

The Unequal Outcomes from Opening the Door: Evidence from the Foreign Ownership Limits of Indian Companies

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Abstract

I study the effects on Indian publicly traded companies of the natural experiment of the Reserve Bank of India (RBI) increasing the limit of a company that could be owned by foreign institutional investors from 1993 – 1997. The government exogenously opening a company up to foreign ownership is found to cause increases in the short-term liquidity of the company's equity, in the long-term growth of the company's book value and in the company's long-term valuation multiples. Interestingly, a company opening up itself is found to be associated with decreases in the short-term liquidity of the company's equity and in the long-term growth in the company's book value, but an increase in the company's long-term valuation multiples. These results are robust to concerns of empirical specification, the RBI endogenously choosing companies or industries to open up and the results being isolated to a certain type of company. In all cases, the results are particularly extreme for government-run firms.

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The positive correlation between the depth of a country's financial markets and business performance is a hotly debated topic. Schumpeter (1934) and later Levine (1997) argue that a well-functioning financial system is a foundational institution in a country's infrastructure that allows for innovation and the deployment of capital to its most efficient end use. Conversely, Robinson (1952) writes that "where enterprise leads finance follows,"² namely business success causes the development of financial markets not the other way around. Unfortunately, there are few natural experiments in which the hypotheses can be tested against one another. My paper will argue that the period 1993 – 1997 when the Reserve Bank of India (RBI) opened up certain companies to higher limits on foreign ownership constitutes such a natural experiment that can be used to estimate the effects of allowing foreign ownership on company performance metrics. Opening a company up to foreign ownership is found to cause increases in the short-term liquidity of the company's equity, in the long-term growth of the company's book value and in the company's long-term valuation multiples. Interestingly, a company opening up itself is found to be associated with decreases in the short-term liquidity of the company's equity and in the long-term growth in the company's book value, but an increase in the company's long-term valuation multiples. These results are robust to concerns of empirical specification, the RBI endogenously choosing companies or industries to open up and the results being isolated to a certain type of company. In all cases, the results are particularly extreme for government-run firms.

This paper is organized as follows. Section I will provide an overview of India's 1991 economic reforms, Section II will discuss the relevant literature, Section III will describe my data, Section IV will introduce my empirical specification, Section V will explain my results, Section VI will interpret them, Section VII will check for robustness concerns and Section VIII concludes.

I. Background on India's 1991 Reforms

In 1991, India experienced a balance of payments crisis because of the unexpected surge in oil prices during the Gulf War and in order to receive a loan from the IMF, the government radically liberalized its economic policies. The 1991 economic reform package phased out the government's licensing control over certain industries, lowered import and export tariffs, decreased regulation on foreign direct investment and allowed foreign institutional investors to own the equity of Indian companies for the first time in the country's history. From September 1992 (hereafter, 1993 for ease of using annual company financial statements) to April 1997 (hereafter, 1997), the RBI selectively opened up companies to foreign ownership by raising the maximum proportion of the firm's outstanding equity that could be held by foreign institutional investors (the limit) from 0 to 24%. After 1997, government policy changed so that a company's limit was determined by their Board of Directors. From 1993 – 1997, it's unclear what factors the RBI used to decide whether or not to raise a company's limit, save the requirements that the

² Robinson, Joan. *Economic Growth and Financial Depth*. European Economic Review. 1952.

company must operate in an industry that was open to foreign direct investment and could not have business activities considered to be in the national interest. Using all of the company-level and industry-level metrics in my data, I do not find a significant relationship between performance metrics and the RBI opening up a company or companies in a certain sector that would reveal the RBI's methodology for choosing which companies to open up and if they were trying to cherry-pick fast-growing ones. For a more complete timeline of events and an excerpt from the statement of the RBI on the selection of companies to open up, see Figure 1.

II. Literature Review

My paper calls upon two parts of the finance and development literature, the opening of equity markets to foreign owners and India's 1991 economic reforms.

Opening equity markets to foreign investors has been shown to increase equity returns and liquidity and decrease their volatility (see Bae *et al* (2003) for an overview). Chandra and Singh (2003) show that publicly traded companies that have highly traded equity are significantly more valuable in less developed financial markets using evidence from South Asian companies from 1991 – 1997. Henry (2000) finds that following the 24 stock market liberalizations in emerging markets in the last 30 years, the country's aggregate equity index experiences abnormal returns of 3.3% per month in the following eight-month window that is primarily driven by higher P / BV and P / E ratios, which he shows is preceded by a decrease in firms' cost of capital. Barajas *et al* (1999) find that allowing foreign ownership in the Colombian financial sector beginning in 1990 improved firm efficiency as measured by operating expenses / revenues and competition as measured both by number of firms and proportion of lending originated by the largest quartile of firms, but also that it deteriorated the loan quality of domestic banks as measured by loss ratios. Ghosh *et al* (2006a) use an event study to show that the Reserve Bank of India's policy change to facilitate acquisition of private sector banks in India by foreign entities was followed by significant gains by private sector banks for the next two years that were almost double those of government-run ones. Further, the firm-specific abnormal returns were significantly associated with a bank's potential for takeover such as board composition and lack of takeover defenses, which confirms that one driver of the gains in value was the expected reduction of agency costs. Ghosh *et al* (2006b) find that there were significant value gains in the RBI increasing the limit on firms in the financial sector and that the gains were higher for government-run banks, as measured by P / BV and P / E using Henry's approach. In this paper, I consider three channels through which foreign ownership could plausibly increase the value of a company: (1) increased liquidity of the equity, (2) increased access to capital of the firm and (3) improved monitoring of management.³

³ There are others that are more difficult to empirically measure such as technology transfers and strategic cooperation between firms. However, without more detailed data, I do not measure improved monitoring of management directly, but rather I consider it the most likely driver of value beyond the first two that I directly test, given the large effects in the literature that have been found to be related to the principal-agent problem between investors and management.

With respect to the 1991 Indian economic reforms, Aghion *et al* (2007) show that the largest effects of dismantling of the License Raj were in delicensed industries in states that had pro-employer labor laws after controlling for other industry-level policy changes such as those in foreign direct investment regulations and tariffs, but importantly not in foreign institutional investment limits. Topalova (2004) shows that the lowering of import tariffs caused an increase in industry productivity across states due to increased foreign competition, particularly in industries in which the government was not a large producer or supplier.

My paper contributes to the literature on foreign ownership and India's 1991 reforms by estimating the benefit to a company of a high limit on foreign ownership, specifically in increasing the liquidity of the firm's equity, the firm's book value and the firm's market valuation. To my knowledge, this is the first paper to look at the effect of increases in the limit across multiple industries and to examine channels through which shareholder value increases.

III. Data

My data set comes from the COMPUSTAT Emerging Markets Database and includes 2105 observations in panel data form of all Indian publicly traded companies from 1976 – 2007 with information on the company's limit, performance metrics, and industry. Using information from company websites, I also create a variable for the type of firm that takes one of four values (Group, Foreign, Government-Run, or None of these) if the firm is a member of an Indian group of firms (i.e. Tata), a division of a foreign multinational, a government-run company or none of these.

Figures 2a and 2b plots the average growth in book value and P / E over time for companies with limits less than .24 (low limit group) and those with limits greater than or equal to .24 (high limit group), showing two interesting patterns. First, from 1993 – 1997, companies with high limits grew faster than those with low limits, but this trend eventually reversed itself in 1998 – 1999 so that the line has a noticeable kink. Later, I will show this kink occurs at the same point at which companies are allowed to determine their own limit and will argue that the initial abnormal growth was due to the exogenous effects of a high limit and the post-kink slump was due to the sample selection of those firms who opened themselves up in desperation. Second, companies with higher limits trade at a relatively constant premium to companies with low limits. Even though this figure does not control for industry and company differences, it is a first indicator that a high limit could be a real driver of value. Figure 3 lists all of the companies that the RBI opened up from 1993 – 1997 and their corresponding type of company, which demonstrates that the RBI opened up the most companies in 1993 and did so to all different types of firms.

