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IV. Financial Development And Growth In India: A Growing Tiger In a Cage? [1]

A. Introduction

1. **Will financial frictions pose an increasing constraint to growth in India?** This is a highly relevant question, both because the financial system is underdeveloped and because corporate investment is expected to continue playing a key role driving India's growth (Figure IV.1). The rapid pace of India's corporate sector expansion will in turn continue to require very large amounts of funds. Analyzing sources of corporate funds will shed light on whether India's financial system might need further upgrading. If firms increasingly use external funds (funds from outside of the firm)[2] rather than internal funds (funds generated by the firm's own operations), access to an efficient domestic financial system, or access to foreign financing, will become ever more important to sustain high levels of investment.

2. **This chapter examines three major questions:** (1) are Indian firms increasingly relying on external funds?; (2) are there signs of financing constraints?; and (3) does higher external finance dependence imply weaker firm growth? In answering these questions, the chapter uses firm level data for Indian companies, examines their summary statistics, and estimates standard models from the corporate finance literature explaining capital structure and firm growth together with the external finance dependence measure introduced by Rajan and Zingales (1998). The rest of the chapter is organized around these questions.

B. Are Indian Firms Increasingly Relying on External Funds?

3. **The patterns of corporate finance have changed dramatically since the end of the 1990's.** This chapter uses the Prowess database from Centre for Monitoring Indian Economy (CMIE), a Mumbai-based economic think-tank, which includes detailed financial statement data for about 9,000 companies out of the approximately 10,000 listed companies in India.[3] The data include from 3,300 to over 6,000 companies for fiscal years 1993/94 to 2005/06 after omitting errors and incomplete observations (Table IV.1). The majority of firms are over 10 years old (some are over 100 years old). By sector, manufacturing firms are the majority, and financial and chemical sectors are the two largest subsectors. The sample

[1] Prepared by Hiroko Oura and Renu Kohli.

[2] Throughout the chapter, the term "external finance" is used to indicate sources of funds outside of a firm, including both domestic and foreign finance. The term "foreign" is used to indicate funds from overseas.

[3] The firms covered in the database account for 75 percent of corporate taxes and over 95 percent of excise duty collected by the Government of India. The database covers a much larger number of companies than the about 500 Indian firms included in Corporate Vulnerability Utility (CVU) developed by the IMF, based on Worldscope and DataStream. In addition, Prowess has more detailed data fields, such as foreign borrowing, than CVU. Prowess is frequently used in the existing studies on India's financial systems, including Topalova (2004), Love and Martinez Peria (2005), Allen, et al (2006), and Allen, et al (2007).

mostly represents domestic private sector companies (either independent or in a business group), although foreign and government owned companies are much larger on average than private sector companies by sales.

- **The share of external funds in total funds gradually declined through 2003/04** (Table IV.2, left panel).[4] In particular, there were large-scale repayments of debt since 2000/01, both domestic and external. These repayments reduced the median share of "core" external funds—defined as formal/active sources of funds including long-term debt and equities, and excluding passive/informal sources of funds such as trade credits—in total funds sharply from 26 percent of total funds in 2000/01 percent to 9 percent in 2002/03 and 2003/04[5] (Table IV.2, right panel). This deleveraging reduced the debt-to-asset ratio, while more or less maintaining the equity-to-asset ratio (Table IV.3).

- **However, the use of external funds seems to be picking up in the latest couple of years.** The share of "core" external funds has come back up to about 16 percent in 2005/06 (Table IV.2, right panel). The use of foreign borrowing has increased and become more wide-spread across sectors (Table IV.4, left panel).

4. **A combination of factors could have influenced these patterns.**

- *The domestic economic cycle.* Corporate investment declined by about 5 percent of GDP from the mid-1990's peak through 2001/02, in response to the unwinding of investments made during the early 1990's boom. The recent pickup in the use of external funds coincides with the pick up in investment that started in 2002/03. Indeed, the growth of corporate investment is much faster than the growth of internal funds, and the share of external funds relative to capital expenditure has increased sharply for nonfinancial firms (Table IV.4, right panel).

- *Corporate tax rate*. The corporate tax rate has been reduced from 60–75 percent in the early 1990's to 45 percent in 2005/06 (including surcharges).[6] This could have contributed to the gradual decline in leverage as it reduced the tax benefits of debt.

- *Global influences***.** Other economies in the world have shown similar corporate finance patterns (whether this reflects the transmission of global factors or

[4] External funds are defined as long-term domestic and foreign debt, equity, and trade credits, while total funds are defined as external funds plus retained earnings and depreciation.

[5] As pointed out in Allen, et al (2006), Indian firms hold significantly large amounts of trade credit on their books, indicating a major role as a source of informal external funds.

[6] Mohan (2007).

coincidence is admittedly unclear). Major emerging markets turned into net capital exporters since 2000, as they de-leveraged after the 1990's crises (IMF, 2004). The corporate sectors in G-7 countries turned into net savers starting around the turn of the century. IMF (2006) discusses possible explanations for the G-7 experiences, including de-leveraging of high debt accumulated during the 1990's; high corporate profits owing to low interest rates and a generalized reduction in corporate tax rates; ongoing technological change that altered the relative price of capital; increased demand for purchasing overseas companies by corporates; and increased demand for cash owing to heightened uncertainty in the business environment.

5. **In addition, there are some notable cross-section patterns.**

- *Age*: Younger firms rely more on external finance, as shown in a high share of external funds in total funds (Table IV.1) and the large share of external funds relative to investment (Table IV.4). This might be because they need to invest in capacity and it may take several years before they become profitable.

- *Size*: Smaller firms have limited access to formal sources of external finance compared to larger firms, and rely relatively heavily on trade credit (as shown in a high share of overall external funds but a low share of core external funds; see Table IV.2). They also tend to rely on equity, most likely from owner-founders, rather than debt (Table IV.3). Despite limited access to core external finance, smaller firms rely on overall external funds to finance their investment more than larger firms (Table IV.4, right panel), indicating their extensive use of trade credits. However, larger firms are more likely to borrow from abroad than smaller firms (Table IV.4, left panel).

6. **Overall, the Indian corporate sector's use of external funds is rapidly increasing** (although the share of external funds in total funds is still below the 1990's peak). Sources of internal funds—corporate profit growth and gains in corporate saving—are strong, but not as strong as corporate investment. Thus, maintaining and improving access to external funds would be key to sustain healthy financing for strong corporate investment going forward.

C. Are There Signs of Financing Constraints?

7. **Economy-wide measures indicate rapid financial development in India in recent years**. Between 2003/04 and 2006/07, the annual growth rate of bank credit to the corporate sector averaged 30 percent y/y, and its share in GDP increased by 5 percentage points to over 16 percent of GDP. Between 2002/03 and mid-2007, the market capitalization of the Bombay Stock Exchange in percent of GDP more than tripled to over 100 percent. Furthermore, capital inflows accelerated sharply from 2 percent of GDP in 2002/03 to 5 percent of GDP in 2006/07, with FDI inflows into Indian companies increasing by 1 percentage point of GDP

and external commercial borrowing disbursements to corporations rising by 2.5 percentage points of GDP.

8. **However, some segments of India's financial system are less developed**. Despite strong growth in recent years, the corporate debt (sum of bank credit to the corporate sector and corporate bonds) to GDP ratio remained below 20 percent in 2006/07, much lower than the average of 60 percent in emerging markets (near 80 percent in emerging Asia, 30 percent in emerging Latin America, and over 20 percent in emerging Europe (IMF, 2005)). Limited reliance on banks to fund corporate investment may reflect regulatory constraints, most notably the Statutory Liquidity Requirement that mandates banks to invest a minimum of 25 percent of their deposits in government securities, and a priority sector lending requirement that mandates domestic banks to lend a minimum of 40 percent of their net credit to the priority sector.[7] The corporate bond market is underdeveloped, amounting to less than 5 percent of GDP, compared with over 20 percent of GDP in Thailand, Chile and Mexico, and 50–100 percent of GDP in more advanced economies. Impediments include fragmented tax structure, low transparency, restrictive issuance rules, lack of repo markets, and quantitative limits on the investor base (see the staff report).

9. **The empirical analyses in this chapter indicate that corporate financing patterns reflect the uneven and still underdeveloped state of India's financial systems**. The financing patterns and capital structure of Indian firms have several notable features: (1) overall, there is a limited relationship between inherent dependence on external funds and actual use of such funds;[8] (2) this is particularly true of debt financing, including foreign debt; and (3) equity markets, on the other hand, seem to be tapped by firms with an inherently higher need for external finance.

10. **This chapter employs a unique empirical strategy that properly instruments for external finance demand factors, and hence, can investigate the relationship between demand factors and financing patterns**:[9]

$$x_i = \alpha + \beta RZ\_us + \gamma y_i + \varepsilon_i \qquad (1)$$

[7] The priority sector includes agriculture, small business, small scale industries, retail trade, education, small housing, and consumption loans among other items.

