6. Discussion

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6. Discussion

This section is organized as per the proposed research questions in Section - 3 followed by the implications of the study.

6.1 Firm-level and Macroeconomic Determinants

The data analysis\textsuperscript{17} (Tables-19 and 20) for the full sample period of 2000 to 2013, shows that lagged corporate saving and profitability are significant firm level determinants that positively affect firm level saving in manufacturing and services sector. GDP growth rate, inflation rate, and financial depth are found to be significant macroeconomic-level variables in both the sectors. GDP growth positively affects, while inflation rate and financial depth negatively affect corporate saving.

For the full period 2000-13, for services and manufacturing sectors in fixed as well as dynamic panels, profitability, GDP growth rate, and capital formation were found to have significant positive association while leverage ratio was found to have significant negative association with corporate saving.

We observed a positive effect of profitability on corporate saving, which is in sync with the previous literature on corporate saving (Bhole & Mahakud, 2005; IMF study, 2006; Jangili & Kumar, 2011; Özmen et al., 2012). This finding suggests that with rising income levels firms prefer to retain income rather than distribute dividends. Findings suggest that a one unit increase in profitability will increase the corporate saving (CS) by 0.12 units in manufacturing sector and by 0.01 units in services sector.

\textsuperscript{17} The ‘data analysis’ unless separately mentioned discusses the system-GMM estimation results. System GMM estimation gives unbiased and efficient estimates than difference-GMM (Flannery & Hankins, 2013; Wintoki et al., 2012).
Findings suggest positive association of GDP growth rate with firm level saving. GDP growth rate has also been found to have a positive relationship with total aggregate savings in other studies (Loayza et al., 2000; Grigoli et al., 2014) and with corporate saving (Grigoli et al., 2014; Özmen et al., 2012). Findings of our study implies that GDP growth rate, used as a proxy for total aggregate demand of the economy, has positive effect on corporate saving by creating domestic demand for firms’ output.

Literature on aggregate savings (Loayza et al., 2000; Grigoli et al., 2014) and household savings (Horioka & Wan, 2007) emphasize the dynamic persistence in saving behaviour i.e., the positive effect of previous year’s saving on current year’s saving. We also found a positive effect of lagged corporate saving on current saving. Persistence effect suggests how much of firm’s decision of current saving is driven by previous year’s decision of saving. Findings suggest that a one unit rise in lagged CS increase the CS by 0.41 units in manufacturing sector and by 0.38 units in services sector. Current level of saving is a proportion of current earnings and should have a high positive association with saving as is evident from the findings.

In terms of control variables, firm size and capital formation were found to be positive and significant while cost of borrowing and leverage ratio were found to be negative and significant for both sectors. Interestingly firms with large total assets save more. Large firms can pay high dividends, given that they are mature firms they may return to shareholders and retain less. Also large firms have higher bargaining power and better firm-bank relationship than small firms. But in the case of India, large firms are saving more in both manufacturing and services sectors. Large firms are generally part of business groups.
which may be looking for investment opportunities and hence may be stocking up on cash for future investments.

We controlled leverage ratio and found that it shared a negative association with corporate saving, which is again in sync with the previous literature (Brufman et al., 2013; Özmen et al., 2012). A highly leveraged company has to depend more on internal sources of financing, as it faces capital market financial constraints. An increase in debt to equity ratio will also increase the debt servicing cost and will effectively reduce the firm level saving.

### 6.2 Sector (Manufacturing and Services) Level Differences

A consistent positive association of lagged corporate saving, profitability, effective corporate tax rate, Tobin’s Q, capital formation, sales volatility, and GDP growth rate and a consistent negative association of borrowing cost and leverage ratio with corporate saving highlight the similarities between these two sectors. The association of interest burden, REER, and indicator of financial constraints with corporate saving was found to be different between these two sectors.

Profitability and GDP growth rate are found to have a positive and significant effect on corporate saving. Increase in GDP growth rate suggests the presence of positive aggregate demand in economy that has the potential to generate high firm saving (Özmen et al., 2012). Higher level of profitability increases the capacity of the firm to save (Bhole & Mahakud, 2005; Jangili & Kumar, 2011). High Tobin’s Q and capital formation suggests the future investment opportunity that encourages firms to retain saving. The positive association of sales volatility and saving suggests the influence of business environment uncertainty on firm
saving decisions. The higher the operating uncertainty, the lower will be the propensity to invest and firms end up keeping reserves in expectations of future investment opportunity.

