

CORPORATE FINANCING AND INVESTMENTS UNDER CAPITAL CONSTRAINTS: EVIDENCES FROM INDIA

*Gaurav Singh Chauhan**

ABSTRACT

Firms in India face varying degree of macroeconomic constraints. Most important of these constraints relate to the availability of capital and cost of funds. The paper here highlights the implicit value losses incurred by the firms in India owing to such constraints. The paper identifies systematic deleveraging for firms in India overtime, which might be responsible for the increasing tax burden on these firms. While forgoing the tax benefits of the debt tax shields, these firms do not seem to be facing distress of similar magnitude. Moreover, upon closely observing their financing patterns, one can see the reduction in external financing, both in the form of equity and debt, by these firms overtime. While the average profitability remains robust and stable, this points towards a possible underinvestment problem on account of systemic capital constraints faced by the firms. The evidence suggests that these constraints, at times, can be so severe so as to prevent firms to even restructure their capital structure in order to avoid the tax drain. Further, the underinvestment remains robust even to firms with easier access to credit i.e. larger firms. The paper also highlights the consequences of such distortions arising out of capital constraints to the growth of the firms and also to the broad economy.

Keywords: *Deleveraging; corporate leverage; corporate taxes; credit market development; underinvestments and capital constraints.*

JEL Classification: *G32, G20, H25, H62, E62.*

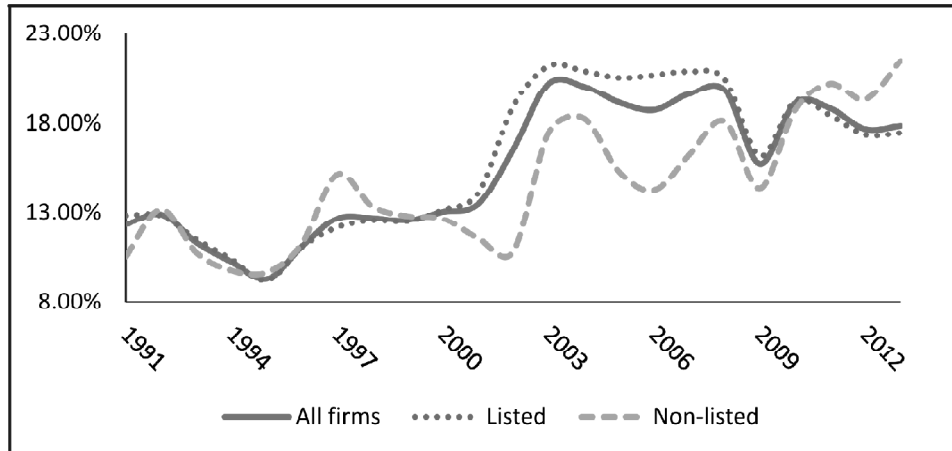
1. INTRODUCTION

Pursuit of value creation for investors is often cited as the prime raison d'être of the firms. Corporate actions, such as financing and investments, are evaluated on the merits of the magnitude of their inherent value propositions. A primary gauge of value creation is the relative proportion of operating income shared by the firm's capital providers and by the government through corporate taxes. A rational firm is expected to maximize the share of the pie in favor of its investors.

* Indian Institute of Management Indore, PrabandhShikhar, Rau-Pithampur Road, Indore - 453331, MP (India), E-mail: gauravs@iimidr.ac.in ; s.gaurav.c@gmail.com

While all said and done, firms in India seem to be sharing an ever increasing proportion of their operating income with the government through corporate income taxes. Post-liberalization in early 1990s, the share of effective taxes (tax paid as a percentage of operating income) paid by non-financial firms¹ has increased from around 13% in 1992 to little less than 18% in 2013 (Figure 1). Further, the trend is similar for both listed and non-listed firms. These observations put forth several questions to be answered. Why effective taxes paid by the firms are increasing overtime? Are firms voluntarily sacrificing value or is it due to some institutional or macroeconomic constraints? Are government treasuries legibly gaining out of higher corporate tax receipts? The purpose of this article is to highlight some of these related questions and their dynamics.

Figure 1: Effective Taxes (%) Paid by Non-financial Firms in India



Reflecting onto the causes for such implicit value losses by Indian firms, the data reveals that debt tax shields in the form of interest expenses as a percentage of operating income have declined significantly. This is primarily due to the deleveraging trail set up by Indian firms in the last two decades. The proportion of debt as a percentage of assets (or total capital) declined consistently since early 1990s.

While, the phenomena of deleveraging of Indian firms in itself is quite interesting, we observe, in this paper, that firms are not very keen on replacing debt with equity either. Interestingly, equity capital (excluding reserves and surpluses) as a percentage of total assets and issuance of fresh capital relative to total capital employed declined significantly during this period. The case points towards a much broader agenda of the declining trend in overall corporate investments irrespective of the form of financing. This is further reinforced by the declining trend in capital expenditures

and working capital need, increased cash balances and increased dividends overtime.

As can be seen, the incremental investments for a firm are a function of its growth opportunities and the availability of capital at reasonable rates. In emerging markets like India, while there may be no dearth of unexplored investment opportunities, higher cost of funds can deter firms to take up such incremental investments. In this paper, we argue that systemic capital constraints and not firm-specific factors, probably, are leading to such underinvestment. In this regard, three important aspects, concerning typical macroeconomic environment faced by firms in India, may need special attention.

First, an important determinant of credit availability and the cost of funds faced by the firms is the proportion of public borrowing by the government to finance the fiscal deficit. Net market borrowings as a percentage of GDP and as a percentage of total government receipts increase sharply in the period under consideration. Such an increase in public financing can be a compelling reason to prevent interest rates from declining.

Second, firms in India operate in a credit constrained environment owing to quantitative and qualitative restriction of bank credit to the industrial sector. Such restrictions are posed in the form of the regulatory requirements for banks to maintain hefty liquidity and cash reserves by way of statutory liquidity reserves (SLR) and cash reserve ratio (CRR). Further, priority sector lending leaves little credit to be available for potentially growing firms in India. Consideration of bank credit is all the more important when alternate and direct credit platforms such as bond markets are practically absent for the corporate sector. While banks in India dominate the credit channel, underdeveloped bond markets hamper the financing through debt even for large players who can avail direct financing from such markets. Such large players when seeking credit through banking channel squeezes credit availability for smaller but faster growing firms.

Finally, opening of domestic markets for foreign firms increases competition and lowers the profitability of firms. While such a detour, due to increased competition, is a natural consequence of growth in any emerging market, domestic firms are often being able to grow because of the offsetting benefit derived by easing out of interest rates over time. This is not the case, however, in India. Firms in India are being offered an uneven playing field where the cost of capital for many incoming foreign firms, through their parent companies in developed economies, can be much lower than what is available to the domestic firms. Even if we ignore the difference in cost of funds, the foreign firms may not be equally credit constrained.

Such hardships faced by firms in India may have severe consequences not only for firms but for the economy as a whole. Such credit constraints

hamper growth of the economy by putting a cap on firms' ability to increase production and productivity. Credit constraints due to increased public borrowing and restriction on bank lending channels lead firms to forgo otherwise profitable investments. Further, firms are also restricted in their ability to readjust their capital structures at will. The sub-optimal deleveraging by firms leads them to pay higher taxes than required. This erodes the profitability and willingness to invest in prospective projects. This is all the more important when the core of the wrath is to be faced by smaller but high growth firms largely responsible for accelerating the economic growth.

Important here is to recognize that higher corporate tax receipts to the government exchequer, due to the inability of firms to contain the tax drain, artificially improves the fiscal deficit figures. In fact, corporate tax receipts (excluding state governments' share) as a percentage of total central government receipts increased from 5.58% in 1992 to 17.87% in 2012. This is despite the fact that public borrowings are also increasing sharply during this period. Thus, even though the tax receipts in government treasury are inflated, they are also not effectively substituting public borrowings to finance the fiscal deficit in India. This is critical as aggressive financing of fiscal deficit by either means, on one hand, affects the firms negatively and, on the other hand, makes the financing of the fiscal deficit non-sustainable for the government. Thus, firms in India are facing a double whammy of higher cost of funds with lesser availability of credit and tax drain at the same time.

