

The Influence of Household Savings in the Indian Economy

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Abstract: *The Savings and investment are the main drivers to accelerate the growth process. Inside Gross Domestic Saving plays an important role in a developing country like India Accelerate the process of growth and achieve higher levels of growth. Savings are made both in the public sector and in the private sector and domestically Savings play an important role in increasing capital accumulation. Structure and the domestic savings system plays an important role in understanding this development economic process. Role of housing sector in Indian economy a dominant role by forming a large share of gross domestic savings. Family savings provide a health cushion for individuals and here at the same time it also provides funds for the development of the country. Domestic Savings are usually in the form of physical and financial assets there has been a major shift in the composition of household savings from financial savings save material. Savings changes in the home sector are straight forward GDP is affected so should the pace Maintained with appropriate fiscal policy measures.*

Keywords: Economic growth, gross domestic savings, household savings, Physical assets, financial asset

1. Introduction

Ever since economics became a scientific discipline, the relationship between saving, investment and economic growth has puzzled economists. Generally, the income amount is saved and invested. In a closed economy, saving is only equal to the income of the total economy. The economy as a whole may reduce consumption expenditure relative to a given income and consequently increase the propensity to save. An exogenous increase in the willingness to save leads to unchanged saving, but at a lower rate of return. If we define both savings and investment as the difference between GDP and consumption, it can be explained in terms of a cause - and - effect relationship.

The role of domestic savings and domestic investment in economic growth has received attention in India and many countries around the world. The central idea of Lewis's (1955) classical theory was that an increase in savings would accelerate economic growth, while the early Harrod - Tomer model posited investment as the main driver of economic growth. On the other hand, the neoclassical Solow (1956) model argues that an increase in the saving rate increases steady - state output rather than its direct effect on investment because an induced increase in income increases saving, which further increases investment. Zappelli and Pagano (1994) stated that saving contributes to higher investment and higher GDP growth in the short run, while the Carroll - Weil hypothesis (Carroll and Weil, 1994) states that economic growth contributes to saving, contributing to saving. For development. Optimism about the Indian economy has been on the rise in recent times. This has led to a renewed interest in the relationship between savings, investment and economic growth in India.

Moreover, the recent empirical literature on savings has shifted interest to the topics of capital accumulation, technological progress, and economic growth a departure from the 1980s and 1990s, when the discourse on

macroeconomic issues was dominated by concerns about short - term stabilization and adjustment. Since the inception of economic planning in India, emphasis has been placed on savings and investment as the primary means of economic growth and increasing national income. One of the objectives of an economic plan (e. g Eleventh Five Year Plan) is to increase productivity in the economy and thereby economic growth. Capital formation is considered a decisive factor in increasing productivity; Capital formation should be supported by adequate amount of savings. Growth in savings, using increased savings to increase capital formation, using increased capital formation to increase savings, and using increased savings to increase capital formation is the strategy behind economic growth. Although classical growth models support the hypothesis that savings lead to economic growth, the Carroll - Weill hypothesis contradicts this argument. Although there are empirical studies on the role of savings and investment in promoting economic growth in the Indian context, they provide only a partial analysis. Furthermore, some empirical studies support classical growth theory, some studies agree with the Carroll - Weill hypothesis, and some support neither.

For example, Sinha (1996) looked at the causality between gross domestic savings and economic growth rate and found that neither causality runs in either direction. In one study, Mühleisen (1997) found significant causality from growth to savings, but rejected causality from savings to growth for all types of savings. In another study, Sinha and Sinha (2008) examined the relationship between GDP, household savings, public savings and corporate savings during the period 1950 to 2001 and found that economic growth led to higher savings in various forms and not the other way around. Verma (2007) used the ARDL co - integration approach to determine the long - run relationship between GDS, GDI and GDP for the period 1950 - 51 to 2003 - 04 and supported the Carroll - Weil hypothesis that savings does not lead to growth, but growthsavings. There appears to be no comprehensive study available analyzing the interdependence between household, private corporate and

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public sector savings and investment with economic growth. Therefore, this paper examines in detail the probability of saving due to investment - led growth and growth by testing for Granger causality between the logarithms of saving, nominal investment and nominal GDP in India

Objectives:

- 1) To study the composition of savings in India
- 2) To analyze the pattern and growth of household savings in the Indian economy.

Data source and methodology:

This study is descriptive and based on secondary data collected from othersSources like Reserve Bank of India Publications, Economic Survey, MOSPI and more various websites. Simple statistical tools are used for data analysis.

