#### EXECUTIVE SUMMARY

- The rapidly evolving macroeconomic and policy environment has been associated with contrasting movements in the rates of savings of the household, private corporate and public sectors.
- During the 2000s, while the household savings rate has leveled off at around 23 per cent after 2003-04, the private corporate sector savings rate has increased sharply to around 8 to 9 per cent. The public sector saving rate after turning increasing to 5 per cent by 2007-08, dipped in the following year, largely reflecting the fiscal stimulus measures.
- Over the years, the composition of household savings has been generally moving in favour of financial assets as opposed to physical assets, with the notable exception of the first half of the 2000s. During the second half of 2000s, the allocation between financial and physical saving became almost evenly balanced.
- Four broad approaches were adopted for estimation of household savings viz.; (i) Instrument-wise elasticities with respect to GDP at current market prices; (ii) elasticities of (changes in) gross financial assets, (changes in) gross financial liabilities and physical savings, all with respect to GDP at current market prices; (iii) model-based i.e. estimation of a household savings function by identifying its (statistically significant) determinants; and (iv) ARIMA-based.
- Under alternative specifications of the household savings function under the model-based approach, it was found that while real GDP growth, real per capita income and growth rate of real per capita income have a positive impact on the savings rate, dependency ratio, the public savings rate and the inflation rate have a negative impact.
- For projection purposes, apart from the five scenarios of alternative combinations of real GDP growth and WPI inflation, as indicated by the main Working Group, the Sub-Group included a sixth scenario (real GDP growth of 8.0 per cent and WPI inflation of 7.0 per cent), keeping in view the recent experience.
- The projections of household savings in 2016-17, the terminal year of the Twelfth Plan, using the four different approaches, under the six scenarios were as follows:

Approach	Household Saving Rate in 2016-17 (Terminal Year of Twelfth Plan) (per cent)
Instrument-wise Elasticities	30.0 - 32.1
Broad Group Elasticities	27.8 – 28.6
Model-Based	22.2 – 24.3
ARIMA	26.8

• Keeping aside the projections under the instrument-wise elasticities which implicitly assume the persistence of past trends under *each instrument*, the average of the projected household savings rate under the other three approaches ranges between **25.6 and 26. 6 per cent in 2016-17**, which is the most likely scenario.

# Report of the Sub-Group on Household Sector Saving during the Twelfth Five-Year Plan (2012-13 to 2016-17)

#### Introduction

1.1 In accordance with the decision taken by the Working Group on the Savings for the Twelfth Plan (Chairman: Dr. Subir Gokarn) in its first meeting on April 8, 2011, a Sub-Group on Household Sector Savings was constituted with the following members:

1.	Smt. Balbir Kaur Adviser	Convenor
	Department of Economic and Policy Research	
~	Reserve Bank of India	Marahan
Ζ.	Smt. Sidani Swain	Wember
	Director Development Baliay and Perspective Planning	
	Development Policy and Perspective Planning	
2	Ma T. Paioswari	Mombor
5.	NS. 1. Rajeswall Doputy Director Conoral	Member
	Central Statistics Office	
Δ	Shri M.C. Singhi	Member
т.	Economic Adviser	Weinber
	Department of Industrial Policy and Promotion	
	Government of India	
5.	Prof. Pradeep Agrawal	Member
	Institute of Economic Growth	
6.	Shri S.B. Mainak	Member
	Executive Director (Investment Operations)	
	Life Insurance Corporation	
7.	Shri Rajesh Bansal	Member
	Financial Advisor and Chief Accounts Officer	
	Employees' Provident Fund Organization	
8.	Shri Ramesh Kolli	Member
9.	Dr. Brinda Jagirdar	Member
	General Manager and Head, Economic Research	
	Department	
	State Bank of India	
10.	Dr. Sarat Malik	Member
	Joint Director	
	Securities and Exchange Board of India	

- 1.2 The Terms of Reference of the Sub-Group were as follows:
  - (i) To review the developments and likely behavioral pattern of household sector saving during the Twelfth Plan period;

- (ii) To estimate household savings, physical and financial and their components, in the light of the policy and structural changes in the real and financial sectors and the existing demographic pattern; and
- (iii) To explain the methodology used for estimation.

1.3 The secretariat to the Sub-Group was provided by the National Accounts Analysis Division, Department of Economic and Policy Research (DEPR), Reserve Bank of India (RBI). The Sub-Group gratefully acknowledges and appreciates the support of the National Accounts Analysis Division of the RBI and, in particular, Shri Somnath Chatterjee, Director and Shri Rakesh Kumar, Research Officer.

1.4 The Sub-Group held two meetings viz.; on June 13 and July 5, 2011, at RBI, New Delhi. The Sub-Group gratefully acknowledges the support of Shri Chandan Sinha, Regional Director, RBI, New Delhi and Shri J.K. Mallik, Director, DEPR, RBI, New Delhi, in this regard.

1.5 The Report is organized as follows. Section II discusses the trends in household sector saving and its composition in the light of the evolving macroeconomic and policy environment. Section III briefly recapitulates the literature on the estimation of savings, particularly with regard to the private/household sector. Section IV explains the different approaches adopted by the Sub-Group for estimating household savings. Section V presents the projections of the household savings rate over the Twelfth Plan. Section VI sums up the discussion.