The aim of this article is to highlight the evolution of corporate financing and investments post-liberalization in early 1990s in an environment of credit constraints. The paper further reflects upon the possible consequences of such credit constraints for firms at the micro level and the economy at the macro level. The paper is arranged as follows. Section 2 highlights the increase in effective taxes paid by the firms over time in India and the possible reasons for the same. Section 3 shows the deleveraging trail of firms in India and argues for the possibility where this is due to the cutting down of investments on account of capital constraints and not due to the substitution of equity for debt. Section 4 discusses the dynamics of capital constraints faced by the firms in India. Section 5 highlights the consequences of these capital constraints for the firms and to the economy as a whole. Section 6 discusses a potential solution and concludes.

2. TAX BURDEN ON INDUSTRIAL FIRMS

Operating income, as we know, is the enterprise's earning out of the employed operating assets in a year. If we consider total pie to be the operating income of a firm, taxes paid out of it represent a value loss to the providers of

economic capital for the firm. A rational firm, unless constrained, would not let this happen and take adequate steps to curb this. Figure 1 above shows the trend in effective taxes (total tax paid as a percentage of earnings before interest and taxes) for non-financial firms in India from 1992 to 2013. The figure also shows the trend for listed and non-listed non-financial firms separately. As can be seen from the figure, something is seriously amiss with respect to Indian corporate sector when it comes to pay taxes out of their operating incomes. The trend shows a significant and almost monotonous increase in effective taxes paid by the firms in India. The increase is much more volatile and visible in case of non-listed firms. Further, high effective taxes are much more visible during the recent economic boom between 2003 and 2008.

Interesting would be to explore the possible reasons for such possible value losses through tax drain by industrial firms in India. For a given operating income of a typical firm, higher taxes will be paid on account of either tax rates going up or interest deductions going down. If we reflect upon various tax regimes in India post-liberalization, we see that marginal corporate tax rates have only declined slightly over time. These corporate income taxes were more than 40% in 1991-92 which eased out to about 33.5% (including surcharges) in 2012-13. This shows that the entire value loss in terms of taxes paid is due to reduction in interest payments. Moreover, easing out of marginal tax rate indicate a more aggressive decline in interest deductions as a fraction of operating income. Interest payments, as we know, are a function of total debt carried by a firm and the interest rates. Table 1 shows the data pertaining to debt by total assets, debt by total capital (book value of debt and book value and market value of equity), the implied interest paid (interest expenses as a fraction of total debt) and total interest expenses as a percentage of operating income paid by non-financial firms in India overtime.

As can be seen, while debt to asset and debt to capital ratio shows a consistent decline, the implied interest rates did not decline much. Further, decreasing tax shield are evident from the table. The data confirms the deleveraging trend by Indian firms highlighted in Shah et al. (2007).

Quite surprisingly, however, debt ratios remained almost flat during the recession of 1998 to 2000 and decreased during the boom experienced between 2003-08, reflecting pro-cyclicality. Similarly, interest rates and interest expenses as a fraction of operating income were also procyclical.

Table 1 also shows the trend in debt ratios calculated using market value of equity in the denominator². Although the ratio is quite volatile and procyclical, the decline in this ratio can be seen by comparing the typical ratio and the average in the first and the later half.

Table 1
Debt ratios, implied interest rates and interest burden on non-financial firms.
Source: CMIE, Prowess

<i>Year</i>	<i>Debt/Total asset</i>	<i>Debt/(Debt+E quity)</i>	<i>Debt/(Debt+M arket Cap)</i>	<i>Implied Interest rate</i>	<i>Interest expense/Op erating Income</i>
1991	45.43%	61.30%	39.95%	11.03%	56.13%
1992	43.62%	59.56%	20.07%	11.74%	58.25%
1993	44.09%	59.40%	36.98%	11.39%	59.20%
1994	42.18%	56.18%	26.64%	11.04%	50.95%
1995	39.88%	51.93%	29.02%	12.00%	46.16%
1996	38.72%	51.25%	34.45%	12.35%	47.21%
1997	40.45%	53.36%	41.39%	12.36%	56.40%
1998	42.18%	55.41%	41.97%	12.00%	59.91%
1999	41.89%	55.75%	88.60%	12.33%	66.79%
2000	41.21%	54.65%	30.76%	13.12%	65.18%
2001	40.65%	54.71%	44.46%	13.45%	66.53%
2002	39.35%	55.23%	41.72%	12.78%	62.33%
2003	36.83%	53.33%	41.83%	11.97%	49.88%
2004	35.08%	51.95%	25.71%	10.41%	36.50%
2005	33.37%	49.84%	21.76%	9.77%	30.81%
2006	33.16%	48.55%	16.54%	8.96%	29.11%
2007	32.02%	46.72%	17.18%	8.82%	25.28%
2008	31.71%	45.84%	16.61%	9.27%	27.44%
2009	33.83%	47.97%	29.95%	12.62%	48.02%
2010	32.57%	46.11%	19.51%	9.76%	36.12%
2011	33.09%	46.36%	22.13%	8.57%	34.79%
2012	32.85%	46.36%	26.79%	11.10%	44.42%
2013	31.83%	44.70%	28.05%	10.60%	38.26%

3. DELEVERAGING OR UNDERINVESTMENT?

While deleveraging is evident through the data presented above, an important question is why firms are shedding debt? Although tax drain associated with lower debt tax shields is obvious, are firms trading off their distress or agency costs by deleveraging themselves? Are the results comparable to the pattern of leverage identified for similar firms in other emerging markets? To answer these questions, in this section we would like to see distress related behavior of the firms; the pattern of leverage in other emerging markets and trends in firm-specific factors (including agency conflicts) influencing leverage.

Degree of financial distress is associated with a firms' relative strength of operating cash flows as compared to financing cash flows or in other words it is the ability of a firm to pay its financial obligations through its operating income. Table 1 above, which shows the decline in interest expenses incurred by the non-financial firms as a fraction of its operating income, suggest that the reciprocal of this ratio (interest coverage ratio)

would be increasing. In other words, the ability of the firms to pay their financial obligations through the operating income has only improved over years at an aggregate level.

While interest coverage increases for firms on an aggregate, it is possible that such a trend might be due to change in population or characteristics of firms over the time period considered. Such changing characteristics of the firms might be in a direction which calls for justified deleveraging. Further, interest coverage does not reflect any trade-off made by firms with regard to agency costs faced by them.

To deal with such issues, we identify within-firm trend of most consistent firm-specific attributes³ affecting leverage of the firms. The most consistent determinants as suggested in the empirical literature are size, profitability, asset tangibility, growth opportunities, median industry leverage and inflation. Except the last two factors, other determinants are firm-specific attributes delineating the agency considerations and other distress related factors. The within-firm trend will control for changing composition of the constituting firms in the sample overtime. Further, within-firm correlation of these explanatory variables on debt ratios for the constituent firms can be seen by employing the fixed effect panel data multivariate regression model⁴.

Firm-specific factors reflect the characteristics of the firms attributed to relative tax benefits, distress costs and other agency considerations. The direction of the correlation identified by the regression model when seen jointly with the trend in the explanatory variables will suggest whether the variable is responsible for the increase or decrease in the leverage of the constituent firms.

For the unbalanced panel of 44,723 firm-year data⁵ we have, we employ the following fixed effect model to see the within-firm trend in firm-specific variables affecting leverage⁶:

$$Factor_{it} = \alpha + Firm_i + \sum \beta_t \cdot Year_t + \varepsilon_{it} \quad (1)$$

'Factor' denotes the subject explanatory variables under consideration, 'Firm' denotes the effect of unknown time-invariant firm-specific factors and 'Year' denotes the complete set of time period dummies from 1992 to 2012 with dummy omitted for the year 1992. The coefficients on 'Year' would then indicate the increase or decrease of subject variable over its standing in the year 1992. Thus, the within-firm trend, if identified, is the movement in coefficients of year dummies for the subject period. The fixed effect model while enable us to focus on within-firm trend on subject variables, also control for changing composition of the sample firms over time. Table 2 describes the variables of interest. The results for all the firm-specific and institutional factors for the full sample are reported in Table 3.