[8] Classification of inherent external finance dependence is based on Rajan and Zingales (1998).

[9] The empirical literature on capital structure often uses firm-level data, and regresses capital structure measures on individual firm characteristics. In the finance-growth literature, such as Rajan and Zingales (1998) and de Serres, et al (2006), industry level cross country data are used, and industry growth in a country is regressed on an interaction term between RZ_us (RZ measure based on U.S. data) and a country specific financial development or financial regulation measure. Since our data are firm-level data for India only, the interaction term is reduced to the RZ_us variable.

The dependent variable x_i is the period average of capital structure measures, including the share of external funds in total funds for firm i, and the share of debt, foreign debt, and equity over total assets. The independent variable y_i is a standard set of firm characteristics known to have explanatory power for capital structure in the corporate finance literature. RZ_us is an instrument for inherent external finance demand introduced by Rajan and Zingales (1998) as an external finance dependence measure (henceforth, the RZ measure), and is calculated as the share of capital expenditure financed by external funds[10] using U.S. data. The analysis uses the calculation of de Serres et al (2006) for ISIC 2-digit level industries, which includes a part of the services sector (but excludes the financial sector).

11. **The RZ measure is widely used as an instrument for external funds demand, in spite of three strong assumptions**. First, some industries are likely to have larger needs for external funds. For instance, the labor-intensive textile industry may not need much external finance compared with capital-intensive heavy industries such as chemicals and petroleum. Second, the cross-industry variation of the demand for external finance is likely to follow the same ordering across countries, implying that if in the United States, the petroleum sector needs more external finance than the textile sector, the same is true in India. Third, and most controversially, the U.S. financial system is assumed to have only limited frictions in supplying finance; therefore, the observed ordering of the RZ measure with the U.S. data[11] should reflect demand factors applicable in other countries. While this last assumption is arguably strong, the measure produces consistently reasonable results in the growth-finance literature (including Rajan and Zingales (1998) and de Serres (2006) for instance).

12. **Accepting these assumptions, if a financial system has minimal supply side constraints, it should provide more funds to sectors that inherently are more dependent on external funds** (higher RZ measure). In the model (1), an efficient financial system should be represented by a positive, significant coefficient for the RZ_us. On the other hand, if a financial system is distorted, the industries with large external finance dependence may not necessarily receive larger external resources, resulting in an insignificant or even a negative coefficient for the RZ_us measure.[12]

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[10] Defined as (capital expenditure –(cash flow +decrease in inventory + decrease in receivables + increase in payables))/capital expenditure. Cash flow adjusted by changes in inventory, receivables and payables represents internal funds; therefore, the numerator represents external funds that fill the gap between financing needs for investment and internally generated resources.

[11] After smoothing short-term cyclical fluctuations; indeed, Rajan and Zingales (1998) used the decade average data to calculate the RZ measure.

[12] A negative correlation between demand intensity for credit and actual amount borrowed indicates a "backward bending" supply curve, which could exist if higher interest rates attract less creditworthy borrowers and lenders cannot observe the creditworthiness of a borrower (Stiglitz and Weiss (1981)).

13. **The model includes a standard set of firm characteristics that are often used in empirical models to explain capital structure by controlling for other relevant factors.**[13] Debt ratios tend to be lower for firms that are more profitable (hence, cash rich) and have higher market-to-book ratios (the latter is usually considered as a proxy for growth opportunity or Tobin's Q). On the other hand, debt ratios tend to be higher for firms that are larger and those that have more tangible assets that they can pledge as collateral. Therefore, the model includes firm size (using log of sales), profitability (return on asset (ROA)), asset tangibility (ratio of tangible assets to total assets), firm age (using log of years since incorporation at the beginning of the sample period), and dummy variables for ownership. Following Love and Peria (2005), the square of firm age is also included.[14] Models are estimated with and without the market to book ratio, since only a limited number of firms have this data. For models explaining foreign borrowing, a dummy variable to distinguish exporters is added.

14. **Models are estimated for three sets of cross section data**: 1993/94–2005/06 (whole sample), 1993/94–1998/99 (first half), and 1999/00–2005/06 (second half). All the ratios were calculated by first summing the denominator and numerator across time with an aim to smooth annual volatility (similarly to Rajan and Zingales (1998)).

15. **Tables IV.5–IV.8 summarize the estimates**. The two sub-samples include different numbers of observations, reflecting entry and exit of firms. Similar results are obtained even when focusing on a subset of companies that have data for the whole period.

Share of core external funds (Table IV.5)

- **The coefficient on the RZ_us measure is negative and significant for the whole sample and the sub-sample in the 1990's, implying that India's financial system**

[13] Two relatively recent studies covering non-U.S. firms, Rajan and Zingales (1995, covering G7 countries) and Booth, et al. (2001, covering developing countries) find that despite substantial institutional differences across countries, firm debt ratios in developed and developing countries seem to be influenced by some similar factors. More generally, in a widely cited review of the theoretical literature, Harris and Raviv (1991) conclude that debt use is positively related to fixed assets, non-debt tax shields, investment levels, and firm size, and is negatively related to cash-flow volatility, growth opportunities, advertising expenditure, the probability of bankruptcy, profitability, and the uniqueness of product. Theoretical models are based on agency costs (costs due to conflicts of interest between shareholders and managers or between shareholders and debt holders), asymmetric information (insiders and managers tend to have private information and may undertake inefficient investments), product/input market interaction (among competing producers, and/or between producers and consumers/suppliers), and corporate control considerations (related to takeover activities).

[14] In their study, this variable often has negative and significant coefficients. One possible explanation is that some firms are extremely old (over 100 years in 1994), often in textile and food industries (tea), and they could survive owing to non-market factors. Another possibility is that many age and firm growth related dynamics could take place in a short horizon and then taper off. The squared term could capture these nonlinear effects.

is not allocating resources to firms that have the highest inherent need for external finance, other things being equal.

- **Coefficients for firm characteristics are generally as expected, although the different results for equity and debt have implications that are not clear cut**. Larger firms seems to have better access to external funds, and more profitable firms with rich cash positions tend to rely less on external funds, as expected. The negative sign on age and asset tangibility seems to be picking up its impact on equity finance (younger firms receive equity finance from founding promoters) as shown in the regressions for equity-to-assets (Table IV.8). Foreign and government-owned firms use less external finance overall, especially debt (Table IV.6), but they use more equity (Table IV.8) than private Indian firms. This apparently indicates a stronger preference for equity finance in foreign and government owned firms, consistent with the findings by Love and Peria (2005). However, it should be noted that these firms, especially government-owned ones, are much larger than Indian independent companies on average, which explains the larger median use of external funds for these firms (Table IV.2).

Debt to assets (Table IV.6)

- **The coefficient on the RZ_us measure is not significantly different from zero for any of the three samples**. All the coefficients for firm characteristics are consistent with the existing literature on leverage (debt-to-equity or debt-to-assets).

Foreign debt to assets (Table IV.7)

- **The coefficient on the RZ_us measure is either not significantly different from zero or is significantly negative for all the cases**. This implies that, so far, evidence is lacking that firms that need more external finance are going abroad in order to avoid constraints in the domestic markets. This could reflect the fact that smaller firms are more likely than large ones to face difficulties borrowing domestically, while big firms have greater access to foreign borrowing.

- **Foreign debt is mostly accessed by large firms**. For each cross-section sample, a model is estimated with all firms and another that includes only the firms with access to foreign borrowing (firms with foreign debt stocks greater than zero). The size impact becomes significant only when estimation is limited to a subset of firms with access to foreign debt. Asset tangibility seems to be associated with increased foreign borrowing. Rather surprisingly, foreign-owned firms are not more likely to access foreign borrowing, but this could reflect a preference for equity finance.

Equity to assets (Table IV.8)

- **The coefficient on the RZ_us measure is generally positive and significant**. In particular, the equity market seems to provide an important source of finance for young and small firms with high growth opportunities in recent years. The estimation also confirms the preference for equity finance by foreign and government owned firms.

D. Does Higher External Finance Dependence Imply Weaker Firm Growth?

16. **Given the evidence above that Indian firms with higher external finance dependence do not tend to borrow as much as less-dependent firms, one would expect to see a negative relation between external finance dependence and firm growth.** To the extent finance matters for growth, such financing constraints are likely to reduce firm growth compared to its potential. Indeed, the studies by Rajan and Zingales (1998, which includes India in their cross-country sample) and de Serres et al (2006, which covers European countries) find that financial underdevelopment reduces the growth rate of an industry that is more dependent on external finance.

17. **Similar empirical models are employed to those for capital structure** (equation (1)). The dependent variable x_i is the annual average growth rate for firm gross value added.[15] Once again, the RZ_us measure functions as an instrument for inherent demand for external funds.

