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Study on domestic savings in the Indian economy

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Abstract

An attempt has been made in the present study to examine the savings behaviour in the Indian Economy in terms of shift in the growth rates of domestic savings, and in magnitude of income elasticity of the domestic savings at the aggregate and disaggregate levels during post economic reform period. The results show that there is no shift in the growth rate of the domestic savings both at aggregate and disaggregate levels during post economic reform period. However there has been acceleration in the growth rates of domestic savings of household and private sectors and deceleration in public sector during 1950-2017. The estimate of constant income elasticity of household savings is found to be more than unity implying that the marginal propensity to save is higher than the average propensity to save, all else equal. Further the constant income elasticity of household savings is moderately higher than that of the income elasticities of domestic savings estimated for private and public sectors during pre-economic reform period. The results point out that there is no shift in the magnitude of income elasticity of savings of household, private and public sectors during post economic reform period showing the homogeneity in the size of the income elasticity of domestic savings. Thus the economic reforms that have been initiated in 1992 could not bump up the growth rate of savings and magnitude of the income elasticity of domestic savings both at aggregate and disaggregate levels in the Indian Economy during post economic reform period.

Keywords: Savings, India

Introduction

It is well-known fact that the rate of savings has been an important economic variable for economic development of, particularly, the countries like India. The extent of domestic savings is only ultimate source for capital formation, which is indispensable for rapid economic development in India. The excess of income over consumption expenditure is referred to as savings. The Policy of the government of India has been to promote savings and capital formation. Increased savings can be used for financing required investment. It is also known fact that an increase in the rate of investment is essential for rapid development. Increase in investment is possible only by increase in savings rate. Therefore the extent of domestic savings is an imperative factor for attaining high rate of investment. The gross savings in the economy can be increased by increasing the national income. Therefore propensity to save depends, inter alia, on the national income. Thus the aggregate savings, inter alia, is a function of national income. The generation of the theoretical savings function depends on the aggregate consumption function as the sum of the aggregate savings [GDS] and consumption expenditure [GC] is the aggregate income [GDP].

$$\begin{aligned} \text{GDP} &= \text{C} + \text{GDS} \\ \text{GDS} &= \text{GDP} - \text{GC} \end{aligned}$$

The general equation for the linear consumption function is

$$\text{GC} = \text{C}_0 + \text{C}_1 \text{GDP}$$

Where C_0 is autonomous consumption expenditure and C_1 , $d\text{GC}/d\text{GDP}$, is the marginal propensity to consume. The general equation for the linear savings function is

$$\text{GDS} = \text{S}_0 + \text{S}_1 \text{Y GDP}$$

Where S_0 is the amount of the savings at the theoretical zero level of Income and S_1 , $d\text{GDS}/d\text{GDP}$ is the marginal propensity to save. Substituting equation $[\text{GC} = \text{C}_0 + \text{C}_1 \text{GDP}]$ in

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equation [GDS=GDPGC], we have the following

$$\begin{aligned} \text{GDS} &= \text{GDP} - (C_0 + C_1 \text{GDP}) \\ \text{GDS} &= -C_0 - C_1 \text{GDP} + \text{GDP} \\ \text{GDS} &= -C_0 + (1 - C_1) \text{GDP} \end{aligned}$$

Where $1 - C_1 = S_1$

Thus the domestic savings would, inter alia, depend on income. In view of the importance of the domestic savings, the empirical on the behaviour of the savings have been carried out in India using the macro time series data. In India domestic savings originate from three principal sectors namely: (i) household sector, (ii) private corporate sector and (iii) Public sector. The present study on the savings behaviour in the Indian Economy will be an extension to the following objectives:-

1. To find out the presence of acceleration/deceleration in the growth rates of the gross domestic savings
2. To estimate the degree of income elasticity of gross domestic savings and
3. To examine the extent speed of adjustment between the actual change and desired change in gross domestic savings

Hypotheses of the Empirical Studies

1. There has been acceleration in the growth rate growth rate of savings of the household sector
2. The marginal propensity to save of the household sector is relatively higher than that of the private and public sectors
3. The income elasticity of domestic savings of the household sector is relatively higher than that of the private and government sectors
4. The speed of adjustment between actual change and desired change in domestic savings of household sector is not quick.

Review on Earlier studies on Savings Behaviour in India

There have been a plethora of empirical studies on the savings behaviour in India based on both cross-sectional and time series data. Some of the time series empirical studies related to the behaviour of savings in the Indian Economy have been examined to view the present study in a wider perspective. Of them the most important study that was carried out by Krishnamurthy and Saibaba^[1]. The important contribution of this study was that the rate of savings in India was rising during 1952-53 to 1978-79 with year to year fluctuations. In another study, Majumdar^[2] *et al.* examined the behaviour of savings in the Indian Economy. They observed that the net income and the share of non-agricultural income in the total income were the important factors in explaining the variations in savings. Joshi^[3] analyzed the savings behaviour in India over a period of thirteen years. He observed that savings out of incremental Income plays the key role in raising the rate of savings.