It can be seen from the table that within-firm trend is quite visible in the majority of the variables of interest. Specifically, we see a downward trend in both the debt ratios of interest, profitability, growth opportunities, average industry leverage and bank credit to the commercial sector as a fraction of GDP. Size is the only variable showing a perceptible upward within-firm trend. Other variables such as asset tangibility and market capitalization to total asset do not show any perceptible trend.

As the next step, we employ the following fixed-effect model to estimate the influence of subject variables on debt ratios:

$$Debt - Ratios_{it} = \alpha + Firm_i + \sum \beta.Factors + \varepsilon_{it} \quad (2)$$

Where, debt ratios are any of the two debt ratios defined earlier; 'Firm' denotes the effect of unknown within-firm time invariant effects and 'Factors' denotes the subject explanatory variables under consideration. Error terms have been adjusted by using robust standard errors to control for heteroscedasticity. The results for estimating correlations of firm-specific variable with debt ratios are shown in Table 4.

Table 2
Description of variables of interest and expected correlation with debt ratios

Level	Attribute	Variable	Symbol	Expected Correlation
Firm-specific	Debt Ratio	Book Debt/Total Asset	D/TA	NA
		Book Debt/Total Capital	D/(D+E)	NA
	Size	Log(Sales)	Log(Sales)	+
	Profitability	Operating Income/Total Asset	PBDITA/TA	-
	Asset Tangibility	Net fixed asset/Total Asset	NFA/TA	+
	Growth	Growth in total assets	GTA	-
		Capital expenditure/Total asset	Capex/TA	-
		Market/Book equity	M/B	-
	Industry Leverage	Average Industry debt/asset	Ind D/TA	+
Average Industry debt/capital		Ind D/(D+E)	+	
Country specific	Credit Market development	Bank credit to commercial sector/GDP	BC/GDP	+
	Stock Market development	Market Capitalization/Total asset for all non-financial firms	MC/TA	-
Tax related	Tax rate	Tax paid/Earnings before tax	Tax rate	+
	Non-debt tax shield	Depreciation and amortization expenses/Operating Income	DA/PBDITA	-
Other Controls	Inflation	Inflation index	Inflation	***

Table 3
Within-firm trend in variables of interest over time

	D/A	D/(D+E)	Log (Sales)	PBDITA/TA	NFA/TA	GTA	Capex/TA	Ind D/TA	Ind D/(D+E)	BC/GDP	MC/TA
1992	0	0	0	0	0	0	0	0	0	0	0
1993	-0.0014	-0.0164	0.0837	-0.0103	0.0070	0.0193	0.0027	0.0178	-0.0007	-0.0506	-0.3498
1994	-0.0320	-0.0607	0.2254	-0.0127	0.0123	0.0678	0.0029	-0.0065	-0.0389	-0.1413	-0.0743
1995	-0.0397	-0.0813	0.4091	-0.0187	0.0096	0.4420	0.0150	-0.0312	-0.0789	-0.1670	-0.1480
1996	-0.0436	-0.0879	0.5896	-0.0166	0.0232	-0.0063	0.0062	-0.0347	-0.0845	-0.2147	-0.2127
1997	-0.0339	-0.0865	0.6572	-0.0282	0.0460	0.2029	-0.0117	-0.0195	-0.0672	-0.2880	-0.3127
1998	-0.0253	-0.0815	0.7206	-0.0318	0.0533	-0.1933	-0.0134	-0.0036	-0.0515	-0.3017	-0.2853
1999	-0.0338	-0.0927	0.7653	-0.0336	0.0558	-0.1961	-0.0289	-0.0054	-0.0505	-0.3534	-0.2619
2000	-0.0486	-0.1060	0.8475	-0.0311	0.0463	0.6616	-0.0296	-0.0096	-0.0587	-0.3413	0.0314
2001	-0.0471	-0.1075	0.9159	-0.0367	0.0466	0.0007	-0.0341	-0.0167	-0.0600	-0.3279	-0.2896
2002	-0.0535	-0.1031	0.9542	-0.0406	0.0498	-0.0408	-0.0373	-0.0220	-0.0457	-0.3340	-0.3000
2003	-0.0925	-0.1049	1.0400	-0.0395	0.0453	-0.3750	-0.0431	-0.0453	-0.0500	-0.3124	-0.3715
2004	-0.0624	-0.1017	1.1937	-0.0328	0.0363	-0.3967	-0.0425	-0.0718	-0.0795	-0.3246	-0.1493
2005	-0.0643	-0.1025	1.3659	-0.0346	0.0264	-0.2400	-0.0302	-0.0909	-0.1061	-0.2960	-0.0428
2006	-0.0612	-0.1021	1.4994	-0.0335	0.0168	0.1170	-0.0254	-0.0953	-0.1220	-0.2488	0.2448
2007	0.0521	0.0931	1.6079	0.0362	0.0094	0.3683	0.0263	0.0976	0.1330	0.2435	0.1840
2008	-0.0540	-0.0968	1.8791	-0.0366	0.0037	-0.0104	-0.0305	-0.1009	-0.1399	-0.2513	0.2737
2009	-0.0595	-0.1107	2.0053	-0.0360	0.0078	-0.5013	-0.0393	-0.0812	-0.1215	-0.2864	-0.1976
2010	-0.0658	-0.1184	2.3413	-0.0339	0.0098	-0.7845	-0.0451	-0.1004	-0.1449	-0.3318	0.1116
2011	-0.0665	-0.1184	2.5134	-0.0432	-0.0082	-1.2832	-0.0464	-0.1041	-0.1508	-0.3575	0.0721
2012	-0.0774	-0.1320	2.5272	-0.0443	-0.0165	-1.1557	-0.0506	-0.1075	-0.1572	-0.3799	0.0260

Table 4
Results for models seeking explanation of debt ratios (debt/total asset and debt/(debt+equity)) by variables of interest

	D/TA		D/(D+E)	
	(1)	(2)	(1)	(2)
Log(Sales)	0.0187***	0.0221***	0.0303***	0.0376***
PBDITA/TA	-0.3214***	-0.3833***	-0.4402***	-0.4972***
NFA/TA	0.1713***	0.1693***	0.1205***	0.1371***
GTA	-8.5e-05		1.23E-05	
Capex/TA	0.0257***		0.0421***	
M/B		0.0003***		0.0006***
Ind D/TA	0.1260***	0.2139***		
Ind D/(D+E)			0.0994***	0.1528***
BC/GDP	0.1495***	0.1603482	0.2622***	0.2613***
MC/TA	-0.0066*	-0.0105**	-0.0104**	-0.0209***
Tax rate	-0.0117	-0.0086	0.0356***	0.0324*
DA/PBDITA	-0.0151	-0.0316^	0.0299^	0.0186
Interaction	0.0209	0.0155	-0.1008***	-0.0941*
Inflation	0.0004***	-0.0004***	7.7e 05***	-0.0006***
N	44723	22754	44723	22754
Adj. R ²	8.91%	8.85%	6.47%	6.40%

The results of the regression show that (i) the firm-specific variables cannot explain most of the variation in debt ratios for firms in India, and (ii) all the firm-specific variables are found to be significantly affecting the debt ratios. Along with these results, interesting would be to see the within-firm trend in these variables jointly with the direction of correlation identified in the regression equation. Quite surprisingly, economic interpretation of within-firm movement in most of the variables suggests an increase in debt ratios overtime. For example, table 4 shows that 'size' is positively correlated with debt ratios; however, in table 3 the trend in 'size' is also increasing. This implies that with the increase in 'size' debt ratio should have increased overtime. However, within-firm movements in variables, which are not firm specific such as average industry leverage, suggest a decrease in debt ratios. Thus, along with the observation that firm-specific variables do not explain most of the variation in debt ratios, they are rather responsible for the increase in debt ratios and not their decline overtime.

To check the robustness of the results we've repeated the above analysis for varying size of the firms, by splitting the data into two equal time-halves, by using constituent firms appearing in BSE 500 index. The results are not reported here for brevity. The results are largely same and show that the key arguments stand robust for all these different models.