Tables 1a – 1d provide summary statistics for the two groups at 4 different cross-sections, in 1993, 1998, 2002 and 2007. Because of several extreme outliers and to follow as near as possible Henry’s (2000) methodology, I winsorized all data at the 1% level, that is to say I dropped all values that are below the 1% percentile or above the 99% percentile for each variable for each year, leaving me with 1861 data points. My results are qualitatively the same using the raw data, but all of the effects are less precisely estimated as the standard errors are larger so I only report regressions using the winsorized data. The cross-sections reveal that the type of firm that tends to have a high limit changes over time, but without appropriate controls is difficult to precisely interpret. In 1993, it appears the RBI tended to open up larger firms as measured by market capitalization and book value and more profitable ones as measured by net income and cash flow. However, in subsequent years, this trend reverses itself such that in 2000, by which point companies are able to determine their own limit, the groups are indistinguishable on all of these metrics except market capitalization and in 2007 companies with high ownership limits are significantly smaller and less profitable. Interestingly, the valuation metrics of companies (P / E, P / BV and P / CF) are consistently higher for companies with high foreign limits regardless of whether the limit was determined by the RBI or the company and the change in composition of the underlying companies in the two groups. Finally, the industry composition of the two groups changes over time. In the beginning, the two groups look very similar, though it should be noted that this is partly due to showing only 10 industry groups in the table, rather than the 67 used in subsequent regressions. Over time, however, the industries in the two groups diverge even more noticeably, so much that in 2007 the only industry the two groups have significantly in common is Materials, which constitute a large portion of all Indian publicly traded companies.

IV. Empirical Specification

My main specification estimates the effect of changing the limit in a certain year on four yearly metrics of company performance, specifically the value traded (a measure of the equity’s liquidity), the book value of equity (the company’s accumulation of capital), the price-to-book value (the company’s value per dollar of accounting value) and the price-to-earnings (the company value per dollar of earnings) after controlling for other lagged characteristics of company performance. I will use two comparable specifications so as to make sure that my results are not being driven by a particular functional form.

My restricted specification is:

$$Y_{it} = \alpha_i + \tau_t + \gamma_{it} + FII_{it} + Reform + (FII_{it} * Reform) + \varepsilon_{it}$$

where Y_{it} represents the four outcome variables listed above, α_i and τ_t are industry and time fixed effects respectively, γ_{it} is a vector of lagged company characteristics (net income, cash flow, dividends and market cap), FII_{it} is the limit and $Reform$ is an indicator if the year is between 1993

and 1997, inclusive. In this model and all others of similar forms, when the outcome variables are leads, another vector of lagged company controls is added with respect to the year that the outcome variable is being projected (i.e. the regression on P / BV_{t+6} includes *Company Controls*_{t+5}). The interaction $FII_{it} * Reform$ is the key variable of interest, because it is important to distinguish between the 1993 – 1997 period when the limit was determined by the RBI and in which I will argue the effect can be interpreted causally and the 1998 – 2007 period in which the limit was determined by the company and is subject to many endogeneity concerns. The two interaction terms will have different interpretations and likely different magnitudes, because one will represent the real effects of opening up and the other will represent which types of companies voluntarily open up to FIIs by raising their limits when given the opportunity.

My unrestricted specification is:

$$Y_{it} = \alpha_i + \tau_t + \gamma_{it} + FII_{it} + (FII_{it} * Year) + \varepsilon_{it}$$

which uses the same outcome variables and regressors, except it estimates the coefficient of interest differently, by using individual year interactions, rather than the reform period interactions.

V. Results

Restricted Specification

Table 2 shows the results of the restricted specification, which demonstrate that when the RBI changes a company's limit, the company's equity becomes significantly more liquid in the next year as measured by *Value Traded*, its capital base consistently expands for the next 6 years as measured by *Book Value* and its valuation multiples consistently increase for the next 6 years as measured by P / BV and P / E . In terms of economic significance, the effect from the RBI opening up a company can simply be computed by setting (1993 – 1997) to 1 and increasing FII from 0 to .24. If a company is opened up, in the next year the company's equity would be traded 48%*** ($=\ln(1 + 2.589 * .24)$) more, its book value would grow by 50%*** ($=\ln(1 + 2.714 * .24)$), its P / BV would go up by .64*** ($= 2.654 * .24$) and its P / E would go up by 1.55*** ($= 6.455 * .24$). The gains in book value, P / BV and P / E would be maintained over the next 6 years, but the effect on the stock's liquidity diminishes within 2 years. Interestingly, when the change in the limit is a decision of the company's Board of Directors, the stock becomes significantly less liquid in the next year, the company's capital base consistently shrinks for the next 6 years, and its valuation multiples consistently increase for the next 6 years. Companies that raised their limit from 0 to .24 in the post-reform period, in the next year the company's equity would be traded 25%** less, its book value would shrink by 29%** , its P / BV would go up by .58*** and its P / E would go up by 1.03***. Again, the effects on the company's book value, P / BV and P / E are

maintained in the next 6 years, but the effect on the stock's liquidity becomes insignificant within 2 years.

Unrestricted Specification

Tables 3 and 4 show the results of the unrestricted specification, which uses individual year interactions rather than reform and post-reform interactions. The directions of the main effects and their significance over time are the same but their magnitudes are amplified. If the RBI raised a company's limit from 0 to .24 in 1993 (the year in which the majority of changes were made and in which the coefficient is consistently significant, see Figure 3 for a list of companies), in the next year the company's equity would be traded 49%*** more, its book value would grow by 59%***, its P / BV would go up by .77** and its P / E would go up by 1.77***. The results follow the same pattern over time, namely the effects on book value, P / BV and P / E are maintained but the effect on the stock's liquidity soon becomes insignificant. Companies that raised their limit from 0 to .24 in 2002 (the first year in which they had the widest range of limits to choose from, see Figure 1 for the timeline of limit ranges), in the next year the company's equity would be traded 36%** less, its book value would shrink by an insignificant 15%, its P / BV would go up by an insignificant .21 and its P / E would go up by 1.25**. Over time, the effect on the stock's liquidity becomes insignificant, the effect on book value and on P / BV become significant in 6 years and the effect on P / E persists for the next 6 years. When the coefficients on book value and P / BV become significant, they are of similar magnitude to the coefficients in the restricted specification: for book value, the unrestricted coefficient is -2.11 and the restricted coefficient is -1.57; for P / BV, the unrestricted coefficient is 2.22 and restricted coefficient is 2.21. I suspect that it takes a while for the effects to become significant because the unrestricted regression has much fewer data points as compared to the restricted regression (i.e. all of the companies that changed their limits in 2002 vs. all of the companies that changed their limits from 1998 – 2007) coupled with the fact that P / BV tends to be a much less sensitive valuation multiple than P / E because the denominator, book value, is so much larger and less variable than earnings. Because the results of the restricted and unrestricted specifications yield such quantitatively and qualitatively similar results, it appears that my results are being driven by variations in limits and not simply my empirical specification.

VI. Interpretations

Liquidity

I believe that the change in the limit had such a strong effect on liquidity in the short term because of the entrance of large FIIs caused a greatly increased demand for the securities that FIIs could own. It's not surprising that this effect diminishes over time, because rational market participants should react to a change in market conditions instantaneously. FIIs that are suddenly able to buy Indian equity should do so immediately and their presence in the market going

forward should not have a significant impact on the growth of value traded in the stock because most FIIs are passive buy-and-hold investors rather than active traders. Interestingly, when the limit change is made by the company rather than the RBI, the effect on value traded becomes strong and negative. Though it is impossible to control for the endogenous decision of the Board of Directors, I think the effect is driven by the fact that changes in the limit are correlated with companies that are in period of severe distress and desperate to raise additional capital and the increase in the limit is interpreted by the market as a negative signal on business performance, especially since this endogenous result overcomes the positive effect of exogenously raising the limit that is shown in the reform period. The most extreme negative effects show up from 2005 – 2007, a period in which many technology companies that had gone public in the Dot Com Bubble raised their limit likely in hopes of turning around the company by raising additional capital.

Book Value

I believe the strong positive effect on book value is driven by the simple fact that companies with higher limits have more investors from which they can raise capital as is in line with Henry's (2000) findings. There seems to be evidence that companies take advantage of this expansion in their potential investors immediately by raising more capital within the next year, as the positive effect is so similar in magnitude and significance in future years. Once again, if the change in the limit was made by the company, it is correlated with a severe decline in book value, which I suspect is a product of its correlation with extreme distress that I discuss above. Further, Asquith and Mullins (1986) have discussed an anomaly in the finance literature that is common knowledge to capital market participants, namely the day that a company announces they are issuing a secondary equity offering, their stock drops immediately and the company actually raises less money than intended by devaluing the stock of their company. They explain the effect as the company signaling a business weakness by trying to raise money, because the effect is particularly strong for those companies that are cash flow positive and should not need large external financing. I believe that an analogous signal is being given to the market when a company raises its limit voluntarily coupled with the sample selection bias of already distressed companies previously discussed.