Savings, investment and national income trend:

The savings rate has steadily increased over time from a low of 9.0 per cent in 1950 - 51 to 37.7 per cent in 2007 - 08. A significant positive and strong relationship between growth

rate and savings rate was observed during this period because the growth rate was increasing during this period. At the same time, the investment ratio has gradually increased from 10.7 percent in 1950 - 51 to 39.1 percent in 2007 - 08. Before 1991, India had a closed capital account that restricted capital movement through administrative controls and direct controls, domestic savings and domestic investment in India were highly correlated (correlation coefficient 0.99 per cent for the entire period).

The gap between saving and investment persisted until liberalization and narrowed after the balance of payments crisis of 1991 and further narrowed after the economy switched to a flexible exchange rate system in 1993. The correlation between saving and investment in the post - reform period remains more or less unchanged from the pre - reform period (correlation is 0.9973 in the pre - reform period and 0.9972 in the post - reform period), although the gap between them has narrowed.

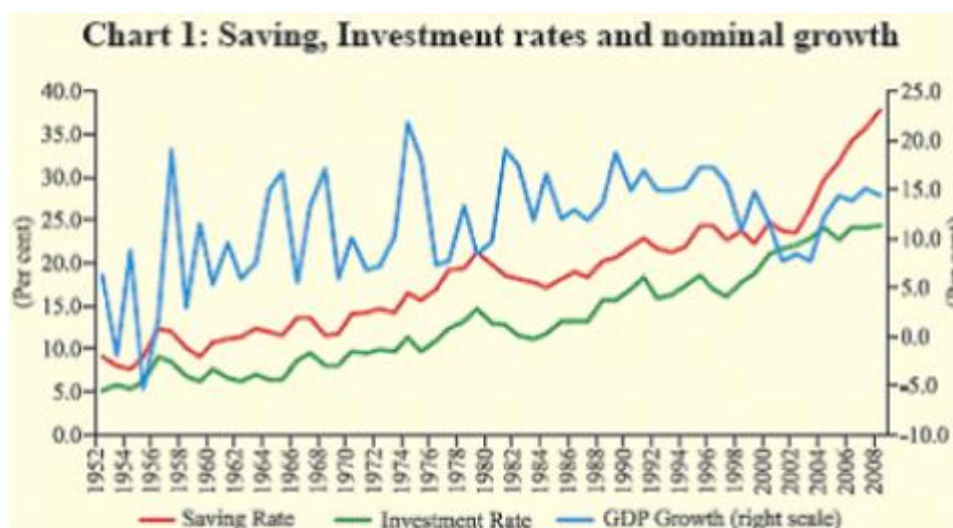
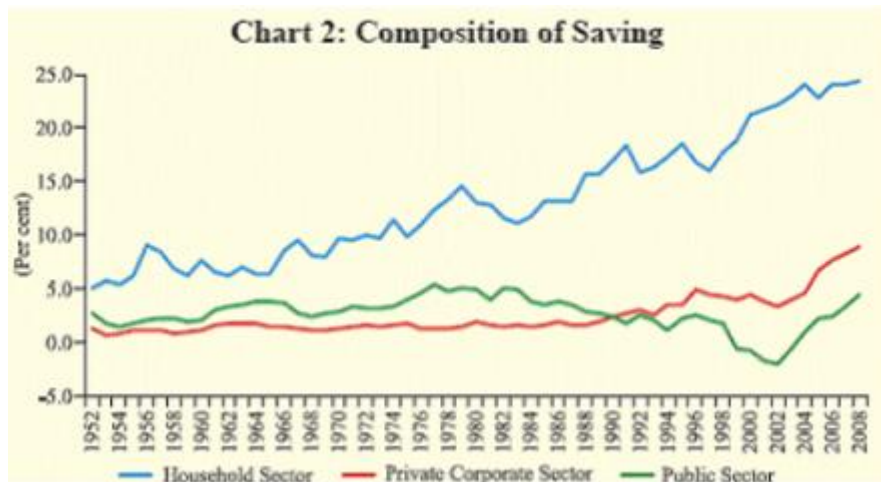


Chart 1, economic growth is largely driven by investment demand, which is captured by gross domestic fixed capital formation in the national accounts. Increase in foreign investment although direct and portfolio investments played a role, the increase in investment was largely financed domestically. India's domestic savings rate rose from 21.6 percent in 1991 - 92 to 37.7 percent in 2007 - 08. This spurred investment and increased demand for all kinds of investment - related goods. This had a manifold impact on economic growth. Domestic savings (investment) in India is divided into two parts – public savings (investment) and private savings (investment). Private Savings (Investment) is divided into two parts namely Household Savings (Investment) and Corporate Savings (Investment). Although India's savings and investment rates have grown steadily over time, their composition has changed significantly. A more significant trend is the widening gap between public and private savings.

