warner (2006).

[18] This methodology is also used in recent studies that examine regulatory and legal pronouncements such as the 2002 SOX Act (see, e.g., Zhang, 2007; Chhaochharia and Grinstein, 2007; Espahbodia et al., 2002).

estimate Equation 1.[19] The event parameter γ varies across firms and measures the impact of the Rule 12h-6 approval on individual firms' stock returns. In all tables, we multiply this coefficient by 300 to present results as the three-day cumulative abnormal return in percentage terms.

The main advantage of the Schipper and Thompson (1983) methodology is that it allows us to measure the overall stock market reaction to the regulatory event for each firm while taking into account any potential contemporaneous correlation. Another advantage is that it allows testing joint hypotheses on regression coefficients where appropriate. We analyze the distribution of event parameter estimates, $\hat{\gamma}_i$, as well as test whether all the event parameter coefficients are jointly equal to zero.

B. The Market Reaction

Panel A of Table 2 presents the average market reaction to the announcement of Rule 12h-6 across several proxies for the level of home country disclosure and legal standards to test if the investors' view of the regulation is related to the new level of investor protections that firms would be subject to upon deregistration. We find that the market reacted negatively to the announcement of Rule 12h-6 for firms that will be subject to weak disclosure environments upon deregistration. For example, the (−1, +1) event window mean (median) reaction in the *Low Disclosure Requirements* sample is −0.56% (−0.92%). In the *Low Disclosure* sample, the (−1, +1) event window mean (median)

[19] Although a SUR system accommodates the contemporaneous cross-correlation of error terms across individual firm's return equations, it has the constraint that the covariance matrix (N × N) must be inverted to calculate test statistics. If the number of periods (T) is smaller than the number of firms (N), the inverted covariance matrix follows a Wishart distribution that has undesirable properties. Therefore, we ran the system in Equation 1 separately for 536 exchange-traded ADRs and 102 OTC-traded ADRs. Another reason for us to run the SUR system separately is that only exchange-traded ADRs are required to comply with the SEC's periodical reporting requirements. We chose June 2004 as the starting point because the first event related to the SEC's deregistration rule took place in January 2005, making T = 782.

reaction is −0.57% (−0.91%). In the *Low Disclosure in Periodic Filings* sample, the (−1, +1) event window mean (median) reaction is −0.49% (−0.58%). Similar results are obtained for the *Low World Bank Disclosure Index* sample. When disclosure is measured by earnings opacity (i.e., *Earnings Management*), we also find that the market reacted negatively for firms located in countries where earnings quality is low. In terms of statistical significance, the means and medians in the *Low Disclosure* samples are significant at conventional levels. Further, stock price response is larger than the local market bid-ask spread.[20] The results are also economically significant. For example, the −0.576% (−0.912%) reaction for the *Low Disclosure* sample translates to the average (median) firm's market value being reduced by $112 million ($32 million).[21]

In contrast to firms located in countries with weak disclosure, we find that for firms domiciled in strong disclosure environments, the market did not react significantly to the announcement of Rule 12h-6. For example, the (−1, +1) event window mean and median reaction in the *High Disclosure Requirements* sample are an economically small −0.02% and −0.18%, respectively, both of which are not statistically significant. Similar results are obtained for all the proxies for home country disclosure standards. Overall, these results are consistent with the hypothesis that SEC registration and the resulting disclosure and reporting requirements are valued by the market, especially for firms located in countries with weak home country disclosure.

Panel A of Table 2 also partitions our sample firms by the level of home country legal protections. We find for firms domiciled in civil law countries, the three-day market mean (median) reaction to Rule 12h-6 was negative and significant: −0.39% (−0.59%). In

[20] We were able to gather bid-ask data for 442 firms from Datastream. The average bid-ask spread (2*(Ask-Bid)/(Ask +Bid)) across the low disclosure samples is 0.29%. In the civil law subsample, it is 0.22%.
[21] The mean (median) market capitalization from Worldscope is $19,459 ($3,499) million.

contrast, for firms domiciled in countries classified as common law, the market did not react significantly. We also examine the market reaction based on the efficiency of the legal system in the firm's home country from LLSV (1998), since one of the most often-cited advantages of U.S. registration is that the foreign firm becomes subject to U.S. laws and U.S. courts (Coffee 1999, 2002). We find that for firms located in countries with low judicial efficiency, the mean (median) market reaction was negative and significant, −0.43% (−0.82%), whereas the reaction for firms from high judicial efficiency countries was not significantly different from zero.

Overall, the results in Panel A of Table 2 suggest that for firms located in countries with the weakest disclosure and investor protections, the market reacted negatively to their ability to easily terminate U.S. registration. However, for firms located in countries with strong investor protections, the market did not view the option of easier deregistration as a negative event.

Panel B of Table 2 partitions our sample by various firm-level characteristics in order to test if compliance costs and access to capital might explain the market reaction to Rule 12h-6. We find that the market reaction was not significantly different from zero for small firms, which suggests that investors do not view small firms' costs of compliance as outweighing the benefits of a U.S. listing. Further, we do not find evidence that our proxies for capital needs, *Leverage* and *Sales Growth*, are related to the market reaction. However, consistent with the corporate governance benefits hypothesis, we find in these univariate results that firms which are immediately eligible as defined by their U.S. trading volume, as well those with high inside ownership, have negative stock price reactions.

Panel C of Table 2 presents results for the entire sample of exchange-traded firms. The overall reaction is economically small, given that we are pooling firms from various governance regimes, which was an important factor in Panel A. Consistent with this finding that the market reaction varies among groups of firms, Panel C reports that the joint test of the market reaction being equal across firms is rejected at the 1% critical level.

Panel D of Table 2 presents results for our holdout sample of firms trading in the U.S., but not subject to U.S. registration. For these OTC-traded firms, the announcement of the new rule did not significantly affect their market value. Further, the joint test fails to reject that all coefficients are equal to zero, suggesting little significant cross-sectional variation in the reaction. Therefore, the negative market reaction to Rule 12h-6 documented earlier was not found in cross-listed firms that are exempt from the stringent SEC registration requirements. This suggests that the disclosure and legal protection of U.S. registration are key drivers of our results, rather than unobserved factors related to cross-listed firms in general.

Taken together, the univariate results in Table 2 suggest that the market values positively the increased disclosure and investor protections that result from SEC registration, in particular, for firms located in countries with weak home country regulations that would come into force upon deregistration.

V. Multivariate Analysis

A. Empirical Approach

In order to examine how firm and country characteristics influence investors' valuation of the SEC's deregistration rule, we associate individual cumulative abnormal returns ($\hat{\gamma}_i$) obtained from the SUR estimation to their firms' cross-sectional determinants. This analysis allows us to measure the economic significance of firm and country characteristics on the stock market reaction of firms to Rule 12h-6. We focus on exchange-traded cross-listed firms hereafter because only they were significantly affected by the SEC's new rule.[22] Our regression model is of the form:

$$\hat{\gamma}_i = \alpha + \beta(Investor\ \ protection_i) + \lambda(Firm\ \ characteristics_i) + \delta(Capital\ \ market\ \ development_i) + \varepsilon_i \quad (2)$$

The dependent variable is $\hat{\gamma}_i$, the event parameter estimate obtained from the SUR estimation in Equation 1. It corresponds to the average abnormal return experienced by firm *i* in our sample in the (−1, +1) event window surrounding the approval of Rule 12h-6.