18. **A slightly different set of firm characteristic variables is used, reflecting the literature on firm growth**, and include the initial share of a firm's gross value added in percent of total gross value added for all the firms in the sample, age, a dummy variables for exporters, access to foreign finance, and ownership, and some financial ratios, including ROA, leverage, and market-to-book ratios. Empirical studies by Evans (1987) and Hall (1987) using U.S. data, find that the growth rate of manufacturing firms is negatively associated with firm size and age. ROA and market to book ratio are expected to be positively correlated with firm growth, as ROA could proxy for a firm's efficiency as well as availability of internal funds, and the market-to-book ratio could proxy for growth opportunities.

19. **Similar to the estimations for capital structure, three sets of cross section data are used**, covering 1993/94–2005/06, 1993/94–1998/99, and 1999/00–2005/06. Table IV.9 summarizes the results.

[15] Estimation using other measures such as growth rate of sales, total assets, or gross fixed assets yielded results that were broadly similar to the results from the model with gross value added.

- **The coefficient for RZ_us is negative and significant, indicating that firms in an industry that tend to rely more on external funds are growing more slowly than others**. In addition, this effect seems to be stronger in more recent years. It is possible that the cyclical upturn of investment and increased need for external finance could have tightened the existing constraints in the financial systems
- **Firm specific control variables generally have coefficients with expected signs**. Age is mostly negatively related to firm growth, and high profitability is positively correlated with growth. Access to foreign finance seems to contribute positively to growth.

E. Conclusion

20. **The estimation results seem to provide a case for strengthening the financial system in India, particularly the corporate debt market and the banking sector.** While corporate profitability has risen substantially in recent years, corporate investment has turned around even more sharply, so that firms have started to increase reliance on external finance. While aggregate measures of financial development have shown appreciable improvements lately, estimation results seem to indicate the presence of some financial frictions. In addition, firm growth is negatively correlated with a benchmark for industry-level need for external finance, which could imply the need to upgrade the financial systems in order to sustain high, investment-led growth in India.

21. **The firm growth estimation results pose a puzzle**. Some of India's star corporations are in industries highly dependent on external finance, such as petroleum and chemicals (pharmaceuticals). One possibility is that they are indeed outliers. In particular, the chemicals industry has the largest number of companies, and the median performance could be very different from that of some star performers. This leaves unanswered the question of what factors have allowed the emergence of some star performers in "finance-intensive" industries; a question that is left for future research.

Figure IV.1. India: The Corporate Sector and Growth

(In percent, in percent of GDP, 1990/81–2005/06)

