Investability and Firm Value

Todd Mitton[*]
Brigham Young University

Thomas O'Connor[**]
National University of Ireland Maynooth

This Version: May 2008

Abstract

We study how investability, or openness to foreign equity investors, affects firm value in a sample of over 1,400 firms from 26 emerging markets. We find that, on average, investability is associated with a 9% valuation premium (as measured by Tobin's *q*). However, in firm-fixed effects regressions this valuation premium disappears, suggesting that investability does not have a causal effect on firm value. Analysis of the components of Tobin's *q* shows that firms that become investable experience significant increases in both market values and physical investment. These effects are strongest for firms that face country-level or firm-level financial constraints prior to becoming investable.

JEL Classification: G15, F36

Key Words: Financial liberalization; Investability; Foreign investors; Tobin's *q*.

[*] Marriott School, Brigham Young University, Provo, UT 84602, USA, 801-422-1763, tm@byu.edu.
[**] Dept. of Economics, Finance, and Accounting, National University of Ireland Maynooth, Co. Kildare, Ireland, +353 1 7083786, thomas.a.oconnor@nuim.ie.

Investability and Firm Value

1. Introduction

When the stock of an emerging-market firm becomes available for foreign investment, the firm experiences changes in its stock market performance and its operating performance. Stocks of firms opening to foreign investment rise in price (see Henry (2000a), Kim and Singal (2000), Chari and Henry (2004)), and increase in return volatility (Bae, Chan, and Ng (2004)). At the same time, firms that become open to foreign investment experience an increase in real investment (see Henry (2000b), Mitton (2006), Chari and Henry (2008)). In addition, firms opening to foreign investment appear to experience increases in sales growth, increases in profitability and efficiency, and lower leverage (Mitton (2006)).

Given the multiple effects of foreign investment on outcomes for firms, a natural question to ask is how opening to foreign investment ultimately impacts firm value. In this paper, we combine stock market data with financial statement data in order to study how openness to foreign investment affects firm value, as measured by Tobin's *q*. In contrast to previous studies of the effect of stock market liberalization on stock prices, in our study we employ a firm-specific measure of liberalization. Whereas Henry (2000a, 2000b), Kim and Singal (2000), and others measure liberalization as a countrywide event, we follow Bae, Chan, and Ng (2004) and Mitton (2006) in measuring liberalization by a firm's investability, which is a firm-specific measure of whether a stock is open to foreign investment.

Using investability as the measure of liberalization rather than a country-specific date has at least three advantages. First, unlike country-specific measures, investability captures the fact that liberalization tends to occur gradually among firms in a country, rather than all on one specific date. Second, the investability measure allows for a natural experiment in which the performance of investable firms can be compared with noninvestable firms while holding

country characteristics constant. Third, since firms in the same country become investable at different times, the investability measure reduces concern about whether the observed effects of stock market liberalization might be more properly ascribed to other reforms undertaken by the country at the time of liberalization. Our study thus adds to our understanding of the effect of liberalization on value by using a more precise measure of liberalization.

The tests in our paper offer evidence on the "monitoring" hypothesis of liberalization and firm value. Previous literature hypothesizes that when a firm becomes open to international investment, the increased scrutiny and analyst coverage that occurs can lead to improved governance of the firm, and that this monitoring in turn can increase firm value due to an improvement in operating performance or a reduction in expropriation (see, e.g., Stulz (1999), Doidge, Karolyi, and Stulz (2004), Bekaert, Harvey, and Lundblad (2005), Mitton (2006)). The monitoring hypothesis implies a lasting increase in Tobin's *q* due to improved corporate governance. In contrast, standard international asset pricing models do not predict that liberalization leads to a lasting increase in Tobin's *q*. These models predict that when a country opens its domestic stock market to foreign investment, the country's cost of capital falls due to international risk sharing. This fall in the cost of capital should lead to increases in both stock prices and physical investment for liberalizing firms (see, e.g., Stulz (1999), Henry (2000a, 2000b, 2003)). Thus, while international asset pricing models predict increases in the components of *q* (market values and book values of assets), they do not predict a net permanent increase in *q* (although *q* may rise or fall temporarily). We would therefore interpret a positive relationship between investability and *q* as being consistent with the monitoring hypothesis.[1]

We study the impact of investability on firm value in a sample of 1,432 firms from 26 emerging markets. We find that, on average, investable firms have higher Tobin's *q* than noninvestable firms. On average, investability is associated with a valuation premium of roughly

[1] This interpretation is similar to that in Gozzi, Levine, and Schmukler (2007), who argue that the bonding hypothesis would imply an enduring increase in firm value for firms that cross-list or raise capital in international markets.

9%, and this valuation difference is statistically significant and persists even after controlling for size, industry, growth, and other firm characteristics. However, although simple averages and regression estimates indicate that investable firms have higher values, these results do not establish that investability has a causal effect on firm value. It may be that firms that already have, or are expected to have, higher values (for whatever reason) are those that are made available for foreign investment. To further address the issue of causality, we employ firm-fixed effects regressions to control for other sources of heterogeneity across firms. We find that in the firm-fixed effects regressions investability has only a small and statistically insignificant positive effect on firm value. This evidence suggests that investability does not have a causal effect on firm value, and does not appear to be consistent with the monitoring hypothesis.

On the other hand, our evidence is quite consistent with predictions of standard international asset pricing models. In additional tests we run firm-fixed effects regressions of the effect of investability on the components of Tobin's *q*, namely market values and book values of assets. We find that investability is associated with a large and statistically significant positive effect on both market values and book values. The pattern of changes in the components of *q* is similar to the pattern documented in Gozzi, Levine, and Schmukler (2007) for firms that cross-list and raise capital internationally. Whereas existing studies document the positive effect of liberalization on stock prices, our results add to existing findings by using the more-precise investability measure rather than a countrywide measure of liberalization.

In a final series of tests we assess the role of financial constraints in the response of firms to becoming investable. Because stock market liberalization increases the availability of financing for firms in emerging markets, the effects of liberalization might be especially strong for firms that face financial constraints prior to liberalization (see, e.g., Henry (2003), Bekaert, Harvey, and Lundblad (2005), Mitton (2006)). In particular, the presence of financial constraints prior to liberalization could magnify both the stock price reaction to becoming investable and the increase in physical investment for investable firms. We measure financial constraints

alternately using a country-level measure (financial development) and a firm-level measure (dividend payouts). We find that firms in countries with poor financial development have greater increases in market values and book values than do firms in countries with better financial development. In addition, we find stronger effects for non-dividend payers than for dividend payers. The finding that liberalization especially benefits firms with financial constraints is consistent with the large literature emphasizing the importance of financial development for economic growth.

Our paper contributes to a growing literature that studies how participation in international capital markets affects firm value as measured by Tobin's *q*. For example, Doidge, Karolyi, and Stulz (2004, 2007) show that foreign firms with shares cross-listed in the U.S. have higher *q* than firms that aren't cross listed. Gozzi, Levine, and Schmukler (2007) document trends in Tobin's *q* when firms internationalize (i.e., cross-list, issue depositary receipts, or raise capital internationally) and find that *q* rises before and during internationalization but falls thereafter. King and Segal (2007) report similar patterns in *q* for Canadian firms that cross-list. We establish the impact on Tobin's *q* of a different aspect of internationalization, the opening of a firm's stock to foreign investment.

The paper proceeds as follows. In the next section we describe the data used in the study and provide some summary statistics. In Section 3 we report results on the relation between investability and firm value. In Section 4 we discuss the role of financial constraints. Section 5 concludes.

2. Data and Summary Statistics

We begin our study by sourcing an initial sample of all firms listed in the major markets of the IFC Emerging Market Database (EMDB) at any time between 1980 and 2003. This initial sample consists of 2,784 firms that are designated as investable at some point during the sample period as well as firms that are never designated as investable but are included in the less-

restrictive IFC Global indices. To be included in the final sample, firms must also have financial data available in the Worldscope database, and we require that firms meet a minimum-data requirement. Firms that are investable at some point in the sample period are required to have financial data available at least one year before and one year after the year in which they are first investable.[2] Firms that are never investable during the sample period are required to have financial data available one year before and one year after the median year in which firms are first investable in their respective country. Our final sample is outlined in Table 1. After imposing the minimum-data requirements, the final sample consists of 1,432 firms; 602 investable firms and 830 noninvestable firms from 26 countries. From our initial sample, we lose all firms from Egypt, Morocco, Slovakia, and Zimbabwe due to insufficient financial data. The number of sample firms per country varies significantly, ranging from a minimum of 1 (Venezuela) to a high of 183 (Korea). Korea provides the greatest number of investable firms (114), while Peru and Venezuela provide just one investable firm each.