We use seven country-level governance variables, which are explained in Section III, to measure the strength of disclosure standards and investor protection in the home country. The firm-specific continuous variables are averaged over the period between 2004 and 2006. We also use the ratio of domestic stock market capitalization to GDP as a control for the potential effect of the degree of capital market development on the market reaction. In addition, we include industry dummies and correct standard errors for

[22] We also conduct cross-sectional tests on OTC firms, which confirm the joint hypothesis test's conclusion of little cross-sectional variation in these firms.

possible clustering across countries using Roger's method in order to mitigate the generated variable problem (Pagan, 1984).

B. Multivariate Results

Table 3 presents the multivariate OLS analysis of the market reaction to Rule 12h-6 using Equation 2. Models 1–5 report the results of the relation between home country disclosure standards and the market reaction to Rule 12h-6, controlling for both firm- and country-level controls. Model 1 reports that the coefficient on *Disclosure Requirements* is positive and significant (1.80, *t*-statistic = 2.31), which is consistent with the univariate results that the Rule 12h-6 market reaction was negatively related to the quality of the home country disclosure environment. Models 2–5 show that the coefficients on *Disclosure*, *World Bank Disclosure*, *Earnings Management*, and *Disclosure in Periodic Filings* are 0.02 (*t*-statistic = 3.03), 0.34 (*t*-statistic = 2.56), −0.08 (*t*-statistic = −3.05), and 0.89 (*t*-statistic = 1.91), respectively. Across all five proxies, we find support for the hypothesis that the market reaction is negatively related to the strength of the home country disclosure environment that the firm will be subject to upon deregistration.

Models 6 and 7 test how the legal environment is related to the market reaction to Rule 12h-6. Model 6 shows that the coefficient on *Civil Law* is negative and significant (−0.84, *t*-statistic = −2.87), indicating that investors penalized firms from weak investor protection regimes upon the announcement of Rule 12h-6. We also find that the coefficient on *Efficiency of the Judicial System* is positive and significant (0.18, *t*-statistic = 1.82), indicating that Rule 12h-6 was not viewed as negatively for firms with strong home country judicial efficiency. Examining the economic significance of the results in Table 3, we see that, for example, the coefficient on *Civil Law* suggests that the market

penalizes firms from weak investor protection regimes by 0.84% compared to those from strong investor protection regimes (i.e., common law countries). The economic significance of the disclosure proxies is of a similar magnitude. For example, the market penalizes firms from high *Earnings Management* countries (one standard deviation above the mean) by 1.20% compared to firms from low *Earnings Management* countries (one standard deviation below the mean). [23]

Models 1–7 of Table 3 also report results for the firm-level variables. We find that after controlling for other firm- and country-level variables, firm size is not significantly related to the market reaction to Rule 12h-6. This finding is not consistent with compliance costs factoring into the market's view of Rule 12h-6. Further, we do not find any of our other firm-level proxies, such as *Leverage*, *Sales Growth*, or *ROA*, to be significantly related to the market reaction. Therefore, we do not find evidence that growth opportunities or capital needs significantly explain the market impact of Rule 12h-6. Finally, we do not find the *Eligible* dummy variable to be significant, which is consistent with the notion that the market views the new rule as affecting all firms equally since upon delisting, the deregistration process is relatively straightforward. The relative importance of the country-level proxies for investor protection is consistent with the findings of Doidge, Karolyi, and Stulz (2007b), who show that country characteristics explain much more of the variation in governance than observable firm-level characteristics.

Overall, the results in Table 3 suggest that the disclosure and corporate governance implications of U.S. registration are valued by investors, especially for firms from

[23] The economic significance is calculated as the difference in estimated CARs from Equation 2 between the value of one standard deviation above the mean for the variable of interest and the value of one standard deviation below the mean, whereas other right-hand-side variables are evaluated at their means.

countries with weak disclosure and investor protection regimes. We do not find support for the hypothesis that compliance costs significantly affect the market reaction.

VI. Robustness Tests

In this section, we perform variations of the tests conducted in Section V. The purpose of this analysis is to gauge the sensitivity of our results to alternative specifications of our tests and to the exclusion of certain observations.

A. Global Fama and French Factor Model

Abnormal returns from Equation 1 are derived from returns in excess of a two-factor U.S. and local (non-U.S.) market model since if markets are not completely integrated, the firm's shares may be priced with respect to the market where it lists as well as its home market (Stapleton and Subrahmanyam, 1977). However, Fama and French (1998) argue that a global factor model provides a parsimonious way to summarize the general pattern in international returns.[24] To investigate the robustness of our results to this alternative model of expected returns, we follow Zhang (2006) and Fama and French (1993, 1998), and construct a global Fama and French factor model of expected returns. These factors are excess returns on the value-weighted global market portfolio, returns on the global SMB portfolio (excess returns of local small firms over local big firms), and returns on the global HML (excess returns of local high B/M firms over local low B/M firms) portfolio. Appendix A provides complete details on the factor model construction.

Table 4 presents cross-sectional results when the cumulative abnormal returns are calculated using the global Fama and French factor model of expected returns. Across all models, we find that the coefficients on the disclosure and governance variables are

[24] For evidence on the limitations of the global Fama and French three-factor model, see Griffin (2002).

correctly signed and statistically significant. Moreover, the coefficients on *Disclosure Requirements* (Model 1) and *Efficiency of the Judicial System* (Model 7) increase in statistical significance, from 5% and 10%, respectively, to 1%.[25] Thus, our results are robust to this alternative model of expected returns.

B. Sefcik and Thompson (1986) Regressions

In addition to the OLS regression tests reported in Tables 3 and 4, we analyze the cross-sectional determinants of the stock market reaction by using the methodology developed by Sefcik and Thompson (1986). This methodology explicitly takes into account the contemporaneous correlation and cross-sectional heteroscedasticity of residuals across firms, and produces unbiased estimates of both the coefficients and their standard errors. A detailed description of this methodology is provided in Appendix B.

Table 5 reports cross-sectional regressions using the Sefcik and Thompson (1986) methodology. For our disclosure and investor protection tests, our results are largely consistent with the OLS results that the market reacted negatively for firms from countries with poor disclosure environments. For example, Models 1–5 show that 4 of the 5 proxies for local (non-U.S.) market disclosure quality are correctly signed and significant. One difference from the OLS results is that the *Disclosure in Periodic Filings* is positive but no longer significant. Therefore, using this alternative methodology, we continue to find evidence that the level of home country disclosure is important in explaining the market reaction to Rule 12h-6. Models 6 and 7 of Table 5 report that the *Efficiency of the Judicial System* and *Civil Law* variables continue to be significant (0.39, *t*-statistic = 1.89 and −1.38, *t*-statistic = −2.27, respectively). Models 1–7 of Table 5 also

[25] We also obtained qualitatively similar results for the univariate tests of Table 2 using the 3-factor global Fama and French factor model.

report firm-level coefficients. Like the OLS results, they are largely insignificant. Finally, in untabulated tests, we use the Sefcik and Thompson (1986) methodology with our global Fama and French factor model and find that our results are robust.

C. Alternative Announcement Dates

Prior to the new rule's acceptance on March 21, 2007, there were three announcements by the SEC regarding the foreign firm deregistration requirements. As discussed in Section I-D, the first one on January 25, 2005 only mentioned that the SEC was considering a revision and did not provide any details. The second announcement on December 14, 2005 proposed an easing of the deregistration rules based on a relative trading volume test, but only for the foreign firms that were well-known seasoned issuers. Finally, a year later, on December 13, 2006, this was modified again to eliminate the aforementioned issuer restriction. Although there likely was a great deal of uncertainty regarding what, if any, rule the SEC would finally adopt after the comment period, we added to our analysis these additional events when examining (1) the overall stock market reaction, and (2) cross-sectional determinants of the magnitude of this market reaction. In contrast to our findings for the final event date we employ in the paper, the stock prices of firms in our sample do not appear to have significantly reacted to these events (untabulated). Further, there is no cross-sectional firm- or country-level characteristic that influences individual firms' stock market reaction to these events.

