

# Determinants of saving and investment in India

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**Abstract** : India is among the world's most efficient financial markets in terms of technology, regulation and systems. It also has one of the highest savings rate in the world - our gross household savings rate, which averaged 19% of gross domestic product between 1996-97 and 1999-2000, increased to about 23% in 2003-04 and has been growing ever since. While savings are more in India, where the savings are invested is a cause for concern. Investments by households have been more into either bank fixed deposits, risk-free government-backed securities and low yielding instruments, or in non-financial assets. This paper examines the determinants of saving and investment in the process of economic development. It is found that the saving rate rises with both the level and the rate of growth of disposable income and the magnitude of the impact of the former is smaller than that of the latter. The real interest rate on bank deposits has a significant positive impact, but the magnitude of the impact is modest. Public saving seems to crowd out private saving, but less than

proportionately, suggesting that public policy can influence the national saving rate. Among the other variables considered, the spread of banking facilities in the economy and the rate of inflation seem to have a positive impact and changes in the external terms of trade and migrant remittances a negative impact on private saving.

**Keywords:** India, saving rate, financial intermediation, macroeconomic policy

## **Introduction:-**

This is a study of determinants of savings and investment of households a study of selected districts of NCR. With the help of this study we will try to find out the saving and investment

pattern of the NCR. This is an attempt to find out that what the different ways for saving and investment and also to know the awareness about the different benefits which come with the choice of the product. This study will be valuable to the policy makers who are willing to make new rules

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and regulation, to private corporate like financial firms and to researchers of social science. Saving is defined by economists as that part of after tax income that is not spent hence; it equals disposable income less consumption.

In recent years, there has been an outpouring of empirical work on the determinants of saving both in developed and developing countries. This has been prompted by the widespread concern over falling saving rates in the major OECD countries and the growing divergence in saving and investment rates between countries of the developing world, and the renewed emphasis on the role of investment in economic growth triggered by the new growth literature. There is, however, a growing concern about the lopsided nature of the existing empirical evidence on the determinants of saving, particularly for developing countries

The purpose of this paper is to examine the determinants of the private saving rate in India during the period 1970 to 2011. The framework for our analysis is derived from the time series, correlation and Vector error Correlation Model that has been the standard theory for the explanation of changes in private saving over time and across countries.

India is a very appropriate case study of the subject at hand for the following reasons. First, the Indian saving and investment database is considered relatively good by developing country standards, and data are available on a comparable basis for a

period of time adequate for systematic econometric investigation. Secondly, India has also undergone significant policy transitions relating to the key variables relevant for the analysis, providing an appropriate setting for a historical analysis of the subject at hand. Finally, saving performance has figured prominently in the policy debate in India in the post-independence period and in particular, following the structural adjustment reforms initiated in 1991.

The rest of the paper is divided into three sections. Section first provides an overview of India's saving behavior, comparing it with other developing countries, in order to place the ensuing analysis in context. Section second contains the different studies of saving and consumption, and a discussion of the method to be used in the empirical analysis. In section third conclusion.

### **1. An overview of saving behavior in India**

The study of vibrant relation between savings and investment has received considerable attention in recent years especially in emerging economies like India. The role of savings and investment in promoting economic growth of India has been given paramount importance since independence. Saving and investment have been considered as two critical macro-economic variables with microeconomic foundations for achieving price stability and promoting employment opportunities

there by contributing to sustainable economic growth.

Since independence Indian economy has been moved from a moderate growth path of 1950-1980 to a higher growth trajectory since 1980's. Over the last three decades, Indian economy has emerged as one of the faster growing economies of the world. Apart from registering impressive growth rate, India's growth process has been almost stable. Many empirical studies suggest the evidence that the year's variation in growth rate of Indian economy has been one of the lowest. In view of this fact, the rate of saving and investment in providing the fundamental growth impulses in the economy cannot be over emphasized.

Aggregate saving is an important source of funds for domestic investment and economic growth and thus the question of what determines its level and rate remains a crucial research and policy agenda. Moreover, in the face of volatile flows of external finance, domestic saving has become even more critical for economic development. In particular, the recent financial turmoil in developing countries, brought about by rapid cross-border movements of capital, has led many countries to seriously consider a larger role for domestic saving (excluding net factor income from abroad) as a source of investment funds.<sup>1</sup> Likewise, savings at the household level are important for the welfare of family members in the course of economic development as a means to smooth income, to fund education, for old age support when members become non-

earners, and to leave as bequests to children.