The analysis above suggests that (i) deleveraging trail seen for the aggregate firms in table 1 is not due to the changing composition of the firms overtime, and (ii) firm-specific attributes that can be ascribed for agency conflicts and other distress related factors, as per the literature on corporate leverage, are not largely responsible for the decline in debt ratios overtime.

The observation made above that firm-specific attributes are responsible for the increase in debt ratios, rather than their decline, is consistent with the behavior of such variables in other emerging markets⁷. However, quite contrary to the consistent deleveraging of the firms in India, the debt ratios for firms in other emerging markets are increasing overtime. Further, firm-specific factors significantly explain most of the increase in debt ratios overtime (Mitton, 2007).

Deleveraging, as it seems, does not look like to be a voluntary response by firms in an endeavor to change their capital structures in favor of more equity in India. Increased effective tax burden on the firms, therefore, quite certainly can be attributed to the loss in value to the investors. What then contributes towards the decline in debt ratios of the firms? If not firm-specific factors then, possibly systematic macroeconomic factors. Further insights can be gleaned over declining debt ratios by focusing on the financing and investment pattern of these firms on an aggregate.

Table 5 shows data pertaining to the sources and uses of funds as a percentage of total assets in a year for non-financial firms in India. Further, Table 6 shows aggregate common size balance sheet of these firms overtime. As can be seen from the tables, although net capital issued to finance the financing deficit changes procyclically, it has declined overtime. Interestingly, while equity can substitute for declining debt, net equity issuances have declined significantly along with net debt issuances. Moreover, from Table 6, equity capital (excluding reserves and surpluses stated as Total capital) as a fraction of total asset is consistently declining for non-financial firms in India. While debt and equity capital are declining, reserves and surpluses only make up for the decline in overall capital employed. The data above shows that not only debt but also equity issuances are rare. Thus, what looks like an interesting trend in deleveraging actually point towards a systematic decline in overall outside financing.

At the outset, declining trend in outside financing can persist due to either lack of fresh investment opportunities or stiff constraints in raising fresh capital by firms. While nothing conclusively can be said at this juncture, we would like to make some more observations from Table 5 & 6. (i) changes in total outside capital employed and reserves and surpluses as a proportion of asset shows a consistent decline and increase respectively, (ii) dividends paid as a proportion of total assets (and also as a proportion of operating income, which is not shown here) increases significantly overtime, (iii) although changing procyclically, there is remarkable stability in the pattern of internal funds as a proportion of total assets overtime, (iv) profitability as measured by operating income as a proportion of total assets, while also changing procyclically, remained more or less stable overtime, and (v) profit after taxes increased overtime despite an increase in taxes paid as a percentage of operating income.

Connecting the dots through the aforesaid pattern in the data might help us to, at least, get a sense of what might be the possible reason of decline in outside financing of the firms. Consistent increase in reserves and surpluses overtime while consistent decline in outside capital, suggest heavy reliance on internal funds for growth. This is not merely suggestive of lack of investment opportunities. Even if firms might not have good investment opportunities, firms would still try to readjust their capital structures to maximize their values. This is required as consistent decrease in proportion of debt would lead to larger tax drain and increasing weighted average cost of capital overtime. Such readjustments can be made by repurchasing equity, issuing debt or paying heavy dividends. Such corporate actions can be initiated just to readjust the capital structure but may not be for making future investments. However, firms in India do not seem to be even readjusting their capital structures overtime.

From the discussion above, it is, however, not to be concluded that firms are not attempting to readjust and avoid value losses due to decline in debt ratios. Dividends as a proportion of operating income have almost doubled from 8.18% to 17.28% between 1992 and 2013. This can be seen as a desperate attempt by firms to rebalance their capital structures in an environment of stiff constraints on raising fresh capital. Increased proportion

Table 5
Sources and Uses of Funds for all non-financial firms in India
Source: CMIE, Prowess

	1992	1993	1994	1995	1996	1997	1998
EBIT	9.70%	9.06%	9.61%	11.11%	10.88%	9.75%	9.25%
Interest exp implied	4.83%	4.68%	4.17%	4.46%	4.44%	4.82%	4.92%
Taxes paid	1.24%	1.04%	1.00%	1.02%	1.20%	1.18%	1.16%
Profit after tax	3.63%	3.34%	4.44%	5.62%	5.24%	3.74%	3.17%
Depreciation (net of transfer from revaluation reserves)	3.64%	2.90%	2.36%	2.84%	2.97%	2.97%	3.16%
Amortisation	0.07%	0.51%	0.37%	0.12%	0.14%	0.24%	0.14%
Internal Funds	7.33%	6.75%	7.16%	8.59%	8.35%	6.95%	6.47%
Dividend paid and proposed	0.82%	0.83%	1.02%	1.20%	1.19%	1.14%	1.08%
Capital expenditure	16.15%	8.99%	9.16%	14.28%	10.28%	6.87%	9.02%
change in Working capital	3.23%	5.62%	1.70%	1.13%	1.08%	1.08%	-0.61%
Adjustments (inventory/investment/others)	8.63%	4.27%	6.12%	4.49%	4.58%	4.53%	4.08%
Financing deficit	-21.50%	-12.96%	-10.84%	-12.51%	-8.79%	-6.66%	-7.10%
Net funds issued	21.50%	12.96%	10.84%	12.51%	8.79%	6.66%	7.10%
Net equity issued	8.90%	4.46%	5.48%	6.86%	2.73%	0.77%	1.54%
Net debt issued	12.60%	8.51%	5.36%	5.65%	6.06%	5.89%	5.55%

	1999	2000	2001	2002	2003	2004	2005
EBIT	8.36%	9.02%	9.58%	9.06%	10.74%	11.63%	12.95%
Interest exp implied	4.85%	5.15%	5.33%	4.88%	4.35%	3.54%	3.06%
Taxes paid	1.04%	1.19%	1.35%	1.72%	2.28%	2.43%	2.66%
Profit after tax	2.47%	2.68%	2.90%	2.47%	4.13%	5.66%	7.23%
Depreciation (net of transfer from revaluation reserves)	3.40%	3.61%	3.61%	3.34%	3.42%	3.45%	3.40%
Amortisation	0.19%	0.16%	0.15%	0.16%	0.13%	0.11%	0.06%
Internal Funds	6.05%	6.46%	6.66%	5.96%	7.68%	9.22%	10.69%
Dividend paid and proposed	1.20%	1.31%	1.39%	1.58%	1.97%	2.19%	2.45%
Capital expenditure	8.89%	5.76%	5.53%	6.64%	3.55%	5.00%	7.71%
change in Working capital	-0.25%	0.24%	0.14%	-0.09%	-0.36%	-1.10%	1.64%
Adjustments (inventory/investment/others)	0.77%	2.99%	2.60%	-0.05%	1.85%	4.87%	2.50%
Financing deficit	-4.00%	-3.85%	-2.99%	-2.12%	0.68%	-1.74%	-3.61%
Net funds issued	4.00%	3.85%	2.99%	2.12%	-0.68%	1.74%	3.61%
Net equity issued	1.47%	2.04%	0.57%	0.40%	-0.24%	0.51%	1.88%
Net debt issued	2.54%	1.81%	2.43%	1.72%	-0.44%	1.23%	1.73%

	2006	2007	2008	2009	2010	2011	2012
EBIT	12.13%	13.36%	13.10%	11.09%	10.85%	9.75%	9.53%
Interest exp implied	2.66%	2.57%	2.68%	4.30%	2.94%	2.58%	3.55%
Taxes paid	2.51%	2.79%	2.68%	1.79%	2.08%	1.80%	1.65%
Profit after tax	6.95%	7.99%	7.74%	5.00%	5.83%	5.37%	4.32%
Depreciation (net of transfer from revaluation reserves)	3.19%	2.96%	2.67%	2.52%	2.63%	2.43%	2.60%
Amortisation	0.04%	0.03%	0.03%	0.03%	0.02%	0.01%	0.02%
Internal Funds	10.18%	10.98%	10.44%	7.55%	8.48%	7.81%	6.94%
Dividend paid and proposed	2.35%	2.24%	1.97%	1.52%	1.73%	1.46%	1.49%
Capital expenditure	6.23%	7.53%	6.46%	8.03%	7.79%	2.09%	8.30%
change in Working capital	1.07%	1.05%	1.87%	-0.73%	1.00%	2.73%	0.48%
Adjustments (inventory/investment/others)	8.38%	9.40%	10.72%	8.97%	3.85%	5.87%	2.59%
Financing deficit	-7.85%	-9.24%	-10.58%	-10.25%	-5.89%	-4.35%	-5.92%
Net funds issued	7.85%	9.24%	10.58%	10.25%	5.89%	4.35%	5.92%
Net equity issued	3.08%	3.09%	4.36%	2.90%	3.54%	0.45%	1.40%
Net debt issued	4.78%	6.15%	6.22%	7.35%	2.36%	3.91%	4.52%