P / BV and P / E

I suspect that the strong effects on the two market multiples are caused by the gains in value from increases in liquidity, decreases in cost of capital and having investors who are apt monitors of companies and reduce the principal-agent wedge between investors and management. Because the gains in value are persistent over time, it seems that the gains in value are not simply responses to speculators trying to make quick profits by anticipating increased foreign demand or more generally to the spike in liquidity over the short term, particularly because the effect is constant regardless of whether the limit is changed by the RBI or

management. Further, even though the companies that raise their limits in the post-reform period may tend to be in distress, the valuation ratios are measures of value per unit of book value or earnings and therefore can go up even if overall market capitalization is likely on the decline. Ultimately, however, because I do not directly test for better monitoring of management as Bhattacharyya and Rao (2005) do by seeing trends in corporate expenses, it is impossible for me to quantify which long-term driver of value is the largest, decreased cost of capital or increased monitoring of management, or even if some other long-term effect is also at work, like transfers of technology to Indian companies.

VII. Robustness Checks

I will address two additional robustness concerns beyond the choice of empirical specification: (1) whether the RBI cherry-picked companies or industries that they expected to be fast-growing and could benefit from higher foreign institutional investment and (2) whether my main results are isolated to a certain type of company.

At the company level, I test to see what company characteristics are strong predictors of being opened up by the RBI with the model:

$$FII_{it} = \alpha_i + \tau_t + \Gamma_{it} + \varepsilon_{it}$$

where Γ_{it} is the vector of lagged company controls used previously with value traded and book value appended.

Table 5a shows the results of this regression. It is clear in Column (1) that book value, market cap and value traded are significantly correlated with the limit, but it is unclear which way the causality runs. Column (2) shows that some company characteristics are predictors of being opened up by the RBI, but all of them become insignificant in Column (3) when industry controls are added. Columns (4) to (6) show that when companies had the ability to determine their own limit and a wider range in which to choose it over time, companies that were smaller, less profitable, had lower levels of cash flow, gave out fewer dividends and had more liquid equity tended to open up, controlling for whether they were opened up by the RBI in the reform period (the coefficient of which, *Gov Limit*, becomes completely insignificant by 2007 showing that companies choose their own optimal limit regardless of what the RBI had determined for them in the reform period). For example, in 2007, the average company in the software consulting industry had a limit of .42. If the company had one standard deviation lower book value, net income, cash flow and dividends, the company would be predicted to have a limit of .65. All of these significant relationships (except perhaps value traded) are consistent with the hypothesis that distressed firms tended to open up in a turnaround attempt.

At the industry level, I test to see what industry characteristics are strong predictors of high limits with a similar model, except the outcome variable is the one of the 67 industry's average limit and the predictor variables are the natural logarithms of the industry three-year moving average for the same 6 variables. The results on Table 5b show a similar pattern: in 1993, the RBI seemed to open up industries pseudorandomly or at least without any obvious biases as is shown in Column (2), but by 2007, industries with declining profits, book value, dividends and increasing value traded tended to have higher average limits as is shown in Column (5). For example, in 2007, the average industry limit was .26, but an industry that had one standard deviation lower growth in net income, book value and dividends would be predicted to have an average industry limit of .44. These results could be driven by a few outliers because the dearth of data disaggregated down to 67 industries at which point there are few observations at the industry level to average over; however, the significant results in the later years seem to justify the model. A more serious concern is that there were some industries that have no observations in the earlier years (especially sub-industries of information technology), which could be a potential source of sample selection bias; however, I believe that they are small because the results are so similar to those at the company level.

My second robustness check is to see how my main results differ across different types of companies, particularly to check that one type of company isn't driving my findings. My specification is:

$$Y_{it} = \alpha_i + \tau_t + \gamma_{it} + FII_{it} + Reform + Government + Foreign + Group + (FII_{it} * Reform) + (FII_{it} * Reform * Government) + (FII_{it} * Reform * Foreign) + (FII_{it} * Reform * Group) + \varepsilon_{it}$$

where *Government*, *Foreign* and *Group* are indicator variables for a company being government-run, an Indian branch of a multinational and a member of an Indian group of companies, respectively. I use reform interactions rather than year interactions to save the reader from interpreting 45 interaction coefficients, but the results are qualitatively similar for the unrestricted specification.

Tables 6 and 7 show the results of this regression, which support that the effects of the limit are constant across different types of firms as the main interaction terms are still significant and have the same signs and similar magnitudes. The type of company that has a significant interaction term is *Government*, for which the effects of the company opening up in the post-reform period are even more negative for growth in book value and the increases in valuation multiples are even higher regardless of the period. I suspect that the correlation between distress and raising the limit is even stronger for government-run companies and opening up is thus followed with significant declines in book value but not caused by it. Also, in post-1991 India, the government started privatizing the activities of many government-run companies such as utilities, which inevitably required first winding down or liquidating the government-run entities first and

these forced wind downs may have caused my extreme results. Further, the valuation multiples of government-run entities increases even more than other types of companies likely because there are even larger gains to better oversight of management in a large national government that “seems to have invented bureaucracy...[and has] a ministry for everything with entrenched interests who have only further solidified themselves following the departure of the British.”⁴

There are several robustness concerns that still could be raised and for which I cannot test. First, if I control for company fixed effects in any of my regressions (not reported), almost every result becomes statistically insignificant because I already have so many regressors and only some 2000 data points. By only using the industry fixed effects, it’s not entirely clear if I am adequately controlling for the differences in composition of the high limit and low limit groups, especially since there are a handful of industries (even disaggregated down to the level of 67 industries) that have companies in both groups (like Fertilizers), making the RBI’s decision to open up a company all the more curious (are certain fertilizer companies in the national interest to keep closed and others are not?). Second, I do not have data on other reforms that were part of the 1991 economic reform package, namely changes in foreign direct investment, government licensing, and tariff rates. However, because I have estimated my model across several specifications and the variation in the limit is almost always significant in a theoretically consistent manner, the correlation between any one of the changes in policies and the limit or the magnitude of their effect would have to be very high to drive all of my results. Unfortunately, in the brief time I have had to work with the controls used by Aghion *et al* (2007), the limit seems to be highly correlated with other reform policies, particularly whether or not an industry was delicensed. Due to this correlation and the extreme magnitude of my results, it is possible that my results are picking up some delicensing effects documented by Aghion *et al* on public companies rather than industry outcomes. Finally, a company being opened up by the RBI could be correlated with a firm’s unobservable political connections even if the treatment was applied pseudorandomly with respect to observed company characteristics. These connections could be especially valuable in certain industries with a large government presence or in obtaining capital in the regulated domestic financial system, an illustration of which is the priority lending sector in which industries are selected by the government to receive cheap financing because their activities are determined to be in the national interest. However, following the 1991 economic reforms it appears that there were not very many significant changes in the industries covered in the priority lending sector, which mainly focused on high-employment industries like small-scale farming, and the changes would only affect a handful of industries and companies in my analysis. Ultimately, all of these outstanding robustness concerns boil down to data limitations and could easily be tested empirically in the future.

⁴ Waldman, Mary. “India looks to liberalize following economic crisis,” *New York Times*. January 12, 1992.

VIII. Conclusion

From 1993 – 1997 the RBI seems to have pseudo-randomly opened up certain companies to the possibility of foreign ownership with dramatic effects. As summarized by showing the unrestricted regressors in graphical format in Figure 4, the effects of raising the limit greatly increased the liquidity of the company's equity in the short term, the growth in the company's book value in both the short term and the long term, and the company's valuation multiples in both the short term and the long term. Because the increases in valuation multiples are so persistent, it's clear that the temporary jump in the liquidity of the equity is not the only channel through which the increase in value is realized. The effect on the growth of book value is so large and persistent due to the company's increased access to capital that it seems obvious that this is an important driver of value, as the average Indian firm seems to have been fairly capital constrained as is evidenced by the rapid increases in book value when presented with the opportunity to raise additional capital from new investors. However, there seems to be evidence that these two channels are not the only drivers of value since when companies chose to raise their own limit in the post-reform period, the liquidity and book value of the companies who did so decreased dramatically presumably because it was a signal to the market of extreme distress, but the valuation multiples still rose significantly, seeming to indicate that monitoring of management or some other unobservable effect is still an important driver of value. However, without more detailed data on corporate expenses or other indicators of the principal-agent wedge between management and investors such as those used by Bhattacharyya and Rao (2005), it's impossible to directly estimate the effect of better monitoring from FIIs and I graciously leave this as an area of future research. However, as evidence that the monitoring of management is an actual driver of value rather than some other unobservable effect, I point to the fact that my results are especially extreme for government-run companies with respect to decreases in book value when the company opens itself up and increases in valuation multiples regardless of the period, which is in line with Ghosh *et al's* (2006) findings on government-run commercial banks in that government firms are typically more insulated from outside monitoring of capital and plausibly have more room to benefit from it.