#### Section II: Trends in Household Sector Savings

#### Methodology for Compilation of Household Savings in India

2.1 As a prelude to the discussion on the trends in household savings, a few remarks on the compilation of data on household savings in India may be in order. Direct estimates of household saving and its composition are not available in India as it is a heterogeneous sector of individuals, non-government non-corporate enterprises of farm business and non-farm business like sole proprietorships and partnerships, and non-profit institutions and income-expenditure surveys for these variegated sub-sectors are not conducted. Household saving consists of saving in financial assets and physical assets. In respect of financial saving of the household sector, estimates are prepared as the sum of annual increase in financial assets net of increase in financial liabilities. The financial savings of households emanate as a residual from the economy-wide Flow of Funds accounts, compiled by the RBI.

2.2 The savings of the household sector in physical assets are not estimated independently. CSO estimates the household investment and transfers the same to the account of household saving in physical assets. Net addition to physical assets of households comprises investment in fixed assets of construction and machinery & equipment and change in stocks. Estimates of investment in fixed assets (construction and machinery) for the economy as a whole are worked out independently using commodity flow method of compiling estimates of gross capital formation. Households' investment in fixed assets is derived as residual by deducting the corresponding estimates of public and private corporate sectors from the total. Change in stocks is estimated separately by industry of use.

2.3 It is, thus, evident that in the indirect system of estimation, financial savings are estimated in 'net' terms where the financial liabilities of the household sector are deducted from the gross financial assets, while physical savings are invariably financed by such financial liabilities.

2.4 In this context, the High Level Committee on the Estimation of Savings and Investment (Chairman: Dr. C. Rangarajan), 2009 had observed, "*While countries like* 

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the US and the UK have established mechanism to directly estimate the savings of their respective household sector through income-expenditure surveys, India follows a unique way of estimating the household savings indirectly by a method, which is a mix of the flow-of-funds and commodity-flow approaches, where the household sector's share is extracted as residual. There are pros and cons in the direct as well as in the indirect approaches. However, India's present practice is considered conceptually sound and it has been endorsed by the earlier Committees, namely, K.N. Raj Committee and Raja Chelliah Committee in addition to some reputed economists. Notwithstanding the conceptual strength of the estimation practice followed by India, it is conceded that the present method is recognised to have weaknesses emanating mainly from data quality, data gaps and estimation problems."

2.5 The Rangarajan Committee had made a number of recommendations for closing the data gaps in the estimation of savings and investment. For instance, given the non-inclusion of a wide array of unregistered companies, the Committee had recommended that data on assets, liabilities, income and expenditure of NBFCs including the unregistered/exempted category of NBFCs, should be collected through a census to be conducted by RBI in collaboration with the Department of Company Affairs, Government of India. Similarly, in the case of shares and debentures, the Rangarajan Committee recommended "... The SEBI may collect the consolidated balance sheet position for all registrars and broker houses and provide the data to the RBI as per the flow-of-funds format (Annex A6.5.2) to be forwarded by the RBI, so that the same can be incorporated in the FoF accounts....[T]he consolidated Statements of assets/liabilities of all capital market institutions (namely, merchant bankers and registered brokers) should be compiled by the SEBI or have them compiled and forwarded to RBI for compilation of flow-of- funds account of the Indian economy.....The CSO should forward requisite formats to SEBI for estimation of savings, capital formation and GDP for the bodies under the regulatory purview of SEBI." (paras VI.w to VI.cc, pp 288-289).

2.6 The Sub-Group noted the observations and recommendations of the Rangarajan Committee and underscored the imperative of concerted action by the

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concerned institutions towards closing of the data gaps and thereby improving the quality of data on savings and investment in India.

#### Evolving Macroeconomic and Policy Environment

As a backdrop to the analysis of the trends in household savings, it may also 2.7 be apposite to briefly recall the broad but significant changes that have occurred in the macroeconomic and policy environment over the past four decades. The 1980s broke the 'jinx' of the 3.5 per cent annual growth rate of real GDP that had characterized the previous three decades, enabled by some reforms in the trade and industrial sectors, good agricultural performance and fiscal activism. The decade of the 1990s marked the initiation of wide-ranging structural reforms and financial liberalization, in response to the unprecedented external payments crisis of 1990-91 that was wrought by the unsustainable macroeconomic policies of the previous decade(s). The decade of the 2000s was characterized by a build-up to over 9 per cent real GDP growth during three consecutive years, a period that coincided with the enactment and implementation of fiscal responsibility legislation and an upsurge in capital inflows. This was followed by a sharp decline in the growth rate and increased financial market volatility in 2008-09 in the face of the knock-on effects of the global financial crisis, and then, a quick recovery to the pre-crisis trend rate of growth, facilitated by coordinated fiscal and monetary policy actions.