Saving plays a very significant societal role as a source of future sustainability and development (Nga, 2007). It provides an economic link between the past, present and future development of a country (Kazmi, 1993). An adequate national saving rate is an essential circumstance for the attainment of investment and growth rate targets (Kazmi, 1993). Through saving, individuals may accumulate wealth and gain financial independence (see saving motives outlined below), and a nation's saving rate determines the rate of its economic development (Athukorala & Sen, 2003). Saving is a shield that protects individuals and the nation from economic shocks (Mboweni, 2008).

Out of three motives one of the motives for saving is the precautionary motive – the desire to accumulate assets to meet possible emergencies whose occurrence, nature, and timing cannot be perfectly foreseen (Modigliani & Brumberg, 1954). It is assumed that people have a tendency to save in good times for the preparation of the bad. Reducing debt exposure – while the interest rates are low – will allow one to pay off one's debt quicker, allowing one to save and invest as one should (Finlogic, 2011).

Household debt has rapidly increased this decade, mainly because debt has become more easily accessible to the average population. At the same time, interest rates have been relatively low.

The need for instant gratification and materialism has burdened South Africans, forcing them to increase their debt levels. Current debt levels stand at approximately 80% of household income, this leaves very little for savings and investments (old mutual saving monitor 2010). It is unfortunate that people spend their income on goods that do not appear to eliminate poverty or create long-term wealth (Moav & Neeman, 2010). They spend their money on items that offer short-term gratification and depreciate quickly, for example expensive vehicles. There is a strong argument that even property will create value if paid off quicker than required by the contract. This could be achieved by halving the payment period, or by paying more or double the required installments due. However, this requires consumers to make sacrifices elsewhere.

For economic development, it is necessary to invest all the savings in a meaningful way. How much money is invested by people out of total savings, frequency of their investments, financial instruments in which they invest and risk aversion shows their investment behavior? To make financial decisions, people should be aware about all the investment alternatives. In the present day, the financial markets are quite complex, with each investor having his or her own specific financial needs based on his financial goals and risk appetite. But ultimately, every investor aims at maximizing returns on his/her investment,

along with capital protection. Thus it is mandatory to have financial knowledge so that people can behave rationally while investing their money. While savings are more in India, where the savings are invested is a cause for concern. Investments by households have been more into either bank fixed deposits, risk-free government-backed securities and low-yielding instruments, or in non-financial assets.

A majority of our households do not use modern financial markets. As per an RBI report, only 1.4% of household savings was invested in equity, mutual funds and debentures in 2003-04.

Though this went up to about 4% in 2005-06, it is still very small. Unless the common person becomes a wiser investor and is protected from wrong doings, wealth creation for the investor and the economy will remain a distant dream. Convert a country of savers into a nation of investors.

### **Literature review:**

This part of the paper has been divided in three categories according to their methods of research that have been used during research.

### **Studies based on Time series**

Gupta (1970) using annual time series data from India analyzed the determinants of saving. He found that permanent income hypothesis is a better fit in the urban areas in India where as in the rural area saving behaviour is more in accordance with the absolute income hypothesis. He found that

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marginal propensity to save is an increasing function of income at lower level of development.

Repetto and Shah, (1975) studied the demographic and other influences on long term saving behaviour in India. The data for the study was collected from surveys conducted in the Kaira district of Maharashtra in 1930 and 1965. They found that large family size had a depressing effect on long term household saving rate. They also found that sons in rural India served as substitute assets in households and fulfil some of the demand for wealth and that the long term saving rate responds positively to a higher rate of return on saving and positively to higher-level of permanent income.

Miller (1988) using the time series data for a period 1946 to 1987, found that in U.S both savings and investment were I(1) and shared a co integrating relationship prior to the Second World War period and that the long-run relationship did not exist in the post-war period. The paper concluded that this phenomenon could be explained by the increased international mobility after the War.