We measure the openness of stocks to foreign investors using the "investable" measure from the EMDB. The IFC designates a firm as investable if its stock is free from country-level and firm-level restrictions on foreign investment. The IFC also requires that the stocks have sufficient size and liquidity to be realistically available to foreign investors. We define a firm as investable in a given year if the firm's stock appears in the IFC investable index by December of that year.

Table 1 also presents four key dates for each country: the first year in which sample firms in each country are designated investable, the first year in which a closed-end country fund is available for the country, the official liberalization date of the country, and the first year in which a sample firm in the country cross-lists in the United States as an American depositary receipt (ADR). Country fund data is sourced from Bekaert, Harvey, and Lundblad (2005) and Patro

[2] There are firms in the sample that become investable more than once, i.e., in some periods they are designated noninvestable after being designated investable in earlier periods. In subsequent periods, these firms are once again designated investable. We require data to be available prior to their initial investable date.

(2005). Official liberalization dates are taken from Bekaert, Harvey, and Lundblad (2005). All information on cross-listed firms is sourced from the Bank of New York, and cross-referenced with information from Deutsche Bank, JP Morgan, the New York Stock Exchange, and Nasdaq.

We employ Tobin's *q* to measure firm value, where Tobin's *q* is defined as the book value of debt plus market capitalization divided by the book value of assets. Like Gozzi, Levine, and Schmukler (2007), we ultimately deviate away from the original definition of Tobin's *q* by proxying for market value of debt by using its book value counterpart, and measure the replacement cost of assets as the book value of assets. Book value of debt is calculated as the book value of total assets less the book value of equity. Doidge, Karolyi, and Stulz (2004, 2007) and Gozzi, Levine, and Schmukler (2007) also use Tobin's *q* to proxy for firm value in their studies on the valuation effects of international cross-listing and internationalization. All firm-level financial information is sourced from Worldscope for each year from 1980 to 2003. We control for firm and industry related factors commonly employed in other studies using Tobin's *q* (see Doidge, Karolyi, and Stulz (2004, 2007) and Gozzi, Levine, and Schmukler (2007)). We use the average (geometric) sales growth (inflation-adjusted) over the last two years and global industry *q* to account for firm and industry growth, respectively. Based upon primary standard industry classifications, the (yearly) mean global industry *q* is calculated as the average *q* of all global firms within each classification.[3] We use the log of sales (inflation-adjusted and in $U.S.), rather than total assets (given the definition of Tobin's *q*) to control for firm size. Finally, we exclude financial firms since these firms are more likely to be valued differently from non-financial firms.

[3] Firms are designated into one of thirteen industries based on the following classifications using 4-digit SIC codes: Agriculture and Food (0100-0999 & 2000-2111); Mining and Construction (1000-1999, excluding 1300-1399); Textiles and Printing/Publishing (2200-2799); Chemicals (2800-2824, 2840-2899); Pharmaceuticals (2830-2836); Extractive (2900-2999, 1300-1399); Durable Manufacturers (3000-3999, excluding 3570-3579); Transportation (4000-4899); Utilities (4900-4999); Retail (5000-5999); Services (7000-8999, excluding 7370-7379); Computers (7370-7379, 3570-3579, 3670-3679); Public Administration (9000+).

3. Investability and Firm Value

This section presents the main results on investability and firm value. We begin with univariate comparisons. We then proceed to panel regression estimates (pooled ordinary least squares and firm-fixed effects) of the effect of investability on firm value and its components.

3.1. Year-by-year valuation comparisons

In Table 2 we compare the value of investable to noninvestable firms in each year from 1988-2003. To compare investable firms to noninvestable firms, we do the following: first, the mean and median value of each group is given for each year. For each year, we calculate the difference in means (and medians) for each group, and test whether the differences in the mean (and median) between the two groups is statistically significant in each year using a t-test (z-test for medians). In addition, we calculate the relative *q* (mean and median-adjusted) for each firm for each year from 1988 to 2003. The mean- and median-adjusted relative *q* is calculated as the *q* of each investable firm divided by the mean (or median) *q* of all noninvestable firms in the firm's home country. A value of relative *q* greater than one indicates that the investable firm is worth more than its average (or median) counterpart noninvestable firm.

Table 2 shows that the average investable firm is valued more highly than the average noninvestable firm in all but five years. We reach similar conclusions when we use mean-adjusted relative *q*, which indicates that investable firms are worth more than noninvestable firms in all but two years. In general, the median investable firm is also worth more. Investable firms only begin to become worth more than noninvestable firms in the later part of the sample. For both means and medians, from 1999 onward investable firms are worth significantly more than noninvestable firms.

Over the entire sample period, the average (median) investable firm has a valuation premium of 0.03 (0.06) relative to noninvestable firms. This difference is statistically significant only for the median. In addition, the mean- and median-adjusted relative *q* measures are both greater than one for the entire sample period. Although the evidence in Table 2 suggests that

investability is associated with higher firm value, the results should be interpreted cautiously given that these univariate comparisons do not control for other factors that may influence firm value. We control for these factors in regression estimates in Section 3.3.

3.2. Event-time valuation comparisons

Table 3 compares the value of investable firms to noninvestable firms, not in calendar time, but in event time. The event-time comparison can shed light on whether there is a significant change in firm value after firms become investable, or if valuation premia exist before firms become investable. We denote the year in which a firm first becomes investable as "Year 0", and compare the value of investable to noninvestable firms in each year up to five years prior to, and five years after becoming investable. We compare the value of investable to noninvestable firms in an identical manner to the calendar-year comparisons presented in Table 2. First, we calculate the mean (or median) abnormal value of investable firms relative to noninvestable firms in each event year. Abnormal value is calculated as the value of each investable firm in each year less the mean (or median) value of noninvestable firms in the same year. In the remaining columns, we calculate the average mean- and median-adjusted relative value of investable firms in each event year. The final column of Table 3 outlines the number of investable firms available in each event year.

Table 3 suggests that firm value does not increase after firms become investable. In fact, the average investable firm is worth relatively less after becoming investable, although the difference is not statistically significant. The value of investable firms appears to peak just prior to becoming investable, but falls off thereafter. The statistically significant valuation premia enjoyed by investable firms over noninvestable firms begin at least five years prior to becoming investable and end two years after becoming investable. The fact that the valuation premium exists prior to the event of becoming investable suggests that investability may not have a causal effect on firm value (although if the market can anticipate which firms become investable, some

causality may be attributed to investability). The decline in value for investable firms is large enough that the median firm is worth statistically less than the median noninvestable firm five years after becoming investable. The last three rows of Table 3 summarize the neutral effect that investability has on firm value. The last three rows compare the (abnormal) value for the pre- and post-investability periods. The last row calculates the difference between both periods. On both an absolute and relative basis, firms that become investable are not worth more than firms that do not become investable.

We supplement Table 3 with a graphical depiction of the evolution of firm value for investable firms in event time as reported in Figure 1. The top panel of Figure 1 outlines the evolution of value for the mean and median investable firm in each year from five years prior to five years after a firm becomes investable. The bottom panel of Figure 1 depicts the evolution of mean- and median-adjusted relative *q* in each event year. Figure 1 again suggests that firm value peaks just before the time that firms become investable, and then steadily declines after firms become investable.

The time-series behavior of Tobin's *q* for firms that become investable is consistent with the time-series patterns of Tobin's *q* for firms that internationalize, as reported by Gozzi, Levine, and Schmukler (2007), and for Canadian firms that cross-list, as reported by King and Segal (2007).[4] In those studies, as well as in ours, firms opening up to international capital markets do not appear to experience a lasting increase in Tobin's *q*. The lack of a permanent increase in *q* does not seem to be consistent with the monitoring hypothesis, which would suggest that monitoring of investable firms leads to an improvement in corporate governance that causes a lasting increase in firm value.

[4] Gozzi, Levine, and Schmukler (2007) characterize "international" firms as those that either cross-list abroad via depositary receipt programs, or raise equity capital in major financial markets. They show that the time-series patterns depicted for their entire sample hold also for various sub-samples, e.g., Level 1 and Private Placements, Exchange Lists (Level 2 & 3), capital and non-capital raising lists. Doidge, Karolyi, and Stulz (2007) do not outline graphically the time-series behavior of value for firms that cross-list abroad (in the U.S. and the U.K.). However, the coefficient estimates from Table 10, Panel B of their paper suggests that, like Gozzi, Levine, and Schmukler (2007), cross-listed firms experience a run-up in value prior to listing, followed by a fall-off thereafter.