Some potential topics for future research include investigating if the effect of raising the limit is caused by the actual presence of FIIs or the possibility of the presence of them, by controlling for the percentage of outstanding equity owned by FIIs, but that would require more in-depth data than I have. Also, it would be interesting to see how a change in the limit affected industry-level outcomes similar to Aghion *et al's* (2007) outcome variables, particularly if greater access to FIIs allows capital-constrained entrepreneurs to enter an industry that otherwise would not have been able to.

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Figure 1: Timeline of foreign ownership limits following the 1991 economic reforms (1992 – 2007)¹

Date	Foreign Institutional Investor Limit
up to September 13, 1992 ²	0
September 14, 1992 ³	0 – .24
April 4, 1997 ⁴	0 – .3
March 1, 2000 ⁵	0 – .4
September 9, 2001 ⁶	0 – sectoral cap

Excerpt from Reserve Bank of India's Policy Statement on Narasimha Rao's Reform Package:

Pension Funds, Mutual Funds, Investment Trusts and other Foreign Institutional Investors shall be able to invest directly in the equity of Indian publicly traded companies as determined by the RBI...[Because] the need for thoughtful reform in this time of economic instability, the RBI will selectively raise the limit on Indian companies to 24% of the outstanding equity of the firm if the company's business and industry meet the eligibility requirements for foreign ownership...Eligibility will be determined based on a company's main business activities, particularly those in which foreign entry is unregulated, that do not include activities of strategic national interests or that do not have other characteristics that are incompatible with high and potentially rapidly changing levels of foreign ownership.

¹ adapted from Ghosh *et al's Effect of Liberalization of Foreign Investment Limits* (2006).

² Prior to this date, no foreign institutional investor (FII) could purchase equity on an Indian stock exchange.

³ Reserve Bank of India outlines new foreign ownership rules as part of India's 1991 liberalizations.

⁴ Upper limit for FII ownership limit can be increased to 30% if the company Board of Directors passes a resolution that is subsequently ratified by its shareholders (the special procedure).

⁵ Under the special procedure, a company can increase FII ownership to 40%.

⁶ Under the special procedure, a company can increase FII ownership limit to a company's sectoral cap, which range from 49% – 100%.

Figures 2a and 2b: Changes in Book Value and P / E by firm-level limits on FII (1984 – 2007)

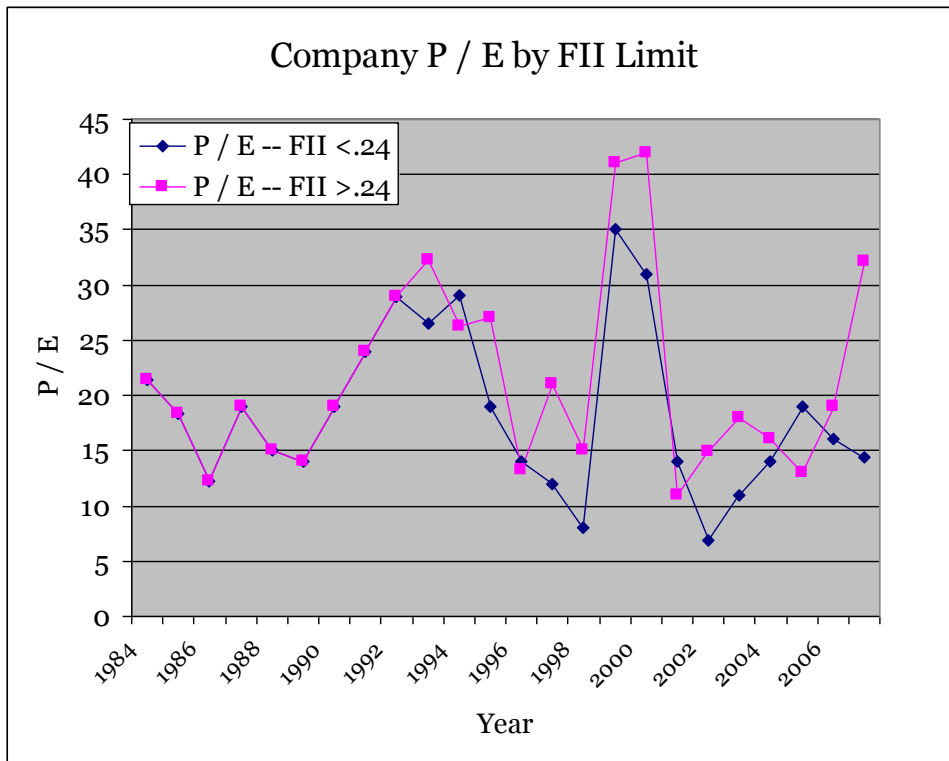
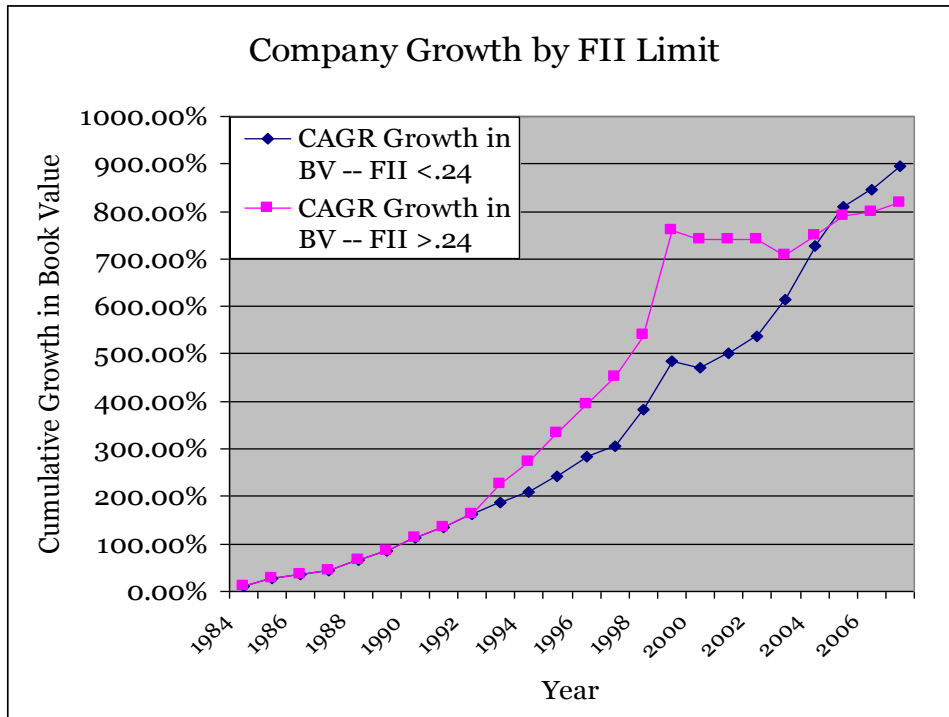


Figure 3: List of Companies that the Reserve Bank of India Opened to FII by Year (1993 – 1997)

1993	1994	1995
Aditya Birla Nuvo	ABB	Alfa-Laval (India)
Ambuja Cements	Ballarpur Industries	Andhra Valley Power Supply
Apollo Tyres	Bharat Forge	Bharat Heavy Electricals
Ashok Leyland	Bharat Petroleum	Britannia Industries
Asian Paints	Birla Jute & Industries	CEAT Tyres
Bajaj Auto	Godrej Soaps	Cadbury (India)
Bombay Dyeing & Manufacturing	Hindustan Petroleum	Crompton Greaves
Brooke Bond Lipton India	Indian Hotels	Escorts
Castrol (India)	Jindal Strips	Garware Polyester
Century Enka	Mahanagar Telephone	ICI (India)
Century Textiles & Industries	Mangalore Refinery & Petrochemicals	Ingersoll Rand (India)
Colgate Palmolive	National Rayon Corp	Ispt Industries
Cummins India	Novartis (India)	Parke Davis (India)
EIH	Philips Medical Systems	Pfizer (India)
Essar Shipping	Ranbaxy Laboratories	Ranbaxy Laboratories
Essar Steel	Reckitt Benckiser	Shipping Corporation of India
Excel Industries	Reliance Polyethylene	Steel Authority of India
Finolex Cables	Reliance Polypropylene	Videocon International
GlaxoSmithKline Consumer Healthcare	State Bank of India	Voltas
GlaxoSmithKline Pharmaceuticals	Videsh Sanchar	
Grasim Industries		
Gujarat Alkalies & Chemicals	1996	1997
Gujarat Narmada Valley Fertilizer	CIPLA	Industrial Finance Corp.
Gujarat State Fertilizers	Chambal Fertilizers	SCICI
Hindalco Industries	Chennai Petroleum	India Cements
Hindustan Unilever	ITC Bhadrachalam Paper	
Housing Development Finance Corp.	Jindal Saw	
ITC	Lakshmi Machine Works	
Indian Aluminum Corp.	MRF	
Indo Gulf	Madras Cements	
Industrial Credit & Investment Corp.	Mahanagar Telephone Nigam	
JK Industries	Oriental Bank of Commerce	
Jaiprakash Industries	Proctor & Gamble (India)	
Kochi Refineries	Uniphos Enterprises	
Larsen & Toubro	Wockhardt Life Sciences	
Lipton (India)		
Mahindra & Mahindra		
Motor Industries Corp.		
Mukand		
National Organic Chemical Industries		
Nestle (India)		
Oswal Agro Mills		
Ponds (India)		
Raymond		
Reliance Energy		
Reliance Industries		
SKF Bearings India		
Sesa Goa		
Siemens (India)		
Southern Petrochemical Industries		
Sterlite Industries India		
Tata Chemicals		
Tata Motors		
Tata Power		
Tata Steel		
Tata Tea		
Arvind Mills		
Associated Cement Companies		
Great Eastern Shipping		
Videocon Appliances		
Zuari Industries		