D. Potential Confounding Events

To ensure that other unrelated corporate announcements around our event dates are not influencing our results, we gathered 8-K and 6-K forms filed with the SEC for each firm in our sample. 8-K forms are filed by a firm with the SEC when there is an

unexpected corporate event such as changes in top management, lawsuits, unexpected product introductions, and M&A announcements. 6-K forms are filed when there is a regularly occurring important corporate event such as a quarterly earnings release. We found 80 firms that filed either an 8-K or 6-K form that contained various announcements within the event window of our four events. Eliminating these firms and re-estimating our regressions yielded results that are qualitatively similar and therefore do not appear to be driven by any confounding events.

E. Firm-Level Governance Effects

In addition to our controls for inside and institutional ownership, we investigate the role of observable firm-level governance indicators in explaining the market's assessment of Rule 12h-6. We gather data from the Institutional Shareholder Services database, with 293 exchange-traded firms being matched with firm-level governance proxies. Following Aggarwal, Erel, and Stulz (2007), we create a firm-level composite governance index based on 44 factors, such as whether the board of directors is insider or independent director dominated, a dual CEO/chairman dummy, a staggered board dummy, and whether all directors attend at least 75% of the board meetings. Using this measure, we find that firm-level governance variables are not statistically significant but the country-level results continue to hold.[26] As with our previous firm-level proxies, the relative importance of the country-level proxies for investor protection is consistent with the findings of Doidge, Karolyi, and Stulz (2007b) that country characteristics explain much more of the variation in governance than observable firm characteristics.

Taken together, this section's robustness results reinforce our earlier findings that the market reacted negatively to the possibility that firms from weak disclosure and

[26] Using the individual factors identified in Aggarwal et al. (2007) yields similar inferences.

governance regimes could more easily deregister from the U.S. reporting and legal environment. This result provides support for the hypothesis that U.S. disclosure and investor protection laws have significant economic consequences, and that investors view their benefits as outweighing their costs.

VII. Impact of the Rule on Firm Deregistration

In this section, we analyze several ancillary predictions of our main results by investigating the impact of Rule 12h-6 on firms' deregistration decisions. To gather the necessary data, we identify all the delistings from 1990 to 2007 using hand-collected data from stock exchanges, depositary institutions, and the SEC. We also conduct news searches for additional delisting announcements using Lexis-Nexis to identify all the voluntary delistings by excluding delistings associated with mergers, acquisitions, bankruptcies, or forced delistings due to exchange requirements. Perhaps most importantly, we verify that the voluntary delistings that occurred prior to the new rule also led to subsequent deregistrations. Finally, because one of the stated goals of Rule 12h-6 is to encourage new U.S. listings, we gather data on new registrations via listings on major U.S. exchanges to assess the net effect of Rule 12h-6 on foreign firms' registration decisions.

A. Registrations and Deregistrations Surrounding Rule 12h-6

Figure 1 presents the total number of yearly registrations, deregistrations, and the net effect from 1990 to 2007. Consistent with the notion that deregistration was difficult prior to Rule 12h-6, there were relatively few deregistrations prior to the rule's adoption. For example, from 1990 to 2001, the average number of yearly deregistrations was fewer

than 2. In the post-SOX period (2002 to 2006), the average number rose to 15. Importantly, before the new rule was approved, the maximum number of foreign firm deregistrations from the SEC in any given year was 33 (in 2006). However, in the 8 months from March 22 to December 31, 2007, the total number of firms that applied for voluntary delisting and deregistration with the SEC under the new rule climbed to a historical high of 80.[27]

Figure 1 also plots the annual difference between new registrations and deregistrations. In every year prior to Rule 12h-6, including the post-SOX period, the number of new registrations exceeds the number of deregistrations. However, in the period following 12h-6, the number of deregistrations exceeded new registrations for the first time. Overall, the pattern suggests that Rule 12h-6 did indeed considerably ease foreign firms' ability to deregister from the U.S. disclosure and enforcement regulations. However, we do not find evidence to suggest that the new rule has encouraged, on balance, new U.S. registrations.

B. Securities Class Action Lawsuits and SEC Enforcement Activity

Our news article search of deregistration announcements in the post 12h-6 period uncovered several firms that had previously been the subject of SEC enforcement activity or private securities class action lawsuits. For example, 2 of the 5 firms highlighted in Coffee (2002) as examples of effective SEC prosecution against U.S.-registered foreign firms were among the first ones that decided to deregister under 12h-6. In addition to the previously discussed case of E.ON AG, another high-profile case involved Australia's then second-largest bank, National Australia Bank (NAB). The SEC launched an

[27] Some of these firms are still in the process of delisting and deregistration, but they have clearly announced their intention to do so.

investigation in 2004 that resulted in NAB and KPMG conceding they violated U.S. laws that prevent auditors from doing other work for the client. Soon after Rule 12h-6 was passed, NAB announced (on May 10, 2007) that it was delisting from the NYSE, but also noted that "NAB will continue to maintain its focus on good control and governance frameworks."

Since SEC prosecutions of non-U.S firms are relatively rare (Siegel, 2005), we also investigate data on private enforcement actions against foreign firms.[28] We examine if ADR firms involved in private securities class action lawsuits (rather than SEC prosecutions) are also the ones that deregister.[29] We search for lawsuits using the *Securities Class Action Clearing House Database* at Stanford Law School, which identifies U.S. private securities litigation against firms. We gather data on all securities litigation since 1996 (the beginning of the database), and then identify non-U.S. firms. We are able to identify 69 foreign firms that were previously the subject of private class action securities lawsuits in U.S. courts that were still trading in the U.S. as of March 2007. Interestingly, we found that over 16% of the firms that had previously been the target of private securities litigation (11 of the 69) voluntarily deregistered under Rule 12h-6 during our sample period, which is consistent with our overall finding that the market values the increased investor protection provided by the U.S. regulatory environment.[30]

C. Market Reaction to Voluntary Deregistrations Post Rule 12h-6

[28] We thank an anonymous referee for this suggestion.
[29] We also searched for *post-Rule* deregistration lawsuits, but the recent nature of the rule appears to have limited the fallout from investor lawsuits so far.
[30] In untabulated tests, we found that when a dummy variable indicating a previous lawsuit is included in our main tests, it is not statistically significant.

Our main findings, based on the full sample of firms cross-listed in the U.S., suggest that the economic impact of disclosure deregulation under 12h-6 is related to the quality of the foreign firm's disclosure and governance environment. To the extent that the economic impact of Rule 12h-6 is not fully anticipated when announced, the market reaction to subsequent voluntary deregistering announcements should also reflect the firm's home country investor protection environment. To test this ancillary prediction of our main results, we examine the stock price reaction to voluntary deregistrations to test if this market reaction is also related to the quality of the firm's disclosure and governance environment.[31]

We compute the (−1,+1) event window CARs using the multifactor SUR framework from Equation 1, employing stock returns from day −180 to day +25 relative to the announcement date. After eliminating firms with significant missing stock price and accounting data, and contemporaneous confounding announcements, 65 firms remain in the voluntary deregistration sample.