# Contrasting Movements in the Savings of the Household, Private Corporate and Public Sectors

2.8 The rapidly evolving macroeconomic and policy environment has been associated with contrasting movements in the rates of savings of the household, private corporate and public sectors. As evident from Chart 1, the years 2002-04 could be viewed as a break point in the trends in the savings rates of the three sectors. While household savings has continued to account for the predominant share of gross domestic savings over the years, the households' savings rate which had generally moved upwards at an increasing pace till 2003-04, leveled off thereafter at around 23 per cent. In contrast, the private corporate sector savings rate which had remained nearly stable at around 2 per cent upto the 1980s, picked up subsequently and increased sharply after 2002-03 to over 9 per cent by 2007-08,

on the back of improved corporate profitability; the private corporate sector savings rate has hovered around 8 per cent since then. The public sector savings rate declined steadily from around 5 per cent in the early 1980s and turned negative in the late 1990s and remained so for the next few years. This largely reflected the fiscal profligacy of the 1980s and the waning of the fiscal consolidation process in the late 1990s. The public savings rate turned positive once again in 2003-04 and increased to around 5 per cent in 2007-08 largely reflecting the enactment of fiscal responsibility legislation and improvement in the finances of public sector enterprises. A sharp but temporary decline in public sector savings occurred in 2008-09 largely on account of the Sixth Pay Commission arrear payouts and fiscal stimulus measures.

Chart 1: Trends in Household, Public Sector and Private Corporate Sector Savings Rates



2.9 It is also evident that the contrasting movements in the savings rates of the private (i.e. household plus private corporate) sector and the public sector that were observed during the 1980s and 1990s --- indicative of Ricardian equivalence --- were not discernable during 2000s (Chart 2). It is noteworthy in this context that both public sector savings and private corporate sector savings improved substantially during 2000s, even as household savings rate plateaued somewhat.



**Chart 2: Trends in Private and Public Sector Savings Rates** 

Trends in Household Sector Savings – Rate and Composition

2.10 A striking feature of the 2000s is the leveling off of the household savings rate at about 23 per cent from around the middle of the decade in contrast to the upward movement in the previous years (Table 1 and Chart 3). Moreover, this leveling off occurred even as the economy generally cruised along a high growth trajectory (barring a brief hiccup in 2008-09). The factors underlying the stability in the household savings rate are discussed next.

	(as per cent of GDP at current market prices)						
Period	Change inGross Financial Assets (GFA)	Change in Gross Financial Liabilities (GFL)	Change in Net Financial Assets (NFA) (2-3)	Change in Physical Assets (PA)	Total Household Savings (4+5)		
1	2	3	4	5	6		
1970s	6.0	1.5	4.5	7.3	11.8		
1980s	8.9	2.4	6.5	7.2	13.7		
1990s	11.2	1.6	9.6	8.2	17.9		
2000s	14.2	3.4	10.8	12.3	23.2		
(i) 2000-05	12.8	2.4	10.3	12.9	23.5		
(ii) 2005-10	15.6	4.3	11.4	11.8	23.3		



Chart 3: Trends in the Household Savings Rate: 1970-71 to 2009-10

2.11 As stated earlier, total saving of the households comprises financial savings and physical savings. Financial savings are treated on a net basis i.e. households' (change in gross) financial assets *less* their (change in gross) financial liabilities. It is evident from Table 1 and Chart 3 that while physical savings of the households increased sharply during the first half of 2000s, the pace of increase in gross financial assets as well as gross financial liabilities slowed down. With the net financial savings rate resultantly showing a modest increase, most of the overall increase in the households' savings during the first half of the 2000s was on account of physical savings. The household sector's preference for savings in the form of physical assets since 2000-01 could be attributed partly to the robust economic growth as well as rising availability of credit to meet financing needs of the household sector.

2.12 During the second half of the decade, even though the gross financial savings (assets) and gross financial liabilities of the households increased sharply, the increase in net financial savings rate remained modest. At the same time, the rate of physical savings declined partly in response to the tightening in credit norms, offsetting the increase in the financial savings rate. Consequently, the households'

overall savings rate remained largely unchanged (at around 23 per cent) since mid-2000s.

2.13 Since the 1970s, the allocation of household savings between financial assets and physical assets had been progressively moving in favour of the former, with the notable exception of the first half of the 2000s. The allocation became almost evenly balanced during the second half of the 2000s.

# Evolving Structure of Households' Gross Financial Savings

2.14 The composition of (changes in) the gross financial assets of households has also changed substantially over the years (Table 2).

									(p0) 00	
			<b>e</b> :		Provident	e Claims				
8			<b>s</b> 1	ute	and	<b>GR</b>	Shares &		Trate	Gross
		<b>Sank</b>	<b>Non-banking</b>	insurance	i cension	i Govern	i debent i	<b>i Units of</b>	debt	i Financiai
Period	Currency	deposits	deposits (	fund	fund	-ment	-ures	UTI	(Hel)	Assets
1970s	13.9	41.6	3.0	9.0	19.6	42	1.5	0.5	2.7	100.0
1980s	119	40.3	4.6	7.5	17.5	11.1	39	22	0.9	100.0
1990s	10.3	34.7	6.8	10,1	18.8	95	7.0	38	-10	100.0
2000s	<b>9</b> 6	4.7	i 1.3 i	17.4	12.4	111	4.1	-05	Û.Û	100.0
it 2000-05	83	37.8	2.8	14.7	15.1	125	28	-43	8.8	100.0
( <b>t</b> : 2005-10	10.3	516	0.6	20.1	9.7	26	5.3	-0.1	0.0	100.0

# Table 2: Composition of (Changes in) Gross Financial Assets

(per cent)

- The share of **currency** has declined to around 10 per cent in recent years reflective of the spread of banking facilities and the declining share of agriculture in GDP.
- **Bank deposits** continue to account for the predominant share of gross financial assets, with their share increasing sharply in the second half of 2000s in contrast to the declining trend in the previous years; part of the recent increase in the share of bank deposits could be attributable to the increase in deposit rates and aggressive deposit mobilization by banks.
- The share of **life insurance funds** continued to increase during 2000s, in line with higher insurance penetration and robust economic growth.