Figures 4a – 4d: FII Regressors on Value Traded, Book Value, P / BV and P / E (1993 – 2007)

Note: All regressors are from the unrestricted version of the main equation that is shown in Tables 3 and 4.

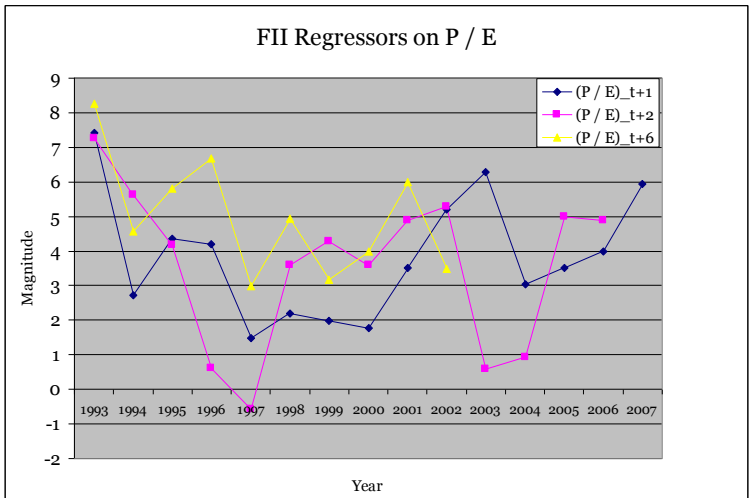
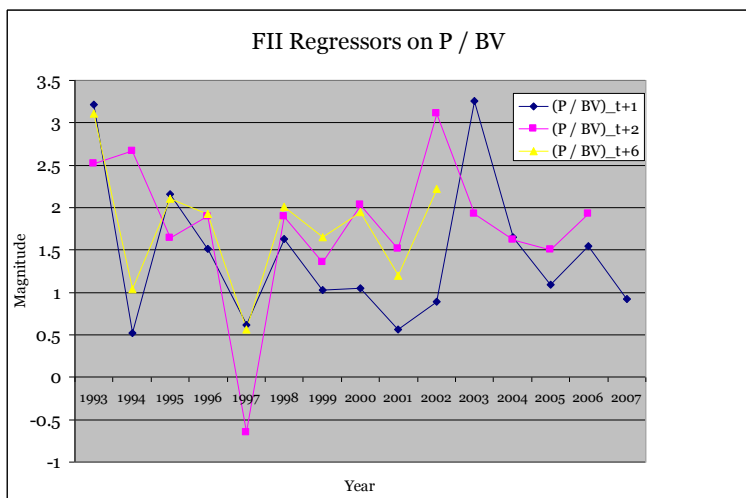
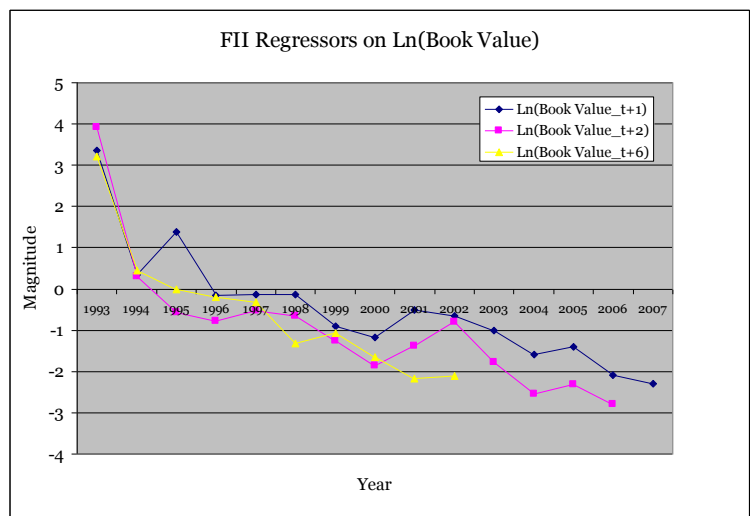
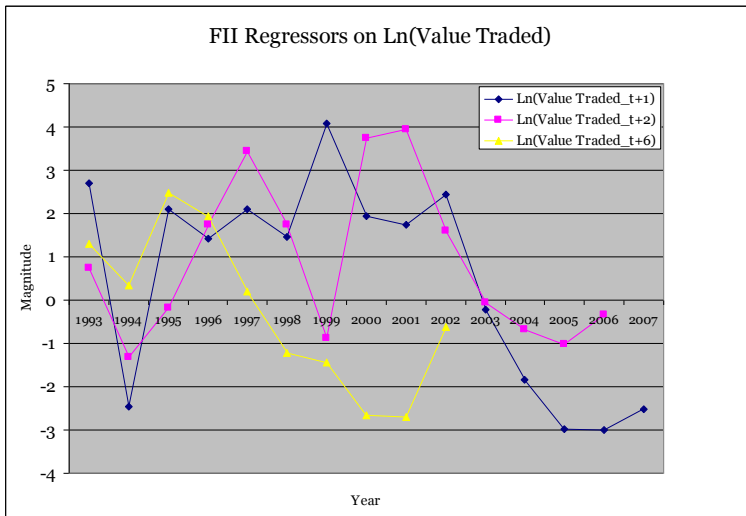


Table 1a – 1d: Summary Statistics for Companies with High and Low Limits (1993, 1998, 2002 and 2007)

Note: For all tables, all levels are in USD millions. Standard errors are included in parentheses for the first two columns and p-values are included in parentheses for the third column. The industry row lists the industries of companies included in a certain range of FII limits with the 3 highest percentages in **bold** (some percentages do not add because of rounding). All data is winsorized at the 1% level that is top and bottom 1% of the variable is dropped. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

1993	Companies with FII Limit < .24	Companies with FII Limit ≥ .24	T-statistic testing equality
<i>Company Info:</i>			
Net Income_t-1	3.0 (5.5)	17.9 (19.9)	5.01*** (.000)
Book Value_t-1	39.4 (23.0)	111.6 (131.1)	3.53*** (.001)
Cash Flow_t-1	7.3 (7.5)	28.6 (30.8)	4.66*** (.000)
Dividends_t-1	.1 (.5)	.1 (.5)	-.17 (.571)
Average FII limit	0 (--)	.24 (--)	-
<i>Market Info:</i>			
Market Cap_t-1	126.1 (87.1)	503.9 (540.9)	4.74*** (.000)
P / E Ratio_t-1	26.5 (23.0)	32.3 (20.1)	1.40 (.166)
P / BV Ratio_t-1	4.4 (3.0)	5.9 (4.6)	1.83 (.070)
P / CF Ratio_t-1	17.5 (14.3)	20.1 (12.7)	.97 (.336)
Value Traded_t-1	22.9 (43.1)	147.2 (337.8)	2.51*** (.014)
n	47	61	
Industries	Consumer Discretionary 18% Consumer Staples 3% Energy 3% Financials 6% Health Care 7% Industrials 15% Materials 40%	Consumer Discretionary 16% Consumer Staples 15% Energy 5% Financials 3% Health Care 2% Industrials 16% Information Technology 2% Materials 38% Utilities 3%	
1998	Companies with FII limit < .24	Companies with FII limit ≥ .24	T-statistic testing equality
<i>Company Info:</i>			
Net Income_t-1	23.4 (37.9)	52.1 (68.7)	2.99*** (.003)
Book Value_t-1	174.4 (305.8)	315.0 (392.7)	2.31*** (.022)
Cash Flow_t-1	37.3 (63.1)	67.5 (80.2)	2.40*** (.018)
Dividends_t-1	0 (--)	0 (--)	-
Average FII limit	.02 (.06)	.24 (.01)	-
<i>Market Info:</i>			
Market Cap_t-1	207.3 (513.4)	704.3 (1042.6)	3.50*** (.001)
P / E Ratio_t-1	8.0 (12.7)	18.6 (16.8)	4.08*** (.000)
P / BV Ratio_t-1	1.6 (2.1)	3.6 (4.5)	3.33*** (.002)
P / CF Ratio_t-1	6.8 (9.2)	13.5 (13.7)	3.22*** (.002)
Value Traded_t-1	92.5 (415.4)	1983.3 (6032.8)	2.40*** (.02)
n	67	66	
Industries	Consumer Discretionary 13% Consumer Staples 3% Energy 3% Financials 6% Health Care 8% Industrials 15% Information Technology 2% Materials 40% Telecommunication 3% Utilities 3%	Consumer Discretionary 14% Consumer Staples 14% Energy 8% Financials 12% Health Care 8% Industrials 14% Materials 29% Utilities 3%	