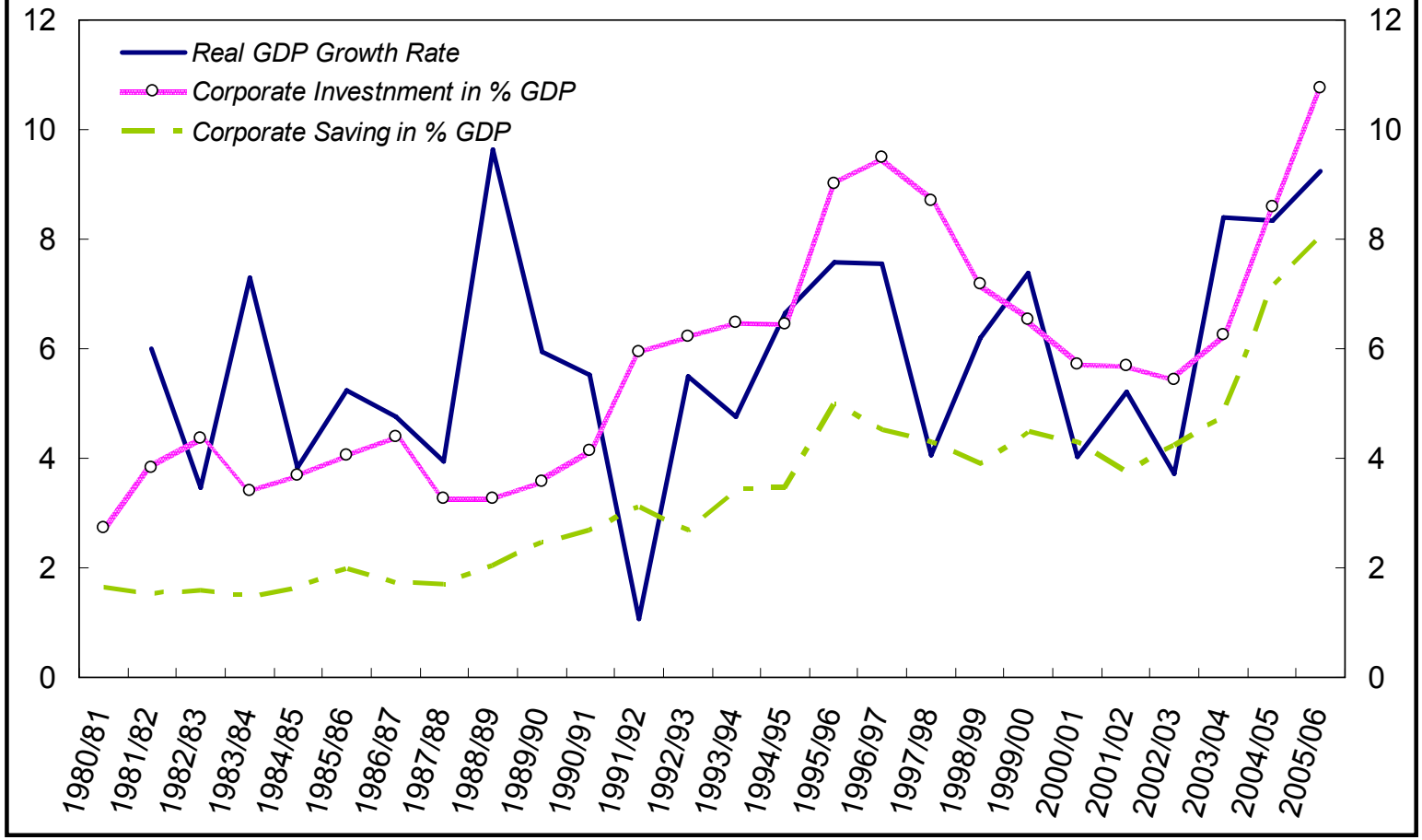

Table IV.1. Distributions of Firms in the Study: Number of Firms

	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06
	Number of Firms												Proportion of Firms											
													(In percent of total)											
Total	3366	4285	4577	4545	4710	5241	5414	5693	6142	6453	5939	5202	100	100	100	100	100	100	100	100	100	100	100	100
Age 0–5	573	929	952	749	574	387	295	260	222	261	183	89	17	22	21	16	12	7	5	5	4	4	3	2
5–10	735	867	901	971	1046	1293	1311	1242	1137	1017	664	416	22	20	20	21	22	25	24	22	19	16	11	8
10+	2058	2489	2724	2825	3090	3561	3808	4191	4783	5175	5092	4697	61	58	60	62	66	68	70	74	78	80	86	90
Industry																								
Financial	370	655	788	821	809	863	881	1008	1340	1437	1350	1106	11	15	17	18	17	16	16	18	22	22	23	21
Nonfinancial	2996	3630	3789	3724	3901	4378	4533	4685	4802	5016	4589	4096	89	85	83	82	83	84	84	82	78	78	77	79
Mining	89	121	138	138	136	145	154	161	167	174	164	150	3	3	3	3	3	3	3	3	3	3	3	3
Manufacturing	2427	2853	2916	2833	2916	3208	3262	3286	3311	3402	3123	2835	72	67	64	62	62	61	60	58	54	53	53	54
Food	293	335	355	337	360	408	411	424	423	428	392	359	9	8	8	7	8	8	8	7	7	7	7	7
Textiles	303	382	393	406	407	426	434	437	441	457	415	397	9	9	9	9	9	8	8	8	7	7	7	8
Wood	10	12	13	14	15	16	15	15	16	17	15	15	0	0	0	0	0	0	0	0	0	0	0	0
Paper	78	100	113	109	110	127	143	142	139	151	132	110	2	2	2	2	2	2	3	2	2	2	2	2
Petroleum	28	37	36	36	34	38	42	39	40	44	33	32	1	1	1	1	1	1	1	1	1	1	1	1
Chemical	553	656	647	640	650	709	706	704	702	738	664	593	16	15	14	14	14	14	13	12	11	11	11	11
Rubber	150	191	204	197	200	224	220	215	227	217	209	191	4	4	4	4	4	4	4	4	4	3	4	4
Mineral	132	136	136	129	129	139	140	150	139	143	141	132	4	3	3	3	3	3	3	3	2	2	2	3
Basic metal	232	264	259	238	257	293	298	297	313	309	292	268	7	6	6	5	5	6	6	5	5	5	5	5
Fabricated metal	61	73	74	72	79	92	91	92	88	92	84	76	2	2	2	2	2	2	2	2	1	1	1	1
Machinery	178	206	207	196	195	214	205	214	219	217	210	194	5	5	5	4	4	4	4	4	4	3	4	4
Electronics	224	252	267	255	255	277	282	290	292	300	266	247	7	6	6	6	5	5	5	5	5	5	4	5
Motor vehicle	128	136	136	137	141	151	178	172	177	185	178	149	4	3	3	3	3	3	3	3	3	3	3	3
Transport equipment	28	28	32	26	31	36	34	32	31	33	32	25	1	1	1	1	1	1	1	1	1	1	1	0
Furniture	29	45	44	41	53	58	63	63	64	71	60	47	1	1	1	1	1	1	1	1	1	1	1	1
Service	850	1311	1523	1574	1658	1888	1998	2246	2664	2876	2652	2217	25	31	33	35	35	36	37	39	43	45	45	43
Electricity gas water	27	31	36	36	40	45	46	56	65	70	69	60	1	1	1	1	1	1	1	1	1	1	1	1
Construction	77	102	110	112	126	144	154	173	182	187	163	126	2	2	2	2	3	3	3	3	3	3	3	2
Trade	203	286	325	321	345	400	411	463	501	539	469	379	6	7	7	7	7	8	8	8	8	8	8	7
Hotel restaurant	50	62	61	64	68	73	75	78	80	87	78	81	1	1	1	1	1	1	1	1	1	1	1	2
Transport service	41	49	55	51	65	83	85	95	108	125	104	91	1	1	1	1	1	2	2	2	2	2	2	2
Telecom	9	12	14	20	22	35	37	39	46	50	43	41	0	0	0	0	0	1	1	1	1	1	1	1
Financial	370	655	788	821	809	863	881	1008	1340	1437	1350	1106	11	15	17	18	17	16	16	18	22	22	23	21
Business service	73	114	134	149	183	245	309	334	342	381	376	333	2	3	3	3	4	5	6	6	6	6	6	6
Ownership																								
Private independent	1546	2262	2420	2404	2438	2809	2944	3173	3579	3710	3352	2913	46	53	53	53	52	54	54	56	58	57	56	56
Private group	1383	1523	1609	1617	1713	1810	1838	1867	1899	2006	1924	1725	41	36	35	36	36	35	34	33	31	31	32	33
Foreign	257	293	300	314	336	357	363	364	360	381	347	307	8	7	7	7	7	7	7	6	6	6	6	6
Government	180	207	248	210	223	265	269	289	304	356	316	257	5	5	5	5	5	5	5	5	5	6	5	5

Sources: Prowess database from CMIE; and authors' calculation.

Table IV.2. Distributions of Firms in the Study: External Funds in Percent of Total Funds
(Ratio of flow variables)

	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average
	Median, External Funds Including Long-term Debt, Equity, and Trade Credits														Median, Core External Funds Including Only Long-term Debt and Equity													
Total	73	80	80	75	71	69	69	69	67	66	62	64	64	70	46	55	52	41	35	25	26	26	15	9	9	12	16	28
Age 0–5	91	90	93	89	86	88	85	88	88	80	72	80	82	86	72	71	76	59	41	41	48	52	37	22	25	30	59	49
5–10	79	83	83	77	73	67	74	73	72	69	68	71	73	74	52	63	60	46	38	26	31	29	15	9	10	16	26	32
10+	68	75	73	70	67	66	66	65	64	64	60	63	63	66	38	47	41	34	32	23	23	24	14	8	9	12	14	25
Size 1/ Small	85	89	94	91	86	79	79	78	69	70	63	58	58	77	53	64	71	41	19	8	12	7	0	0	0	0	0	21
Medium	71	78	76	72	71	69	72	70	70	70	64	66	64	70	45	54	48	40	32	30	31	30	26	16	17	16	20	31
Large	68	76	73	68	65	65	64	63	64	60	59	65	66	66	41	50	44	41	44	34	31	35	26	20	20	31	33	35
Industry																												
Financial	84	86	88	83	84	82	83	81	80	83	75	72	65	81	68	69	67	48	32	36	32	18	13	0	0	0	0	30
Nonfinancial	72	79	78	73	69	66	67	67	64	62	59	63	64	68	44	53	48	40	35	24	25	27	15	11	12	17	20	29
Mining	68	85	71	63	62	50	47	47	53	39	51	54	45	57	40	61	45	32	36	19	16	3	6	3	0	13	10	22
Manufacturing	71	78	77	71	67	62	63	63	60	59	56	63	63	66	46	53	51	41	37	25	25	27	18	14	13	22	24	31
Food	73	80	81	74	64	61	69	72	71	72	73	70	65	71	54	58	53	35	22	27	39	32	32	30	35	28	28	36
Textiles	71	81	79	71	67	61	45	57	55	60	56	70	67	65	54	66	65	50	45	28	19	27	26	18	29	43	47	40
Wood	57	76	74	70	67	84	67	84	74	82	66	85	84	75	63	53	59	36	51	53	18	46	29	38	9	53	1	39
Paper	59	73	73	82	66	73	65	51	35	50	51	61	53	61	28	45	53	55	52	39	39	19	22	10	15	20	33	33
Petroleum	71	81	73	77	45	60	79	72	68	74	77	63	75	70	25	57	43	22	6	21	22	2	4	9	22	17	16	21
Chemical	72	79	77	71	67	60	59	61	48	52	46	55	58	62	46	53	50	43	41	21	23	29	14	13	9	16	24	29
Rubber	74	79	81	72	67	64	54	45	47	48	48	44	61	60	48	59	64	46	39	34	30	25	17	11	10	0	24	31
Mineral	60	66	67	66	60	61	73	64	55	50	46	55	51	60	28	41	46	44	32	30	34	27	15	10	0	6	28	26
Basic metal	80	81	75	72	76	68	69	68	74	61	64	73	75	72	59	53	47	37	40	35	29	29	34	14	19	40	35	36
Fabricated metal	67	78	73	64	71	82	65	50	76	61	63	75	71	69	57	48	47	51	45	21	23	21	28	8	5	30	28	32
Machinery	68	76	73	63	69	52	55	64	59	50	53	61	58	62	28	35	34	35	25	12	19	15	3	5	1	8	7	17
Electronics	76	78	77	78	74	66	71	67	67	71	57	64	56	69	40	46	46	34	36	24	35	27	19	19	12	10	6	27
Motor vehicle	62	69	67	55	56	62	51	56	35	39	43	49	53	54	36	37	41	37	42	31	20	37	14	6	4	24	20	27
Transport equipment	55	57	78	76	58	61	82	91	79	50	52	82	74	69	21	17	23	31	46	18	11	18	9	9	2	13	13	18
Furniture	72	75	81	79	62	71	67	71	63	76	73	83	86	74	15	62	46	23	24	14	14	25	6	8	8	21	27	23
Service	82	85	86	84	83	82	82	83	79	78	72	69	68	79	49	61	55	40	26	25	28	26	10	2	5	1	3	25
Electricity gas water	73	80	75	83	70	70	77	69	87	86	68	66	71	75	61	66	34	45	61	28	17	17	49	43	37	41	43	42
Construction	83	87	87	91	86	89	83	90	88	84	82	82	87	86	37	40	35	23	24	12	16	23	5	13	17	14	25	22
Trade	82	86	90	91	88	91	87	90	87	84	83	77	77	86	27	44	39	33	22	19	16	19	9	2	10	7	2	19
Hotel restaurant	45	78	75	70	81	65	71	64	91	40	45	56	36	63	29	56	45	40	45	37	38	39	45	0	9	7	0	30
Transport service	81	69	60	55	50	71	82	57	59	60	51	49	65	62	45	18	10	16	17	8	30	31	22	17	14	8	32	21
Telecom	77	80	88	89	101	120	95	98	87	76	41	46	55	81	53	66	65	41	39	73	78	70	30	43	1	3	8	44
Financial	84	86	88	83	84	82	83	81	80	83	75	72	65	81	68	69	67	48	32	36	32	18	13	0	0	0	0	30
Business service	78	86	74	78	59	54	74	76	44	43	46	45	57	63	34	54	43	28	14	11	38	41	0	1	4	1	7	21
Ownership																												
Private independent	78	82	84	79	72	68	69	68	64	66	62	64	66	71	51	60	61	43	30	21	23	25	12	6	10	12	18	29
Private group	71	78	75	72	72	72	69	69	68	66	61	65	62	69	46	53	46	42	41	34	32	29	22	13	11	17	17	31
Foreign	69	74	71	63	68	63	63	64	66	60	53	54	45	62	31	33	29	26	28	24	16	23	8	6	3	1	0	18
Government	79	85	83	70	70	80	77	80	79	73	72	76	71	76	36	53	41	25	33	18	35	18	20	22	9	18	26	27

Sources: Prowess database from CMIE; and authors' calculation.