Public savings declined from 4.9 per cent of GDP in 1976 - 77 to 2.2 per cent in 2001 - 02 and rose to 4.5 per cent in 2007 - 08. Over the same period, savings rates in the household and private enterprise sectors have risen steadily, compensating for the decline in the public sector. In the early 1990s, the share of household savings in total savings peaked at 94 per cent in 2001 - 02 and declined to 65 per cent in 2007 - 08. The private corporate sector, whose savings rate remained stable until the late 1980s, has recently emerged as the sector with the fastest growing savings rate (from 1.8 per cent of GDP in 1987 - 88 to 8.8 per cent of GDP in 2007 - 08). The share of private corporate savings in total savings has risen from below 10 percent in the 1980s to over 23 percent in recent years.



Similar structural changes have occurred in investment. The rate of public investment remained high until the late 1980s and reached 12 percent in 1986 - 87. After liberalization in the early 1990s, the role of the public sector gradually declined in many sectors and was replaced by the private sector. Therefore, to offset the decline in public sector investment, private sector investment continues to rise. The share of public sector investment in total investment remained stable at around 50 per cent till 1980 and declined

to 23 per cent in 2007 - 08. On the other hand, the share of private enterprise investment increased from a little over 20 percent in the 1980s to 40 percent in 2007 - 08. The rate of investment in the domestic sector also rose from 3.2 per cent in 1963 - 64 to 14.2 per cent in 2004 - 05 and then declined. However, its share in total investment remained broadly unchanged.



Information and process Economic analysis

To understand savings, investment - led growth or growth - led saving and investment in India, we follow the Johansen method given in the appendix. This study uses annual data to examine the causal relationship between domestic savings, investment and returns for India. Annual time series data are available for Gross Domestic Product (GDP), Gross Domestic Savings (GDS), Gross Domestic Investment (GDI), Savings and Household Sector, Private Enterprise Sector and Public Sector for the period 1950 - 51 to 2007 - 08. Compiled from National Accounts Statistics published by the Ministry of Statistics and Planning, Government of

India. All data are in domestic currency and nominal prices.

Unit root testing:

The most important property of a time series variable is its order of integration. Therefore, we perform unit root tests on the first level and first differences to determine the order of convergence of the series. To test for collinearity, we use the conventional Augmented Dickey - Fuller (ADF) test (Dickey and Fuller, 1979 and 1981). The ADF test tests the null hypothesis of a unit root against a standard alternative. The results are presented in Table 1.

Table 1: Unit Root Test Using Augmented Dickey Fuller Test

Out come	At the level of I_0		level I_1		The first difference $I_{IS I_1}$	
	Optimal length	ADF test statistic	Optimal length	ADF test statistic	Optimal length	ADF test statistic
Gross Domestic Product (GDP)	0	3.47	1	- 3.46	0	- 5.34*
Gross Domestic Savings (GDS)	0	2.14	0	- 2.86	0	- 6.45*
Home Savings (HHS)	0	1.29	0	- 3.22	0	- 7.96*
Private Institutional Savings (PCS)	0	1.36	0	- 1.97	0	- 8.31*

Public Sector Savings (PBS)	2	0.68	0	- 3.81**	-	-
Private Sector Savings (PS)	0	1.83	0	- 2.87	0	- 7.10*
Gross Domestic Investment (GDI)	0	1.29	0	- 2.64	0	- 7.84*
Household Investment (HHI)	1	1.22	0	- 3.41	0	- 9.09*
Private Enterprise Investment (PCI)	8	0.65	0	- 3.38	7	- 4.01*
Public Sector Investment (PPI)	0	- 0.21	0	- 2.53	0	- 7.42*
Private Sector Investment (PI)	2	2.13	0	- 3.22	0	- 7.41*

It is clear from the table that the calculated ADF statistics for the level variables are less than the critical values in all cases, indicating that the variables are not stationary. Table 1 also shows that ADF statistics for all variables except public sector savings (PPS) are first - difference constants. For further analysis, series with the same coordinate order as the GDP series are retained for empirical analysis only. Therefore, the PBS series was not considered for further analysis.