2002	Companies with FII limit < .24	Companies with FII limit ≥ .24	T-statistic testing equality
<i>Company Info:</i>			
Net Income_t-1	36.4 (90.1)	67.8 (94.2)	1.90* (.06)
Book Value_t-1	271.3 (550.4)	393.7 (459.0)	1.36 (.18)
Cash Flow_t-1	50.0 (114.5)	96.3 (137.3)	2.02** (.05)
Dividends_t-1	0 (--)	6.5 (54.4)	-
Average FII limit	.02 (.05)	.28 (.08)	-
<i>Market Info:</i>			
Market Cap_t-1	363.2 (1191.8)	863.1 (1513.2)	2.07** (.04)
P / E Ratio_t-1	6.9 (11.6)	14.9 (12.5)	3.75*** (.003)
P / BV Ratio_t-1	.84 (1.1)	4.4 (6.1)	4.33*** (.000)
P / CF Ratio_t-1	4.0 (3.8)	11.1 (9.6)	5.29*** (.000)
Value Traded_t-1	995.3 (5893.0)	5900.2 (11348.1)	3.01*** (.003)
n	60	70	
Industries	Consumer Discretionary 18%	Consumer Discretionary 13%	
	Consumer Staples 2%	Consumer Staples 14%	
	Energy 8%	Energy 4%	
	Financials 12%	Financials 8%	
	Health Care 2%	Health Care 10%	
	Industrials 18%	Industrials 10%	
	Information Technology 7%	Information Technology 18%	
	Materials 33%	Materials 17%	
	Utilities 3%	Utilities 3%	

2007	Companies with FII limit < .24	Companies with FII limit ≥ .24	T-statistic testing equality
<i>Company Info:</i>			
Net Income_t-1	179.8 (210.7)	115.3 (146.4)	-2.08** (.039)
Book Value_t-1	775.2 (619.3)	530.3 (568.2)	-2.09** (.038)
Cash Flow_t-1	282.5 (358.5)	155.5 (196.5)	-2.84*** (.005)
Dividends_t-1	2.2 (11.1)	.92 (5.0)	-1.06 (.288)
Average FII limit	.13 (.09)	.33 (.14)	-
<i>Market Info:</i>			
Market Cap_t-1	5418.8 (9462.2)	3108.2 (5461.9)	-1.98** (.049)
P / E Ratio_t-1	14.4 (13.7)	32.1 (33.1)	3.10*** (.002)
P / BV Ratio_t-1	3.6 (4.8)	7.5 (6.0)	3.49*** (.001)
P / CF Ratio_t-1	13.4 (15.3)	20.1 (13.3)	2.97*** (.003)
Value Traded_t-1	6443.9 (10043.4)	8237.8 (11600.4)	.87 (.382)
n	38	155	
Industries	Consumer Discretionary 8%	Consumer Discretionary 16%	
	Consumer Staples 3%	Consumer Staples 8%	
	Energy 13%	Energy 4%	
	Financials 40%	Financials 10%	
	Health Care 3%	Health Care 8%	
	Industrials 8%	Industrials 14%	
	Information Technology 5%	Information Technology 10%	
	Materials 16%	Materials 25%	
	Utilities 5%	Utilities 4%	

Tables 2a and 2b: Effect of FII Limit on Value Traded, Book Value, P / BV and P / E using reform and post-reform interactions (1976 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of each variable is dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 1. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. The regressions also include a FII limit regressor, but the coefficient of which is omitted. Company Controls_{t+1} and Company Controls_{t+5} represent the lead values of the set of 5 (if the regression is in the bottom table) or 6 (if the regression is in the top table) company control variables, but the coefficients are omitted. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	Ln(Value Traded_{t+1})	Ln(Value Traded_{t+2})	Ln(Value Traded_{t+6})	Ln(Book Value_{t+1})	Ln(Book Value_{t+2})	Ln(Book Value_{t+6})
FII limit * (1993 – 1997)	2.589*** (.569)	1.198 (.781)	.451 (.498)	2.714*** (.678)	2.581*** (.798)	2.278** (.945)
FII limit * (1998 – 2007)	-1.581** (.581)	.589 (.871)	-.848 (.887)	-1.465** (.713)	-1.892** (.873)	-1.571** (.841)
<i>Company Controls:</i>						
Net Income _{t-1}	.287 (2.828)	-1.772 (3.030)	.759 (2.866)	.326 (2.377)	-3.534** (1.566)	.652 (1.220)
Cash Flow _{t-1}	.339 (.280)	.315 (.207)	.521 (.311)	.977 (1.710)	4.74*** (1.369)	1.758 (1.257)
Dividends _{t-1}	-.753 (2.490)	-1.867 (2.815)	-4.996* (2.45)	.0007 (.0008)	.0005 (.001)	-.001** (.0003)
Market Cap _{t-1}	.001 (.001)	-.0003 (.001)	.002 (.001)	.030 (.036)	.177*** (.049)	.234* (.112)
Ln(Market Cap _{t-1})	1.037*** (.096)	1.127*** (.084)	1.319*** (.084)	–	–	–
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls _{t+1}	–	Yes	–	–	Yes	–
Company Controls _{t+5}	–	–	Yes	–	–	Yes
R ²	.775	.762	.778	.599	.694	.674
<i>n</i>	1776	1566	880	1861	1535	897

	(P / BV)_{t+1}	(P / BV)_{t+2}	(P / BV)_{t+6}	(P / E)_{t+1}	(P / E)_{t+2}	(P / E)_{t+6}
FII limit * (1993 – 1997)	2.654*** (1.055)	3.275*** (1.258)	3.156*** (1.298)	6.455*** (1.349)	6.882*** (1.736)	5.399*** (1.885)
FII limit * (1998 – 2007)	2.594*** (.852)	1.586** (.783)	2.210*** (.894)	4.283*** (1.844)	5.987*** (1.944)	4.435** (2.241)
<i>Company Controls:</i>						
Net Income _{t-1}	.837 (1.357)	.593 (1.398)	.587 (1.247)	.857 (1.785)	.682 (1.632)	.780 (.983)
Cash Flow _{t-1}	-2.517 (2.573)	-1.982 (1.575)	-1.348 (1.926)	-.248 (1.055)	-.681 (1.096)	.053 (1.053)
Dividends _{t-1}	-.258 (.395)	-2.581*** (.581)	-1.885* (1.048)	-1.541 (1.049)	-1.994** (1.093)	.598 (.837)
Market Cap _{t-1}	.035 (.485)	.481 (.591)	.683 (.697)	.552 (.984)	.687 (.622)	1.106 (.912)
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls _{t+1}	–	Yes	–	–	Yes	–
Company Controls _{t+5}	–	–	Yes	–	–	Yes
R ²	.451	.516	.412	.617	.581	.577
<i>n</i>	1861	1535	897	1861	1535	897