1/ Each category has one-thirds of the total observation

Table IV.3. Distributions of Firms in the Study: Equity-to-Asset and Debt-to-Asset Ratios
(Ratios of stock variables)

	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average
	Median, Equity-to-Asset														Median, Debt-to-Asset													
Total	15	20	26	27	26	24	24	24	25	26	24	24	23	24	36	32	31	30	32	32	31	30	29	25	24	23	23	29
Age 0–5	36	39	50	53	53	45	35	32	26	29	27	29	18	36	34	28	23	21	20	22	26	23	26	24	26	20	27	25
5–10	23	29	34	37	39	40	44	45	48	46	36	29	28	37	39	33	33	34	35	32	30	25	23	17	19	21	20	28
10+	10	14	17	17	18	18	18	19	20	23	21	22	23	18	35	33	32	31	33	33	32	32	30	27	25	23	23	30
Size 1/ Small	26	35	52	58	59	57	56	57	60	65	62	63	65	55	33	25	18	14	13	16	16	13	10	4	3	2	4	13
Medium	13	21	26	27	27	25	25	25	26	28	25	25	25	24	37	34	33	34	35	35	34	34	32	30	28	27	26	32
Large	9	13	14	14	14	13	13	13	12	12	11	11	11	12	36	35	35	36	38	37	36	36	35	33	32	31	31	35
Industry																												
Financial	11	17	34	38	43	42	37	35	39	49	42	41	39	36	37	29	17	11	10	12	8	8	4	2	2	1	1	11
Nonfinancial	15	21	25	26	25	23	23	23	23	23	21	21	21	22	36	32	32	32	34	34	33	33	32	30	29	28	28	32
Mining	20	29	35	36	35	27	27	26	28	29	28	27	25	29	32	31	26	31	34	33	32	31	30	29	24	23	26	29
Manufacturing	15	21	24	25	24	22	22	22	21	21	19	18	19	21	37	34	34	35	37	38	37	38	37	35	34	33	32	35
Food	10	17	21	20	19	18	17	16	14	15	13	14	14	16	33	33	35	36	34	33	35	36	37	37	39	37	34	35
Textiles	15	22	26	28	26	25	25	22	22	22	21	21	20	23	41	41	42	44	46	48	47	47	46	43	45	45	44	45
Wood	7	13	18	24	24	21	21	19	19	21	15	17	28	19	52	50	44	38	39	34	38	44	44	39	33	29	34	40
Paper	13	18	24	30	28	26	25	24	24	22	22	19	22	23	36	32	34	32	38	42	41	38	39	38	40	38	37	37
Petroleum	5	17	24	22	23	21	22	22	21	19	18	21	20	20	27	25	33	29	31	25	27	30	32	26	23	17	24	27
Chemical	18	23	28	28	26	24	23	24	24	24	21	20	21	23	37	34	34	34	37	38	37	37	35	33	30	30	31	34
Rubber	16	21	31	30	30	29	28	28	28	29	27	27	27	27	39	36	36	36	38	39	39	38	38	37	36	35	35	37
Mineral	14	20	21	23	21	21	25	23	23	23	21	20	21	21	45	40	39	41	45	47	46	46	45	42	40	38	38	42
Basic metal	18	21	24	24	23	22	21	21	21	22	19	17	18	21	40	37	38	38	40	41	42	44	42	40	41	40	37	40
Fabricated metal	13	21	25	24	24	22	20	16	16	16	17	15	18	19	31	25	30	35	36	39	37	38	39	36	33	32	34	34
Machinery	11	13	16	16	17	15	17	18	18	19	17	15	15	16	24	26	26	26	29	27	27	25	23	22	20	20	18	24
Electronics	15	20	25	25	24	23	24	26	26	25	25	24	22	23	36	31	31	32	33	34	33	33	31	29	27	25	24	31
Motor vehicle	14	17	16	16	16	16	17	17	17	15	15	12	13	16	39	35	35	36	37	37	35	37	33	30	28	29	27	34
Transport equipment	18	22	20	17	16	17	12	18	19	21	12	17	10	17	33	25	27	29	31	34	28	28	33	28	22	22	20	28
Furniture	25	35	40	36	31	27	18	17	17	17	13	14	17	24	20	23	11	12	15	20	21	23	22	23	23	26	22	20
Service	12	19	30	33	35	31	31	33	33	38	33	34	34	30	26	23	18	16	15	15	14	11	10	6	7	5	6	13
Electricity gas water	16	20	26	27	25	22	22	22	22	23	25	25	25	23	42	42	34	29	36	37	35	30	44	46	44	43	36	38
Construction	8	8	14	18	15	13	13	13	14	13	11	11	17	13	20	23	19	18	19	19	18	21	22	21	20	18	19	20
Trade	10	19	30	32	30	24	23	24	25	26	22	24	25	24	21	16	16	16	18	15	16	17	17	12	11	8	11	15
Hotel restaurant	25	22	34	34	34	31	30	31	33	28	26	23	26	29	37	29	24	22	21	24	26	27	30	32	34	31	31	28
Transport service	12	20	20	20	20	21	21	22	23	25	22	25	20	21	37	32	27	21	30	32	26	29	24	30	33	29	33	29
Telecom	6	31	31	29	36	38	39	43	34	47	56	58	51	38	44	13	32	38	39	48	39	30	42	33	29	31	9	33
Financial	11	17	34	38	43	42	37	35	39	49	42	41	39	36	37	29	17	11	10	12	8	8	4	2	2	1	1	11
Business service	24	36	42	49	43	43	51	56	56	55	51	51	48	46	17	18	13	10	10	9	5	3	3	3	4	3	6	8
Ownership																												
Private independent	18	26	36	39	38	34	32	32	32	34	30	30	30	32	35	30	27	26	27	28	29	27	25	21	21	20	22	26
Private group	13	18	18	18	18	18	18	19	19	19	17	17	17	18	38	35	36	36	38	38	37	37	37	33	32	30	29	35
Foreign	12	13	15	15	14	15	17	18	17	19	20	18	17	16	27	25	25	23	22	21	20	19	16	14	11	8	6	18
Government	10	11	12	12	12	12	13	12	11	10	12	11	10	11	35	40	38	34	32	30	29	29	33	27	25	21	20	30

Sources: Prowess database from CMIE; and authors' calculation.

1/ Each category has one-thirds of the total observation

Table IV.4. Distributions of Firms in the Study: Foreign Borrowing to Asset Ratio and External Funds Relative to Capital Expenditure 1/