<i>Common size balance sheet</i>	2006	2007	2008	2009	2010	2011	2012
Current assets	32.60%	32.20%	31.91%	29.50%	29.76%	32.01%	32.53%
Cash and bank balance	7.98%	8.41%	7.48%	7.39%	7.16%	6.71%	5.91%
Inventories	12.61%	12.13%	12.27%	10.73%	11.25%	12.08%	11.94%
Receivables	12.01%	11.66%	12.16%	11.38%	11.35%	13.23%	14.69%
Investments	10.78%	11.91%	14.97%	15.21%	16.81%	16.22%	14.47%
Loans & advances	12.24%	13.31%	12.61%	12.94%	12.66%	12.99%	14.11%
Deferred tax assets	1.38%	1.21%	1.07%	1.30%	1.17%	1.07%	1.20%
Net fixed assets	35.14%	33.00%	30.26%	30.50%	30.64%	29.20%	29.06%
Other assets	43.00%	41.37%	39.45%	41.05%	39.60%	37.71%	37.69%
Total assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Current liabilities & provisions	26.77%	26.53%	25.58%	25.06%	24.92%	24.98%	25.98%
Current liabilities	19.31%	19.27%	19.09%	18.71%	18.18%	19.23%	19.26%
Provisions outstanding	7.46%	7.26%	6.50%	6.35%	6.75%	5.76%	6.72%
Deferred tax liability	4.13%	3.66%	3.21%	3.07%	2.96%	2.70%	2.86%
Contingent liabilities	20.01%	22.27%	22.06%	21.74%	19.89%	22.04%	22.12%
Borrowings	29.26%	29.35%	29.31%	31.27%	29.37%	29.98%	30.41%
Borrowing from banks	13.46%	14.52%	15.33%	17.20%	15.55%	15.13%	14.54%
Borrowing from financial institutions	2.21%	1.69%	1.37%	1.15%	1.15%	1.05%	0.93%
Borrowings syndicated across banks & institutions	0.02%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
Debentures and bonds	3.16%	2.54%	2.10%	2.86%	3.47%	3.73%	3.53%
Foreign currency borrowings	5.78%	6.49%	6.47%	6.19%	5.40%	5.93%	6.57%
Inter-corporate loans	0.94%	1.08%	0.98%	0.91%	0.95%	0.85%	1.00%
Commercial papers	0.07%	0.09%	0.20%	0.22%	0.47%	0.24%	0.41%
Other borrowings	3.62%	2.91%	2.90%	2.75%	2.42%	3.06%	3.43%
Other liabilities	0.24%	0.21%	0.12%	0.12%	0.16%	0.16%	0.10%
Total capital	7.32%	6.07%	5.46%	4.55%	4.21%	4.05%	3.61%
Reserves and funds	32.28%	34.17%	36.33%	35.92%	38.38%	38.12%	37.04%
Total liabilities	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

of dividends distributed restricts the growth in reserve and surpluses contributing towards higher proportions of total equity capital overtime. This is especially useful when firms' profitability, over and above the cost of funds, is very low. Given that cost of equity would be normally higher than the cost of debt retained earnings will mechanically increase the proportion of costlier equity, at least, for the marginal firms. This in turn would increase the weighted average cost of funds. Thus, if firms are constrained to raise capital, they are justified in increasing dividends so as contain the increase in weighted average cost of funds. This will also help in improving the reporting of returns on equity figures for existing shareholders.

Further, cash balances as a fraction of total assets are going up significantly. At the same time, dividends are increasing as a proportion of operating income (not shown here). The simultaneous increase in cash balances and dividends would have been inconsistent, if profitable investment opportunities were there and raising capital would have been easier. In such circumstances, firms could have paid heavier dividends and reduced their cash balances. Further, as we see today, even large corporate houses are holding up an increasing amount of cash balances in recent times.

While increasing dividends can be seen as an attempt to modulate the capital structure to check the increase in relative proportion of equity, this also indicates that after tax returns on marginal fund retained may not be

as high so as to compensate investors for higher tax payments by firms⁸. Nevertheless, increasing cash balances highlights the uncertainty in raising capital for future investments.

Uncertainty and difficulty in raising capital in the future can also be seen when firms choose to invest existing investors' funds in non-operating assets. A firm having decent net operating profitability and relaxed capital constraints would focus on its core operations and distribute the surplus cash, if any, back to the investors rather than choosing to invest in non-operating assets. However, Indian firms do not seem to do that. Non-operating investments and loans and advances as a fraction of total assets for firms in India more than doubled in last two decades.

Recalling the data presented in Table 1 and 5 shows that the trend in gross profitability (measured as operating income as a proportion of total assets) tracks the implied cost of debt (measured as interest expenses as a fraction of total borrowings) very closely. Gross profitability remained only marginally higher than the cost of debt. Recognizing that cost of equity will be normally higher than the cost of debt, it can be seen from the tables that the net profitability of operations, after adjusting for cost of funds is indeed very low for firms in India. In such cases, increasing proportion of equity will make net present values (NPVs) of the projects very sensitive towards the changes in cost of funds.

Further, the data in table 1 and 5 shows that, although, the operating profitability of the firms remained stable and modestly high, cost of debt remained high overtime. Stable operating profitability can further be ascertained by looking into the trend in internal funds as a fraction of total assets in a given year (Table 5). Although being procyclical, the remarkable stability of internal funds suggests that the operating profitability of the firms remained quite robust. While retaining high operating profitability in an increasingly competitive environment is commendable, this is hardly contributing towards value creation for investors owing to the high cost of funds.

Summarizing the discussion above, we can see that what may look like simple deleveraging by firms is a potentially serious concern of underinvestment. Given that the operating profitably for firms remains robust and the fact that there usually is no dearth of such opportunities in emerging markets, incremental investments are declining not due to the lack of sound investment opportunities but due to harder capital constraints faced by the firms. We shall now discuss the dynamics of capital constraints faced by the firms in India.

4. CAPITAL CONSTRAINTS

In this section we discuss the two most important dynamics of capital constraints faced by firms in India viz., the availability of capital and cost of capital.

Firms in India face varying credit constraints in the market place. Firms in need of capital can raise capital through capital markets or through bank lending channels. Firms with sizable standing in the market would be more aggressive in raising capital through capital markets while banks can serve smaller and marginal firms who may not have access to direct credit through capital markets.

Bond markets in India are relatively passive and stagnant⁹. Moreover, majority of activity is due to government securities and corporate bond market is practically absent. Major institutional investors including banks, pension funds and insurance companies are facing regulatory constraints for investing in corporate debt securities. For example, banks would prefer extending loans to firms but would not like to subscribe for bonds due to the regulatory cap of 10% of their non-SLR investments into unrated debt securities. Since participation from retail investors is limited in bond markets even in developed countries, such regulatory restrictions on institutional players endangers the very existence of these markets. Truly so, the participation, liquidity and price discovery in the markets are struggling to be anywhere at par with other contemporary bond markets in the world.

Not only public bond markets but also the private placements of corporate debt securities are affected by regulations. For example, firms are restricted to offer private placements to more than 49 investors at a time. Further, any such issues need to be rated from credit rating agencies. Matters are even worse for non-investment grade securities. This reduces the ability of even larger firms to issue debt on their own and increase reliance on bank credit.