Lahiri (1989) has conducted a study to examine the determinants of saving. He based his empirical studies on time series for individual countries. He found the rate of growth of personal disposable income is a significant determinant of private saving of all the countries in his sample of

Asian countries. He inferred the age dependency ratio, as a significant determinant of private savings. He found that a one percentage increase in dependency ratio reduces the long run average of propensity to save APS by 1.6 percentage points.

Bhalla (1978) investigated the effects of sources of income and investment opportunities on the saving Behaviour of farm households in India. He used the survey data collected by National Council of Applied Economic Research (NCAER) during the three years starting from the year 1968-1969 and found that the propensity to save out of non-agricultural income was higher than the propensity to save out of agricultural income. The permanent income hypothesis (PIH) offers an explanation for this difference in propensity. He also found that investment opportunities increase saving, *ceteris paribus*, for the subsistence group of household and had a negative effect for the non-subsistence group.

Rajkrishana and Roy choudhari (1982) making use of rural/urban consumption saving data derived from aggregate time series point to the propensity differential the rural and urban households.

Frankel et al (1986) using a sample of 64 countries(14 developed and 50 developing countries) in a study on saving-investment relationship found that in case of all the countries except a few less developed countries, saving and

investment are highly correlated and long-run equilibrium relationship.

### **Studies based on correlation:-**

Bayoumi (1990) argued that to a large extent the saving-investment correlation reflects endogenous inventory investment behavior. Arginon and Roldan (1994) investigated the observed correlation between domestic savings and investment in European countries using annual data for the period 1960–1988 and suggest the causality flowing from savings to investment without any feedback effect.

De Hann and Siermann (1994) found cointegration between savings and investment for some OECD countries. Ghosh and Ostry (1995) used a current-account solvency model for some developing countries to explain the correlation of savings and investment co-movement in advanced and developing economies. Their approach takes into account demand-side factors.

Jansen (1998) suggests that correlation between savings and investment in the long run is determined by one or more of these factors - limited capital mobility, current account targeting by the Government and inter-temporal budget constraint and the short-run co-movements are due to capital mobility. In addition, the paper also finds that the short-run correlation seems to vary across countries and is determined by country-specific business cycles (in line with Leachman, 1991; Jansen, 1996 and Taylor, 1996).

Moreno (1997) extends the study to Japan along with the U.S.

Ghosh and Ostry (1995) use a current-account solvency model for some developing countries to explain the correlation of savings and investment co-movement in advanced and developing economies. Their approach takes into account demand-side factors. Coakley, Hasan and Smith (1999) extend the study and find that the correlation is low in LDCs, which could be attributed to country-specific macroeconomic policies and not high mobility.

Mamingi (1997) estimated the relationship between saving and investment correlations for 58 developing countries by assessing the degree of capital mobility in the Feldstein -Horioka sense for these developing countries. They found that the relationship between savings and investment in case of middle-income countries tend to be lower than those that of low-income countries.

Levy (1998) examined the relationship in the short run as well in the long run and found the evidence in favor of long run and cyclical relationship between savings and investment. This study also found stronger relationship between savings and investment relationship in the post-war period than during pre-war period.

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Coakley, Hasan and Smith (1999) found that the correlation between savings and investment is low in less developed countries, which could be attributed to country-specific macroeconomic policies and not high mobility.

Corbin (2001) recognized the importance of controlling for the heterogeneity of countries in a cross-section analysis of the savings and investment correlation for a group of countries using panel data. And, concluded that high saving and investment correlation is more due to country specific effect than to the existence of common factors affecting all the countries in his sample.

De Vita and Abott (2001) found that there is high correlation between saving and investment in the U.S.A by applying Autoregressive Distributive Lag (ARDL) bounds testing. This correlation however weakened during the more liberalized floating exchange rate period.

Wahid, Salahuddin, and Noman (2008) using Fixed Effect, Random Effect and between or CS models, found that there is low correlation between saving and investment in Bangladesh, India, Pakistan,

Srilanka and Nepal. But this result does not necessarily imply high capital mobility in these countries as capital mobility is influenced by other factors such as economic size, differences in financial structure across countries, fiscal policy coordination etc.