		93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Time Series Average
		Average Foreign Borrowing to Asset Ratio														Median External Funds Relative to Capital Expenditure 1/													
Total		0.4	0.4	0.3	0.3	0.5	0.6	0.5	0.4	0.4	0.4	0.6	1.4	1.6	0.6	0.7	0.9	0.9	0.7	0.7	0.6	0.6	0.6	0.4	0.3	0.5	0.4	0.5	0.6
Age	0–5	0.3	0.1	0.2	0.1	0.4	0.4	0.6	0.7	0.8	0.7	0.8	1.3	1.1	0.6	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	0.7	0.7	0.5	0.9	0.9	0.9
	5–10	0.4	0.3	0.2	0.3	0.4	0.4	0.4	0.2	0.4	0.3	0.5	1.4	1.8	0.5	0.7	1.0	1.0	0.8	1.0	0.8	0.8	0.8	0.6	0.6	0.5	0.3	0.7	0.7
	10+	0.5	0.4	0.4	0.4	0.6	0.6	0.5	0.4	0.4	0.4	0.5	1.4	1.6	0.6	0.5	0.7	0.6	0.5	0.5	0.4	0.4	0.5	0.4	0.2	0.4	0.4	0.4	0.5
Size 2/	Small	0.2	0.1	0.0	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.6	0.6	0.2	0.9	1.0	1.0	1.0	1.0	0.9	0.9	1.0	0.9	0.9	0.8	0.7	0.8	0.9
	Medium	0.1	0.1	0.2	0.1	0.3	0.4	0.3	0.3	0.4	0.3	0.6	1.2	1.2	0.4	0.7	0.9	0.8	0.7	0.7	0.7	0.7	0.6	0.5	0.4	0.5	0.6	0.5	0.6
	Large	1.0	0.9	0.7	0.8	1.1	1.1	0.8	0.6	0.6	0.6	0.9	2.4	3.1	1.1	0.4	0.7	0.7	0.4	0.5	0.2	0.3	0.3	0.1	0.1	0.2	0.3	0.4	0.4
Industry																													
	Financial	1.0	0.7	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.6	0.7	0.8	0.6	0.5	0.3	0.6	0.5	0.8	0.7	0.4	0.1	0.0	0.5
	Nonfinancial	0.4	0.3	0.3	0.4	0.5	0.6	0.5	0.4	0.4	0.4	0.6	1.7	2.0	0.7	0.7	0.9	0.9	0.7	0.7	0.6	0.6	0.6	0.4	0.3	0.5	0.5	0.5	0.6
	Mining	0.8	0.4	0.4	0.2	0.6	0.6	0.7	0.7	0.5	0.4	0.5	1.7	1.6	0.7	0.3	0.9	1.0	0.8	1.0	0.7	0.4	-0.1	0.6	0.4	0.4	0.5	0.5	0.6
	Manufacturing	0.3	0.2	0.2	0.3	0.5	0.6	0.4	0.3	0.4	0.4	0.6	2.0	2.2	0.7	0.7	1.0	0.9	0.7	0.7	0.6	0.5	0.6	0.3	0.2	0.4	0.5	0.5	0.6
	Food	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.5	1.4	1.3	0.3	0.7	1.0	0.9	0.7	0.6	0.2	1.0	0.9	0.7	0.8	0.9	0.7	0.5	0.7
	Textiles	0.0	0.0	0.1	0.3	0.6	0.7	0.4	0.4	0.6	0.5	0.6	3.3	3.3	0.8	1.0	1.1	1.0	0.7	0.8	0.8	0.6	0.6	0.2	0.3	0.5	0.6	0.8	0.7
	Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.5	1.9	0.8	0.4	0.7	0.9	1.0	0.9	0.4	0.6	0.3	0.8	1.0	0.5	1.1	-0.2	0.9	0.7
	Paper	0.3	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.4	2.6	3.7	0.8	0.7	0.8	0.8	0.8	0.8	0.8	1.0	0.5	0.2	0.4	0.6	0.5	0.4	0.6
	Petroleum	0.4	0.3	0.3	1.0	1.4	1.6	1.6	0.5	0.6	0.4	0.1	2.8	3.9	1.1	0.2	0.3	1.0	0.5	0.6	0.6	0.9	0.5	0.5	0.4	-0.5	-0.2	0.8	0.4
	Chemical	0.3	0.4	0.2	0.2	0.6	0.7	0.3	0.3	0.3	0.3	0.5	2.0	2.7	0.7	0.7	1.0	0.9	0.6	0.6	0.5	0.4	0.6	0.2	0.1	0.2	0.3	0.5	0.5
	Rubber	0.2	0.2	0.3	0.3	0.4	0.6	0.4	0.4	0.5	0.8	0.8	2.1	1.7	0.7	0.9	1.0	1.1	0.8	0.6	0.7	0.6	0.5	0.0	-0.1	0.5	0.4	0.5	0.6
	Mineral	0.4	0.5	0.6	0.6	0.4	0.3	0.3	0.4	0.3	0.5	0.5	0.7	1.1	0.5	0.6	0.5	0.5	0.8	0.9	0.7	0.7	0.7	0.4	0.1	0.0	0.1	0.3	0.5
	Basic metal	0.6	0.6	0.7	0.6	0.8	0.9	1.0	0.6	0.3	0.4	0.6	2.1	2.1	0.9	0.9	1.0	0.9	0.6	1.0	0.8	0.6	0.7	0.7	0.5	0.7	0.9	0.8	0.8
	Fabricated metal	0.0	0.2	0.1	0.1	0.4	0.6	1.2	0.3	0.2	0.1	0.2	2.4	2.7	0.7	0.7	0.8	1.0	0.9	0.4	0.7	1.2	0.6	-0.1	0.3	0.9	0.6	0.7	0.7
	Machinery	0.2	0.2	0.1	0.6	0.5	0.2	0.4	0.2	0.5	0.4	1.2	1.3	1.4	0.6	0.0	0.5	0.9	0.6	0.2	0.2	0.0	0.3	0.3	-0.2	-0.2	0.4	0.1	0.2
	Electronics	0.4	0.1	0.1	0.3	0.3	0.5	0.5	0.6	0.9	0.7	0.9	1.5	1.2	0.6	0.5	1.0	1.0	0.9	0.7	0.7	0.5	0.8	0.1	0.2	0.2	0.1	0.5	0.6
	Motor vehicle	0.2	0.0	0.1	0.5	0.8	1.1	0.5	0.5	0.8	0.5	0.9	1.7	2.7	0.8	0.3	0.6	0.6	0.3	0.2	0.4	0.3	0.4	-0.6	-0.3	-0.2	0.3	0.3	0.2
	Transport equipment	0.5	0.0	0.0	0.1	0.5	0.4	0.8	0.8	0.9	0.8	0.6	3.6	6.4	1.2	-0.6	0.6	0.5	0.7	0.6	0.1	-1.0	0.0	0.8	-0.4	-0.6	1.0	0.3	0.2
	Furniture	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.1	3.6	0.4	1.3	2.5	1.3	0.9	2.0	0.6	0.9	1.5	1.2	1.8	0.2	1.0	0.8	1.2
	Service	1.0	0.8	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.5	0.7	0.8	0.6	0.6	0.8	0.8	0.6	0.6	0.5	0.6	0.6	0.7	0.6	0.6	0.3	0.4	0.6
	Electricity gas water	10.9	7.2	5.8	4.3	7.0	7.3	4.1	2.5	1.8	2.3	2.6	2.8	3.1	4.7	0.6	0.7	0.8	0.8	0.6	0.7	0.4	0.7	0.5	0.9	0.5	0.5	0.7	0.7
	Construction	0.0	0.0	0.0	0.0	0.1	0.2	0.8	0.7	0.3	0.3	0.3	0.5	0.6	0.3	0.7	1.2	0.8	0.8	0.5	0.9	0.8	0.7	0.6	1.0	1.1	0.5	0.9	0.8
	Trade	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.5	0.4	0.2	0.9	0.9	0.9	0.8	1.0	0.7	0.9	0.9	1.0	0.4	0.8	0.7	0.7	0.8
	Hotel restaurant	0.0	0.6	0.5	0.5	1.0	0.8	0.7	0.6	0.5	0.4	1.0	3.6	2.4	1.0	0.2	0.2	0.5	0.3	0.5	0.6	0.6	0.5	0.8	0.6	0.1	0.0	-0.1	0.4
	Transport service	4.4	4.6	2.7	2.3	3.1	2.6	2.2	2.5	2.6	1.8	2.4	2.5	4.3	2.9	0.6	0.8	0.3	0.7	0.6	0.8	0.2	0.2	0.6	0.6	0.6	0.3	0.6	0.5
	Telecom	0.1	0.0	0.0	0.0	0.3	0.7	1.7	1.5	1.1	0.9	0.9	1.4	1.2	0.8	1.7	0.9	1.0	0.5	1.0	2.0	0.7	0.9	0.6	0.8	0.6	-0.1	0.0	0.8
	Financial	1.0	0.7	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.6	0.7	0.8	0.6	0.5	0.3	0.6	0.5	0.8	0.7	0.4	0.1	0.0	0.5
	Business service	0.0	0.1	0.0	0.3	0.4	0.4	0.2	0.1	0.2	0.1	0.1	0.4	0.9	0.2	0.4	0.9	0.6	0.6	0.4	0.2	0.5	0.5	0.6	0.3	0.6	0.2	0.2	0.5
	Ownership																												
	Private independent	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1.0	1.2	0.3	0.9	1.0	1.0	0.8	0.8	0.7	0.7	0.7	0.6	0.5	0.6	0.6	0.7	0.7
	Private group	0.4	0.4	0.4	0.5	0.7	0.7	0.5	0.4	0.4	0.3	0.5	1.8	2.1	0.7	0.6	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.2	0.3	0.3	0.4	0.5
	Foreign	0.5	0.7	0.7	0.9	1.2	1.1	1.1	1.0	1.5	1.7	2.6	2.8	3.2	1.5	0.0	0.3	0.6	0.2	0.0	0.3	0.2	0.3	-0.5	-0.9	0.0	0.2	-0.3	0.0
	Government	2.2	2.0	1.7	1.3	1.7	1.9	1.8	1.2	1.1	1.3	1.0	1.5	1.6	1.6	-0.1	0.4	0.4	0.3	0.1	0.2	0.2	-0.1	-0.1	-0.7	-0.3	-1.7	-1.6	-0.2

Sources: Prowess database from CMIE; and authors' calculation.

1/ (capital expenditure -(internally generated cash))/capital expenditure. Internally generated cash includes cash flow from operation and change in inventories, receivables, and payables. capital expenditure - internally generated cash amounts to the external funds needed to fill the gap between investment and internal saving.

2/ Each category has one-thirds of the total observation

Table IV.5. Determinants of External Funds Use in India

This table presents results from regressions using data excluding outliers (firms with external fund ratio falling in largest 5 percentile or lowest 5 percentile). All models are estimated using standard OLS. Heteroskedasticity consistent standard errors are reported in brackets. Dependent variable is percent share of external funds (flow) over total funds. External and total funds includes changes in short term current liabilities. RZ_us is taken from de Sorres et al (2006, shown in Appendix), as a result, the estimation excludes some sectors where RZ_us is not available, most notably, financial sector. Ownership dummy variables are set against private independent companies.