Owing to the lack of sound bond market, banks in India dominate the credit market. Table 7 shows data pertaining to the composition of borrowings by firms in India. As can be seen, bank borrowings as a percentage of total borrowings increases sharply overtime even for larger listed firms. Moreover, reliance on bank credit remained strong even during the recent economic boom between 2003-08. Further, the effect of underdeveloped bond markets can be seen more clearly in the pattern of debentures and bonds as a percentage of total borrowings which have declined overtime. While activity in commercial papers remained marginal, share of foreign currency borrowings increased overtime for listed firms.

Even though bank dominates the credit channel for private sector, the availability of credit is severely restricted and rationed due to (i) government borrowings competes for funds from public savings that can serve as credit to the commercial sector; (ii) the stipulation of quality and liquidity control by the reserve bank of India (RBI) in the form of statutory liquidity ratio (SLR) and cash reserve ratio (CRR) requirements, and (ii) quantitative

Table 7
Composition of borrowings, all non-financial firms in India
Source: CMIE, Prowess

	1992	1993	1994	1995	1996	1997	1998
Borrowings	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Borrowing from banks	19.87%	25.53%	24.64%	27.06%	29.24%	29.58%	28.81%
Borrowing from financial institutions	17.09%	17.54%	18.44%	18.88%	18.29%	19.30%	19.13%
Borrowings syndicated across banks & institutions	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Debentures and bonds	15.86%	15.60%	18.08%	17.05%	15.55%	15.89%	15.41%
Foreign currency borrowings	16.86%	14.76%	13.41%	13.26%	11.84%	10.75%	12.05%
Inter-corporate loans	5.71%	6.13%	3.61%	3.46%	4.59%	4.81%	3.99%
Commercial papers	0.15%	0.29%	1.17%	0.19%	0.03%	0.18%	0.44%
Other borrowings	3.09%	2.49%	2.82%	3.23%	3.97%	4.07%	5.31%

	1999	2000	2001	2002	2003	2004	2005
Borrowings	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Borrowing from banks	27.95%	30.41%	30.16%	33.66%	31.78%	35.74%	37.66%
Borrowing from financial institutions	19.89%	17.86%	17.08%	13.80%	13.53%	11.95%	10.00%
Borrowings syndicated across banks & institutions	0.17%	0.61%	0.49%	0.72%	0.69%	0.59%	0.51%
Debentures and bonds	14.35%	14.85%	16.26%	16.58%	16.13%	15.03%	13.31%
Foreign currency borrowings	12.30%	11.13%	8.76%	7.18%	6.69%	6.54%	11.77%
Inter-corporate loans	3.97%	3.86%	4.54%	4.37%	5.24%	5.59%	5.83%
Commercial papers	0.86%	0.95%	1.06%	0.86%	0.31%	0.24%	0.30%
Other borrowings	4.15%	5.19%	4.79%	4.49%	6.17%	6.61%	4.00%

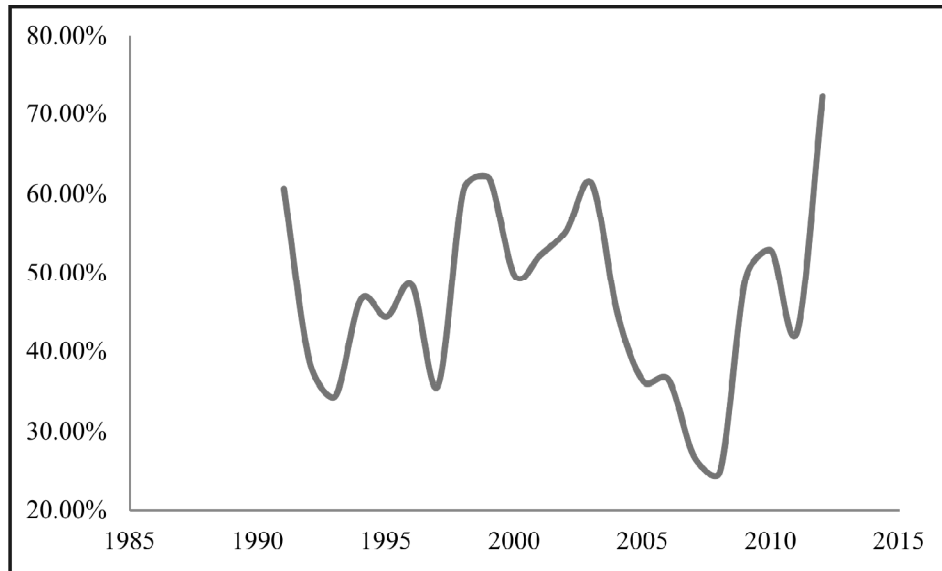
	2006	2007	2008	2009	2010	2011	2012
Borrowings	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Borrowing from banks	42.22%	47.56%	48.30%	51.21%	50.92%	49.47%	47.41%
Borrowing from financial institutions	9.84%	8.67%	7.90%	6.73%	7.23%	6.02%	4.32%
Borrowings syndicated across banks & institutions	0.12%	0.08%	0.03%	0.01%	0.00%	0.00%	0.00%
Debentures and bonds	10.94%	9.32%	8.92%	8.94%	9.99%	10.09%	10.75%
Foreign currency borrowings	12.74%	14.89%	14.87%	14.19%	13.07%	14.68%	17.11%
Inter-corporate loans	7.03%	6.35%	6.51%	7.20%	7.05%	7.73%	7.60%
Commercial papers	0.16%	0.22%	0.40%	0.72%	1.02%	0.83%	1.21%
Other borrowings	3.67%	3.02%	3.54%	3.53%	3.68%	2.59%	3.15%

restrictions in the form of priority sector lending and caps for investments in corporate debt instruments.

Government securities issued to finance the fiscal deficit consume a large share of public savings. Figure 2 shows that government debt receipts (excluding external assistance) as a fraction of total financial household savings remain high and averages about 47% overtime.

Higher share of public borrowings limits the supply of overall funds available to be disbursed through banking channel for entrepreneurial production. Further, commercial banks are supposed to put up 23% of their net time and demand liabilities as SLR securities which are largely treasury instruments, public sector bonds and other high credit rating instruments. This shrinks the availability of funds even further to non-government enterprises and provides more funding to the government treasury indirectly. Moreover, 4% of total deposits of a bank are to be retained as non-interest bearing CRR in the form of cash or parked with reserve bank of India; 40% of the aggregate advances by any commercial bank need to be allocated as priority sector allocations¹⁰ away from mainstream competitive firms. Over

Figure 2
Government debt receipts (excluding external assistance) as a fraction of total financial household savings. Source: RBI



and above these regulations, prudential norms, dominance of public sector banks in the banking sector and high interest rates on government securities lead banks to invest more than SLR requirements in credit risk free assets.

Such restrictions on banks further squeeze credit availability for firms in the fiercely competitive growth sector. Bank credit for smaller, but high growth firms is further restricted on account of larger firms competing for limited credit available through the bank lending channels. This hampers the growth of the industrial sector as a whole. Composition of bank borrowings in the table suggests that even for listed firms, for which direct access to credit from capital markets is relatively easier, bank borrowings remained significant and increasing as a proportion of total borrowings.

With such capital constraints, it is not difficult to envisage higher cost of capital for firms in the productive sector. In such circumstances, many firms may choose to be dormant in their investment activities even though these investments are reasonably sound and profitable. This may lead to systematic underinvestment.

Another important dynamics in capital constraints is the prevailing lending rates in India. Lending rates which are benchmarked against the general interest rates in India are also used as policy tools by the reserve bank of India to regulate the money supply in the economy. Interest rate remained high in India post liberalization, primarily due to extensive public borrowing by the government to finance its fiscal deficit.

Table 8 shows the trend in bank lending rates and net market borrowings by the government as a percentage of GDP and also as a percentage of total government receipts. As can be seen, bank lending rates¹¹ were consistently high and rarely dropped below 10% per annum. While net market borrowings increased from 1.22% in 1992 to 5.22% of GDP, increase as a fraction of total receipt is much sharper. Net market borrowings as a proportion of total central government receipts increased from 7.18% in 1992 to 33.04% in 2012. Public borrowings by the government, to finance the fiscal deficit, not only increase interest rates but also squeeze credit availability to the private sector. This adds to the already limited supply of credit through bank channels.