Table 3: Effect of the Foreign Institutional Investment Limit on a Firm's Growth in Value Traded and Book Value (1976 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of each variable is dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 1. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. For F-tests, p-values are shown in the parentheses. The regressions also include a FII limit regressor, but the coefficient of which is omitted. Company Controls_t+1 and Company Controls_t+5 represent the lead values of the set of 6 company control variables, but the coefficients are omitted. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	Ln(Value Traded_t+1)	Ln(Value Traded_t+2)	Ln(Value Traded_t+6)	Ln(Book Value_t+1)	Ln(Book Value_t+2)	Ln(Book Value_t+6)
FII limit * 1993	2.695*** (.452)	.735 (.750)	1.302 (1.409)	3.358*** (.659)	3.924*** (.525)	3.213*** (.341)
FII limit * 1994	-2.466 (1.458)	-1.325 (.783)	.337 (1.871)	.352 (.519)	.295 (.342)	.441 (.558)
FII limit * 1995	2.102* (.902)	-.171 (3.574)	2.489 (1.923)	1.377** (.536)	-.563 (.696)	.567* (.294)
FII limit * 1996	1.414 (1.146)	3.736** (1.424)	1.947 (2.138)	-.154 (.719)	-.781 (.651)	-.196 (.898)
FII limit * 1997	2.092 (1.273)	3.449* (1.728)	.195 (1.535)	-.135 (.749)	-.524 (.712)	-.313 (1.029)
FII limit * 1998	1.465 (1.783)	3.731 (2.447)	-1.218 (1.988)	-.129 (.923)	-.649 (.805)	-1.312 (.968)
FII limit * 1999	4.089** (1.418)	3.409** (1.160)	-1.444 (.797)	-.903 (.968)	-1.256 (.827)	-1.070 (.913)
FII limit * 2000	1.945* (1.027)	3.745** (1.189)	-2.666 (2.849)	-1.178 (.858)	-1.862* (.891)	-1.648*** (.497)
FII limit * 2001	1.741 (1.430)	3.945 (2.399)	-2.693 (1.746)	-.503 (.940)	-1.379 (.804)	-2.181*** (.655)
FII limit * 2002	-1.849** (.589)	1.595 (2.069)	-.622 (1.703)	-.661 (.802)	-.791 (.774)	-2.106** (.941)
FII limit * 2003	-.224 (1.244)	-.054 (1.152)	-	-1.017 (.605)	-1.786*** (.488)	-
FII limit * 2004	2.438 (1.610)	-.682 (.856)	-	-1.586** (.594)	-2.547** (.845)	-
FII limit * 2005	-2.985** (1.074)	-1.010 (.897)	-	-1.397 (1.103)	-2.319** (.764)	-
FII limit * 2006	-3.009*** (.778)	-.334 (.840)	-	-2.090** (.973)	-2.802*** (.702)	-
FII limit * 2007	-2.517*** (.696)	-	-	-2.299** (1.006)	-	-
<i>Company Controls:</i>						
Net Income_t-1	.287 (2.828)	-1.772 (3.030)	.759 (2.866)	.326 (2.377)	-3.534** (1.566)	.652 (1.220)
Cash Flow_t-1	.339 (.280)	.315 (.207)	.521 (.311)	.977 (1.710)	4.74*** (1.369)	1.758 (1.257)
Dividends_t-1	-.753 (2.490)	-1.867 (2.815)	-4.996* (2.45)	.0007 (.0008)	.0005 (.0001)	-.001** (.0003)
Market Cap_t-1	.001 (.001)	-.0003 (.001)	.002 (.001)	.030 (.036)	.177*** (.049)	.234* (.112)
Ln(Market Cap_t+1)	1.037*** (.096)	1.127*** (.084)	1.319*** (.084)	-	-	-
F-Test testing FIWF through FIWF * 1997 = 0	152.62 (.000)	34.38 (.000)	2.61 (.110)	123.51 (.000)	235.15 (.000)	151.51 (.000)
F-Test testing FIWF through FIWF * 1997 are all equal	7.51 (.016)	2.14 (.167)	1.14 (.415)	19.42 (.000)	23.15 (.000)	21.55 (.000)
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls_t+1	-	Yes	-	-	Yes	-
Company Controls_t+5	-	-	Yes	-	-	Yes
R ²	.775	.772	.778	.599	.694	.674
n	1776	1566	880	1861	1535	897

Table 4: Effect of the Foreign Institutional Investment Limit on a Company's Valuation Multiples (1976 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of each variable is dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 1. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. For F-tests, p-values are shown in the parentheses. The regressions also include a FII limit regressor, but the coefficient of which is omitted. Company Controls_t+1 and Company Controls_t+5 represent the lead values of the set of 5 company control variables, but the coefficients are omitted. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	(P / BV)_t+1	(P / BV)_t+2	(P / BV)_t+6	(P / E)_t+1	(P / E)_t+2	(P / E)_t+6
FII limit * 1993	3.216** (1.516)	2.516* (1.289)	3.109** (1.510)	7.412*** (1.351)	7.256*** (2.619)	8.267*** (2.651)
FII limit * 1994	.516 (1.515)	2.661** (1.001)	1.035 (1.051)	2.718 (1.582)	5.618*** (2.401)	4.581 (3.875)
FII limit * 1995	2.161* (1.109)	1.643 (1.542)	2.105* (1.251)	4.368** (1.829)	4.185** (2.291)	5.817 (3.023)
FII limit * 1996	1.515 (1.590)	1.897 (1.209)	1.925 (.957)	4.201** (2.051)	.605 (2.575)	6.689* (3.481)
FII limit * 1997	.612 (1.601)	-.651 (1.021)	.567 (.892)	1.481 (1.855)	-.587 (2.175)	2.988 (3.531)
FII limit * 1998	1.629** (.752)	1.895** (.891)	2.015** (.925)	2.198 (1.958)	3.585* (1.872)	4.938 (3.198)
FII limit * 1999	1.026** (.478)	1.351 (1.031)	1.651 (1.061)	1.986* (1.201)	4.285 (2.571)	3.180 (3.581)
FII limit * 2000	1.051*** (.310)	2.035** (.918)	1.951* (1.181)	1.771 (1.325)	3.581 (2.881)	3.991 (3.577)
FII limit * 2001	.561 (2.052)	1.516 (1.051)	1.195 (1.068)	3.518** (1.251)	4.891** (2.121)	5.982** (2.567)
FII limit * 2002	.891 (1.250)	1.621 (1.699)	2.218** (1.351)	5.191** (1.098)	5.275*** (2.058)	3.498* (1.897)
FII limit * 2003	1.656 (1.200)	1.925 (1.906)	-	6.278** (2.277)	.581 (2.985)	-
FII limit * 2004	3.261*** (1.456)	3.105*** (1.035)	-	3.041 (1.561)	.918 (2.821)	-
FII limit * 2005	1.090 (.821)	1.506 (1.969)	-	3.519 (2.355)	4.981** (2.325)	-
FII limit * 2006	1.550** (.681)	1.925* (1.051)	-	3.992 (1.678)	4.892** (2.235)	-
FII limit * 2007	.918* (.419)	-	-	5.927** (2.591)	-	-
<i>Company Controls:</i>						
Net Income_t-1	1.981 (2.123)	.761 (1.541)	.983 (1.656)	.819 (2.681)	.981 (1.799)	1.235 (1.681)
Cash Flow_t-1	-2.812 (2.193)	-1.783 (1.556)	-2.661** (1.009)	-3.165 (2.591)	-2.687** (1.299)	-2.415 (2.057)
Dividends_t-1	-6.950 (4.965)	-5.776 (4.196)	-1.235 (3.698)	-1.654 (2.696)	-.983 (1.682)	-.955 (1.329)
Market Cap_t-1	.081 (.491)	.023 (.560)	.359 (.587)	.596 (.545)	.772 (.592)	.298 (.948)
F-Test testing FIWF through FIWF * 1997 = 0	43.09 (.000)	25.81 (.000)	87.01 (.000)	78.55 (.000)	55.51 (.000)	47.98 (.000)
F-Test testing FIWF through FIWF * 1997 are all equal	2.65 (.054)	2.65 (.078)	1.34 (.456)	4.56 (.006)	1.72 (.234)	3.41 (.020)
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls_t+1	-	Yes	-	-	Yes	-
Company Controls_t+5	-	-	Yes	-	-	Yes
R ²	.451	.516	.412	.617	.581	.577
n	1861	1535	897	1861	1535	897

Tables 5a and 5b: Determinants of a Company's and an Industry's limit on Foreign Institutional Investment (1993 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of the variables are dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 100. Gov Limit is a variable that takes the value of 1 if the company's FII limit was determined by the RBI from 1993 – 1997 to isolate the decisions by company Board of Directors in the 1998 – 2007 period. Net Income_3-year MA is the three-year moving average of Net Income. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	FII limit	FII limit in 1993	FII limit in 1993	FII limit in 1998	FII limit in 2002	FII limit in 2007
Net Income_t-1	.011 (.016)	.331** (.016)	.298 (.205)	.01 (.05)	-.109 (.084)	-.088** (.038)
Book Value_t-1	.006*** (.002)	-.023 (.024)	-.019 (.026)	-.004 (.007)	.003 (.006)	-.008** (.003)
Cash Flow_t-1	-.019 (.014)	.011 (.016)	.126 (.199)	.026 (.052)	.092* (.048)	.088** (.034)
Dividends_t-1	-.021 (.027)	-.006 (.019)	-.879 (2.03)	(dropped)	.026 (.015)	-.429** (.166)
Market Cap_t-1	.758** (.350)	.548** (.273)	.864 (.815)	.979 (2.139)	.592 (1.613)	-.392 (.531)
Value Traded_t-1	.290*** (.048)	-.151** (.062)	-1.743 (1.718)	-.145 (.150)	.806*** (.152)	.561*** (.154)
Gov Limit	–	–	–	14.746*** (1.749)	6.072** (2.558)	2.444 (3.065)
Industry Controls	Yes	No	Yes	Yes	Yes	Yes
Year Controls	Yes	–	–	–	–	–
R ²	.258	.224	.267	.489	.471	.343
n	1761	103	103	123	118	135