	Dependent Variable: Leverage (External funds in percent of total funds)									
Independent Variables	1993/94–05/06		1999/00–05/06		1993/94–98/99		99/00–2002/03		2003/04–05/06	
RZ_US	-1.472***	-1.293***	-0.187	-0.528	-0.433	-1.083***	-0.318	-0.315	-0.544	-0.071
	[0.436]	[0.485]	[0.545]	[0.579]	[0.349]	[0.416]	[0.787]	[1.065]	[0.541]	[0.635]
Size (log, sales)	2.932***	3.536***	1.038	1.644	2.617***	4.019***	-2.050**	2.797	0.861	1.870**
	[0.765]	[0.824]	[0.690]	[1.233]	[0.716]	[0.809]	[0.886]	[1.837]	[0.613]	[0.894]
Age (log)	-9.07	-15.850*	-19.920*	9.139	-14.535**	-0.853	-32.964**	-28.449	-19.472*	-2.938
	[6.504]	[8.216]	[10.866]	[13.130]	[5.715]	[7.854]	[14.117]	[31.640]	[10.855]	[19.909]
Age (log, square)	0.5	1.516	3.036	-2.884	1.026	-1.202	5.299**	4.031	2.762	0.054
	[1.127]	[1.380]	[1.877]	[2.229]	[1.004]	[1.321]	[2.356]	[4.798]	[1.768]	[3.070]
Profitability (ROA)	-2.445***	-2.596***	0.023	-2.560***	-2.044***	-3.622***	0.248	-3.475***	-0.046	-0.941**
	[0.281]	[0.367]	[0.049]	[0.300]	[0.416]	[0.230]	[0.240]	[0.445]	[0.079]	[0.408]
Asset tangibility	-179.922*	-142.633	-73.655**	-102.291***	-84.931	-105.163*	-113.722*	-146.488**	3.752	18.993
	[54.003]	[108.777]	[29.755]	[38.764]	[66.815]	[59.854]	[41.493]	[69.525]	[24.740]	[38.132]
Market to book ratio		2.162***		2.811***		1.313***		2.132***		1.281**
		[0.631]		[0.645]		[0.474]		[0.789]		[0.634]
Private group (dummy)	-3.544	-8.690***	-6.100**	-10.301***	-0.938	-6.076**	0.982	-6.888	-5.468*	-7.768**
	[2.439]	[2.725]	[3.095]	[3.806]	[2.152]	[2.453]	[3.915]	[5.595]	[2.888]	[3.609]
Foreign (dummy)	-4.478	-11.148***	-10.431**	-10.810**	-3.325	-7.531**	-9.87	-19.006**	-11.339**	-14.133***
	[2.857]	[3.439]	[4.290]	[4.669]	[3.019]	[3.286]	[6.494]	[8.582]	[4.430]	[5.305]
Government (dummy)	-13.669**	-21.077***	-20.243**	-21.582**	-16.780**	-19.873***	18.654*	-12.245	-8.455	-23.294***
	[5.407]	[6.379]	[8.778]	[10.546]	[7.312]	[7.190]	[10.435]	[16.032]	[6.845]	[8.865]
Number of observations	934	427	2128	825	1420	743	2938	972	2906	1371
R-square	0.20	0.23	0.01	0.10	0.18	0.35	0.01	0.08	0.00	0.02

***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table IV.6. Determinants of Leverage in India, Debt-to-Assets Ratio

This table presents results from regressions using data excluding outliers (firms with dependent variable falling in largest 5 percentile or lowest 5 percentile). All models are estimated using standard OLS. Heteroskedasticity consistent standard errors are reported in brackets. Dependent variable is ratio of debt to total asset where debt only includes long-term borrowing (and does not include current liabilities). RZ_us is taken from de Sorres et al (2006, shown in Appendix), as a result, the estimation excludes some sectors where RZ_us is not available, most notably, financial sector. Ownership dummy variables are set against private independent companies.

	Dependent Variable: Leverage (Debt-to-asset ratio)					
Independent Variables	1993/94–05/06		1993/94–98/99		1999/00–05/06	
RZ_US	0	0.001	0	-0.001	-0.002	-0.001
	[0.002]	[0.002]	[0.001]	[0.002]	[0.002]	[0.002]
Size (log, sales)	0.025***	0.024***	0.024***	0.023***	0.032***	0.039***
	[0.003]	[0.005]	[0.003]	[0.005]	[0.003]	[0.004]
Age (log)	0.029	0.085*	0.019	0.014	0.054	0.128**
	[0.032]	[0.049]	[0.024]	[0.036]	[0.036]	[0.051]
Age (log, square)	-0.012**	-0.020**	-0.010**	-0.009	-0.014**	-0.026***
	[0.005]	[0.008]	[0.004]	[0.006]	[0.006]	[0.008]
Profitability (ROA)	-0.014***	-0.016***	-0.010***	-0.012***	-0.014***	-0.012***
	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]	[0.002]
Asset tangibility	0.559**	1.441***	0.516*	0.687*	0.405***	0.804***
	[0.280]	[0.499]	[0.307]	[0.402]	[0.124]	[0.169]
Market to book ratio		-0.004		-0.004*		-0.006*
		[0.005]		[0.002]		[0.004]
Private group (dummy)	-0.001	-0.039**	0.005	-0.003	-0.002	-0.026**
	[0.010]	[0.016]	[0.008]	[0.012]	[0.009]	[0.012]
Foreign (dummy)	-0.111***	-0.128***	-0.066***	-0.060***	-0.124***	-0.140***
	[0.014]	[0.019]	[0.013]	[0.016]	[0.013]	[0.014]
Government (dummy)	-0.098***	-0.135**	-0.080***	-0.052	-0.128***	-0.207***
	[0.027]	[0.052]	[0.025]	[0.049]	[0.023]	[0.034]
Number of observations	934	414	1423	735	2133	838
R-square	0.32	0.38	0.24	0.27	0.31	0.32

***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table IV.7. Determinants of Foreign Borrowing Use in India

Results under "All" column show estimates using data with all firms. Results under "Access" column show estimates using data of firms that have access to foreign borroiwng. A firm is defined to have access to foreing borrowing if stock of foreing debt is positive in the sample. All models are estimated using standard OLS. Heteroskedasticity consistent standard errors are reported in brackets. Dependent variable is stock of foreign debt in percent of the stock of total external resources (including debt, current liabilities, and equity capital). RZ_us is taken from de Sorres et al (2006, shown in Appendix), as a result, the estimation excludes some sectors where RZ_us is not available, most notably, financial sector. Ownership dummy variables are set against private independent companies.

	Dependent Variable: Foreign Debt in Percent of Total Assets											
Independent Variables	1993/94–05/06				1993/94–98/99				1999/00–05/06			
	All		Access		All		Access		All		Access	
RZ_US	-0.071**	-0.012	-0.199**	-0.124	-0.055**	-0.029	-0.376*	-0.367	-0.007	0.035	-0.01	-0.023
	[0.033]	[0.056]	[0.080]	[0.109]	[0.028]	[0.046]	[0.209]	[0.250]	[0.037]	[0.053]	[0.110]	[0.109]
Size (log, sales)	0.406***	0.626***	0.257	0.341	0.410***	0.653***	-1.937	-6.473	0.255***	0.604***	-0.269	0.161
	[0.072]	[0.146]	[0.225]	[0.299]	[0.068]	[0.154]	[3.536]	[4.142]	[0.040]	[0.094]	[0.286]	[0.211]
Age (log)	-0.35	0.731	-1.358	-0.419	-0.619	-1.119	-3.167	-6.416	-0.991	-2.453	-9.415	-8.637**
	[0.684]	[1.260]	[1.984]	[2.852]	[0.571]	[1.154]	[3.793]	[5.862]	[1.507]	[2.470]	[6.198]	[3.747]
Age (log, square)	-0.006	-0.183	0.084	-0.025	0.078	0.16	0.326	0.903	0.074	0.274	1.226	1.094*
	[0.112]	[0.218]	[0.323]	[0.476]	[0.105]	[0.214]	[0.652]	[0.955]	[0.231]	[0.375]	[0.954]	[0.561]
Profitability (ROA)	-0.006	-0.011	-0.023	0.031	-0.016*	-0.027	-0.158	0.08	0	0.029	-0.055	0.168**
	[0.010]	[0.053]	[0.041]	[0.130]	[0.008]	[0.025]	[0.117]	[0.234]	[0.001]	[0.024]	[0.055]	[0.078]
Asset tangibility	3.316	15.137***	6.31	31.876***	7.327***	9.690**	109.750***	117.723***	0.718	3.88	2.16	5.497
	[4.458]	[5.245]	[7.565]	[12.047]	[2.505]	[4.332]	[29.642]	[37.173]	[1.814]	[3.323]	[11.686]	[10.939]
Market to book ratio		-0.063		0.084		-0.153**		-0.305		0.015		0.098
		[0.125]		[0.274]		[0.068]		[0.324]		[0.061]		[0.228]
Exporter (dummy)	0.123	0.361	0.244	0.474	0.026	-0.052	0.062	-1.902	-0.034	-0.01	-0.42	-0.337
	[0.235]	[0.335]	[0.676]	[0.671]	[0.201]	[0.268]	[1.763]	[1.439]	[0.161]	[0.241]	[0.605]	[0.570]
Private group (dummy)	-0.09	-0.19	-0.543	-0.408	0.006	-0.136	-0.857	-0.135	0.399**	0.177	0.666	0.276
	[0.201]	[0.438]	[0.670]	[0.910]	[0.137]	[0.283]	[2.057]	[2.850]	[0.189]	[0.346]	[0.818]	[0.762]
Foreign (dummy)	-0.018	-0.788*	0.287	-1.289	0.118	0.462	-1.937	-6.473	0.705	-1.147***	2.23	-1.952**
	[0.450]	[0.471]	[1.190]	[1.099]	[0.283]	[0.448]	[3.536]	[4.142]	[0.594]	[0.338]	[1.808]	[0.911]
Government (dummy)	0.906	-1.13	1.621	-1.515	1.214	-1.158	-1.937	-6.473	0.423	-0.287	2.048	-0.042
	[0.910]	[1.181]	[1.987]	[2.006]	[1.065]	[0.921]	[3.536]	[4.142]	[0.447]	[0.816]	[1.657]	[1.471]
Number of observations	1040	434	347	192	1578	765	177	123	2363	872	553	312
R-square	0.06	0.08	0.05	0.04	0.05	0.05	0.06	0.09	0.03	0.08	0.08	0.11