- The share of **provident and pension funds** has progressively declined over the years; this has been attributable to a number of factors viz.;
  - The EPF and MP Act, 1952 covers only those employees of organised sector whose salary is below `6500/- per month. This statutory limit is stagnant since 2002 while there has been a phenomenal growth in wage structure in industry over the years. Resultantly, in new coverages of the establishments, very few categories of employees are eligible for coverage under the Act.
  - While the new enrolment of members has become difficult as mentioned above, the exit of members by way of retirement, retrenchment and death are keeping normal pace.
  - The increasing job avenues in global age economy have stirred the job dynamics and owing to this there is a brisk movement of labour amongst the companies offering better rewards. This has also resulted in settlement of accounts rapidly and giving way to outflow of contributions, as many of exiting members do not come back under coverage profile due to low statutory ceiling of wages.
  - The Employees' Provident Fund Organization (EPFO), of late, has taken a decision not to allow interest on those accounts in which no contributions have been received for last 36 months. This has been done with a view to dissuade the ex-members to consider this social security scheme as Investment Avenue. With obvious exit of such members, this may further erode the deposit base.
  - Reflecting the impact of the above factors, the contributions received in the Employees' Provident Funds Scheme, 1952, Employees' Pension Scheme, 1995 and Employees' Deposit-Linked Insurance Scheme, 1976 framed under the EPF & MP Act, 1952, have been decelerating over the years as evident from the table below:

Name of Scheme					
	2005-06	2006-07	2007-08	2008-09	2009-10
EPF , 1952	11792.66	14414.01	18782.30	23246.59	26558.19
EPS , 1995	6885.44	8050.65	9012.46	10487.77	10924.52
EDLI, 1976	220.68	250.65	308.43	368.39	423.22

(`Crore)

• The share of **claims on Government**, which largely reflect Small Savings, which had picked up over the years, particularly during the first half of 2000s, declined during the second half largely in response to the unchanged (administered) interest rates on Small Savings since 2003-04. In fact, households disinvested their holdings of Small Savings during 2007-08 and 2008-09.

- The share of shares and debentures in the gross financial assets of households has remained quite small (less than 10 per cent, on an average), even though it increased sharply during the (early) 1990s, spurred by the reforms in the capital market. Subsequently, the share of shares and debentures started declining ---- largely reflecting stock market conditions impacted by irregularities and the downturn in industrial activity ---- and was placed at less than 3 per cent in the first half of 2000s. The share of 'shares & debentures' picked up very sharply during 2005-06 to 2007-08 largely coinciding with the high growth phase and buoyant stock market trends, but then plummeted in 2008-09 in the face of knock-on effects of the global financial crisis; on the average, however, the share of shares and debentures improved during the second half of 2000s.
- Contrasting movements were observed in the shares of bank deposits and shares and debentures in the households' gross financial assets till around the first half of 2000s, indicative of households' perception of substitutability between the two instruments in the allocation of their financial savings. In the second half of 2000s, however, the average shares of *both* the instruments *increased* sharply in response to the very buoyant economic conditions, pick up in primary market activity (in the case of shares and debentures) and increase in deposit rates (in the case of bank deposits), and disinvestment of Small Savings holdings by households during 2007-09.
- The share of **Units of UTI**, **Mutual Funds**, etc has generally been small and these turned negative during 2000s. **Trade debt (net)** has been negligible.
- In sum, bank deposits continue to account for the predominant share of gross financial savings of the households and their share has increased sharply during the second half of 2000s. The share of Life Insurance Funds has also increased progressively over the years. Provident and Pension Funds, non-banking deposits, claims on Government and currency have lost momentum over the years. Shares and debentures constitute a relatively small portion of household financial savings, even though their share has picked up in the recent period.

### Gross Financial Liabilities of the Households

2.15 Advances from banks have remained the largest component of the financial liabilities of households; their share had dipped during the 1990s, but picked up subsequently (Table 3). The shares of loans from other financial institutions, Government and cooperative non-credit societies have, on the other hand,

declined in recent years; in fact, the shares of loans from the latter two institutions have become negligible.

	(per cent)					
Period	Advances from Banks	Loans & Advances fom other Fls	Loans & Advances from Government	Loans & Advances from Cooperative Non-Credit Societies	Changes in GFL	
1970s	81.6	8.2	8.4	1.8	100.0	
1980s	86.2	7.4	4.2	2.1	100.0	
1990s	79.1	15.5	3.6	1.9	100.0	
2000s	90.6	8.4	0.8	0.2	100.0	
(i) 2000-05	85.8	12.3	1.4	0.5	100.0	
(ii) 2005-10	95.5	4.5	0.1	-0.1	100.0	

#### Table 3: Composition of Gross Financial Liabilities

#### **Outlook for Instruments of Household Savings**

#### Bank Deposits

2.16 In recent years, banks have moved to the Core Banking platform which has enabled them to offer a range of value-added products to customers across geographies and across all sections, on a real time basis 24x7, which has enhanced the attractiveness of bank deposits. Moreover, against the backdrop of financial sector reforms and financial inclusion, supported by favourable demographic pattern, bank deposits would continue to be one of the key drivers of the household financial savings during the Twelfth Five Year Plan period.