Table 6 presents the results when our previously employed country and firm characteristics are regressed on the three-day announcement returns.[32] For our disclosure tests, we find that 4 of the 5 disclosure and investor protection variables are correctly signed and significant. The insignificant coefficient on *Disclosure* is perhaps not surprising, given that a significant number of the firms (41 of 65) are from European countries, and therefore, there is much less cross-sectional variation in this test variable than in our main sample of 536 firms. For example, 59 of the 65 firms are above the full

[31] In contrast to our focus on the market reaction to the regulatory announcement of rule 12h-6, Doidge et al. (2008) provide a detailed analysis of the voluntary deregistration decision and the associated market reaction following Rule 12h-6.

[32] Similar to the reaction to the approval of Rule 12h-6, the average market reaction in this sample is not statistically different from zero.

sample median for *Disclosure*. For our investor protection proxies, *Civil Law* is correctly signed and significant, which suggests that firms from lower-quality environments have more negative stock price reactions to voluntary deregistration announcements. Although *Efficiency of the Judicial System* is not significant, as with the *Disclosure* variable, the majority of the sample is from high-efficiency countries (86%). Overall, the results suggest that the stock price reaction to voluntary deregistrations after Rule 12h-6 is also inversely related to the quality of the home country disclosure and investor protection environment.

Moreover, it is also consistent with previous research documenting that the market reaction to foreign firms registering for the first time with the SEC is largest for firms from low-quality environments (e.g., Miller, 1999). We also find the coefficient on sales growth is negative and significant in all specifications, which is consistent with Doidge et al. (2008), who argue that firms with better growth opportunities had a more negative deregistration stock price reaction. Finally, in untabulated tests, we find evidence suggesting that the likelihood of firms subsequently delisting/deregistering is related to the market reaction on March 22. This finding is consistent with the deregistration decisions of firms being partially anticipated and therefore reflected in the market's evaluation of Rule 12h-6. Taken together, the findings suggest that shareholders place significant value on U.S. securities regulations, especially when the home country investor protections are weak.

VIII. Conclusion

We examine the stock market impact of Rule 12h-6, which made it easier for foreign firms to opt out of U.S. disclosure and investor protection regulations. We find that the market reacted negatively to the ability of firms from weak investor protection regimes to easily opt out of the stringent U.S. reporting and legal environment and revert to their less stringent home country environment. For example, we find that the market reaction is negative for firms located in countries with poor disclosure environments as well as for firms from countries with civil law legal origin and with low levels of judicial efficiency.

In contrast, we find that the market reaction was insignificant for firms located in countries with strong investor protections. Therefore, our results suggest that shareholders place the highest value on U.S. disclosure requirements when the levels of disclosure and investor protection are poor in the home country. In contrast to the country-level disclosure and investor protection results, we find much weaker evidence that proxies for compliance costs or financing needs explain the market reaction. Finally, we also find that the negative abnormal returns are concentrated in firms that are currently complying with SEC disclosure requirements (e.g., level II and III ADRs), rather than cross-listed firms exempted from registration requirements (OTC and Rule 144a ADRs). This suggests the economic impact of the rule is concentrated in firms currently subject to SEC registration. Overall, the results support the hypothesis that U.S. disclosure and investor protection laws have significant economic benefits, especially for cross-listed firms from poor investor protection regimes.

Our analysis also points to several potential avenues for future research. For example, left unanswered is the question of whether Rule 12h-6 affected the relative costs and benefits of a London listing for foreign firms. In addition, whether firms that

subsequently deregistered under Rule 12h-6 subsequently lowered their disclosure quality or investor protections is also unknown. More detailed single-country studies could also yield insights into these unanswered questions.

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Table 1. Summary Statistics

This table presents descriptive statistics for the sample and variables used in the analysis. Panel A describes the number of observations and number of firms across countries. Panel B presents the distribution of the sample by cross-listing status. Panel C presents the summary statistics for the sample used in the regression analysis. *Disclosure Requirements* is an index that includes disclosure on prospectus, compensation, shareholders, inside ownership, contracts irregular, and transactions. It is obtained from La Porta et al. (2006). *Disclosure* is based on the average ranking of the answers to the following questions: R&D, capital expenditure, subsidiaries, segment-product, segment-geographic, and accounting policy. It is obtained from Bushman et al. (2004). The *World Bank Disclosure* is an index based on disclosure of information on seven items, including ownership, voting agreements between shareholders, and audit committees that review and certify financial data. It is obtained from the World Bank's Cost of Doing Business survey in 2005. *Disclosure in Periodic Filings* is an index of disclosures required in periodic reports and is obtained from Djankov et al. (2008). Higher values of these disclosure indexes represent better transparency. *Earnings Management* is an aggregate earnings management score based on earnings smoothing and discretion measures, and is obtained from Leuz et al. (2003). Higher values of this index refer to higher levels of earnings management. *Efficiency of the Judicial System* is an assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms" produced by the country risk rating agency International Country Risk. Higher scores of this index refer to higher efficiency levels. *Civil (common) Law* refers to firms located in countries with an English (non-English) legal origin (La Porta et al., 2006). Total Assets is total firm assets measured in million $US. Leverage is long-term debt divided by Total Assets. Sales Growth is the one-year growth in firm sales. ROA is the earnings before interest and taxes divided by Total Assets. Institutional Ownership % is the percentage of shares held by financial institutions as reported in 13F filings. Inside Ownership % is the percentage of shares held by company insiders, and is obtained from *Worldscope*. IFRS Adoption is a dummy variable that equals one if the firm prepares its annual reports in compliance with the IFRS, and zero otherwise. It is obtained from Worldscope. Eligible is one for firms for which the U.S. stock markets account for at most 5% of their worldwide trading volume, and zero otherwise. ADR ratios are taken into account when calculating the relative trading volume. Comment equals one for firms that commented on any of the SEC's deregistration proposals, obtained from the SEC's Web site, and zero otherwise. Stock Market Cap/GDP is the domestic stock market capitalization divided by GDP, and is obtained from the World Development Indicators database. All the continuous firm-specific variables are averaged over the period between 2004 and 2006.

Panel A. Country Distribution

Country	# Firms	Country	# Firms
Argentina	12	Japan	26
Australia	24	Mexico	12
Austria	1	Netherlands	21
Belgium	2	New Zealand	1
Brazil	27	Norway	5
Canada	260	Peru	2
Chile	14	Philippines	1
Colombia	1	Portugal	2
Denmark	1	Singapore	7
Finland	4	South Africa	8
France	25	South Korea	10
Germany	18	Spain	5
Greece	3	Sweden	6
Hong Kong	12	Switzerland	13
India	9	Taiwan	7
Ireland	7	Turkey	1
Israel	42	United Kingdom	39
Italy	9	Venezuela	1
Total	**638**		

Panel B. Cross-Listing Type

Cross-Listing Type	# Firms
Exchange-traded	**536**
AMEX	66
NASDAQ	154
NYSE	316
OTC-traded	**102**
Total	**638**

Panel C. Firm and Country Characteristics

Variable	# Firms	Mean	Median	Std. Dev.	5th percentile	95th percentile
Total Assets	638	48,188	2,070	198,307	11.140	220,435
ROA	638	−0.059	0.026	0.296	−0.621	0.139
Leverage	638	0.186	0.176	0.150	0	0.449
Sales Growth	638	0.241	0.084	0.882	−0.182	0.954
Foreign Sales Ratio	638	0.384	0.287	0.386	0	1
Comment	638	0.030	0	0.170	0	0
Eligible	638	0.227	0	0.419	0	1
Institutional Ownership %	638	0.265	0.079	0.343	0	0.998
Inside Ownership %	638	0.192	0.109	0.238	0	0.698
IFRS Adoption	638	0.252	0	0.435	0	1
Disclosure Requirements	638	0.758	0.833	0.192	0.333	0.916
Disclosure	638	93.951	100	13.398	57.25	100
World Bank Disclosure	638	6.260	7	0.927	5	7
Earnings Management	525	10.248	5.3	7.119	5.1	22.5
Disclosure in Periodic Filings	638	0.836	1	0.261	0.2	1
Civil Law	638	0.359	0	0.480	0	1
Efficiency of the Judicial System	638	8.863	9.250	1.352	6	10
Stock Market Cap/GDP	638	1.208	1.33	0.747	0.34	2.36