	Average Industry FII Limit	Average Industry FII Limit in 1993	Average Industry FII Limit in 1998	Average Industry FII Limit in 2002	Average Industry FII Limit in 2007
Ln(Net Income_3-year MA)	2.301 (3.451)	1.523 (2.490)	-5.261 (4.105)	-6.169 (5.261)	-8.613*** (2.346)
Ln(Book Value_3-year MA)	6.701*** (1.410)	1.671 (1.406)	2.561 (2.351)	-5.161 (3.561)	-5.262*** (1.123)
Ln(Cash Flow_3-year MA)	1.004 (.891)	5.322 (3.672)	.891 (1.251)	2.351 (4.561)	5.245* (2.672)
Ln(Dividends_3-year MA)	4.103 (12.410)	4.304 (4.671)	-.621 (.602)	-4.551* (2.210)	-6.832*** (2.176)
Ln(Market Cap_3-year MA)	12.501** (4.239)	2.901 (1.274)	2.626 (2.671)	-5.251 (5.101)	-1.340 (5.134)
Ln(Value Traded_3-year MA)	9.761*** (2.345)	3.140 (5.230)	4.662 (8.612)	2.621* (1.211)	4.246*** (2.161)
Gov Limit	–	–	12.627*** (3.267)	9.246*** (2.641)	2.531 (3.469)
Year Controls	Yes	–	–	–	–
R ²	.346	.161	.156	.416	.351
n	649	47	53	61	67

Table 6: Effect of Foreign Institutional Investment Limit on Value Traded and Book Value by Type of Company using reform and post-reform interactions (1976 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of each variable is dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 1. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. The regressions also include FII limit, Government, Foreign and Group regressors, the coefficient of which are omitted. Company Controls_t+1 and Company Controls_t+5 represent the lead values of the set of company control variables, but the coefficients are omitted. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	Ln(Value Traded_t+1)	Ln(Value Traded_t+2)	Ln(Value Traded_t+6)	Ln(Book Value_t+1)	Ln(Book Value_t+2)	Ln(Book Value_t+6)
FII limit * (1993 – 1997)	2.418*** (.582)	2.156** (.724)	.488 (.582)	2.523*** (.783)	2.449*** (.872)	2.149*** (.844)
FII limit * (1998 – 2007)	-1.287** (.481)	.281 (.731)	-.575 (.843)	-1.173** (.621)	-1.152** (.635)	-1.232** (.613)
FII limit * (1993 – 1997) * Government	.487 (1.782)	.387 (1.458)	.575 (1.287)	.498 (1.775)	.671 (1.258)	.781 (1.578)
FII limit * (1993 – 1997) * Foreign	.229 (.341)	.298 (.557)	.341 (.561)	.671* (.376)	.479 (.315)	.445 (.367)
FII limit * (1998 – 1997) * Group	.578 (.452)	.047 (.471)	.057 (.875)	.135 (.741)	.351 (.418)	.441 (.515)
FII limit * (1998 – 2007) * Government	-.513 (.573)	.617 (.831)	.857 (.613)	-1.415*** (.415)	-1.124** (.517)	-1.782*** (.459)
FII limit * (1998 – 2007) * Foreign	.516 (.591)	.588 (.414)	.456 (.551)	.331 (.388)	.438 (.591)	.443 (.567)
FII limit * (1998 – 2007) * Group	.566 (.341)	.575 (.412)	.441 (.351)	.876 (.873)	.235 (.523)	.357 (.861)
<i>Company Controls:</i>						
Net Income_t-1	.256 (2.345)	-1.742 (3.551)	.664 (2.689)	.332 (2.997)	-3.663** (1.255)	.764 (1.863)
Cash Flow_t-1	.451 (.632)	.445 (.367)	.542 (.383)	.953 (1.671)	4.312*** (1.552)	1.331 (1.799)
Dividends_t-1	-.754 (2.221)	-1.567 (2.742)	-4.642 (2.789)	.003 (.008)	.002 (.036)	-.015 (.042)
Market Cap_t-1	.045*** (.011)	-.035 (.042)	.022 (.013)	.036 (.074)	.156 (.254)	.314 (.453)
Ln(Market Cap_t+1)	1.023*** (.135)	1.823*** (.451)	1.577*** (.587)	–	–	–
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls_t+1	–	Yes	–	–	Yes	–
Company Controls_t+5	–	–	Yes	–	–	Yes
R ²	.775	.772	.778	.599	.694	.674
n	1776	1566	880	1861	1535	897

Table 7: Effect of Foreign Institutional Investment Limit on P / BV and P / E by Type of Company using reform and post-reform interactions (1976 – 2007)

Note: All variables in all regressions are winsorized at the 99% level, that is the top and bottom 1% of each variable is dropped. Market Cap is measured in USD billions, all other company variables are in USD millions and the FII limit ranges from 0 to 1. All regressions use heteroscedastic standard errors, which are included in parentheses below coefficients. The regressions also include FII limit, Government, Foreign and Group regressors, but the coefficient of which is omitted. Company Controls_t+1 and Company Controls_t+5 represent the lead values of the set of 5 company control variables, but the coefficients are omitted. *, **, and *** represent significance to the 10%, 5% and 1% levels, respectively.

	(P / BV)_t+1	(P / BV)_t+2	(P / BV)_t+6	(P / E)_t+1	(P / E)_t+2	(P / E)_t+6
FII limit * (1993 – 1997)	2.861** (1.351)	3.827*** (1.355)	3.189*** (1.582)	6.343*** (1.185)	5.731*** (1.083)	8.135*** (2.952)
FII limit * (1998 – 2007)	2.765*** (.871)	1.239** (.635)	1.872*** (.822)	5.239*** (1.382)	5.318*** (1.052)	5.238*** (1.885)
FII limit * (1993 – 1997) * Government	1.571*** (.531)	.987*** (.364)	.934** (.428)	3.684*** (1.144)	3.557*** (1.313)	3.739*** (1.135)
FII limit * (1993 – 1997) * Foreign	.456 (.583)	.051 (.582)	-.545 (.688)	-.582 (.985)	-.701 (.839)	.837 (.710)
FII limit * (1993 – 1997) * Group	.489 (.589)	.585 (.662)	-.342 (.538)	1.035* (.589)	.873 (.631)	.934 (.783)
FII limit * (1998 – 2007) * Government	.912* (.522)	1.351*** (.421)	.836** (.418)	2.583** (1.349)	2.574** (1.124)	2.573** (1.253)
FII limit * (1998 – 2007) * Foreign	-.287 (.345)	.481 (.494)	.584 (.452)	.987 (.670)	.809 (.801)	.605 (.703)
FII limit * (1998 – 2007) * Group	.359 (.574)	.474 (.381)	.477 (.763)	-.581 (.501)	.350 (.702)	.815* (.403)
<i>Company Controls:</i>						
Net Income_t-1	1.573 (2.583)	.581 (1.832)	.847 (.993)	.275 (.883)	.467 (.501)	.199 (.419)
Cash Flow_t-1	-2.538 (2.583)	-2.584 (2.568)	-1.580 (1.533)	-1.337 (1.568)	-1.930 (1.550)	-1.093 (1.320)
Dividends_t-1	-5.382 (5.384)	-5.699 (4.528)	-3.899 (3.510)	-3.119 (2.581)	-3.198 (2.821)	-5.319 (3.862)
Market Cap_t-1	.855 (.586)	.573 (.813)	.358 (.581)	.318 (.831)	.589 (.812)	.532 (.938)
Industry Controls	Yes	Yes	Yes	Yes	Yes	Yes
SEs clustered by Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Company Controls_t+1	–	Yes	–	–	Yes	–
Company Controls_t+5	–	–	Yes	–	–	Yes
R ²	.451	.516	.412	.617	.581	.577
n	1861	1535	897	1861	1535	897