Panickar (1992) studied the rural household saving and investment pattern in selected villages in Karala and Tamil nadu. The study was conducted with the objective of looking into the levels of saving and the manner of its disposition and in-depth analysis of factors underlying the rates of saving. From The study, it was found that a high proportion of saving was absorbed in unproductive assets leading to a vicious cycle of low income saving.

Most of the studies have focused on developed countries; similar studies for developing countries have been few and far between. Mamingi (1997) estimated the relationship between saving and investment correlations for 58 developing countries by assessing the degree of capital mobility in the Feldstein – Horioka sense for these developing countries. They found that the relationship between Savings and investment in case of middle – income countries tend to be lower than those that of low-income countries. Sinha (2002) finds that Savings and Investment rates are cointegrated for Myanmar and Thailand indicating the growth of savings rate causes the growth of investment rate. Interestingly, reverse causality between savings rate and investment rate has been observed for Hong Kong, Malaysia, Myanmar and Singapore.

Kasuga (2004) employed cross sectional analysis and concluded that the impact of domestic savings on investment depended on financial systems and their development. Usually in developing countries with bank-based and/or relatively inefficient financial sectors, the lower saving and investment correlation is not unexpected.

The determinants of household saving in the process of economic development, in the light of the Taiwanese experience during the period 1952–99 examined by Prema-Chandra and Pang-Long (2003). They found that the household saving rate rises with both the level and the rate of growth of household disposable income and that the real deposit rate has a significant positive impact on saving. Public saving they discovered seems to crowd out private saving, but less than proportionately and that while both old- and young-dependency in population have a negative impact on the saving rate, the Alma and Richard (1988) in their attempt to examine the saving behaviour of Filipino rural households regressed current income on saving and concluded that a large potential for voluntary saving can be found in the rural households of the Philippines and other less developed countries. They have substantial evidence to argue that there is no reason to believe that mobilization of voluntary rural household saving cannot be perused. Their findings further indicate that income is the

most important economic variable affecting rural savings.

Levy (2000) examined the relationship between saving and investment in US over the period 1897 to 1989 and found existence of long-run and business cyclical relationship, through frequency domain analysis, regardless of the time period covered. The study also found existence of short run relationship between investment and saving for the post-war period only. Levy argued that the variation in the extent of the saving-investment co-movement over the long run, business cycle and short run frequencies, emphasises the importance of separating the long run correlation between the two indicators from the short run and business cycle correlation.

#### **Studies based on Vector error**

##### **Correlation Model:-**

Krol (1996) examined the relationship between savings and investment using annual data pooled for 21 OECD countries over the period 1962-90 and found that the estimated impact of saving on investment is considerably smaller than the estimates of the earlier researcher that were used averaged data (Pelagidis and Mastrogiannis, 2003). Apergis and Tsoulfidis (1997), for 14 EU countries found that savings and investment are cointegrated which suggests that capital mobility is not as high even after the move towards economic integration in Europe has gained momentum. The study also finds that savings Granger-causes



investment using Vector Error-Correction Model.

Narayan (2005) examined the relationship between saving and investment for China. The saving-investment relationship was examined over the two period's from 1952-1998 and 1952-1994. The second period represents the fixed exchange rate regime and restricted capital movement. Till 1994, China followed a fixed exchange rate regime and thereafter it has been following a managed Floating exchange rate regime (Jin, 2003). Empirically, saving and investment were found to be co integrated for China for both the periods and the results support the F-H hypothesis for the Chinese economy. The correlation between saving and investment was found to be stronger under the fixed exchange rate regime. Apergis and Tsoulfidis (1997) use similar econometric technique in Countries heavily dependent on foreign aid and assistance programs Sessaiah S. and Sriyval V. Savings and investment in India their study for 14 EU countries and find that savings and investment are cointegrated which suggests that capital mobility is not as high even after the move towards Economic integration in Europe has gained momentum. The study also finds that saving Granger-Causes investment using Vector Error-Correction Model.

Sinha and Sinha (2004) use a huge sample of 123 countries to estimate the

short run and long-run relationship between savings and investment rates using an error correction framework. Results suggest capital should be more mobile for the countries with high per capita income. They also found that the capital is mobile for 16 countries most with a low per-capita income.