Table 2. The Market Reaction to Rule 12h-6

This table presents summary statistics and joint test results for coefficient estimates for exchange-traded and OTC-traded ADRs separately on the event parameter ($\hat{\gamma}_i$) obtained from the following SUR system:

$$R_i = \alpha_i + \beta_i R_m^{Local} + \lambda_i R_m^{US} + \gamma_i D + \varepsilon_i \quad i = 1,\ 2,\ ....,\ N$$

where R_i is the daily return series on an individual firm *i* in its local (non-U.S.) market; *D* takes on the value of one for the three-day window surrounding the approval of Rule 12h-6 by the SEC on March 22, 2007, and zero otherwise; R_m^{Local} is the daily return series on the domestic market index; R_m^{US} is the daily return series on the U.S. market index; and *N* is the number of firms in the sample. Daily stock returns are measured between June 1, 2004, and June 1, 2007, for 536 exchange-traded and 102 OTC-traded ADRs. The event parameter estimate $\hat{\gamma}_i$ corresponds to the average abnormal return for firm *i* in the (−1, +1) event window, and is multiplied by 300 to reflect the CAR in percentage over the three-day period. Panel A reports results based on different measures of the degree of legal protection for exchange-traded ADRs. The sample medians from the original studies are used to group firms into high vs. low legal protection regimes. Panel B reports results based on different firm characteristics for exchange-traded ADRs. The sample medians are used to group firms into high vs. low respective firm financial characteristics. Panel C reports results for all the 536 exchange-traded ADRs, and panel D displays results for all the 102 OTC-traded ADRs. Variable definitions are reported in Table 1. Standard errors take into account the contemporaneous correlation of residuals. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Subsamples Based on Disclosure and Legal Protection

Weak	**N**	**Mean $\hat{\gamma}_i$ (%)**	**Median $\hat{\gamma}_i$ (%)**	**Strong**	**N**	**Mean $\hat{\gamma}_i$ (%)**	**Median $\hat{\gamma}_i$ (%)**
Low Disclosure Requirements	112	−0.558**	−0.924***	High Disclosure Requirements	424	−0.027	−0.183
Low Disclosure	127	−0.576***	−0.912***	High Disclosure	409	−0.0015	−0.156
Low Disclosure in Periodic Filings	210	−0.492***	−0.585***	High Disclosure in Periodic Filings	326	0.099	−0.165
Low World Bank Disclosure	151	−0.522***	−0.828***	High World Bank Disclosure	385	0.021	−0.165
High Earnings Management	280	−0.459***	−0.405***	Low Earnings Management	132	−0.111	−0.177
Civil Law	211	−0.396***	−0.594***	Common Law	325	0.039	−0.153
Low Judicial Efficiency	141	−0.432**	−0.822***	High Judicial Efficiency	395	−0.027	−0.156

Panel B. Subsamples Based on Firm Characteristics

Bottom Half of the Sample	**N**	**Mean $\hat{\gamma}_i$** (%)	**Median $\hat{\gamma}_i$** (%)	**Top Half of the Sample**	**N**	**Mean $\hat{\gamma}_i$** (%)	**Median $\hat{\gamma}_i$** (%)
Small Firm	268	0.051	−0.342	Large Firm	268	−0.297**	−0.213**
Low Leverage	268	−0.081	−0.207	High Leverage	268	−0.165	−0.300*
Low Sales Growth	268	−0.162	−0.456**	High Sales Growth	268	−0.102	−0.171
Non-Eligible	410	−0.084	−0.294*	Eligible	126	−0.294*	−0.243*
Low Foreign Sales Ratio	268	0.063	−0.126	High Foreign Sales Ratio	268	−0.327**	−0.453***
Low ROA	268	−0.093	−0.378*	High ROA	268	−0.162	−0.174*
Low Institutional Ownership	268	−0.099	−0.378**	High Institutional Ownership	268	−0.162	−0.258
Low Inside Ownership	268	0.324	−0.135	High Inside Ownership	268	−0.585***	−0.489***

Panel C. All 536 Exchange-Traded ADRs

	N	**Mean $\hat{\gamma}_i$ (%)**	**Median $\hat{\gamma}_i$ (%)**	χ^2 *values* **for** $H_0: \gamma_i = 0 \ \forall i$
All Exchange-Traded ADRs	536	−0.138	−0.294***	2.61***

Panel D. All 102 OTC-Traded ADRs

	N	**Mean $\hat{\gamma}_i$ (%)**	**Median $\hat{\gamma}_i$ (%)**	χ^2 *values* **for** $H_0: \gamma_i = 0 \ \forall i$
All OTC-Traded ADRs	102	−0.039	−0.534	0.69

Table 3. Cross-Sectional Determinants of Firm-Level Responses to Rule 12h-6

This table presents the multivariate regression results of the impact of firm and country characteristics on the stock market reaction of individual firms to the Rule 12h-6 approval. The dependent variable is the coefficient estimate on the event parameter ($\hat{\gamma}_i$) multiplied by 300, which corresponds to the cumulative average abnormal return for firm *i* in the (−1, +1) event window. The sample comprises 536 exchange-traded ADRs. Variable definitions are reported in Table 1. Robust standard errors are estimated using Roger's method of clustering by country. The *t*-statistics are reported in parentheses below coefficient estimates. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Disclosure Requirements	1.800**	-	-	-	-	-	-
	[2.313]						
Disclosure	-	0.027***	-	-	-	-	-
		[3.035]					
World Bank Disclosure	-	-	0.348**	-	-	-	-
			[2.561]				
Earnings Management	-	-	-	−0.081***	-	-	-
				[−3.054]			
Disclosure in Periodic Filings	-	-	-	-	0.897*	-	-
					[1.911]		
Civil Law	-	-	-	-	-	−0.840***	-
						[−2.872]	
Efficiency of the Judicial System	-	-	-	-	-	-	0.180*
							[1.821]
Log (Total Assets)	0.024	0.024	0.03	0.099	0.024	0.051	0.009
	[0.307]	[0.294]	[0.389]	[1.034]	[0.284]	[0.594]	[0.116]
ROA	−0.96	−0.936	−0.948	−0.81	−0.987	−1.014	−1.017
	[−0.749]	[−0.720]	[−0.728]	[−0.581]	[−0.768]	[−0.794]	[−0.793]
Leverage	−0.147	−0.078	−0.261	−0.252	−0.156	−0.288	0.0005
	[−0.120]	[−0.064]	[−0.214]	[−0.166]	[−0.127]	[−0.236]	[0.001]
Sales Growth	−0.126	−0.123	−0.105	−0.099	−0.117	−0.12	−0.126
	[−0.528]	[−0.521]	[−0.452]	[−0.391]	[−0.496]	[−0.502]	[−0.530]
Foreign Sales Ratio	−0.309	−0.483	−0.363	−0.138	−0.348	−0.354	−0.435
	[−0.749]	[−1.146]	[−0.877]	[−0.276]	[−0.839]	[−0.867]	[−1.017]
Comment	0.024	−0.12	−0.111	0.147	−0.12	−0.018	−0.192
	[0.044]	[−0.232]	[−0.202]	[0.233]	[−0.220]	[−0.031]	[−0.363]
Eligible	−0.09	−0.129	−0.012	0.396	−0.09	0.114	−0.123
	[−0.344]	[−0.495]	[−0.047]	[1.245]	[−0.345]	[0.414]	[−0.464]
Institutional Ownership %	−0.369	−0.3	−0.339	−0.651*	−0.279	−0.282	−0.21
	[−1.048]	[−0.869]	[−0.970]	[−1.700]	[−0.788]	[−0.816]	[−0.606]
Inside Ownership %	−0.783	−0.747	−0.822	−0.825	−0.924	−0.777	−0.843
	[−1.283]	[−1.277]	[−1.366]	[−1.088]	[−1.572]	[−1.289]	[−1.449]
IFRS Adoption	−0.279	−0.468	−0.306	−0.729**	−0.306	−0.366	−0.351
	[−0.915]	[−1.476]	[−0.971]	[−2.067]	[−0.985]	[−1.180]	[−1.125]
Stock Market Cap / GDP	−0.198	−0.099	−0.108	−0.126	−0.09	−0.192	−0.132
	[1.249]	[0.685]	[0.712]	[0.715]	[0.601]	[1.218]	[0.822]
Constant	−0.549	−1.587*	−1.491	1.149	−0.075	0.045	−0.747
	[0.567]	[1.693]	[1.448]	[1.324]	[0.090]	[0.058]	[0.762]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Observations	536	536	531	411	536	536	536
R-Squared	0.048	0.050	0.049	0.080	0.045	0.051	0.045