3.3. Regression Analysis

In this section we examine the relation between investability and firm value, conditional on country, industry, and firm-level controls. Specifically, we estimate the following panel (pooled ordinary least squares) regression:

$$\text{Tobin's } q_{it} = \alpha + X_{it}\beta + \text{Investable}_{it} + \text{Year}_t + \text{Country}_i + \varepsilon_{it} \quad (1)$$

where Tobin's q_{it} is Tobin's *q* for firm i in year t, X_{it} is a set of firm and industry controls (sales growth, size, and global industry *q*), and Investable is a dummy variable that equals one if firm i is investable in year t and zero otherwise. Year_t and Country_i represent a full set of year and country dummy variables.

The coefficient estimates corresponding to Eq. (1) are presented in Table 4. Below each coefficient estimate we present t-statistics (absolute value), which are calculated using standard errors clustered at the level of the firm in parentheses. Clustered standard errors are, by construction, also robust to heteroskedasticity (see Petersen (2007)). In Column 1 of Table 4, we regress Tobin's *q* on just the investable dummy along with year and country dummies. The coefficient estimate suggests that investable firms have higher values than noninvestable firms. The estimate indicates that, on average, investable firms have a Tobin's *q* that is 0.12 higher than noninvestable firms, a difference that is significant at the 1% level. Relative to the overall average *q* of noninvestable firms of 1.71, the estimate indicates that investable firms have roughly a 7% valuation premium over noninvestable firms. We find that the inclusion of firm and industry-level controls does not reduce the magnitude of the coefficient estimate, nor its statistical significance. In Column 2 we include controls for firm size, firm growth, and industry growth opportunities (global industry *q*). In this regression the coefficient on the investable dummy increases to 0.15, which is indicative of roughly a 9% valuation premium for investable firms. The controls are of the expected sign and are statistically significant. Firm- and industry-level growth impact positively on valuations, whereas size is negatively correlated with Tobin's *q*.

In the remaining columns of Table 4 we control for the effects of "indirect investability". Specifically, in this study we examine whether foreign ownership of a firm's stock enhances value. However, foreigners may be able to take a position in a stock even if the stock is not directly investable. This can occur either though the issuance of an ADR, or through inclusion in a closed-end country fund. In order to isolate these indirect investability effects from the direct investability effects associated with stock market liberalizations, we control for both in the remaining columns of Table 4. First, we create separate dummy variables for each different ADR level (Level 1, Level 2, Level 3, and Rule 144a/RegS). The ADR dummy variables equal one in the year in which the firm first cross-lists,[5] and one thereafter (the dummy becomes zero again if the firm cross-delists). We classify the ADR levels separately, since exchange-traded depositary receipts (Level 2 and 3) are associated with greater access to capital (see Lins, Strickland, and Zenner (2005) and Reese and Weisbach (2002)).[6] To control for the indirect investable effects of country funds, we create a dummy variable called "Country Fund" which equals one for every year in which a country fund is available for investment in the particular country, according to the dates outlined in the "Key Dates" column of Table 1. Column 3 shows that Level 2 and 3 cross-listings are associated with the greatest valuation gains, which is consistent with what Doidge, Karolyi, and Stulz (2007) term a "cross-listing premium". The presence of country funds (Column 4) is also associated with higher valuations. Importantly, Columns 3 and 4 show that controlling for indirect investability, either through ADRs or country funds, has very little effect on the magnitude or the statistical significance of the investable dummy.

[5] We ensure that we identify a firm's initial listing in the U.S. For example, many firms upgrade (e.g., Level 1 to Level 2 or 3) or downgrade (e.g., from exchange listing to Level 1) their depositary receipt level. The records displayed on the Bank of New York's website refer to a firm's current ADR listing. We consult historical records in order to identify a firm's initial listing.

[6] The results do not change if we create a single cross-listing dummy, rather than differentiate among the different listing types.

3.4. Fixed-effects regressions

Although the coefficient estimates from the pooled ordinary least squares regressions indicate substantial valuation premia for investable firms, these regressions fall short of establishing a causal effect of investability on value. The positive coefficient on the investable dummy could simply indicate that firms with higher valuations (for whatever reason) are those that are selected to be made open to foreign investment. The results could be affected by heterogeneity across firms that we have not sufficiently captured with the control variables in Table 4. To address these concerns, we focus on within-firm changes by re-estimating Eq. (1), but with firm-fixed effects included, i.e., least squares dummy variable regression (LSDV). Specifically, we estimate the following two-way fixed-effects model:

$$\text{Tobin's } q_{it} = \alpha + X_{it}\beta + \text{Investable}_{it} + \text{Year}_t + \text{Firm}_i + \varepsilon_{it} \quad (2)$$

where Firm_i represents firm-fixed effects, and all other variables are as explained in Eq. (1) (except that country-fixed effects are excluded).

Panel A of Table 5 presents the coefficient estimates of Eq. (2), with t-statistics, adjusted for heteroskedasticity as in White (1980), in parentheses underneath the coefficient estimates. In Column 1, we regress Tobin's *q* on the investable dummy alone (no controls, but time-fixed effects included). In subsequent columns, we introduce each control individually. In Column 5, we estimate the effect of investability on firm value with all firm and industry controls included simultaneously. In the remaining columns, we control for the indirect investability effects of ADR issuances and country fund introductions. In all specifications in Table 5, the coefficient on the investable dummy is positive, but not statistically different from zero. The coefficient estimate ranges from 0.005 to 0.016, indicating relatively small valuation premia for firms that become investable.

In contrast to the pooled ordinary least squares estimates presented in Table 4, the firm-fixed effects estimates of Table 5 do not indicate positive valuation effects of investability. Within firms, the act of becoming investable does not appear to result in an increase in Tobin's

q. The results presented in Table 5 are consistent with the findings reported in Table 3 and shown in Figure 1, which indicate that investable firms peak in value prior to becoming investable and that investability does not produce a lasting increase in Tobin's *q*. In drawing a conclusion that investability does not increase value, one caveat to these results should be maintained. Specifically, if investors can foresee which firms are likely to be made investable, and if becoming investable is perceived to have benefits for firm value, then some of the valuation increase noted prior to the first year of investability may actually be attributable to investability. If this is the case, then the firm-fixed estimates in Table 5 may underestimate the true impact of investability on value. Nevertheless, taken as a whole, the results in Table 5 (as well as Table 3 and Figure 1) appear to cast doubt on the positive impact of investability on value.

For purposes of comparison, in Panel B of Table 5, we re-estimate the impact of stock market liberalization on firm value, but now we use the official liberalization dates from Bekaert, Harvey, and Lundblad (2005).[7] The official liberalization dates are presented in Table 1 for each country. In contrast to the investability dummies, the official liberalization measures imply that all firms within each country become liberalized simultaneously. As a precursor, we outline the time-series behavior of Tobin's *q* in the years immediately prior to, and subsequent to the official liberalization date. The result is depicted as Figure 2. Similar to the analysis of Tobin's *q* presented in Figure 1, firms appear to experience an increase in value in the period immediately prior to liberalization, followed by a fall-off thereafter. However, in contrast to Figure 1, the magnitude of the post-liberalization fall-off in value is much less pronounced using the official liberalization measures. For example, using the investability dummies, the average (median) firm experiences, relative to the year in which the firm becomes investable, a fall in value of about 23% (20% for the median firm) three years after becoming investable. The corresponding

[7] The only difference between Panels A and B is that in Panel B we do not control for the effects of county fund availability. This is because some studies date stock market liberalizations as the year in which country funds are first available in a particular country. Consequently, official liberalization dates and country funds are likely to be highly correlated.

depreciation in firm value over the same period using the official liberalization dates is a smaller 14% (and 9% for the median firm).

The regression estimates presented in Panel B of Table 5 suggest the following. First, in contrast to the results presented in Panel A, we find a larger (and statistically significant) effect of stock market liberalization on firm value. The coefficient estimates on the liberalization dummy range from 0.080 to 0.112 and are statistically significant in every specification. These results imply that measuring liberalization with a country-level measure (as done in previous studies) may overstate the impact of liberalization on value. As noted above, the country-level measure has the shortcomings of not reflecting the gradual nature of liberalization and of possibly capturing the effects of other country-level economic reforms. However, there is also a large difference in sample size between Panel A and Panel B, because for some countries we do not have firm-level financial data in the pre-liberalization period. To assess the effect of different sample sizes, we replicate the results of Panel A, but use only the observations available in Panel B (3,842 firm-year observations). In these results (not reported) we find a statistically significant effect of investability, with a coefficient on the investable dummy of about 0.07. Therefore, only a part of the difference in results in Panels A and B is attributable to the shortcomings of the liberalization measure; the remainder of the difference is attributable to sample composition. In summary, the liberalization measure itself does not appear to greatly overstate the effect of liberalization on firm value, but the investable measure, in addition to being more precise, also leads to more informed estimates by allowing for a larger sample size, and ultimately the investable measure shows no significant effect of liberalization on firm value.