Narayan (2005) showed that low capital mobility also causes high saving and investment correlation in a study on China during the period of restricted capital mobility as indicated by low foreign direct investment.

Sessaiah and Sriyval (2005) investigated the relationship between savings and investment in India. The results reveal that there is unidirectional causality from savings to investment in the country during the sample period 1970-71 to 2001-02.

Bichitrananda Seth (2005) examines the long-run and short-run relationship between domestic savings and investment on the one hand and between private corporate savings and private corporate investment on the other hand. Also, it focused on their rate of adjustment in disequilibrium in the long-run.

Chinn and Ito (2007) found that increased financial liberalization may also encourage outflows of funds, resulting in fewer resources available to fund domestic investment projects, and thereby curtail the correlation

between saving and investment. Moreover, the effect of financial liberalization on the relationship is further confounded by the theoretically ambiguous effect of financial liberalization on savings, although its effect on investment has generally been found to be positive.

Verma (2007) considered savings, investment and economic growth for India using annual time series data for the period 1950-51 to 2003-04. The study finds that saving unambiguously determines investment in both the short run and long run. And, no evidence has been found to support the commonly accepted growth models in India, that investment is the engine of economic growth.

Ang (2009) examined the dynamic relationship between the domestic savings and investment rates in India over the period 1950-2005 by controlling for the level of financial liberalization. The results indicate that greater financial liberalization enables more domestic resources to be channeled to investment activities.

Chales Yuji Horioka and akiko Terada Hagiwara (2010) analyze the determinants of the domestic saving rate in developing Asia during 1966–2007 and find that the main determinants appear to be the aged dependency ratio, income levels, and level of financial development.

Haruna Issahuku (2011) using the microeconomic approach of estimating the determinants of financial saving and investment in one of the most deprived district capital in Ghana the Nodowli District of the upper west region two separate multiple linear regression models were fitted for saving and investment and found that there is the propensity to save and invest in Nodowli in spite of low income.

Onafowara *et al.* (2011) studied the relationship between saving and co integration framework and found statistically significant evidence of co integration for six countries. Existence of long-run unidirectional causality from saving to investment was established for UK and the Netherland. These two countries were characterized by highest share of financial activity in GDP5 Long-run bidirectional causality was found between the two variables for Belgium, while causality from investment to saving was found for Denmark, Germany and Luxembourg.

### **Conclusion:**

A literature review was undertaken to understand the underlying factors that impact the saving activities of individuals. It seeks to categories what constitutes saving behavior and

Following were finding during the study:

**Education:**

Is there a link between educational background and saving behavior and, if it does exist, does a tertiary qualification, and its nature, have an impact?

**Age:**

The research will seek to conclude whether age has an influence on saving behavior. If ownership of property is considered, it needs to be questioned whether people purchase property as they grow older. The question of age also addresses the issue of dependency, in the sense that older people are likely to have more children than younger people.

**Gender:**

There is a difference between saving behavior of male and female Previous authors have claimed that women are natural savers (Du Plessis, 2008).

**Culture:**

This will seek to establish people's attitudes towards money in relation to when Monetary topics were introduced in their lives.

**Level of income:**

This will be used to determine whether a person's capacity to save increases with an increased income.

**Inflation:**

Inflation and savings are inter related, higher the inflation reflects

Higher savings and income. On the other hand inflation lead to Uncertainty and may be lower rate of saving (Hondroyannis, 2004). Corbo and Schmidt- Hebbel (1991), Masson et al. (1998), Haque et al. (1999)'s empirical research have proved negative or zero coefficients of Consumer price index.

**Income level:**

Economic growth is motivated with the increase in the expenditures and savings. Such an increase is resulted in the form of increasing living standard of the peoples which is ultimately the outcome of the increase in income level. Carrol & weil(1994) reported that higher saving rates due to the increase in income per capita. Loayza & Shankar (2000) conform that savings are positive related with income per capita, by using cointegration approach in India..

**Dependency Ratio:**

dependency ratio is the ratio of dependents--people younger than 15 or older than 64--to the working-age population--those ages 15-64. In life cycle model there is age dependency ratio is most important determinant of saving, decrease in the number of dependant persons on working persons results in high saving rate.

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