Table 4. Cross-Sectional Determinants of Firm-Level Responses to Rule 12h-6, Using the Global Fama and French Factors as an Alternative Benchmark

This table presents the multivariate regression results of the impact of firm and country characteristics on the stock market reaction of individual firms to the Rule 12h-6 approval, using the global Fama and French 3-factor model as an alternative benchmark. The dependent variable is the coefficient estimate on the event parameter ($\hat{\gamma}_i$) multiplied by 300, which corresponds to the cumulative average abnormal return for firm *i* in the (−1, +1) event window. It is obtained from regressing firms' excess returns on the Datastream's value-weighted global market portfolio, and the global high-minus-low and small-minus-big Fama and French factors as estimated by Zhang (2006). The sample is 536 exchange-traded ADRs. Variable definitions are reported in Table 1. Robust standard errors are estimated using Roger's method of clustering by country. The *t*-statistics are reported in parentheses below coefficient estimates. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Disclosure Requirements	2.673***	-	-	-	-	-	-
	[3.471]						
Disclosure	-	0.037***	-	-	-	-	-
		[3.904]					
World Bank Disclosure	-	-	0.300**	-	-	-	-
			[2.223]				
Earnings Management	-	-	-	−0.091***	-	-	-
				[−3.591]			
Disclosure in Periodic Filings	-	-	-	-	0.905*	-	-
					[1.825]		
Civil Law	-	-	-	-	-	−1.213***	-
						[−4.137]	
Efficiency of the Judicial System	-	-	-	-	-	-	0.310***
							[2.833]
Log (Total Assets)	−0.038	−0.052	−0.056	0.017	−0.057	−0.008	−0.060
	[0.522]	[0.713]	[0.784]	[0.209]	[0.759]	[0.102]	[0.825]
ROA	−0.260	−0.262	−0.296	−0.141	−0.314	−0.352	−0.34
	[0.373]	[0.372]	[0.418]	[0.192]	[0.448]	[0.508]	[0.488]
Leverage	0.271	0.357	0.061	0.206	0.171	0.059	0.502
	[0.254]	[0.342]	[0.057]	[0.156]	[0.162]	[0.056]	[0.486]
Sales Growth	−0.050	−0.042	−0.030	−0.013	−0.040	−0.040	−0.051
	[0.230]	[0.195]	[0.140]	[0.059]	[0.187]	[0.182]	[0.236]
Foreign Sales Ratio	−0.345	−0.629	−0.430	−0.374	−0.426	−0.428	−0.605
	[0.872]	[1.561]	[1.073]	[0.781]	[1.074]	[1.090]	[1.492]
Comment	−0.053	−0.356	−0.327	−0.143	−0.327	−0.173	−0.420
	[0.099]	[0.706]	[0.616]	[0.235]	[0.629]	[0.317]	[0.818]
Eligible	−0.112	−0.243	−0.060	0.069	−0.136	0.140	−0.234
	[0.448]	[0.955]	[0.236]	[0.239]	[0.534]	[0.548]	[0.906]
Institutional Ownership %	−0.173	0.001	−0.006	−0.375	0.018	−0.030	0.053
	[0.488]	[0.003]	[0.018]	[0.979]	[0.050]	[0.088]	[0.153]
Inside Ownership %	−0.309	−0.286	−0.303	−0.117	−0.294	−0.272	−0.289
	[0.840]	[0.741]	[0.795]	[0.327]	[0.770]	[0.750]	[0.741]
IFRS Adoption	−0.106	−0.278	0.113	−0.895*	0.137	−0.110	−0.028
	[0.353]	[0.848]	[0.372]	[1.954]	[0.449]	[0.352]	[0.090]
Stock Market Cap/GDP	−0.362**	−0.169	−0.216	−0.161	−0.219	−0.339**	−0.304*
	[2.268]	[1.141]	[1.407]	[0.924]	[1.416]	[2.197]	[1.885]
Constant	−0.542	−1.895**	−0.596	2.631***	0.474	1.594**	−1.229
	[0.647]	[2.081]	[0.636]	[2.826]	[0.620]	[2.308]	[1.242]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Observations	536	536	531	411	536	536	536
R-Squared	0.045	0.047	0.035	0.072	0.033	0.050	0.042

Table 5. The Cross-Sectional Determinants of the Stock Market Reaction to Rule 12h-6, Using the Methodology of Sefcik and Thompson (1986)