High debt coupled with high borrowing cost makes it even more difficult for firms to maintain their liquidity levels, which is evident with the observed negative association of leverage ratio and cost of borrowing with saving.

We found effective corporate tax rate, which has been defined as ‘total taxes paid divided by the profit before tax (PBT)’, to be positively and significantly associated with firm level saving in the manufacturing sector (positive but non significant for services sector). This result appears to contradict earlier literature that suggested that a decline in the corporate tax rates will increase corporate saving (Bhole & Mahakud, 2005; Feldstein & Flemming, 1971; Hsieh & Parker, 2006; IMF, 2006; Jangili & Kumar, 2011). We posit the following reasoning for this finding. We examined the sample data\textsuperscript{18} and found that in full sample of manufacturing firms for 2000 to 2013, correlation between absolute values of corporate saving and PBT is high and significant at 0.95 and the correlation between corporate saving and total tax paid is also high and significant at 0.83\textsuperscript{19}. In full sample, PBT has grown with a CAGR\textsuperscript{20} of 12% while total tax paid has grown with a CAGR of 7.6%. Thus, the positive effect of higher profitability on CS is possibly stronger when compared to negative effect of tax payment on CS.

\textsuperscript{18} For the manufacturing sector, effective tax rate has reduced over time from the mean value of 2.7(group-1), 2.25 (group-2), and 1.91 (group-3) (see Table-15, 16, and 17).
\textsuperscript{19} Also the correlation between PBT and total tax paid is high and significant at 0.82.
\textsuperscript{20} CAGR (compounded annual growth rate) reported is that of the yearly means of the variables.
Interest burden, REER\textsuperscript{21}, and indicator of financial constraints were found to be ambiguous in the two sectors with a consistent negative association in manufacturing and a consistent positive association in services sector. Both interest burden and REER were found to be non significant in services sector. However, when we ran the model on only those firms whose data was available for all fourteen years (see Appendix-3 (b)), interest burden and indicator of financial constraints turn out to have a negative and significant with corporate saving in the services sector. The coefficient of REER found (see Appendix-3 (b)) was to be negative\textsuperscript{22} (significant for manufacturing sector) where an increase in the REER value implies appreciation of the local currency. Negative association between REER and saving was observed by Özmen et al. (2012) in a set of non-financial companies for Turkey\textsuperscript{23}. Firms do face different levels of currency exposure that may not be necessarily driven by their nature of net exports. Level and sign of currency exposure depends on multiple other factors such as changes in terms of trade, changes in tariffs and quotas, changes in the level of imported costs, competition, hedging policies, and the extent of the exchange rate change (Priestley & Ødegaard, 2007).

It is worth mentioning here that during 2000 to 2013 period, services sector grew at a compound annual growth rate (CAGR) of 8.7 per cent. India had the second fastest growing services sector, just below China’s 10.7 per cent\textsuperscript{24}. The growth of services sector GDP has

\textsuperscript{21}For the full period (2000-13) manufacturing sector (sample firms) turns out to be a net importer with the net exports value (exports minus imports) as Rupees -39.45 Million and services sector (sample firms) turns out to be net exporter with the net exports value as Rupees 86.36 Million.

\textsuperscript{22}REER also displayed a negative association (significant for manufacturing firms) during post crisis period (group-3: 2009-13) for both the sectors.

\textsuperscript{23}Özmen et al. (2012) found that an appreciation of domestic currency reduces profitability and saving of both manufacturing and non manufacturing sector firms in Turkey. They also found that negative effect of REER appreciation was larger for those firms that have high export shares and suggested that market orientation and the cost structure of an economy may be responsible for the net impact of the currency appreciation on firm level profitability and saving.

been higher than that of overall GDP growth during 2000-01 to 2013-14\textsuperscript{25}. Services sector’s growth and the number of firms in the sector have accelerated since 2005\textsuperscript{26}. So, the overall sample in services sector represents the majority of those firms that are relatively new to the industry. In both sectors (see Appendix-3 (b)), the negative effect of interest burden and indicator of financial constraints is present along with the negative effect of leverage. Negative association with financial depth suggests that increasing penetration of bank credit to private sector has reduced the requirements of firms to hold back their saving. This highlights the role of financial deepening in the country.