#### Life Insurance Funds

2.17 Given the changes in policy with regard to ULIP, there has been some fall in the life fund segment in 2010-11. The progressive withdrawal of tax incentives have also impacted on the overall insurance segment. Going forward, however, the increasing penetration of insurance activity could increase the share of life insurance in total financial savings of households.

#### **Provident Funds**

2.18 Since contributions to Employees' Provident Fund is mandatory only with respect to monthly incomes below `6,500, the recent trends in terms of number of participants and their contributions indicated the prospects in respect of this instrument are dim, notwithstanding a very high rate of tax-free return. Prospects are likely to improve only after a couple of years once the proposal to increase the monthly income ceiling for mandatory contributions to `15,000 is accepted and implemented.

#### Shares and Debentures

2.19 The Indian Securities market is growing rapidly with introduction of new products and processes. As seen from Chart 4, during the first five years of the current decade, resource mobilisation from the primary market has increased. In the next five years, the tempo continued at a faster pace until the global financial crisis affected the market. However, the trend in resource mobilisation in the post-crisis period signals a quick recovery.



Chart 4: Resource Mobilisation in the Primary Market (`Crore)

2.20 Gross resource mobilisation in mutual funds has gone up at an accelerated rate in the current decade, though net resource mobilisation has shown a volatile

trend. Asset under management has also increased during this period, except the fall in the crisis-affected year 2008-09 (Chart 5).



Chart 5: Resource Mobilisation by Mutual Funds (`Crore)

2.21 Number of investors in the country has also increased manifold. At present, India is the second fastest growing country in the world next to China. With increase in per capita income, the households are left with more investible resources. The increase in number of investors is reflected in the increase in the value of shares settled in demat format (Chart 6). Besides, the Securities and Exchange Board of



Chart 6: Growth of Value of Shares Settled in Demat (` crore)

India (SEBI) is trying to improve the transparency in the market with better regulations, efficient surveillance of the market and better availability of information to the investors. Investor education workshops are being conducted all over the country. Looking at the past trend of Indian securities market, which has witnessed remarkable growth in last two decades, it may be conjectured that in next five years the expansion will continue at a faster pace with more investors participating in the securities market in India.

#### Physical Savings

2.22 The trend is that households are investing more on acquisition of physical assets rather than financial assets. Within physical assets, households are now investing more on construction activities. These trends are expected to continue.

#### Section III: A Brief Survey of Literature on the Estimation of Household Saving

3.1 There have been two broad kinds of empirical studies on the estimation of private /household savings viz.; (a) panel data studies i.e. analysis of pooled data across countries and across time, such as Horioka et al (2010) and Schmidt-Hebbel et al (1992); and (b) country-specific time series studies, such as Agrawal et al (2010), Athukorala and Sen (2001 and 2004) and Loayza and Shankar (2000). Agrawal (2010), however, highlights the fact that savings behavior shows considerable variation across countries depending on their socioeconomic structure and, therefore, one cannot be sure whether the results of such pooled studies, which are applicable to the "average country in the sample", apply to the country in question. Others, such as Athukorala and Sen (2004), while conceding that panel data studies allow for country-specific (fixed effects) while capturing possible "within-country changes" over time, have pointed out that the substantial differences in the nature and quality of data on savings across countries could impact on panel data estimation. This underscores the importance of country-specific studies.

3.2 An eclectic survey of literature indicates that the major determinants of household savings are as follows:

Income variables such as real GDP (per capita) and growth rate of real GDP (per capita): There are broadly two competing principles here. In terms of Keynes' Absolute Income Hypothesis, consumption, and hence saving, is linearly related to the level of income in that period, On the other hand, Modligliani's Life Cycle Model (LCM) postulates that consumption is related to expectations about lifetime income and not current income. Accordingly, in the LCM, the objective of smoothening consumption over lifetime results in individuals being net savers during their working years and dis-savers during retirement. As a corollary, the savings behavior of an individual in the LCM depends upon his/her stage in the life cycle.

It has, however, been argued that current (rather than lifetime) income does matter for savings, particularly in the case of low income countries, where for large sections of the population consumption is likely to be at subsistence levels, Hence, the formulation of savings function, in many cases, takes into account both the level and growth of incomes (the rate of growth of income being one of the indicators of lifetime income). Sometimes, a non-linear relationship between savings and the level of income is also postulated i.e. savings tend to decline even as income increases upto a certain level (i.e. till such time, say, subsistence consumption levels are fully attained) and then increase in tandem with further increases in income.

**Wealth:** The impact of wealth on saving is expected to be negative, since it obviates the need for saving in order to sustain consumption over the future.