This table presents the multivariate regression results of the impact of firm and country characteristics on the stock market reaction of individual firms to the Rule 12h-6 approval. The Sefcik and Thompson (1986) methodology is used to estimate the model (see Appendix B for details). The dependent variable is the portfolio return weighted using the weighting matrix of firm- and country-specific variables, and multiplied by 300. The sample comprises 536 exchange-traded ADRs. Variable definitions are reported in Table 1. Standard errors are adjusted for heteroscedasticity and cross-correlation. The *t*-statistics are reported in parentheses below coefficient estimates. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Disclosure Requirements	2.622*	-	-	-	-	-	-
	[1.81]						
Disclosure	-	0.045**	-	-	-	-	-
		[2.11]					
World Bank Disclosure	-	-	0.504*	-	-	-	-
			[1.66]				
Earnings Management	-	-	-	−0.093**	-	-	-
				[−1.99]			
Disclosure in Periodic Filings	-	-	-	-	1.068	-	-
					[0.99]		
Civil Law	-	-	-	-	-	−1.383**	-
						[−2.27]	
Efficiency of the Judicial System	-	-	-	-	-	-	0.396*
							[1.89]
Log (Total Assets)	−0.051	−0.078	−0.033	−0.672	−0.06	0.009	−0.075
	[−0.31]	[−0.46]	[−0.19]	[−0.23]	[−0.35]	[0.05]	[−0.44]
ROA	−2.379	−2.478	−2.559	−3.54	−2.238	−2.529	−2.181
	[−1.09]	[−1.15]	[−1.17]	[−1.30]	[−1.03]	[−1.16]	[−1.01]
Leverage	0.660	0.813	0.666	−1.347	0.510	0.387	0.393
	[0.30]	[0.37]	[0.30]	[−0.51]	[0.23]	[0.18]	[0.18]
Sales Growth	0.025	−0.013	0.024	0.067	0.042	0.286	−0.082
	[0.01]	[−0.01]	[0.07]	[0.18]	[0.01]	[0.08]	[−0.02]
Foreign Sales Ratio	0.072	−0.156	0.021	0.366	0.012	−0.087	−0.1353
	[0.10]	[−0.22]	[0.03]	[0.40]	[0.02]	[−0.12]	[−0.09]
Comment	−0.036	−0.207	−0.015	0.0969	−0.003	0.237	−0.129
	[−0.07]	[−0.41]	[−0.03]	[0.17]	[−0.01]	[0.44]	[−0.26]
Eligible	0.117	−0.087	0.003	0.093	0.075	0.084	−0.009
	[0.14]	[−0.10]	[0.01]	[0.09]	[0.09]	[0.10]	[−0.01]
Institutional Ownership %	−0.732	−0.549	−0.657	−0.867	−0.342	−1.128	−0.312
	[−0.50]	[−0.37]	[−0.45]	[−0.52]	[−0.24]	[−0.56]	[−0.21]
Inside Ownership %	−0.654*	−0.675*	−0.639*	−0.204*	−0.657*	−0.618*	−0.624*
	[−1.92]	[−1.97]	[−1.87]	[−0.53]	[−1.92]	[−1.81]	[−1.81]
IFRS Adoption	−0.076	−0.025	−0.057	−0.254	0.019	0.098	0.019
	[−0.26]	[−0.04]	[−0.10]	[−0.59]	[0.03]	[0.16]	[0.01]
Stock Market Cap/GDP	−0.006	−0.003	−0.0003	−0.003	−0.003	−0.006	−0.006
	[−1.54]	[−1.24]	[−1.07]	[−0.87]	[−1.04]	[−1.61]	[−1.47]
Constant	3.861	1.701	2.025	0.036	0.045	4.155	0.024
	[1.26]	[0.51]	[0.59]	[1.06]	[1.52]	[1.44]	[0.76]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Observations	536	536	531	411	536	536	536

Table 6. Cross-Sectional Determinants of the Market Reaction to Firms' Deregistration Announcements Following Rule 12h-6

This table presents the multivariate regression results of the impact of firm and country characteristics on the stock market reaction to firms' deregistration announcements in the post Rule 12h-6 period. The dependent variable is the coefficient estimate on the event parameter ($\hat{\gamma}_i$) multiplied by 300, which corresponds to the cumulative average abnormal return for firm *i* in the (−1, +1) event window. Variable definitions are reported in Table 1. Robust standard errors are estimated using Roger's method of clustering by country. The *t*-statistics are reported in parentheses below coefficient estimates. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Disclosure Requirements	1.790*** [3.460]	-	-	-	-	-	-
Disclosure	-	0.005 [0.357]	-	-	-	-	-
World Bank Disclosure	-	-	0.168*** [3.644]	-	-	-	-
Earnings Management	-	-	-	−0.022* [−2.038]	-	-	-
Disclosure in Periodic Filings	-	-	-	-	0.755** [2.579]	-	-
Civil Law	-	-	-	-	-	−0.271** [−2.596]	-
Efficiency of the Judicial system	-	-	-	-	-	-	−0.072 [−1.049]
Log (Total Assets)	0.018 [0.388]	−0.028 [−0.712]	−0.013 [−0.288]	−0.018 [−0.501]	−0.014 [−0.335]	−0.021 [−0.533]	−0.027 [−0.636]
ROA	1.184* [2.011]	0.944 [1.399]	1.045 [1.663]	1.007 [1.415]	1.301* [2.017]	1.010 [1.598]	1.004 [1.431]
Leverage	0.139 [1.274]	0.286 [1.352]	0.103 [0.623]	0.299 [1.375]	0.277 [1.535]	0.259 [1.339]	0.274 [1.308]
Sales Growth	−0.142*** [−9.136]	−0.142*** [−7.717]	−0.144*** [−9.216]	−0.150*** [−7.550]	−0.147*** [−8.669]	−0.149*** [−10.05]	−0.141*** [−7.934]
Foreign Sales Ratio	0.374 [1.397]	0.393 [1.572]	0.324 [1.180]	0.447 [1.702]	0.388 [1.569]	0.398 [1.544]	0.360 [1.574]
Comment	−0.387 [−1.658]	−0.474** [−2.299]	−0.490** [−2.507]	−0.505** [−2.423]	−0.455* [−2.133]	−0.475** [−2.457]	−0.449* [−2.042]
Eligible	−0.026 [−0.124]	0.126 [0.591]	0.085 [0.345]	0.196 [0.777]	0.095 [0.429]	0.165 [0.654]	0.103 [0.486]
Institutional Ownership %	0.017 [0.070]	0.439 [1.067]	0.386 [1.033]	0.439 [1.237]	0.179 [0.530]	0.324 [1.037]	0.391 [1.004]
Inside Ownership %	−0.087 [−0.096]	0.114 [0.144]	0.043 [0.048]	0.296 [0.390]	−0.015 [−0.017]	0.008 [0.010]	0.089 [0.100]
IFRS Adoption	0.089 [0.268]	0.059 [0.186]	0.093 [0.285]	−0.111 [0.270]	0.029 [0.089]	0.013 [0.039]	0.055 [0.173]
Stock Market Cap/GDP	−0.167* [−1.945]	−0.060 [−0.495]	−0.068 [−0.664]	−0.087 [−0.903]	−0.079 [−0.757]	−0.116 [−1.351]	−0.011 [−0.093]
Constant	−1.378 [−1.245]	0.645 [0.340]	−0.931 [−0.950]	0.301 [0.442]	−0.514 [−0.828]	0.289 [0.357]	0.811 [0.709]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Observations	65	65	65	63	65	65	65
R-Squared	0.533	0.467	0.49	0.524	0.506	0.485	0.474