3.5. Components of Tobin's *q*

In Table 3 (and Figure 1), we analyzed the absolute and relative time-series behavior of the value of firms that become investable. In summary, that analysis suggests that the absolute and relative values (mean and median-adjusted) of investable firms increase in the years prior to

becoming investable, and fall off thereafter. To shed further light on the evolution of value for investable firms around the time of becoming investable, we examine the components of value for the full sample of firms. Thus, we separately document the time-series behavior of the book value of assets and of market capitalization, where both values are measured in logarithms and in $U.S. Gozzi, Levine, and Schmukler (2007) perform a similar exercise in their study. We first trace out the time-series pattern of book values and market values in the eleven-year window (five years before, the year of becoming investable '0', and five years after) around the time of firms becoming investable and present these as Figures 3 and 4. In addition to calculating the absolute value of the mean and median investable firm, for each of the components of Tobin's *q*, we examine their values relative to the average values of noninvestable firms from the same country. Relative total assets and relative market capitalization are calculated in the same manner as relative Tobin's *q* (mean-adjusted).

Figures 3 shows that firms experience sharp increases in book values upon becoming investable. In contrast, Figure 4 demonstrates that (absolute) market capitalization begins to fall post-investability. However, unlike book assets, firms experience a large run-up in market capitalization prior to becoming investable. Firms only experience an increase in book values once they become investable.

To further investigate the effect of investability on book value and market capitalization, we estimate firm-fixed effects regressions of the same form as in Eq. (2), but with book value and market value as the dependent variables. Table 6 presents the firm-fixed effects coefficients using log of total assets (in $U.S.) and log of market capitalization (in $U.S.) as dependent variables, respectively. For both components, we estimate four separate regressions. First, we regress total assets and market capitalization on the investable dummy alone. In subsequent regressions, we also control for sales growth and for the presence of ADRs and country funds.

In these regressions we do not control for global industry *q* (given that our dependent variable is no longer Tobin's *q*)[8] and log of sales (a proxy for firm size).

The results from Table 6 indicate that investability is associated with an increase in both total assets and market capitalization. In all four specifications, the coefficient estimates are positive and statistically significant at the 1% level for both components. The coefficient estimates suggest that the increase in total assets ranges from 4.38% to 4.72% for the mean firm. The average investable firm experiences an increase in market capitalization ranging from 7.17% to 7.67%.

Taken together, the time-series behavior of the components of Tobin's *q* shed light on what causes the value of investable firms to experience an appreciation prior to becoming investable, peak on the year immediately prior to becoming investable and fall-off thereafter. The pre-investable appreciation in firm value is caused by the appreciation in market capitalization, with no corresponding change in total assets. In contrast, the subsequent post-investability fall-off is caused by large-scale corporate expansion, coupled with a decline in market capitalization. While investable firms experience a greater percentage increase in market capitalization (compared to asset base) once they become investable, the increase in the firms asset base is more than sufficient to offset the increase in market capitalization, given that for these firms, their asset base tends to be greater than their market capitalization. (For example, in the year in which firms become investable, the median firm had assets in place of just under $498 million, compared with a market capitalization of just over $328 million.) These results are similar to those documented for firms that cross-list by Gozzi, Levine, and Schmukler (2007) in that firms that internationalize also experience an appreciation in market capitalization and an expansion in their asset base.

[8] In their paper, Gozzi, Levine, and Schmukler (2007) also perform a separate analysis of the impact of 'internationalization' on the components of Tobin's *q*. In their pooled ordinary least squares estimates, they no longer control for global industry *q* or firm size in these regressions (as we also do), instead using industry fixed-effects. However, this is not possible in our analysis, as we estimate firm-fixed effects, as opposed to pooled ordinary least squares regressions.

4. Regression estimates by level of financial constraints

Using the entire sample of firms, the results thus far suggest that investability does not enhance firm value. In this section, we examine whether there exist systematic differences across firms. Specifically, we examine whether firms that are more financially constrained, and thus have more to gain from becoming investable, become more highly valued post-investability.[9] To undertake this analysis, we classify firms according to their level of financial constraints. We characterize financial constraints at both the country and firm level. At the country level, we assume that firms that come from countries with weaker financial development should, on average, have greater financial constraints. We use two indicators of financial development taken from World Bank data. The first measure is market capitalization of listed firms, scaled by GDP, and the second measure is domestic credit to the private sector, also scaled by GDP. Both variables are measured as of the year 2000 and have been used extensively as measures of financial development (e.g., Rajan and Zingales (1998)). The variables are summarized in the last two columns of Table 1. To examine the impact of investability on firm value by level of financial constraints, we partition our original sample into two groups depending on whether the firms are domiciled in countries that are above or below the sample median for financial development (the cutoff points are less than 0.321 for market capitalization and less than 0.310 for domestic credit). We estimate Eq. (2) for each set of firms.

Table 7 presents firm-fixed effect regression estimates by level of financial development. The top panel contains the results using market capitalization as the measure of financial development, and the bottom panel uses domestic credit. We estimate in turn regressions using Tobin's *q*, log of total assets, and log of market capitalization as dependent variables. The results from Table 7 suggest the following. First, in the regressions with *q* as the dependent variable,

[9] Laeven (2003) demonstrates empirically that financial liberalization reduces financial constraints. However, his index of financial liberalization does not account for stock market liberalizations. Kaminsky and Schmukler (2003) overcome this shortcoming, and construct an index of financial liberalization that accounts for domestic financial sector reform, stock market liberalizations, and capital account liberalization.

there is little evidence that financially constrained firms gain more from becoming investable. In fact, in the top panel, less financially constrained firms show greater increases in *q* from becoming investable than do financially constrained firms (the coefficient estimate for these firms is negative, but not statistically different from zero). In the bottom panel, the coefficient estimates for *q* are similar for both sets of firms, but neither coefficient is statistically different from zero.

Next, we examine the regressions for the components of Tobin's *q* for both sets of firms. Unlike the results for Tobin's *q*, the results using total assets and market capitalization as dependent variables reveal stronger and more consistent differences between the two sets of firms. Employing either measure of financial development, we find that financially constrained firms experience greater increases in market capitalization and asset base expansion. The top panel shows that for financially constrained firms, investability is associated with a 47% larger increase in asset growth (comparing the coefficients of 0.291 and 0.198) and a 63% larger increase in market value relative to unconstrained firms. In the bottom panel, investability is associated with a 68% larger increase in asset growth and a 62% larger increase in market value for financially constrained firms. In summary, the gains from becoming investable, by level of financial constraints, are more revealing when we examine the components of Tobin's *q*. Becoming investable is associated with enhanced market capitalization and increased investment for both sets of firms, but the gains are greatest for financially constrained firms.

Next, we measure financial constraints at the firm level, using dividend payouts as a proxy for financial constraints. Following previous literature, we assume that firms that pay dividends are less likely to be financially constrained (see, e.g., Fazzari, Hubbard, and Petersen (1988), Lang and Stulz (1994), Chari and Henry (2008)). We collect from Worldscope data on dividend payouts for all firms in our sample. We define dividend payers as those that paid dividends in the year prior to becoming investable, and estimate separate regressions for

financially constrained firms (non-dividend payers), and less-financially constrained firms (dividend payers).

Regression estimates of Eq. (2) for dividend payers and non-dividend payers are reported in Table 8. As in Table 7, we estimate regressions using Tobin's *q*, total assets, and market capitalization as dependent variables. The number of observations in Table 8 shows that most of the firms in the sample are classified as non-dividend payers. The coefficient estimates suggest the greatest gains from stock market liberalizations accrue to financially constrained firms. In terms of Tobin's *q*, financially constrained firms have larger increases in value associated with investability, although the differences are not large (a coefficient of 0.012 for non-dividend payers compared to -0.031 for dividend payers). For asset growth and market capitalization, the differences are more pronounced. Non-dividend payers experience a larger increase in both asset base and market capitalization. Specifically, investability is associated with a 22% larger (comparing the coefficients of 0.247 and 0.201) increase in asset growth and 17% larger (comparing the coefficients of 0.423 and 0.359) increase in market capitalization.[10]

The finding that non-dividend payers experience a larger increase in asset growth upon becoming investable, relative to dividend payers, is indicative of stock market liberalization playing a role in reducing financial constraints for emerging market firms. If one of the benefits of stock market liberalization is that it opens a new financing channel, then the effects of liberalization would be expected to be stronger for firms that are in greater need of additional financing. Taken together, the results in Tables 7 and 8 are suggestive of benefits to firms that become investable, particularly to those that have financial constraints.