**Demographics:** It is expected that the higher the share of dependent population (i.e. population below or above the working age), the lower would be aggregate savings.

Access to banking facilities (number of bank branches per capita) or Financial **Deepening** (measured by the ratio of M3 to GDP at current market prices): While increased access to appropriate financial instruments, at low transaction costs, are expected to incentivize savings, the easing of liquidity/borrowing constraints following financial deepening could, at the same time, impact savings adversely. In this context, some [such as Horoika (2010)] have argued that relationship between savings and financial development is non-linear – savings increase upto a point and then taper off or start declining thereafter.

**Real interest rates:** A change in real interest rates has two opposing effects on savings. For instance, an increase in the real interest rate results in an increase in the current price of consumption vis-à-vis its future price, and hence spurs an increase in savings, reflecting the substitution of present consumption by future consumption. At the same time, an increase in the real interest rate leads to an increase in lifetime income/wealth, which tends to increase consumption and reduce saving. The overall impact of real interest rates on savings, thus, depends on the strengths of the substitution and income effects.

**Inflation rate:** The channels through which inflation impacts on savings are the real interest rate, real income/wealth and macroeconomic uncertainty. To the extent, nominal interest rates adjust partially or with a lag, to inflation, real interest rates

would change and impact on savings rate, in the manner discussed above. This apart, inflation could reduce real income which, in turn, could adversely impact saving. On the flip side, higher macroeconomic uncertainty associated with increases in the inflation rate could trigger higher (precautionary) savings. Thus, the impact of inflation on savings is also an empirical issue.

**Public Savings:** Assuming Ricardian equivalence prevails, a lower (higher) level of public saving would be associated with an equivalent increase (decline) in private (household) saving. This is because the private (household) sector would anticipate higher taxes in the future to finance the decline in public saving and would, accordingly, save more to provide for such higher tax burden. Ricardian equivalence is based on a number of assumptions such as perfect foresight and perfect capital markets which are rarely met in the real world. Hence, the degree of prevalence of Ricardian equivalence is essentially an empirical issue.

3.3 The general impact of the various determinants of savings, as brought out by a survey of literature, is summarized below:

Determinants	Empirical Studies
GDP growth (+)	Masson, Bayoumi, and Samiei (1998), Athukorala and Sen, 2004
Wealth (-)	Klaus Schmidt- Hebbel, Steven B. Webb and Giancarlo Corsetti (1992)
Income Volatility (+)	Edwards (1996)
Real interest rate (+) /(-)	Masson, Bayoumi, and Samiei (1998), Athukorala and Sen, 2004/ Agrawal et al (2010)
Public savings (-)	Athukorala and Sen, 2004, Agrawal et al, 2010
(Log of) Level of per capita income (+) /(-)	Masson, Bayoumi, and Samiei (1998); Athukorala and Sen, 2004, Agrawal et al, 2010 /Horoika et al (2010)
(Log of) (Square of Level of per capita income) (+)	Horoika et al (2010)
Rate of inflation (+) /(-)	Athukorala and Sen, 2004) / Agrawal et al (2010
Spread of banking facilities or Financial Deepening (+)	Athukorala and Sen, 2004, Agrawal et al, 2010, Horoika et al (2010)
Square of Financial Deepening (-)	Horoika et al (2010)
Age Structure/Dependency Ratio (-)	Horoika et al (2010)

# Section IV: Alternative Approaches for Estimation and Projection of Household Savings

#### Sample Period for Estimation

4.1 Annual data on different variables for the period 1980-81 to 2009-10 were used for estimation of household savings; these were sourced from CSO, RBI and World Development Indicators (for dependency ratio). The sample size (30-year span) is appropriate for econometric estimation, even though studies on estimation of savings in India such as Athukorala and Sen (2004) and Agrawal et al (2010) have used a +40-year sample period. While extending the sample prior to 1980-81 so as to increase the sample size was possible, the Sub-Group felt that in doing so the estimated parameters could result in somewhat anachronistic projections of household savings over the Twelfth Plan period.

### Scenarios for Growth and Inflation during the Twelfth Plan

4.2 The main Working Group on Savings for the Twelfth Plan had in its first meeting decided that all six of its Sub-Groups would adopt the following five scenarios of real GDP growth and WPI inflation as a common starting point for making projections of savings relating to their respective sectors over the Twelfth Plan:

Scenario	Real GDP growth	WPI Inflation	Implied growth rate of GDP at current market prices*
1	8.5	5.0	13.9
2	9.0	5.0	14.5
3	9.0	6.0	15.5
4	9.5	5.0	15.0
5	9.5	6.5	16.6
Memo:			
6	8.0	7.0	15.6

\* Worked out as: [(1+real GDP growth rate)\*(1+WPI inflation) -1]

4.3 The scenarios 2 to 5 are in line with the target growth rate of 9.0 to 9.5 per cent during the Twelfth Plan, though the assumed inflation rate varies. It may be recalled that the Eleventh Plan Working Group/Sub-Groups had worked out projections under four scenarios for real GDP growth viz.; 7.0 per cent, 8.0 per cent, 8.5 per cent (which was the working estimate for the Eleventh Plan) and 9.0 per cent, with an identical WPI inflation rate of 5.0 per cent in all the four scenarios.