Shetty^[4] reviewed the trends in domestic saving rates in India. He observed the changes in consumption patterns seem an obvious explanation for the absence of any buoyancy in household savings. In another study Krishnamurthy *et al.*^[5] examined the trends in savings and its composition in India. In an empirical exercise, Upender^[6] estimated the elasticity of gross domestic savings with respect to gross domestic product during 1950-2017 using the linear regression model. The numerical value of the elasticity was turned out to be unity. This study did not attempt to see the presence of acceleration and deceleration in the growth rate of the domestic savings and speed of adjustment. Thus the time series studies examined the savings behaviour till 1990 only in the Indian Economy. They have not attempted to examine the speed of adjustment between the actual change and desired change in the domestic savings. No study has been undertaken to scan the structural change in the savings function after the economic reforms initiated in India using the most recent data. There for there is a need to generate empirical information on these aspects for the Indian Economy.

Methodology

In order to examine the above objectives and test the empirical validity of the hypotheses of the present study, the required time series data on domestic savings by household, private and public sectors, domestic income and Gross Domestic Product at market prices have been collected from various issues of the Economic Survey published by the ministry of finance [Economic Wing] National Accounts Statistics published by Central Statistical Organization, Ministry of planning and the Basic statistics relating to the Indian Economy by Reserve Bank of India for the period from 1950-51 to 2002-03.

Growth Rate of the Domestic Savings at Aggregate Level

With a view to scan the presence/absence of an upward or downward shift in the growth rate of the domestic savings at the aggregate and disaggregate levels during post economic reform period the regression model with dummy and interaction variables has been fitted to the macro time series data. The results are furnished in the following tables. The estimate of the regression coefficient of the interaction variable is not significant showing that the absence of shift in the growth rate of the gross domestic savings during post economic reform period. The absence of shift in the growth rate shows that the results presented in table - 1 are valid for the entire period 1950-2017. Therefore the regression model with time and square of time has been attempted to see the presence of acceleration / deceleration, known as variable growth, in the growth rate of the gross domestic savings. The results of the same are set out in table -2. The estimates of the regression coefficients of time and that of its square are positively significant implying the presence of acceleration in the growth rate of the gross domestic savings during the period under consideration.

Table 1: Search for Shift in the Growth Rate of Gross Domestic

Dependent Variable: Gross Domestic Savings= Log(Gds1)			
Method: Least Squares Sample: 1950 - 2017.			
Variable	Coefficient	Standard Error	t-Statistic
Constant*	6.383195	0.042896	148.8047
Time*	0.128535	0.001801	71.35991
Dummy	0.516732	0.636936	0.811278
Dummy*time	-0.004252	0.013610	-0.312416
R-squared	0.995649	Durbin-Watson statistic	
Adjusted R-sq.	0.995383	0.522005	

Notes:* Significant at one percent level

Table 2: Acceleration/Deceleration in the Growth Rate of Gross Domestic Savings

Dependent Variable: Gross Domestic Savings= Log(Gds1)			
Method: Least Squares Sample: 1950-2017.			
Variable	Coefficient	Standard Error	t-Statistic
Constant*	6.560347	0.043679	150.1962
Time*	0.103357	0.003884	26.60788
Time2 *	0.000597	7.22E-05	8.263268
R-squared	0.997316	Durbin-Watson statistic	
Adjusted R-sq.	0.997208	0.632431	

Growth Rate of the Domestic Savings at the Disaggregate Level.

The regression results furnished shows that the coefficients of dummy and interaction variable are not significant showing the absence of the shift in the growth rate of the gross domestic savings by the household sector during post economic reform period. The absence of shift during post economic reform period shows that the empirical estimates presented are applicable for the entire period 1950-2017. In view of this the regression model with time and square of time has been estimated to observe the presence of acceleration / deceleration in the growth rate of the gross domestic savings by household sector.

Conclusions

On the basis of the results the empirical validity of the hypotheses that “There has been acceleration in the growth rate growth rate of savings of the household sector”, “The marginal propensity to save of the household sector is relatively higher than that of the private and government sectors” and “The elasticity of domestic savings of the household sector with respect to the changes in income is relatively higher than that of the private and government sectors” can be accepted. However the empirical validity of the hypothesis that “The speed of adjustment between actual change and desired change in domestic savings of household sector is not quick” cannot be accepted as the coefficient of speed of adjustment in case of household sector is somewhat smaller as compared to private sector. The savings behaviour in the Indian Economy has been empirically examined in terms of presence of acceleration/deceleration in the growth rates of domestic savings, responsiveness of the domestic savings to the changes in gross domestic product and extent of discrepancy between actual change and desired change in domestic savings at the aggregate and disaggregate levels during 1950 – 2017. The empirical results show that there is no shift in the growth rate of the domestic savings both at aggregate and disaggregate levels during post economic reform period. However there has been acceleration in the growth rates of domestic savings of household and private sectors and deceleration in public sector during the period under consideration. The estimate of constant income elasticity of household savings is found to be more than unity and relatively higher than the private and public sectors. The results point out that there is no shift in the magnitude of income elasticity of savings of household, private and public sectors during post economic reform period showing the homogeneity in the size of the income elasticity of domestic savings. The extent of discrepancy that can be eliminated in a year between actual change and desired changes in the domestic savings is ranged from eighteen percent to forty two percent at the aggregate and disaggregate levels. In the light of the results it can be understood that the economic reforms that have

been initiated in 1992 could not augment the growth rate of savings and income elasticity of domestic savings both at aggregate and disaggregate levels in the Indian Economy. It should be noted that the results emerged out the present empirical exercise though useful to understand the behaviour of the domestic savings in terms of shift in growth and income elasticity of domestic savings at the aggregate and disaggregate levels during post economic reform period, they are subjected to the specification of the relationship between savings and income and data used in the study.

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