Table 8
Base bank lending rates and net market borrowings by the government as a percentage of total government receipts and GDP

	<i>Base Bank lending rates</i>	<i>Net market borrowings/T otal govt. receipts</i>	<i>Net market borrowings/GDP</i>
1990-91	16	8.52%	1.50%
1991-92	19	7.18%	1.22%
1992-93	17	3.33%	0.52%
1993-94	14	22.10%	3.54%
1994-95	15	12.72%	2.13%
1995-96	16.5	19.64%	2.96%
1996-97	14.50-15.00	10.65%	1.54%
1997-98	14	13.95%	2.25%
1998-99	12.00-13.00	24.68%	4.13%
1999-00	12.00-12.50	23.65%	3.80%
2000-01	11.00-12.00	22.32%	3.66%
2001-02	11.00-12.00	24.11%	4.05%
2002-03	10.75-11.50	23.72%	4.17%
2003-04	10.25-11.00	18.70%	3.39%
2004-05	10.25-11.00	9.09%	1.55%
2005-06	10.25-12.75	18.11%	2.81%
2006-07	12.25-14.75	19.08%	2.79%
2007-08	12.25-15.75	17.81%	2.88%
2008-09	11.50-16.75	27.81%	4.41%
2009-10	11.00-15.75	38.84%	6.52%
2010-11	8.25-9.50	27.33%	4.48%
2011-12	10.00-10.75	33.04%	5.22%

5. IMPLICATIONS OF CAPITAL CONSTRAINTS

It is also important at this juncture to highlight the role of adequate capital in the growth of the productive capacity of the firms. Timely and adequate availability of capital at a reasonable cost ensure that growing firms can act rapidly to make use of profitable opportunities as and when they discover them. Also, firms are incentivized to innovate and discover ways to create more value. In an emerging market setting, adequate capital is required to grow by technology adoption from developed world. Further, adequate capital at the disposal of the firms can capitalize and leverage any potential gains through improvement in labor productivity. Viability of infrastructure projects, which are critical in emerging market settings, hinges largely upon the adequate and timely availability of capital. Delay in capital infusion can significantly increase the costs of such projects through economic and social externalities attached to them.

Lack of availability of capital makes the growth prospects of the firms largely exogenous. This deters the potential gross earnings and profitability of firms. This is in addition to the constraint of high cost of capital, benchmarked against the prevailing interest rates and regulated by capital controls, remains primarily exogenous for the firms to control. Both the constraints jointly leave the firms strangled with low net profitability. Adding to the woes for the firms is the increasing competition which may erode the profitability further.

While deep and resilient capital markets are necessary to enable firms to raise capital, the much sought after utility of capital markets comes into the picture only when sufficient credit is available for the firms to be reallocated between debt and equity. However, as the evidence above would suggest, raising capital in India can be so difficult to even allow firms to readjust their debt ratios so as to minimize the tax drain. Even though India is now endowed with sound secondary equity markets in place, the complementarity of good equity markets¹² cannot be realized for debt issuances by the firm. Also, at the same time, owing to high cost of funds equity cannot substitute for debt.

Inability of firms to readjust the debt ratios also prevents them to optimally use debt as a tool to counter agency conflicts and other information asymmetry discussed in the corporate finance literature. For example, cash rich firms may take up debt to get rid of free cash flow problem arising out of agency considerations between managers and investors.

Irrespective of the capital available at firms' disposal, the restructuring of capital structures may also not be possible for firms facing only marginal profitability after adjusting for cost of funds. Even though the prospective projects of firms are reasonably sound in terms of gross profitability, they would turn out to be negative NPV projects owing to higher cost of funds

and sensitivity of capital structure changes on cost of capital. Faced with such consequences, firms can be seen to pile up cash which can be used for uncertain future needs and also pay heavy dividends to readjust their debt ratios at the same time.

Past experiences from fast growing economies such as Hong Kong, Taiwan, South Korea and Singapore highlights the importance of the growth in capital markets and the gradual easing out of interest rates over time. However, this is not working out for Indian corporate sector. Supply side capital constraints may affect the growth of the firms and eventually leads to slow growth of the economy as well.

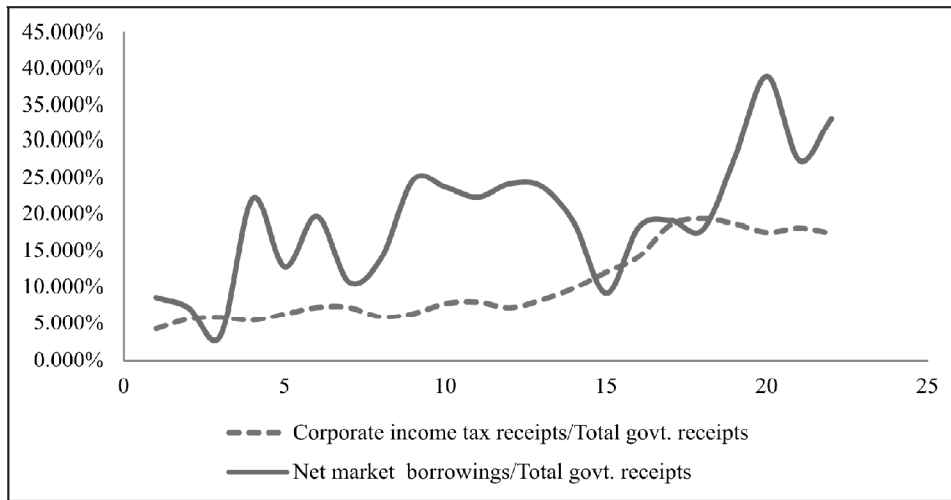
Another important dimension which correlates the competitiveness of the firms and cost of funds is the opening up of the domestic markets for foreign firms. It may be unfair to allow foreign firms with adequate credit availability at a cheaper cost to compete with firms in India. These firms then are not competing with domestic firms on a level playing field. The grave consequence for such policy moves would be a net drain of domestic value to international markets as highlighted in the form of crowding out effect of foreign capital in Ghose (2011). This is not difficult to visualize if we can appreciate a sound potential of growth for firms in India marred only by capital constraints. Foreign players would find the situation to be benign enough as the fierce competition that could have been posed by domestic firms is now virtually absent.

Higher cost of funds not only affects the firm level dynamics but could also seriously impair the macro-economy in the intermediate term. Higher interest rates can potentially increase the future indebtedness of the government which would call for a further round of public borrowing which may, at least, prevent interest rates to fall from their current levels, if not contributing towards the increase. This may turn up into a vicious cycle unless higher tax receipts can substitute public borrowings. However, the Indian story tells us that as that higher tax receipts are not effectively substituting public borrowings. In fact, we see a simultaneous increase in the share of corporate tax receipts to central government and net market borrowings as a fraction of total receipts(see Figure 3).

Interesting is to observe that during the same period the share of GDP from industries and services has not increased so rapidly as the share of corporate tax receipts increased in total government receipts (Figure 3). CAGR of the share of industrial output (GDP contribution from industry and services excluding agriculture) is 14.85% while CAGR of the share of corporate tax receipts is 20.13% between 1992 and 2012. This shows that higher tax receipts are not an outcome of increased productivity or increased participation of corporate sector in the economy; rather, the increase in higher tax receipts is primarily due to the firms' inability to raise debt to

readjust their capital structures. This can be ascertained by looking into the relative difference in the growth rate of corporate taxes and industrial output during the recent boom experienced between 2003-08. During this period, it can be expected that firms are in a relatively better position to readjust their debt ratios so as to minimize the tax drain. The CAGR of industrial output was only 15.88% as compared to the CAGR of 32.25% for corporate tax receipts. This is inconsistent with the views put forward in Nagaraj (2013), which argues for a debt led growth of the economy during the boom of 2003-08.

Figure 3: Corporate income tax receipts and net market borrowings as a fraction of total central government receipts
Source: CMIE (economic outlook)



Interpreting the data reveals that tax collection in government treasuries would have been far lesser should firms be able to rationalize their tax burden at par with their economic contribution. As per the current data for aggregate non-financial firms, firms are paying about 20% of their operating incomes as taxes. If somehow, these firms could cut down the tax burden by 1%, this would lead to an increase of roughly 3% in gross fiscal deficit. To finance the increase in fiscal deficit, public borrowings would have to be increased by 1.4%. This way these unbalanced corporate taxes are artificially improving the fiscal deficit figures in India.