Increase in indicator of financial constraints (dividend payout ratio) suggests that these firms are able to finance their investment needs with external financing sources and thus are not facing any financial constraints. However, in both the sectors a negative association of financial constraints (see Appendix-3 (b)) has been found with saving suggesting that firms paying high dividends are actually facing financial constraints and after paying dividend they are left with low saving. Another explanation could be that these firms are bound to pay a consistent dividend returns to their investors irrespective of their profits. It has been found that in India there are large numbers of such firms that are not making good profits but pay seemingly good dividends\textsuperscript{27}. With a huge inconsistency between their profits and dividend payouts\textsuperscript{28}, these firms seem to be following sticky dividend policies. Level of ‘Public debt to GDP’ indicates fiscal policy stance, higher public debt to GDP ratio implies crowding out that might reduce the total loanable funds in the economy. We found public


debt to GDP positive and significant in manufacturing sector, with firms having data was available for fourteen years (see Appendix-3 (b)). In both sectors fixed effects models have shown a positive association. For firms in service sector, effect of public debt to GDP on saving remains ambiguous in terms of estimation techniques. Previous literature on aggregate savings (Loayza et al., 2000; Grigoli et al., 2014) has also found similar ambiguous results.

6.3 Impact of 2007-8 Global Financial Crisis

In order to capture the impact of global financial crisis on determinants of firm level saving in India, the dataset for 2000 to 2013, was broken into three groups, group-1 (1999-00 to 2002-03), group-2 (2003-04 to 2007-08), and group-3 (2008-09 to 2012-13). Determinants of saving, particularly the macroeconomic factors, showed a significant transition between pre-crisis (Group-2) and post-crisis (Group-3) periods (Tables-19 and 20).

GDP growth rate became positive (significant for manufacturing sector) in post crisis period for both the sectors. This illustrates the effect of business cycles on corporate saving. In the post crisis period of 2009-13 along with general decline of GDP growth rate, corporate saving also displayed a downward trend. Value of coefficient of lagged corporate saving has reduced in group -3 for both the sectors. Coefficient of lagged corporate saving has been reduced from 0.45 (group-2) to 0.26 (group-3) for manufacturing sector (see Table-19) and from 0.33 to 0.31 for services sector (Table-20). This implies that the persistence effect (the decision to continue the similar levels of previous year’s saving) has reduced in post crisis period, more markedly for the manufacturing sector.

Firms have displayed an increased level of precautionary saving motive during post crisis which is evident from the positive association of inflation rate that captured the
It is found to be positive (significant for manufacturing) for both the sectors. However, for the full time period 2000-13, inflation was found to be negative and significant for both the sectors. One possible explanation may be deduced from descriptive statistics that suggests in case of group-3 (2009-13), inflation had much higher mean value and greater variability compared to previous periods. A low and stable inflation is considered a good economic indicator while a high and volatile inflation suggests heightened macroeconomic uncertainty. Thus, firm level saving showed positive association with uncertainty during post crisis period.

‘Precautionary motive’ has been found useful in explaining the cash holding behaviour of corporates in the presence of financial constraints (e.g. Almeida et al., 2004; Bates et al., 2009; Boubakri et al., 2013; Gao et al., 2013). Recently, Sun and Wang (2015) found that precautionary saving motives for firms have increased after 2007-8 crisis especially for financially constrained US firms. However, in this study the indicator of financial constraints turns out to be non significant for the post crisis period for both the sectors. In group-3, in the manufacturing sector, coefficient of public debt to GDP was found to be significant and negative, which is in contradiction with the full sample findings. The descriptive statistics shows that the mean value of public debt to GDP reduced from 58.2 (group-2) to 49.8 (group-3). This might suggest that during post crisis crowding out effect was not as prominent as the full period. During post-crisis recessionary phase, we may expect crowding out effect to be lower as there is enough liquidity in the system. During the post crisis period, the coefficient of financial depth was found to be significant and positive, which suggests that financial deepening has positive impact on corporate savings. Descriptive statistics also suggest a rise in mean value of financial depth from 42.3 (pre-crisis group) to 49.8 (post-crisis group). However, we had expected that corporate saving might fall with the
increase in financial depth (Grigoli et al., 2014; Özmen et al., 2012). The possible explanation for the positive association of financial depth with corporate saving in manufacturing sector (see Table-19) could be the high cost of credit. Mean value of cost of borrowing in manufacturing sector has increased from 0.08 (group-2) to 0.10 (group-3). RBI has followed a contractionary monetary policy in response to rising inflation since 2010 that has resulted in high cost of borrowing. An additional reason for this could be reluctance to lend on the part of financial institutions during the post-crisis period necessitating firms to increase their reliance on internal funds.