5. Conclusion

A great deal of research has focused on the effects on performance when firms from emerging markets pass through different steps in a process of globalization. We add to this

[10] Mitton (2006) also finds that non-dividend payers invest more upon becoming investable.

literature by documenting the valuation effects when firms are opened to foreign equity investment. We find significant effects when firms become investable: increases in market valuations and in real investment both appear to be associated with investability. These results add to prior research on the effects of stock market liberalizations by documenting stock price increases associated with liberalization, but using a firm-specific, rather than marketwide, measure of openness. The effects of investability on market valuations and investment are particularly strong for firms that are subject to financial constraints prior to becoming investable. Ultimately, however, we do not find evidence of a causal effect of investability on firm value, as measured by Tobin's *q*. In essence, increases in market values and book values when firms become investable tend to balance out, leaving no apparent permanent increase in *q*. This result appears to be a challenge for the monitoring hypothesis, which would imply that governance improvements upon opening up to foreign investment should lead to an enduring increase in firm value. In the end, although our findings do not address other potential risks of opening up to foreign investment (such as crisis susceptibility), they add to our understanding of the perceived benefits of stock market liberalization on firm performance.

References

1. Bae, K.-H., Chan, K., Ng, A., 2004. Investibility and return volatility. Journal of Financial Economics 71, 239-263.
2. Bekaert, G., Harvey, C., Lundblad, C., 2005. Does financial liberalization spur growth? Journal of Financial Economics 77, 3-55.
3. Chari, A., Henry, P., 2004. Risk sharing and asset prices: evidence from a natural experiment. Journal of Finance 59, 1295-1324.
4. Chari, A., Henry, P., 2008. Firm-specific information and the efficiency of investment. Journal of Financial Economics 87, 636-655.
5. Doidge, C., Karolyi, G.A., Stulz, R.M., 2004. Why are foreign firms listed in the U.S. worth more? Journal of Financial Economics 71, 205-238.
6. Doidge, C., Karolyi, G.A., Stulz, R.M., 2007. Has New York become less competitive in global markets? Evaluating foreign listing choices over time. Working paper, Ohio State University and University of Toronto.
7. Fazzari, S., Hubbard, G., Petersen, B., 1988. Financing constraints and corporate investment. Brookings Papers on Economic Activity 1, 141-195.
8. Gozzi, J.C., Levine, R., Schmukler, S.L., 2007. Internationalization and the evolution of corporate valuation. Journal of Financial Economics (Forthcoming).
9. Henry, P., 2000a. Stock market liberalization, economic reform, and emerging market equity prices. Journal of Finance 55, 529-564.
10. Henry, P., 2000b. Do stock market liberalizations cause investment booms? Journal of Financial Economics 58, 301-334.
11. Henry, P., 2003. Capital account liberalization, the cost of capital, and economic growth. American Economic Review 93, 91-96.
12. Kaminsky, G.L., Schmukler, S.L., 2003. Short-run pain, long-term gain: the effects of financial liberalization. IMF working paper 03/34.
13. Kim, E. H., Singal, V., 2000. Stock market openings: Experience of emerging economies. Journal of Business 73, 25-66.
14. King, M.R., Segal, D., 2007. The long-term effects of cross-listing, investor recognition, and ownership structure on valuation. Review of Financial Studies (Forthcoming).
15. Laeven, L., 2003. Does financial liberalization reduce financing constraints? Financial Management 32, 5-34.
16. Lang, L.H.P., Stulz, R.M., 1994, Tobin's *q*, corporate diversification, and firm performance. Journal of Political Economy 102, 1248-1280.

17. Lins, K., Strickland, D., Zenner, M., 2005. Do non-U.S. firms issue equity on U.S. stock exchanges to relax capital constraints? Journal of Financial and Quantitative Analysis 40, 1, 109-133.
18. Mitton, T., 2006. Stock market liberalization and operating performance at the firm level. Journal of Financial Economics 81, 625-647.
19. Patro, D., 2005. Stock market liberalization and emerging market country fund premiums. Journal of Business 78, 135-168,
20. Petersen, M.A., 2007. Estimating standard errors in finance panel data sets: comparing approaches. Review of Financial Studies (Forthcoming).
21. Rajan, R. Zingales, L., 1998. Financial dependence and growth. American Economic Review 88, 559-586.
22. Reese, W., Weisbach, M., 2002. Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings. Journal of Financial Economics 66, 65-104.
23. Stulz, R., 1999. Globalization, corporate finance, and the cost of capital. Journal of Applied Corporate Finance 12, 8-25.
24. White, H., 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica 48, 817-838.

Table 1: Sample statistics by country

	Sample firms			Key Dates			ADR		Financial Development Indicators	
Country	Investable	Non-investable	Total	First investable in sample	First country fund	Official liberalization date	First ADR in sample	Firms with ADRs	Market capitalization	Domestic credit
Argentina	7	3	10	1994	1991	1989	1997	1	0.584	0.239
Brazil	31	49	80	1991	1992	*1991*	1994	16	0.376	0.347
Chile	17	18	35	1990	1989	*1992*	1994	7	0.800	0.635
China	25	26	51	1993	1992	-	1995	4	0.538	1.246
Colombia	3	10	13	1995	1992	1991	1994	1	0.115	0.269
Czech R.	4	24	28	1997	1994	-	-	-	0.214	0.540
Greece	16	53	69	1990	1998	1987	2000	1	0.990	-
Hungary	5	3	8	1995	NA	-	-	-	0.258	0.322
India	36	96	132	1992	1986	*1992*	1993	15	0.321	0.288
Indonesia	15	47	62	1992	1989	1989	1996	1	0.179	0.219
Israel	5	15	20	1997	1992	*1993*	-	-	0.581	0.869
Korea	114	69	183	1991	1984	*1992*	1993	7	0.372	1.010
Malaysia	75	79	154	1988	1987	*1988*	1992	6	1.299	1.406
Mexico	35	11	46	1989	1981	*1989*	1991	16	0.216	0.130
Pakistan	8	28	36	1994	1991	1991	-	-	0.108	0.298
Peru	1	7	8	1997	NA	1992	1994	1	0.198	0.259
Philippines	18	28	46	1991	1987	*1991*	1995	4	0.689	0.444
Poland	2	12	14	1996	1995	-	-	-	0.191	0.278
Portugal	13	13	26	1989	1987	1986	-	-	0.573	1.398
Russia	9	8	17	1997	NA	-	1997	5	0.150	0.119
Sri Lanka	6	0	6	1995	NA	1991	-	-	1.602	1.389
Sth Africa	61	50	111	1992	1994	*1996*	1994	22	0.066	0.289
Taiwan	47	75	122	1991	1986	-	1992	17	-	-
Thailand	38	96	134	1990	1985	1987	1997	5	0.244	1.084
Turkey	10	10	20	1989	1989	*1989*	1998	1	0.350	0.237
Venezuela	1	0	1	1994	NA	1990	1991	1	0.067	0.120
	Total						Total			
All	602	830	1,432					131	0.321	0.310

The table reports summary statistics of the sample by country. Investable dates are taken from the Emerging Markets Database (EMDB). All information on ADRs is sourced from the Bank of New York, Citibank, NYSE, and NASDAQ. The number of ADRs refers to the number of firms with ADRs that also have post-listing financial data. First country fund dates are taken form Bekaert, Harvey, and Lundblad (2005) and Patro (2005). Official liberalization dates are taken from Bekaert, Harvey, and Lundblad (2005). Official liberalization dates presented in italics represents those countries with pre- and post-liberalization firm-level financial data. Financial development indicators are sourced from World Bank data. Domestic credit is credit provided to the private sector in the country (as a % of GDP), and market capitalization is the capitalization of listed firms in the country (as a % of GDP).

