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Title : Investment Cash Flow Sensitivity in Manufacturing Sector of India

FINDINGS

It was proposed that with the introduction of economic and financial sector reforms since 1991 will lead to reduction in the financing constraint on the part of smaller or constrained firms and will boost investment activity. Using a panel of 117 Indian manufacturing firms this study examines investment cash flow sensitivity among various groups of firms and impact of financial reforms on firms' sources of investment finance. The study covers the period of 1992-2012 and has been conducted at two levels- Macro level (or industry) as a whole, Micro level (or firm wise).

Started with a dismal performance in the early years of reform, growth rate in manufacturing sector picked up in subsequent years up to mid 1990s and reached 15.46 percent in 1995-96. Thereafter the growth rate slumped down to the lowest level of 0.05% and 2.27% in 1997-98 and 2001-02 respectively. Recovery since 2002-03 led the manufacturing sector to grow consistently at high growth rates up to 2010-11. The industrial and manufacturing growth was 2.68 % (2011-12) and 2.69% (2011-12) respectively as compared to 8.8% and 9.7% in the previous year, which is a matter of concern. The sectoral contribution of industry (19.64% in 2011-12) and manufacturing (15.7 % in 2011-12) to the real GDP is almost constant even after more than two decades of the initiation of reforms. Likewise on the employment front, industrial sector failed to generate employment opportunities and the contribution of industrial sector including manufacturing is only 20.4% in 2007. The contribution of manufacturing exports to total exports is around 70% and except for a few years the manufacturing exports registered a healthy growth of around 20%.

Sources of finance for the manufacturing sector as a whole indicates, that before economic reforms Indian private corporate sector was more dependent on external funds, which constituted about 71.9 % of the funding in 1991-92. This trend was reversed after economic reforms as dependence on internal sources of funds increased and reached to the 69.2% in 2002-03. This is quite surprising because it was earlier expected that the financial sector reforms and other liberalisation measures in the financial market will bring more financing opportunities to the Indian Corporate Sector. However since 2003-04 the share of internal funds registered a declining trend and increased marginally to the level of 36.9 % in the last year of analysis (2007-08).

The firm level study employs an "Augmented Accelerator Investment Equation" derived from neo-classical investment theories to estimate various determinants of firms' investment and ICFS between different groups of firms. The baseline investment equation has been estimated through OLS, fixed effect, random effect, within effect, 2SLS and GMM-IV techniques. The estimated result through these models for different firm groups have been provided in table below:

Comparison of Results

Model → Variables↓	OLS	Fixed Effect	Two Way Within Effect	IV-2SLS	GMM-IV
CF	AF,LMA, FC	AF, LMA, FC	AF, LMA, FC	LMA, FC	LMA,FC
Sales	UMA	AF,NFC,UMA	AF, NFC, UMA	UMA	UMA
AVSH			NFC, UMA	AF, FC	
BRW	ALL	ALL	ALL	ALL	ALL

Statistically significant at 10%

From the table it can be argued that cash flow (retained profits) is an important determinant of investment for full sample firms (AF), smaller (FC) firms and semi smaller (LMA) firms. Cash flow coefficient from the above models is found to be highly statistically significant for these categories of firms. This implies that these firms were financially constrained in their investment decision making over the period of 1994-2012. On the other hand cash flow coefficient is insignificant for NFC firms and UMA firms which are consistent with the empirical findings that larger firms are less investment-cash flow sensitive as compared to smaller firms.

The results indicate that unlike cash flow, the sales are highly significant for NFC and UMA firms and play an important role in investment financing for these firms. It means, rather than retained profits, the larger and old firms rely on sales income for their investment financing.