Co - integration test:

After establishing that all variables except PBS are cointegrated in the same order, we test for cointegration among variables. We use the Johansen co - integration test. It may be noted here that we are interested in examining the existence of co - coordinating relationships between variables, however, we are not interested in the number of co - coordinating vectors. Accordingly, in Table 2, we present only the results of the null hypothesis of no cointegration versus the alternative that it does. Starting from the null hypothesis of no co - integration ($r=0$) between the variables, the trace statistic exceeds the 95 percent critical value for all series except private sector savings (PCS).

Therefore, it rejects the null hypothesis of no cointegration in favor of the presence of cointegration for all series except PCS. Returning to the maximum eigenvalue test, the null hypothesis of no cointegration at the 5 percent significance level is rejected in favor of the specified alternative that all series except PCS have at least one cointegration vector. Thus, both the trace and maximum eigenvalue test statistics indicate that all series except PCS have a co - integration relationship with GDP. Therefore, we use a vector error correction (VEC) model for all other series and a vector auto regression (VAR) model for PCS to test causality.

Table 2: Empirical results of the co - integration test based on the Johansen - Julius method

H₀: No co - integration			
variables in the system	Trace statistics	The maximum eigen value statistic	Conclusion
GDP and GDS	24.33 *	18.03*	Co - ordinated
GDP and GDI	34.06*	29.55*	Co - ordinated
GDP, GDS and GDI	43.46*	30.74 *	Co - ordinated
GDP and PS	29.94*	22.48 *	Co - ordinated
GDP and PI	27.19*	21.54*	Co - ordinated
GDP, PS and PI	50.01*	24.33*	Co - ordinated
GDP and HHS	23.95*	17.08*	Co - ordinated
GDP and HHI	19.75*	16.36*	Co - ordinated
GDP, HHS and HHI	39.33*	21.71*	Co - ordinated
GDP and PCS	15.22	10.47	Not coordinated
GDP and PCI	39.59*	34.93*	Co - ordinated
GDP, PCS and PCI	53.79*	41.73*	Co - ordinated
GDP and PPI	32.69*	32.63 *	Co - ordinated

Since GDP is aggregated with GDS and GDI separately and jointly for the Indian economy, the presence of both series and causality implies a long - run equilibrium relationship in at least one direction. Private sector savings and investment are co - integrated with national income, suggesting a long - run equilibrium relationship between national income and private sector savings and investment.

Empirical results show that there is no univariate relationship between national income and private corporate sector savings. It can be noted that the existence of a co - integration relationship between national income and private sector saving and investment is mainly caused by the household sector rather than the private corporate sector.

Granger causality

Based on the results of co - integration tests, VECM/VAR should be estimated to determine causality between income, saving and investment. If co - integration is present, a Granger - causality test is performed under the vector error correction method. Otherwise, in the case of private corporate sector and GDP savings, standard Granger - causality testing is done under VAR framework. The results of the causality tests under the VECM/VAR framework are shown in Table 3. Bivariate Granger causality tests conducted under the VECM framework between savings and income and investment and income show unidirectional causality between gross domestic saving and national income and between gross domestic investment and national income. Consistent with the existing literature, the empirical results show that savings lead to income rather than savings. It is further clear that investment leads to higher returns while returns do not lead to higher investment. Under the three - variable VECM framework, it is empirically found that savings and investment combine to lead to higher returns in India.

However, income does not lead to greater savings and investment. Also, it is clear that private sector savings can lead to higher growth and conversely, private sector investment alone cannot lead to economic growth. Also, private sector surpluses in both saving and investment can stimulate economic growth. The reasons for the growth of the household sector and the private corporate sector are examined separately. It is empirically found that household saving is growth oriented but housing investment is not growth oriented. On the other hand, savings and investment in the household sector both contribute to growth. Bivariate Granger causality test under VAR framework is applied to private corporate sector saving and national income, and national income leads to private corporate sector saving but not vice versa. Based on private corporate sector investment and national income, the test is conducted under the VECM framework.

It is found that investment in the private corporate sector leads to higher growth and growth leads to higher investment in the private corporate sector. Also, both savings and investment of the private corporate sector are found to be growth oriented. Also, higher public sector investment improves economic growth, while higher growth does not lead to higher public sector investment.