Table 2: Comparison of investable firms to noninvestable firms in calendar time

		Mean				Median			
Year	#Inv	Relative *q* (Mean Adjusted)	Investable (*q*)	Noninvest (*q*)	Difference	Relative *q* (Median Adj)	Investable (*q*)	Noninvest (*q*)	Difference
1988	15	1.02	2.07	1.76	0.31	1.09	1.93	1.47	0.46**
1989	29	0.97	1.89	2.06	(0.17)	1.07	1.55	1.71	(0.16)
1990	38	0.96	1.77	1.87	(0.10)	1.02	1.55	1.61	(0.06)
1991	51	1.03	2.09	1.91	0.18	1.17	1.84	1.69	0.15**
1992	137	1.05	1.84	1.97	(0.13)	1.18	1.54	1.75	(0.21)*
1993	177	1.03	1.93	2.06	(0.13)*	1.15	1.71	1.82	(0.11)
1994	243	1.05	2.12	2.14	(0.02)	1.13	1.76	1.87	(0.11)
1995	302	1.04	1.87	1.87	0.00	1.14	1.59	1.67	(0.08)
1996	350	1.02	1.83	1.77	0.06	1.12	1.59	1.51	0.08
1997	397	1.04	1.71	1.71	0.00	1.15	1.50	1.41	0.09
1998	380	1.05	1.47	1.45	0.02	1.16	1.25	1.21	0.04
1999	342	1.07	1.72	1.60	0.12**	1.18	1.44	1.31	0.13***
2000	295	1.04	1.67	1.53	0.14**	1.20	1.37	1.28	0.09***
2001	271	1.12	1.48	1.35	0.13***	1.22	1.34	1.23	0.11***
2002	247	1.14	1.56	1.38	0.18***	1.21	1.41	1.28	0.13***
2003	175	1.16	1.75	1.53	0.22***	1.25	1.62	1.39	0.23***
All	3,449	1.06	1.74	1.71	0.03	1.17	1.48	1.42	0.06***

The table reports the mean and median values of investable and noninvestable firms in each year from 1988 to 2003. Value is proxied using Tobin's *q*. Relative *q* is calculated as the value (*q*) of each investable firm divided by the mean (or median) value of all noninvestable firms in the firm's home country in that year. The number of observations (#Inv) is based on the available sample in each year. Asterisks denote significance of t-tests and z-tests of the equality of means and medians, respectively, where ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 3: Abnormal performance of investable firms relative to noninvestable firms in event time

	Tobin's *q*		Relative *q* (Average)		
	Mean Abnormal Value	Median Abnormal Value	Mean Adjusted	Median Adjusted	# Inv
-5	0.20**	0.09*	1.06	1.18	126
-4	0.19**	0.11**	1.09	1.21	185
-3	0.13**	0.17***	1.06	1.17	247
-2	0.27***	0.20***	1.11	1.24	363
-1	0.42***	0.37***	1.19	1.32	577
0	0.30***	0.22***	1.16	1.27	602
1	0.12***	0.14***	1.08	1.19	568
2	0.10**	0.08***	1.05	1.16	520
3	0.04	0.02	1.02	1.13	468
4	(0.01)	(0.05)	1.00	1.10	455
5	(0.02)	(0.06)*	1.00	1.10	439
All pre-investable	0.40***	0.30***	1.11	1.24	1,902
All post-investable	0.03	0.06***	1.06	1.17	3,449
Difference (Post-Pre)	(0.37)	(0.24)	(0.05)	(0.07)	

The table reports the mean and median abnormal value of investable firms relative to the value of noninvestable firms in event time. The event window defined as an eleven-year period around the event year (i.e., Year 0 is the first year that a firm becomes investable). Abnormal value is calculated as the mean (or median) of the value of investable firms less the mean (or median) value of noninvestable firms in the same year. Value is proxied using Tobin's *q*. Also reported are mean and median relative *q*, where relative *q* is calculated as the value (*q*) of each investable firm divided by the average value of all noninvestable firms in the firm's home country. The number of observations (#Inv) is based on the available sample in each event year. Asterisks denote significance of t-tests and z-tests of the equality of means and medians, respectively, where ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 4: Regression estimates of the effect of investability on firm value

	Tobin's *q*			
	(1)	(2)	(3)	(4)
Investable	0.117***	0.154***	0.153***	0.151***
	[4.20]	[5.59]	[5.52]	[5.47]
Firm Size		-0.040***	-0.040***	-0.041***
		[4.21]	[4.14]	[4.23]
Firm Growth		0.497***	0.503***	0.447***
		[7.57]	[7.65]	[6.84]
Global Industry *q*		0.620***	0.618***	0.619***
		[8.42]	[8.40]	[8.38]
Level 1 ADR			0.084	
			[1.25]	
Level 2 ADR			0.169**	
			[2.18]	
Level 3 ADR			0.222**	
			[2.01]	
Rule 144a/Reg S ADR			-0.095	
			[1.57]	
Country Fund				0.411***
				[6.03]
Time Dummies	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes
Obs #	14,017	14,017	14,017	14,017
R-Squared	0.268	0.301	0.303	0.307

The table reports coefficient estimates from ordinary least squares (pooled) regressions with t-statistics (absolute value) calculated using standard errors clustered at the firm level in parentheses. The dependent variable is Tobin's *q*. Investable is a dummy variable that is set equal to one in years in which the firm is designated as investable. Firm size is measured as the log of annual sales in real $U.S. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. ADR variables are dummy variables that are set equal to one in years in which the firm has an ADR of the specified type. Country fund is a dummy variable indicating the existence of a closed-end country fund in the firm's country. Also estimated but not reported are a constant, a full set of year dummies, and a full set of country dummies. Statistical significance is denoted by ***, **, * for the 1%, 5, and 10% levels, respectively.

Table 5: Firm-fixed effect estimates using the investable measure and official liberalization dates

Panel A	Tobin's *q*: Investability dummies						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Investable	0.012	0.010	0.016	0.012	0.012	0.012	0.005
	[0.62]	[0.32]	[0.85]	[0.66]	[0.63]	[0.65]	[0.26]
Firm Size		0.019*			0.017	0.016	0.024**
		[1.75]			[1.56]	[1.49]	[2.27]
Firm Growth			0.281***		0.279***	0.283***	0.225***
			[6.08]		[6.13]	[6.22]	[4.97]
Global Industry *q*				0.486***	0.481***	0.480***	0.466
				[12.28]	[12.19]	[12.20]	[11.82]
Level 1 ADR						0.030	
						[0.53]	
Level 2 ADR						0.323***	
						[4.37]	
Level 3 ADR						-0.138	
						[0.83]	
Rule 144a/Reg S ADR						-0.154**	
						[2.54]	
Country Fund							0.528***
							[12.86]
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	14,017	14,017	14,017	14,017	14,017	14,017	14,017
R-Squared	0.074	0.062	0.077	0.104	0.095	0.093	0.071

Panel B	Tobin's *q*: Official Liberalization Dates					
	(1)	(2)	(3)	(4)	(5)	(6)
Liberalization	0.112***	0.112***	0.108***	0.086***	0.081***	0.080**
	[3.44]	[3.44]	[3.34]	[2.70]	[2.57]	[2.54]
Firm Size		0.005			-0.010	-0.010
		[0.29]			[0.58]	[0.56]
Firm Growth			0.123		0.133	0.127
			[1.26]		[1.39]	[1.33]
Global Industry *q*				0.526***	0.530***	0.531***
				[10.42]	[10.52]	[10.52]
Level 1 ADR						-0.077
						[1.05]
Level 2 ADR						0.184**
						[2.16]
Level 3 ADR						-0.373
						[1.50]
Rule 144a/Reg S ADR						0.009
						[0.15]
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	3,842	3,842	3,842	3,842	3,842	3,842
R-Squared	0.065	0.061	0.066	0.113	0.121	0.113

The table reports coefficient estimates from firm-fixed effects regressions with t-statistics (absolute value), adjusted for heteroskedasticity, in parentheses. The dependent variable is Tobin's *q*. In Panel A, we use investability dummies. Investable is a dummy variable that is set equal to one in years in which the firm is designated as investable. In Panel B, we use official stock market liberalization dates taken from Bekaert, Harvey, and Lundblad (2005). Liberalization is a dummy variable that is set equal to one in each year from the time in which each firm's country officially liberalizes. Firm size is measured as the log of annual sales in real $U.S. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. ADR variables are dummy variables that are set equal to one in years in which the firm has an ADR of the specified type. Country fund is a dummy variable indicating the existence of a closed-end country fund in the firm's country. Also estimated but not reported are a constant and a full set of year dummies. Statistical significance is denoted by ***, **, * for the 1%, 5, and 10% levels, respectively.