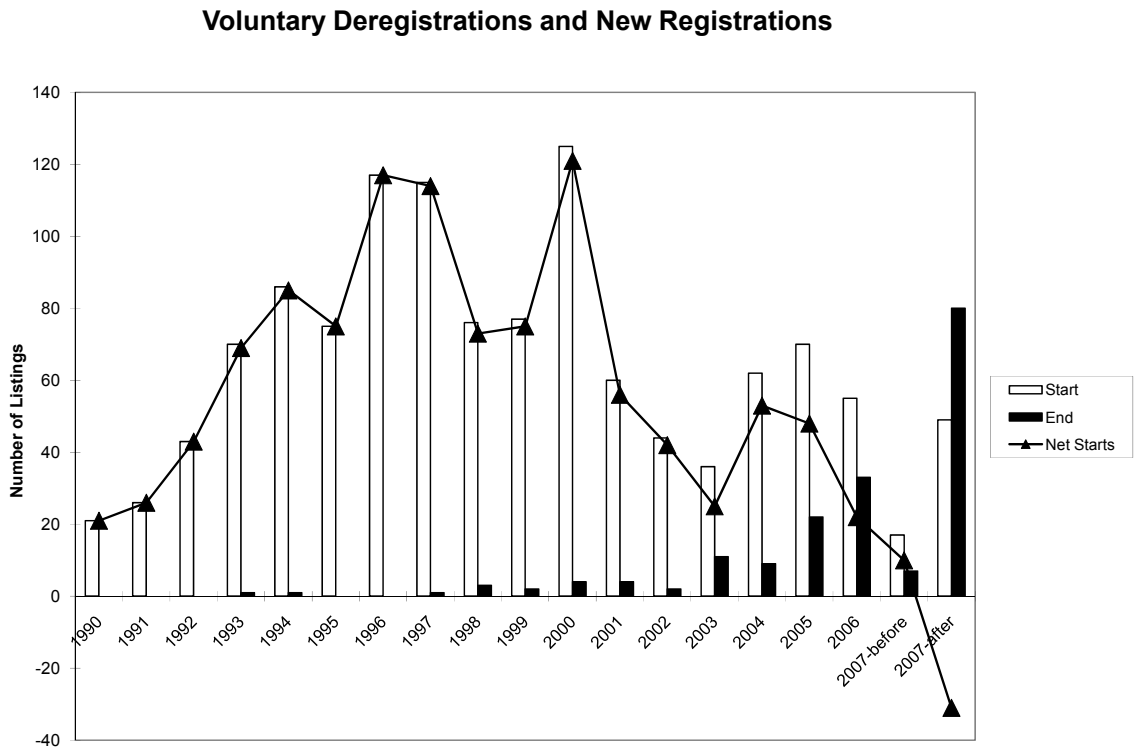

Figure 1. Number of firms voluntarily deregistering and registering with the SEC.

This figure presents the total number of yearly voluntary deregistrations and registrations from 1990 to 2007. The data were collected from several sources, including stock exchanges, depository institutions, SEC, and news databases. We exclude any deregistration related to mergers, acquisitions, bankruptcies, and involuntary delistings due to exchange requirements. The number of deregistrations described as "2007–before" corresponds to the period between January 1, 2007, and March 21, 2007. The number of deregistrations described as "2007–after" corresponds to the period between March 22, 2007, and December 31, 2007.

Appendix A. Global Fama and French (1993) Factor Model

We followed Zhang (2006) and Fama and French (1993, 1998) in constructing the global Fama and French factors. These factors are excess returns on the value-weighted global market portfolio, returns on the global SMB portfolio (excess returns of local small firms over local big firms), and returns on the global HML (excess returns of local high B/M firms over local low B/M firms) portfolio.

We used the return on the Datastream value-weighted global index in excess of the one-month Eurodollar deposit rate as a proxy for the global market portfolio. To obtain the returns on the size and book-to-market (B/M) portfolios, we started with the universe of stocks in the Datastream database.[33] We obtained daily returns, market capitalization (firm size), and B/M ratios at year end for each firm between January 2003 and June 2007. We used the one-month Euro-dollar deposit rate as a proxy for the risk-free rate, obtained from the Federal Reserve. Then, we constructed six portfolios based on firm size and B/M ratio and rebalanced them each year.

More specifically, we sorted firms within each country by size and book-to-market (B/M) ratios separately and created two size and three B/M ratio portfolios. Firms with a market capitalization of greater than the country median were put into the *Big size* portfolio and the rest were grouped under the *Small size* portfolio. Similarly, firms in the top 30% in terms of their B/M ratios within each country constituted the *High B/M* portfolio. *Low B/M* portfolio included the bottom 30% in terms of B/M ratios, and the *Neutral B/M* portfolio included the rest of firms. These portfolios were rebalanced each July using the previous December's B/M ratio and the previous June's market value.

[33] Our results remain similar if we use only the countries in our sample, rather than all the countries in Datastream.

The six portfolios we constructed were labeled SH, SM, SL, BH, BM, and BL. SH included firms that are both in the small size portfolio and high B/M portfolio, and SM included firms that are both in the small size portfolio and neutral B/M portfolio, and so on. This categorization of firms was undertaken separately for each country using the previous year's size and B/M.

Then, we calculated the value-weighted portfolio daily returns for each of these portfolios and created country-specific SMB and HML portfolio returns as follows:

SMB = 1/3 * (SH + SM +SL) - 1/3 * (BH + BM + BL) (7)
HML = 1/2 * (BH + SH) - 1/2 * (BL + SL) (8)

In the final step, we calculated the value-weighted sums of SML and HML portfolios using the global weights from Datastream, and labeled them WSMB and WHML portfolios, as in Zhang (2006).

Next, we estimated the following system of equations simultaneously in a SUR framework[34]:

$$R_i - r_f = \alpha_i + \beta_i (R_{VW} - r_f) + \lambda_i R_{WSMB} + \delta_i R_{WHML} + \gamma_i D + \varepsilon_i \quad (9)$$

where:

R_i = return series on the individual firm *i*, $i = 1, 2, \ldots, N$, and N is the total number of firms,

r_f = one-month Euro-dollar deposit rate as a proxy for the risk free rate,

R_{VW} = return series on the value-weighted global market portfolio,

R_{WSMB} = return series on the global SMB portfolio,

[34] In this setting, regressors are identical across firms; thus, SUR and OLS results are identical (Zellner, 1962).

R_{WHML} = return series on the global HML portfolio,

D = a dummy variable that equals one for the three-day window surrounding March 22, 2007, and zero otherwise, and

ε_i = error term series that are allowed to be contemporaneously correlated across firms.

As with the 2-factor model in Equation 1, daily stock returns were measured in local currency between June 1, 2004, and June 1, 2007 (782 observations per firm), and were obtained from the Datastream database.

Appendix B. The Methodology of Sefcik and Thompson (1986)

The Sefcik and Thompson (1986) method is based on constructing portfolios of sample firms' returns using a weighting matrix that includes firm and country characteristics of the sample firms that are described in Equation 2 and presented in Table 1. This weighting matrix (W) is defined as

$$W = [C'C]^{-1}C' = \begin{bmatrix} W_1' \\ W_2' \\ . \\ W_J' \end{bmatrix} \tag{3}$$

Then, a portfolio for each characteristic J is formed as follows:

$$R_{jt} = W_j' R_{it} \tag{4}$$

where:

J = number of firm and country characteristics analyzed including a constant

C = N x J matrix of firm and country characteristics

$$C = [1, X_2, \ldots X_J] \tag{5}$$

W = J x N matrix of portfolio weights

X_J = N x 1 vector of the j-th characteristic

W' = j^{th} row of the matrix W, corresponding to the j-th characteristic.

R_{it} = N × 1 vector of individual firms' stock returns on day t

R_{jt} = Weighted return on day t for portfolio J.

In our case, J equals 12 firm and country characteristics plus 2-digit SIC dummies and the intercept term, and N equals 536. After forming J portfolios using Equation 4, we run the following time-series regression for each portfolio:

$$R_t^j = \alpha^j + \beta^j \; R_{mt}^{World} + \lambda^j R_{mt}^{US} + \gamma^j D + \varepsilon_t^j \qquad j = 1,2,....,J \tag{6}$$

where:

R_t^j = weighted portfolio return series of all the exchange-traded ADRs for characteristic *J*, obtained from Equation 4

R_{mt}^{World} = return series on the World market index,

R_{mt}^{US} = return series on the U.S. market index,

D = a dummy variable that equals one for the three-day window surrounding March 22, 2007, and zero otherwise, and

Daily stock returns are measured between June 1, 2004, and June 1, 2007 (782 observations per firm), for 536 exchange-traded ADRs. Using a shorter estimation period, such as 200 days, does not change our results significantly.

The coefficient estimate on γ^j measures the impact of the *j*-th characteristic on the overall stock market reaction of portfolio firms to the SEC deregistration rule. This estimate is similar to the results obtained from cross-sectional regressions in a standard event study methodology, with the difference that results obtained from the Sefcik and Thompson (1986) method account for cross-sectional correlation and heteroscedasticity.