This Sub-Group worked out the projections for an additional **(sixth) scenario** viz.; real GDP growth of 8.0 per cent and WPI inflation of 7.0 per cent, keeping in view the recent experience.

4.4 It may be added that since actual data on domestic savings are available upto 2009-10, projections were also required to be made for 2010-11 and 2011-12, the remaining two years of the Eleventh Plan. Towards this end, actual data on macro aggregates (GDPCMP and real GDP) were used for 2010-11, whereas real GDP growth and WPI inflation rate were assumed to be 8.0 per cent and 6 per cent, respectively in 2011-12, as indicated in the Monetary Policy Statement of April 2011.

#### Estimation/Projection Methodology

4.5 Three broad approaches were adopted by the Sub-Group for the estimation/projection of household savings viz.; the **'bottom-up' approach** (with two variants), the **'model-based' approach and ARIMA approach**.

#### A. Bottom-Up Approach

4.6 Under the 'bottom-up' approach, the elasticities of the various components of gross financial assets, physical assets and gross financial liabilities with respect to GDP at current market prices (GDPCMP) were first computed,. The elasticities were then applied to the various scenarios of real GDP growth and WPI inflation to obtain the evolution of the different components as well as the overall level of household savings over the Twelfth Plan. This approach had been also adopted by the Eleventh Plan Sub-Group on the Household Sector Savings as well as the main Working Group. Instrument-wise elasticities were computed on the basis of (a) Ordinary Least Squares (OLS) for the period 1980-81 to 2009-10; (b) recognizing that the estimates of instrument-wise elasticities could vary in line with the chosen sample period, OLS estimates were worked out for three additional equal size (30-year) sample periods viz,; 1970-71 to 1999-00; 1975-76 to 2004-05; and 1977-78 to 2006-07, and the average of OLS estimates from the four samples were obtained; and (iii) Dynamic Ordinary Least Squares (DOLS) for the period 1980-81 to 2009-10, taking into account that the variables in the regression were I(1). In all cases, two dummy variables were incorporated in the regressions viz.; D1 for the structural reforms period beginning 1991-92 and D2 for the global crisis year (2008-09) and recovery year (2009-10).

4.7 It may be highlighted in this context that the average household savings rate projected by the previous Working Group, using the instrument-wise elasticity approach, for the entire Eleventh Plan period (2007-08 to 2011-12) varied between 24.1 and 24.4 per cent for the four scenarios. The actual average household savings rate during the Eleventh Plan so far (i.e. 2007-08 to 2009-10) is placed at 23.3 per cent.

4.8 While recognizing the simplicity of the instrument-wise elasticity approach, given the all-encompassing nature of GDPCMP, the previous Working Group/Sub-Group had alluded to its major limitation in that the elasticities estimated on the basis of past trends were expected to persist over the ensuing five-year Plan period, notwithstanding the emergence of nascent trends in instruments such as bank deposits, shares and debentures and claims on Government. In this context, the Working Group had felt the necessity of augmenting this method with a judgmental approach.

#### B. Variant of Bottom-up Approach

4.9 Recognizing this limitation, this Sub-Group additionally worked out a **slight variant of this approach**. Instead of computing elasticities of individual instruments of financial savings, the elasticity of the (change in) gross financial assets of the households with respect to the GDPCMP was worked out alongwith those of (change in) gross financial liabilities and physical savings (assets). These elasticities were then used to project household (net) financial, physical and total savings over the Twelfth Plan. As in the case of instrument-wise elasticities, the 'aggregate' elasticities were obtained via (a) OLS for the sample period 1980-81 to 2009-10; (b) average of the OLS estimates for the four sample periods; and (c) DOLS for the sample period 1980-81 to 2009-10. This approach provides scope to alter the pattern/composition of financial savings in line with emerging trends while maintaining overall consistency with the long-term responsiveness of household savings with GDPCMP.

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4.10 Notwithstanding the above 'tweaking' of the elasticity-based approach, two basic limitations remained. One, the data series on almost all the individual financial and physical assets of the household sector, as well as GDPCMP, turned out to be I(1). Only real GDP growth rate and the WPI inflation rate were found to be I(0). As a consequence, the elasticities computed on the basis of OLS method were considered to be statistically spurious. This limitation has, of course, been overcome to some extent by using DOLS.

4.11 The second limitation related to the fact that projections under the elasticity approach implicitly assume that savings are impervious to the rate of inflation, so long as the rate of growth of GDPCMP remains unchanged under different scenarios. The unresponsiveness of household savings to inflation could well be plausible as pointed out by some empirical studies, and would not make any difference to the projections if the inflation rate was assumed to remain unchanged in all the scenarios, as was the case in the Eleventh Plan Working Group. In the context of the differing inflation scenarios under the present dispensation and the evolving growth-inflation dynamics, this Sub-Group felt that it would be worthwhile to also consider projections which do not make such an assumption. Indeed, it stands to reason that household savings could differ under say, two alternative scenarios of (a) real GDP growth of 9 per cent and inflation rate of 6 per cent and (b) real GDP growth of 8 per cent and inflation rate of 7 per cent, even though the rate of growth of GDPCMP is almost identical in both cases.