Table 6: Firm-fixed effect estimates of the effect of investability on book values and market values

	Dependent Variable							
	Total Assets				Market Capitalization			
Investable	0.234***	0.234***	0.218***	0.235***	0.394***	0.399***	0.373***	0.392***
	[15.52]	[15.53]	[14.76]	[15.57]	[15.08]	[15.32]	[14.75]	[15.16]
Firm Growth		0.010	0.010	0.015		0.335***	0.352***	0.259***
		[0.13]	[0.22]	[0.33]		[4.47]	[4.73]	[3.49]
Level 1 ADR			0.077				0.256***	
			[1.45]				[3.28]	
Level 2 ADR			0.245***				0.914***	
			[4.29]				[7.17]	
Level 3 ADR			0.461***				0.690***	
			[3.39]				[3.04]	
Rule 144a/Reg S			0.424***				0.395***	
			[8.07]				[3.80]	
Country Fund				-0.088***				0.709***
				[2.59]				[13.29]
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	14,017	14,017	14,017	14,017	14,017	14,017	14,017	14,017
R-Squared	0.030	0.030	0.057	0.029	0.095	0.100	0.126	0.084

The table reports coefficient estimates from firm-fixed effects regressions with t-statistics (absolute value), adjusted for heteroskedasticity, in parentheses. The dependent variable is the logarithm of total assets (in $U.S.) or the logarithm of market capitalization (in $U.S.) as indicated. Investable is a dummy variable that is set equal to one in years in which the firm is designated as investable. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. ADR variables are dummy variables that are set equal to one in years in which the firm has an ADR of the specified type. Country fund is a dummy variable indicating the existence of a closed-end country fund in the firm's country. Also estimated but not reported are a constant and a full set of year dummies. Statistical significance is denoted by ***, **, * for the 1%, 5, and 10% levels, respectively.

Table 7: Firm-fixed effect estimates by level of financial development

	Market Capitalization of Listed Firms					
	Above Median			Below Median		
	Tobin's *q*	Assets	Market Cap	Tobin's *q*	Assets	Market Cap
Investable	0.010	0.198***	0.322***	-0.011	0.291***	0.527***
	[0.43]	[11.52]	[10.98]	[0.34]	[10.20]	[9.78]
Firm Size	0.035***			-0.024		
	[2.70]			[1.35]		
Firm Growth	0.257***	0.129**	0.330***	0.267***	-0.086	0.458***
	[4.48]	[2.54]	[3.63]	[3.59]	[0.97]	[3.66]
Global Industry *q*	0.421***			0.526***		
	[8.49]			[8.03]		
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	9,151	9,151	9,151	4,866	4,866	4,866
R-Squared	0.051	0.030	0.073	0.169	0.100	0.186
	Domestic Credit to Private Sector					
	Above Median			Below Median		
	Tobin's *q*	Assets	Market Cap	Tobin's *q*	Assets	Market Cap
Investable	-0.003	0.195***	0.331***	0.010	0.329***	0.536***
	[0.16]	[11.32]	[11.03]	[0.29]	[11.40]	[10.44]
Firm Size	0.051***			-0.044**		
	[4.05]			[2.45]		
Firm Growth	0.321***	0.090*	0.380***	0.175**	-0.111	0.266**
	[5.58]	[1.77]	[4.12]	[2.42]	[1.25]	[2.11]
Global Industry *q*	0.326***			0.699***		
	[7.24]			[9.51]		
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	9,328	9,328	9,328	4,689	4,689	4,689
R-Squared	0.045	0.032	0.089	0.129	0.123	0.159

The table reports coefficient estimates from firm-fixed effects regressions with t-statistics (absolute value), adjusted for heteroskedasticity, in parentheses. The dependent variable is Tobin's *q*, the logarithm of total assets (in $U.S.), or the logarithm of market capitalization (in $U.S.) as indicated. Separate regressions are reported for firms in countries with above- and below-median financial development. In the top panel, financial development is measured as the market capitalization of listed firms divided by GDP, and in the bottom panel financial development is measured as domestic credit provided to the private sector divided by GDP. Investable is a dummy variable that is set equal to one in years in which the firm is designated as investable. Firm size is measured as the log of annual sales in real $U.S. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. Also estimated but not reported are a constant and a full set of year dummies. Statistical significance is denoted by ***, **, * for the 1%, 5, and 10% levels, respectively.

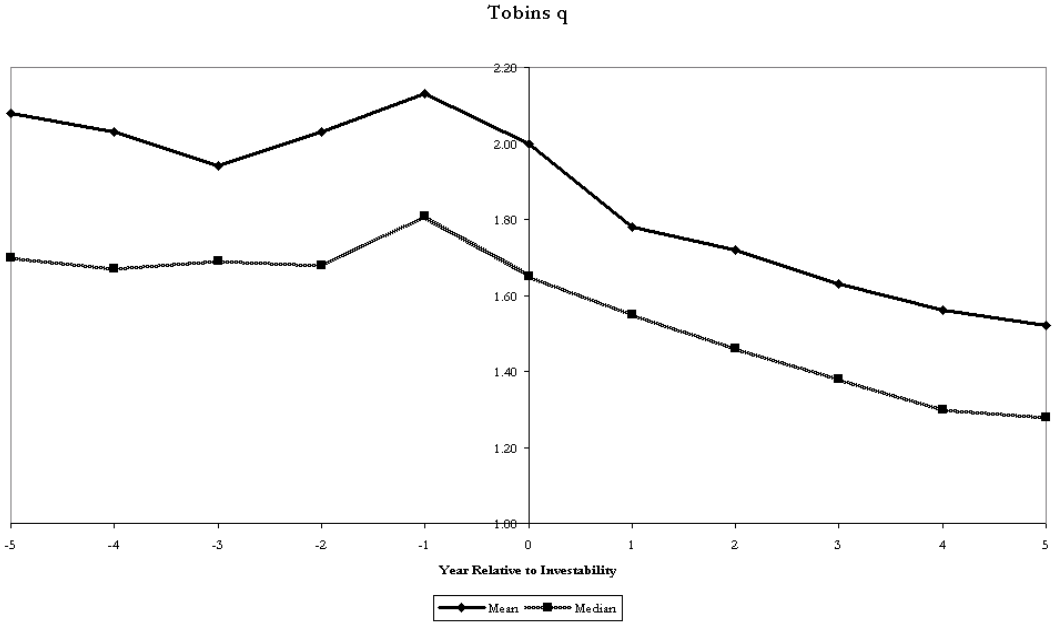
Table 8: Firm-fixed effect estimates by level of dividend payout

	Dividend Payers			Non-Dividend Payers		
	Tobin's *q*	Asset	MCap	Tobin's *q*	Asset	MCap
Investable	-0.031	0.201***	0.359***	0.012	0.247***	0.423***
	[0.88]	[6.24]	[7.18]	[0.79]	[12.26]	[11.71]
Firm Size	0.010			0.019		
	[0.30]			[1.34]		
Firm Growth	0.179**	-0.082	0.161	0.358***	0.041	0.426***
	[2.23]	[1.02]	[1.24]	[5.36]	[0.63]	[3.92]
Global Industry *q*	0.642***			0.413***		
	[8.05]			[8.03]		
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Obs #	4,500	4,500	4,500	9,517	9,517	9,517
R-Squared	0.130	0.031	0.069	0.084	0.030	0.121

The table reports coefficient estimates from firm-fixed effects regressions with t-statistics (absolute value), adjusted for heteroskedasticity, in parentheses. The dependent variable is Tobin's *q*, the logarithm of total assets (in $U.S.), or the logarithm of market capitalization (in $U.S.) as indicated. Separate regressions are reported for firms that were and were not dividend payers in the year prior to becoming investable. Investable is a dummy variable that is set equal to one in years in which the firm is designated as investable. Firm size is measured as the log of annual sales in real $U.S. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. Also estimated but not reported are a constant and a full set of year dummies. Statistical significance is denoted by ***, **, * for the 1%, 5, and 10% levels, respectively.

Figure 1: Value of investable firms in event time

The top figures displays the mean and median Tobin's *q* of investable firms around the time of investability. Date '0' is the investable date. The bottom panel displays the mean and median-adjusted Relative Tobin's *q* of investable firms. Mean and median-adjusted relative Tobin's *q* is calculated as the value of each investable firm less the average/median value of noninvestable firms.