Such a situation can be extremely precarious for the well being of Indian economy and can lead it to be trapped in a vicious cycle of high public borrowings and subdued industrial activity. To see this, we start with the externalities of high public borrowings by the government to finance the fiscal deficit. The immediate externalities of increased public borrowing are the squeeze of capital and higher interest rates faced by the private

sector. Both these externalities jointly could hamper technological progress and its adaption and therefore, negatively affect the productivity.

While firms could invest less by forgoing profitable opportunities, they also could not readjust their capital structures at will. Missing out on profitable opportunities lowers the prospective returns on investment. Further, firms are paying higher than required taxes out of their operations. This could further disincentivize firms to invest in prospective projects. Resultant subdued state of industrial activity, in turn, would contribute lower corporate taxes to the government exchequer in subsequent periods. Also, fewer investments, especially in emerging markets, are tantamount to lower economic growth. In an effort to compensate for lower tax receipts and to boost up the economic growth government would again resort to higher amounts of public borrowings for the vicious cycle to be repeated again.

6. SUGGESTIVE WAY OUT AND CONCLUSION

Financing of fiscal deficit by corporate taxes can be made more viable and sustainable by making rather concrete attempts to infuse more capital at a reasonable cost into the productive sector. This can be achieved at a broader level by rationalizing public expenditure and cutting down public financing, more in line with the spirit of Fiscal Responsibility and Budget Management (FRBM) Act, (2003). Further, an improvement in capital market infrastructure (especially debt markets) in an attempt to make it more liquid, deep and resilient will ensure smooth availability of capital. Developed debt markets would relax the reliance of firms on bank lending channels. This would improve allocation efficiency of funds where smaller firms need not compete fiercely for credit with larger firms through bank lending channels.

Such measures will boost the investment climate and production by (i) allowing more capital infusion into the growing industrial sector, (ii) easing out cost of funds and hence improving the net profitability of firms, (iii) allowing firms to adopt capital intensive technologies for higher production, and (iv) allowing firms to optimize and restructure their capital structure, at will, so as to maximize their values. Increased production, this way, will feed higher taxes (this time legible!) into the government treasuries, which can effectively substitute for public borrowings.

The paper here shows the evolution of corporate financing in India under capital constraints. The key argument put forth in the paper is that firms in India are facing severe macroeconomic credit constraint which is primarily responsible for declining incremental investments by these firms despite robust operating profitability. Capital constraints in the form of inadequate availability of capital and higher cost of funds prevent firms to raise additional capital for growth. Net outside financing of these firms shows a

declining trend, post liberalization in early 1990s. Following the decline in outside financing, firms are unable to raise adequate debt even for the purpose of adjusting their debt ratios so as to minimize the tax drain. The effective taxes paid by the firms are increasing overtime owing to the inability of the firms to make use of optimal debt-tax shields.

The underinvestment problem highlighted above is found robust for firms having higher access to the credit markets i.e. listed and larger firms. Further, the observed deleveraging of firms in India is not due to the changing composition of the firms or due to their trading-off of debt tax shields with distress and agency related features. The macroeconomic credit constraint of the firms remains significant even for the periods of economic boom when it is expected that access to the credit markets is relatively easier.

These restrictive macroeconomic constraints faced by firms in India calls for comprehensive policy moves to make adequate capital available for these firms. Such a policy should be targeted towards rationalizing public borrowings by the government to finance the fiscal deficit ad by developing credit markets in India. Timely and adequate capital at a reasonable cost is required so that firms can make optimal investment decisions for growth. Such a policy move while providing the much needed fuel for growth to the firms also contributes positively to finance the fiscal deficit by legitimate corporate taxations.

Notes

1. The analysis in this paper is concerned with non-financial firms in India. We've used annual financial year end data for all the non-financial firms available with Centre for Monitoring of Indian Economy (CMIE) database. The full dataset, without making any exclusion, consists of 20280 firms as on 3rd November 2013. Out of this total population 5105 firms are currently listed, either in Bombay stock exchange (BSE) or National stock exchange (NSE), and remaining 15175 firms are non-listed. For our analysis, we've excluded firms whose data for annual sales is not reported in a given year. The time period under consideration is from 1992 to 2013.
2. Estimated for all the firms whose market capitalization data is available in a given year.
3. See Frank and Goyal (2009) for most reliable firm-specific factors affecting leverage. Haris and Raviv (1991) provide a sound review of the literature around empirical testing of capital structure theories.
4. See Baltagi (2001) and Wooldridge (2002) for fixed-effect models in Panel data analysis.
5. The analysis involves more than 8000 (out of total 20280) non-financial firms between 1992 to 2012. Not all firms are having data for all the years. Since firm-wise data in CMIE is updated with a lag, we've excluded firm-year data for 2013 for within-firm analysis.

6. The econometric analysis is originally carried out in Chauhan (2013).
7. See Mitton (2007) for an empirical study on emerging markets for identifying factors responsible for increase in debt ratios in these countries.
8. Interesting to note here is that increase in dividends, owing to lack of profitable investment opportunities, may be a conscious move by firms in order to retain higher return on equity capital. Thus, firms might be finding it wise to pay 15% direct distribution tax (DDT) on dividends rather than paying more and up to 33.5% in marginal taxes on earnings by retaining these dividends, which can impair the returns on equity further.
9. See Raghvan and Sarwono (2012), Patil (2010) and Mitra (2009) for a discussion of dismal bond market development in India.
10. Categories under priority sector include agriculture, micro and small enterprises, education loans and housing loans.
11. These are prime lending rates meant for high credit quality borrowers. Therefore, it can be expected that average lending rates to the corporate sector will be much higher than these rates.
12. Demirguc-Kunt and Maksimovic (1996) shows that good equity markets are complementary to debt markets in emerging markets but act as substitutes in developed economies.

References

- Baltagi, B. H. (2001), *Econometric Analysis of Panel Data*, Second edition, John Wiley & Sons, New York.
- Chauhan, G. S., (2013), On Corporate Financing and Stability of Fiscal Deficit in India. Conference Proceedings of World Management Conference conducted by Indian Institute of Management Calcutta in May-June 2013.
- Demirguc-Kunt, A. and Maksimovic, V., (1996), Stock Market Development and Firm Financing Choices. *World Bank Economic Review*, 10, 341–69.
- Frank, M. and Goyal, V., (2009), Capital structure decisions, Which factors are reliably important? *Financial Management*, 38, 1-37.
- Ghose, A. K., (2011), The Crowding-Out Effect of Foreign Capital. *Economic and Political Weekly*, 46, 98-103.
- Harris, M. and Raviv, A., (1991), The theory of capital structure. *Journal of Finance*, 46, 297–355.
- Mitra, A. (2009), Why corporate bond market in India is in Nelson's low level equilibrium trap for so long?. NSE News, March 2009: 8-16.
- Mitton, T., (2007), Why have debt ratios increased for firms in emerging markets?. *European Financial Management*, 14, 127–151.
- Nagaraj, R., (2013), India's Dream Run, 2003-08: Understanding the Boom and Its Aftermath. *Economic and Political Weekly*, 48, 39-51.
- Patil, R. H. (2010), Financial sector reforms: Realities & myths. Speech delivered at the R. S. Bhatt Birth Centenary Memorial Lecture for the Clearing Corporation of India Ltd., March 30 in Mumbai, India.

- Raghvan, S. and Sarwono, D. (2012), Development of the Corporate Bond market in India: an Empirical and Policy Analysis. International Conference on Economics and Finance Research, International Proceedings of Economics Development and Research 32, 49-53.
- Shah, A., Thomas, S., and Gorham, M. (2008), India's Financial Markets: An Insider's Guide to How the Markets Work. Elsevier.
- Wooldridge, J., (2002), Econometric analysis of cross section and panel data. Second Edition. MIT Press.

This document was created with Win2PDF available at <http://www.win2pdf.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.
This page will not be added after purchasing Win2PDF.