During the post crisis period, in the manufacturing sector there was significant positive association of Tobin’s Q with corporate saving while during the pre-crisis period Tobin’s Q was found to be non significant. This suggests that firms were sitting on funds and waiting for the right time to invest during the post-crisis period. The coefficient of volatility of sales that captures the business environment uncertainty remained positive although non significant for both the sectors.

Cost of borrowing and leverage ratio were found to be negative (significant for manufacturing sector) for both the sectors. For the manufacturing sector, during the post crisis period, increase in cost of borrowing and leverage ratio reduced corporate saving. Descriptive statistics suggests a rise in the mean value of cost of borrowing in both sectors from pre crisis (group-2) to post crisis (group-3), thereby reducing the level of corporate saving. In manufacturing sector, cost of borrowing rose from 0.08 to 0.10 and leverage ratio rose from 1.21 to 1.33. In services sector cost of borrowing increased from 0.08 to 0.09 and leverage ratio remained at the pre crisis value of 0.97. This indicates higher debt levels and increased servicing cost during post crisis period.
6.4 Implications

The identified determinants may be useful for policy makers to understand why the corporates in India are increasing their saving and may help regulators formulate policies to allocate available resources in the economy. Corporate saving remains the least costly funds available and a preferred financing mode in India. However, due to presence of high economic and policy uncertainties, firms are reluctant to invest. Policies should be formulated to reduce economic uncertainties in the business environment and channelize corporate saving to profitable investment opportunities that might have large aggregate growth effects.

During pre-crisis period, the boom period\textsuperscript{29} for Indian economy, high corporate saving can be attributed to high profitability, dynamic persistence in saving behaviour, and high GDP growth rates. However, during post-crisis it was the precautionary saving motives that explain the saving behaviour of firms in India. It was both macroeconomic uncertainty captured by inflation rates and business environment uncertainty captured by sales volatility that led firms to retain money rather than make capital investments decisions. The Government should create conducive environment where both business and macroeconomic stability are promoted so that firms are motivated to invest. As the investment picks up firms will start utilising their savings. One such notable move includes the adoption of inflation targeting by RBI. In March 2015, RBI and Government signed the agreement that mandated\textsuperscript{30} RBI to bring inflation down to 6% by January 2016, and 4% (plus or minus 2%) in the following years.

\textsuperscript{29} During the period of 2004-05 to 2007-08, GDP growth rate recorded new heights in Indian economy (see Figure-3)

\textsuperscript{30} 'India’s RBI Adopts Inflation Targeting is Positive Move’, \textit{Forbes}, March 05, 2015.

This study suggests that financial deepening encourages firms to reduce corporate savings and possibly deploy the same in business. Reforms in banking sector leading to financial deepening will positively impact investment and growth. Higher the affordable credit available in the economy lesser the incentives for firms to save. One such noteworthy reform is the issuance of new bank licences by RBI in an attempt to enhance financial deepening. Between April 2014 and Sept. 2015, RBI granted 23 new banking licences including two licenses for universal banking, 11 for payments banks and 10 for small finance banks. This will facilitate further financial deepening thereby reducing the need for firms to save out of their earnings.

The study may have implications for managers to understand the possible macroeconomic variables that affect firm level saving. This will help mangers to prepare a checklist of select variables such as GDP growth rates, inflation rates, etc. that capture the movements of external environment. The study may have implications for investors as they will be able to better understand the interlinkages among leverage ratio, Tobin’s Q, and corporate savings. As per the market timing theory, firms hoard cash in good times, wait for the right opportunity and invest in slowdown. Investors may consider firms having a mix of high saving, high Tobin’s Q and low leverage values. A firm that has investment opportunity, as captured by higher Tobin’s Q, is likely to use retained earnings as a ready money for expansion. Such a firm serves as a good choice for the investor rather than a firm that has huge saving but no growth potential.