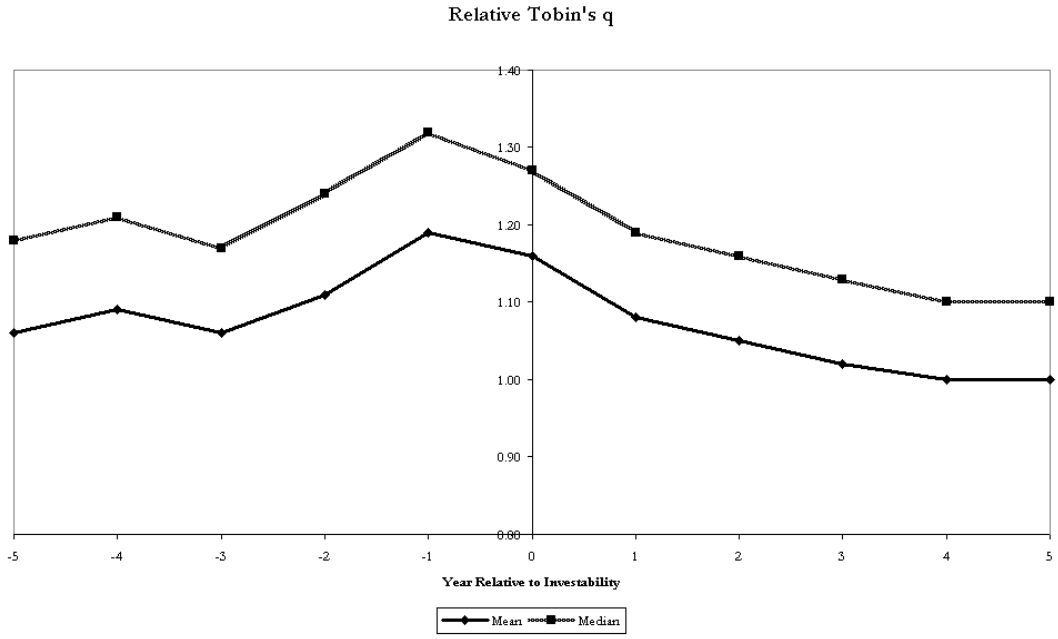


Figure 2: Value of firms around the time of official liberalization

This figure displays the mean and median Tobin's *q* of firms around the time of the official liberalization. Date '0' is the liberalization date as reported in Bekaert, Harvey, and Lundblad (2005).

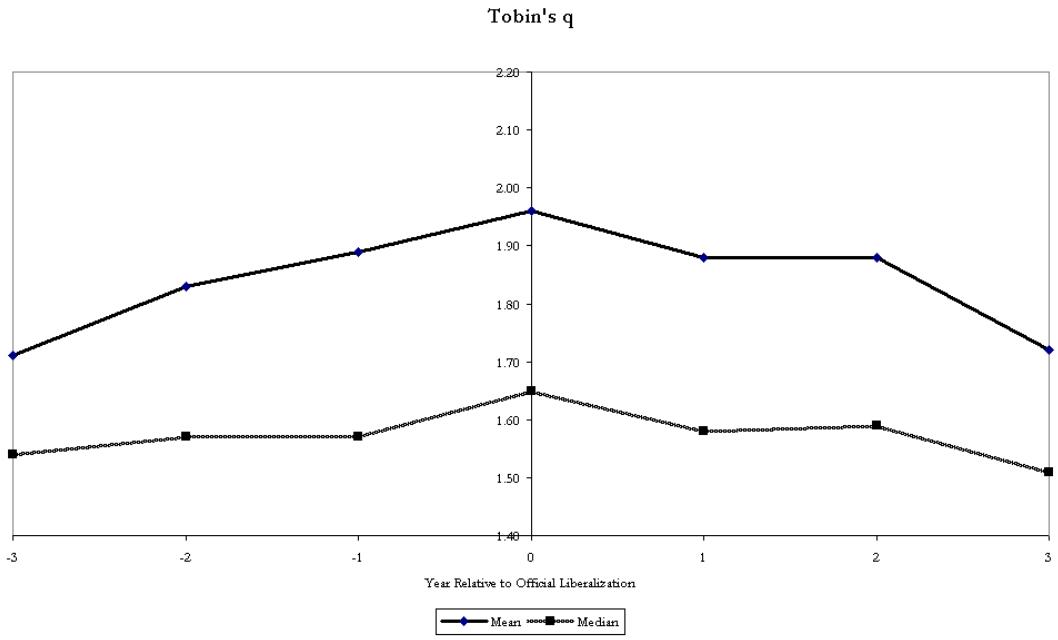
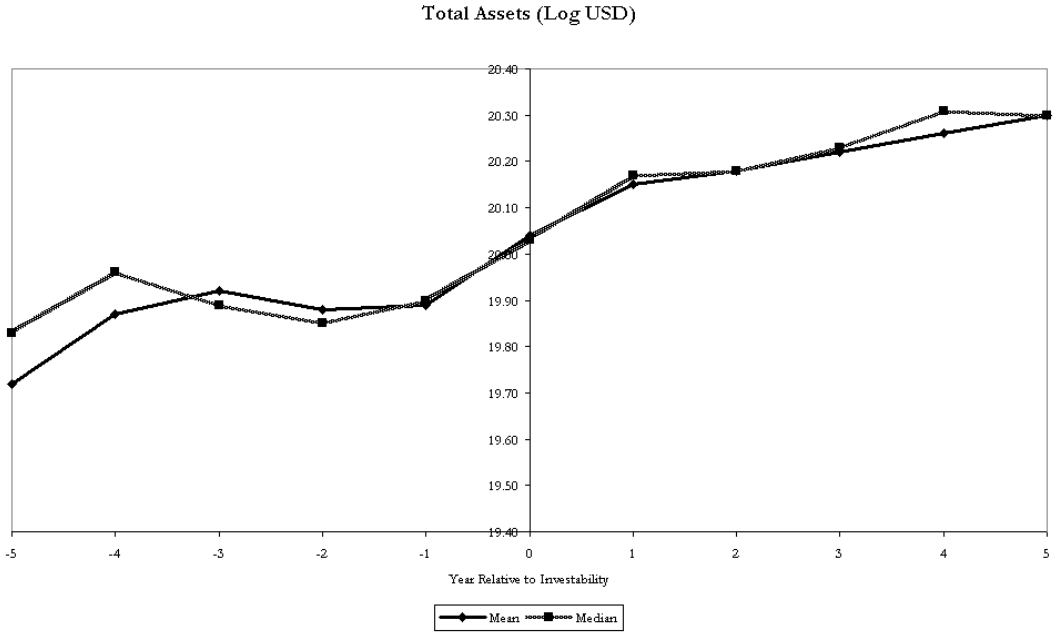


Figure 3: Absolute and relative asset size of investable firms in event time

The top figure displays the mean and median size of investable firms around the time of investability. Date '0' is the investable date. The bottom panel displays the mean and median relative size of investable firms. Relative size is calculated as the size of each investable firm divided by the average value of noninvestable firms.



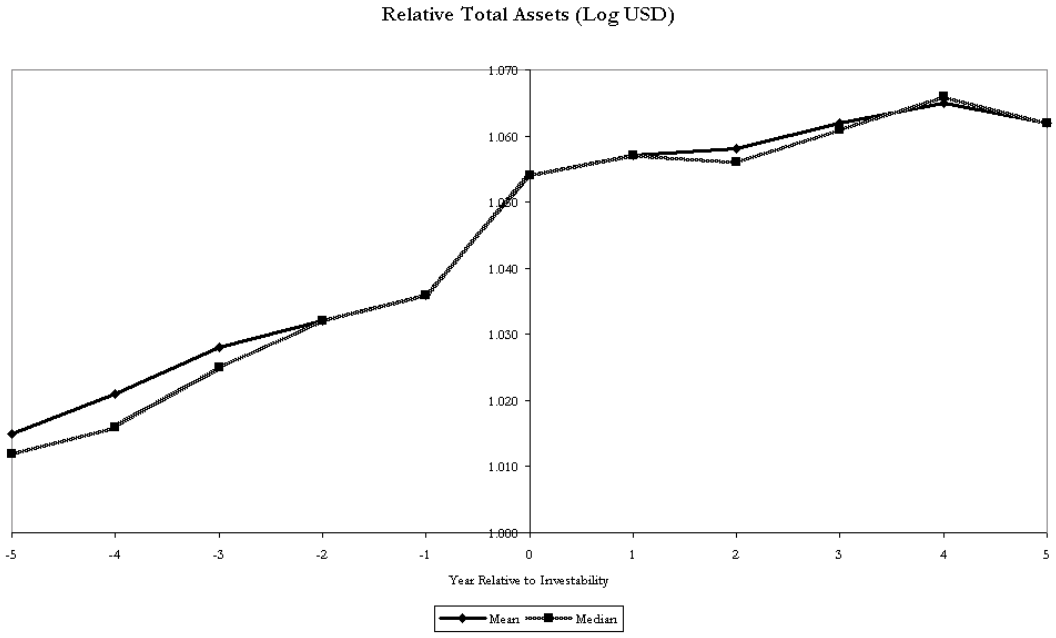


Figure 4: Absolute and relative market capitalization of investable firms in event time

The top figure displays the mean and median market capitalization of investable firms around the time of investability. Date '0' is the investable date. The bottom panel displays the mean and median relative market capitalization of investable firms. Relative market capitalization is calculated as the market capitalization of each investable firm divided by the average market capitalization of noninvestable firms.