Table 3: VECM/VAR based causality tests: F statistics

The null hypothesis	F - statistic	As a result
The whole economy		
Gross Domestic Savings does not contribute to GDP	19.05	Re
GDP does not lead to GDP	1.39	Don't deny it
Gross domestic investment does not increase GDP	18.88	Re
Gross domestic product does not lead to gross domestic investment	2.53	Don't deny it
Gross domestic savings and investment do not increase GDP	21.33	Re
GDP does not account for gross domestic saving and investment	4.95	Don't deny it
Private sector		
Private sector savings do not contribute to GDP	9.94	Re
GDP does not lead to private sector savings	7.07	Re
Private sector investment does not increase GDP	1.28	Don't deny it
GDP does not reduce private sector investment	15.49	Re
Private sector savings and investment do not increase GDP	10.29	Re
GDP does not result in private sector saving and investment	17.97	Re
Home Department		
Savings in the housing sector do not contribute to GDP	9.92	Re
GDP does not save the housing sector	7.89	Re
Investment in the domestic sector does not increase GDP	3.99	Don't deny it
GDP does not reduce investment in the housing sector	17.32	Re
Savings and investment in the housing sector do not increase GDP	26.11	Re
GDP does not account for savings and investment by the household sector	8.8	Re
Private Enterprise Sector		
Savings in the private corporate sector do not contribute to GDP	1.78	Don't deny it
GDP does not account for savings by the private corporate sector	7.5	Re
Investment in the private corporate sector cannot increase GDP	6.06	Re
GDP does not reduce investment in the private corporate sector	19.78	Re
Savings and investment in the private corporate sector cannot increase GDP	8.6	Re
GDP does not account for savings and investment by the private corporate sector	9	Re
Public Sector		
Public sector investment does not increase GDP	22.03	Re
Public sector investment cannot be counted in GDP	1.07	Don't deny it

2. Discussion of Experimental Results

All long - run growth theories suggest that an economy can grow faster by investing more. An economy with open capital markets, e. g., India, does not require much domestic

savings for rapid growth because investment can be financed through foreign sources. However, empirical results suggest that higher domestic savings can stimulate economic growth. The positive correlation between savings and growth appears puzzling from the perspective of sustainable development theory. Some researchers, for example Carroll - Weil (1994) have tried to explain correlations showing the effect of growth on savings. But this interpretation contradicts mainstream economic theory, which suggests that a representative individual's consumption - Euler equation should have a negative effect on growth savings. Since India is an open economy with both domestic and foreign investors, domestic savings are not necessarily growth oriented. Growth in emerging economies is driven by innovation that allows domestic sectors to use existing frontier technologies. But frontier adaptation in any sector requires the cooperation of a foreign investor familiar with the frontier technology and local entrepreneurs familiar with the local conditions to which the technology must be adapted.

When domestic savings lead to economic growth, as empirically found for India, the question arises as to how far the country is from the technological frontier. In particular, attention will be paid to the relationship between savings and a country's distance from the technological frontier. Agion et al (2006) argue that saving has a positive effect on growth in countries not very close to the technological frontier, but has no effect in countries close to the frontier. High savings in emerging economies increase the number of projects that can be co - financed by local entrepreneurs, reducing agency problems and making profits when foreign investors participate. However, in countries near the frontier, local firms are likely to be familiar with the frontier technology and therefore do not need to attract foreign investment to undertake innovative projects. In such a situation, every ex ante profitable innovation project will be undertaken regardless of the level of domestic savings, since co - financing is not required when only one agent is involved in the project.

3. Conclusion

This study examines the direction of the relationship between savings, investment and economic growth in India over the period 1950 - 51 to 2007 - 08. It is empirically clear that the direction of causality is from savings and investment jointly and separately to economic growth, and that there is no causality from economic growth to savings and (or) investment. Empirical results suggest that there is a reciprocal causality from private sector saving and investment to economic growth. This reciprocal causality stems from the housing sector, where savings and investment increase and growth leads to savings and investment. It is empirically clear that private corporate sector savings do not lead to economic growth, although savings and investment in this sector together lead to economic growth. Saving leading growth in emerging market economies means that the economy is not amenable to technological frontiers and is therefore underdeveloped by innovation taking place around the world. The results show that even as the Indian economy opens up to foreign investment, domestic savings drive growth. Also, domestic

firms are unable to absorb the technology brought by foreign investment to undertake more profitable innovation projects

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