***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table IV.8. Determinants of External Funds Use in India

This table presents results from regressions using data excluding outliers (firms with dependent variable falling in largest 5 percentile or lowest 5 percentile). All models are estimated using standard OLS. Heteroskedasticity consistent standard errors are reported in brackets. Dependent variable is ratio of equity to total asset where equity is only includes long-term borrowing (and does not include current liabilities). RZ_us is taken from de Sorres et al (2006, shown in Appendix), as a result, the estimation excludes some sectors where RZ_us is not available, most notably, financial sector. Ownership dummy variables are set against private independent companies.

	Dependent Variable: Ratio of Equity to Total Assets					
Independent Variables	1993/94–05/06		1999/00–05/06		1993/94–98/99	
RZ_US	0.005***	-0.001	0.006***	0.004**	0.004***	0.001
	[0.002]	[0.002]	[0.002]	[0.002]	[0.001]	[0.002]
Size (log, sales)	-0.013***	-0.011**	-0.043***	-0.047***	-0.008***	-0.011***
	[0.003]	[0.005]	[0.003]	[0.004]	[0.002]	[0.004]
Age (log)	-0.053*	-0.140***	-0.140***	-0.261***	-0.070***	-0.108***
	[0.029]	[0.047]	[0.038]	[0.071]	[0.021]	[0.033]
Age (log, square)	0	0.018**	0.007	0.032***	0.001	0.010*
	[0.005]	[0.008]	[0.006]	[0.011]	[0.004]	[0.005]
Profitability (ROA)	-0.004***	-0.004***	-0.001	-0.007***	-0.002***	-0.003***
	[0.001]	[0.001]	[0.000]	[0.001]	[0.001]	[0.001]
Asset tangibility	0.044	-0.311	-0.342	-1.378***	-0.177	-0.133
	[0.297]	[0.372]	[0.254]	[0.240]	[0.275]	[0.243]
Market to book ratio		-0.002		0.007***		-0.005*
		[0.003]		[0.002]		[0.002]
Private group (dummy)	0.005	0.012	-0.007	0.008	-0.012*	0
	[0.009]	[0.012]	[0.009]	[0.011]	[0.007]	[0.010]
Foreign (dummy)	0.029**	0.045**	0.048***	0.061***	-0.004	0.019
	[0.013]	[0.018]	[0.016]	[0.019]	[0.011]	[0.015]
Government (dummy)	0.043**	0.017	0.094***	0.134***	0.008	-0.032
	[0.019]	[0.027]	[0.022]	[0.022]	[0.017]	[0.020]
Number of observations	934	407	2130	820	1422	725
R-square	0.26	0.17	0.35	0.44	0.25	0.23

***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table IV.9. Determinants of Firm Growth

This table presents results from regressions using data excluding outliers (firms with firm growth rate falling in largest 5 percentile or lowest 5 percentile). All models are estimated using standard OLS. Heteroskedasticity consistent standard errors are reported in brackets. Dependent variable is annual average growth rate of firm gross value added within each sample period. RZ_us is taken from de Sorres et al (2006, shown in Appendix), as a result, the estimation excludes some sectors where RZ_us is not available, most notably, financial sector. Initial share of a firm is calculated as a share of the firm's gross value added to the sum of gross value added across all firms as of the first year of the sample period. Ownership dummy variables are set against private independent companies.

	Dependent Variable: Annualized Average Growth of Gross Value Added					
Independent Variables	1993/94–05/06		1999/00–05/06		1993/94–98/99	
RZ_US	-0.417***	-0.632***	-0.357***	-0.733***	-0.027	-0.373*
	[0.113]	[0.146]	[0.138]	[0.166]	[0.162]	[0.195]
Initial share	0.609	0.062	1.512	-4.920	1.19	-2.354
	[1.096]	[1.536]	[2.224]	[3.475]	[1.942]	[1.833]
Age (log)	-2.216***	-2.262***	-2.493***	-1.471**	-3.200***	-3.631***
	[0.355]	[0.469]	[0.440]	[0.609]	[0.450]	[0.630]
Profitability (ROA)	0.700***	0.860***	0.070*	0.927***	0.572***	1.051***
	[0.070]	[0.104]	[0.039]	[0.099]	[0.147]	[0.116]
Leverage	0.056	0.159*	0.075***	0.109	0.016	0.375***
	[0.050]	[0.089]	[0.029]	[0.080]	[0.033]	[0.097]
Market to book ratio		0.261		0.688		0.371
		[0.206]		[0.422]		[0.307]
Access to foreign debt (dummy)	2.188***	1.817**	2.631***	1.174	2.731**	3.294***
	[0.533]	[0.705]	[0.712]	[0.885]	[1.081]	[1.194]
Exporter (dummy)	-0.802	-0.929	-0.284	-1.065	0.607	-0.246
	[0.515]	[0.665]	[0.632]	[0.803]	[0.718]	[0.882]
Private group (dummy)	-0.352	-0.813	-0.931	-1.670*	2.138***	1.422
	[0.603]	[0.874]	[0.686]	[0.947]	[0.819]	[1.156]
Foreign (dummy)	0.041	-1.806	3.370***	-2.931**	2.240*	0.856
	[0.816]	[1.161]	[1.144]	[1.429]	[1.282]	[1.662]
Government (dummy)	-1.334	-1.533	-1.105	-1.575	3.385	3.953
	[1.451]	[2.090]	[1.704]	[2.744]	[2.164]	[3.073]
Number of observations	867	394	1919	801	1297	678
R-square	0.32	0.32	0.05	0.19	0.15	0.24

***, **, and * denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Appendix Table IV.1. Industries' Dependence on External Finance (U.S.)

Industry	ISIC/NIC Code	Our Indicator	Dependence on External Finance
Wood and products of wood and cork	20	Wood	-0.45
Fabricated metal products except machinery and equipment	28	Fabricated metal	-0.25
Construction	45	Construction	-0.19
Other nonmetallic mineral products	26	Mineral	0.0
Pulp paper, paper products, printing and publishing	21–22	Paper	0.09
Electricity, gas, and water supply	40–41	Electricity, gas, water	0.12
Machinery and equipment n.e.c.	29	Machinery	0.19
Textiles, textile products, leather, and footwear.	17–19	Textile	0.19
Other transport equipment	35	Transport equipment	0.19
Motor vehicles, trailers and semi-trailers	34	Motor vehicle	0.2
Transport and storage	60–63	Transport service	0.43
Basic metals	27	Basic metal	0.44
Food products, beverages and tobacco	15–16	Food	0.53
Rubber and plastics products	25	Rubber	0.56
Hotels and restaurants	55	Hotel restaurant	0.64
Wholesale and retail trade, repairs	50–52	Trade	0.75
Coke refined petroleum products and nuclear fuel	23	Petroleum	0.78
Electrical and optical equipment	30–33	Electronics	1.62
Post and telecommunications	64	Telecom	1.67
Real estate renting and business activities including computer and R&D services	70–74	Business service	3.35
Chemicals and chemical products	24	Chemical	6.2

Source: de Serres, et al (2006)

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