#### C. Model-based Approach

4.12 Against this backdrop, the Sub-Group also adopted a 'model-based' **approach**, in which the household savings rate was regressed on its various determinants and the estimated equation was used to project household savings over the Twelfth Plan.

4.13 Based on the literature, notably Horoika *et al* (2010), Agrawal *et al* (2010) and Athukorala and Sen (2004), alternative specifications of the household savings function were estimated, based on a combination of different variables. The stationarity properties of these variables were first tested and the results are set out below:

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Unit Root Test – ADF					
Variable	Level	First Difference			
Household Savings Rate (HSR)	l(1)	I(0)*			
Real Per capital Income (RPCI)	l(l)	I(0)*			
Growth rate of Real Per capital Income (RPCIG)	l(0)*				
Financial Deepening (M3/GDP) (FDEP)	l(1)	I(0)*			
Real GDP Growth (RYG)	I(0)*				
Inflation (INFL)	I(0)*				
Real Interest Rate (RINT) <sup>1</sup>	I(0)*				
Public Savings (PUBR)	l(1)	I(0)*			
Dependency Ratio( DR)	I(0)*				

\*: Significant at 5 per cent level

4.14 In this context, whenever a mix of I(1) and I(0) variables were to be regressed, Dynamic Ordinary Least Squares (DOLS) method was adopted for estimation purposes. Alternatively, the residuals from OLS method were tested for stationarity. In both the cases, the approach was to move from a 'general' to 'specific' model, by progressively eliminating the variables that turned out to be statistically insignificant. Four of the more plausible estimates of the household savings rate are reproduced below for illustrative purposes:

4.15 In the **first (OLS-based) equation**, the residuals were found to be stationary. All the explanatory variables [real GDP growth (RYG), inflation (INFL) and the public savings rate (PUBR)] were statistically significant and had the expected signs. The overall fit (adjusted R squared) was also good. The same equation turned out to be almost equally robust when the sample period was changed to 1970-71 to 2009-10.

<sup>&</sup>lt;sup>1</sup> Real interest rate is obtained as the 3 to 5 year bank (nominal) deposit rate (mid-point) less WPI inflation rate.

Dependent Variable: HSR Method: Least Squares

Sample: 1980 2009 Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C RYG INFL(-1) D1 PUBR(-1) D2	17.57093 0.537723 -0.281664 2.596515 -0.920786 3.885141	1.392268 0.157919 0.093145 0.927117 0.224097 1.354925	12.62037 3.405047 -3.023930 2.800634 -4.108875 2.867422	0.0000 0.0023 0.0059 0.0099 0.0004 0.0085
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.857844 0.828228 1.749403 73.44985 -55.99924 28.96579 0.000000	Mean depend S.D. depende Akaike info cr Schwarz crite Hannan-Quin Durbin-Watso	ent var nt var iterion rion n criter. n stat	18.50596 4.220989 4.133283 4.413522 4.222934 1.331194

4.16 In the **second equation**, the real GDP growth (RYG) was replaced with dependency ratio (DR). In this case, the best results were obtained only for the sample period 1970-71 to 2009-10 (and not 1980-81 to 2009-10).

Dependent Variable: HSR Method: Least Squares

Sample (adjusted): 1971 2009 Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C DR INFL(-1) PUBR(-1) D1 D2	64.90191 -0.649565 -0.080187 -0.520486 -0.736665 -1.538294	5.236117 0.071995 0.040484 0.145308 0.840080 1.141389	12.39505 -9.022394 -1.980683 -3.581963 -0.876899 -1.347739	0.0000 0.0000 0.0560 0.0011 0.3869 0.1869

R-squared	0.938823	Mean dependent var	17.02392
Adjusted R-squared	0.929554	S.D. dependent var	4.669421
S.E. of regression	1.239341	Akaike info criterion	3.407675
Sum squared resid	50.68690	Schwarz criterion	3.663608
Log likelihood	-60.44967	Hannan-Quinn criter.	3.499502
F-statistic	101.2842	Durbin-Watson stat	1.257131
Prob(F-statistic)	0.000000		

4.17 Here too, all the variables [dependency ratio, inflation rate and the public savings rate] were statistically significant and had the expected signs. The overall fit (adjusted R squared) was also very good. DW statistic, however, was a bit on the lower side. The residuals were, however, found to be stationary. It may be observed from this equation that a one unit decline in the dependency ratio would lead to an increase of 0.65 units in the household savings rate. In the previous equation, a unit increase in the growth rate of real GDP leads to a 0.54 unit increase in the household savings rate.

4.18 In the **third equation**, real per capita income (RPCI), the growth rate of real per capita income (RPCIG) and the real interest rate turned out to be statistically significant. The sign of RINT was negative indicating that the income effect overwhelmed the substitution effect. The overall fit of the equation was quite good. Re-estimating the equation for 1970-71 to 2009-10 also gave similar results.

Dependent Variable: HSR Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1980 2008 Included observations: 29 after adjustments Cointegrating equation deterministics: C D1 D2 Fixed leads and lags specification (lead=1, lag=1) Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RINT	-0.322048	0.073490	-4.382182	0.0006
RPCIG	2.815367	0.366727	7.677007	0.0000
RPCI	0.001496	0.000149	10.02488	0.0000
С	-5.042967	1.923325	-2.622004	0.0201
D1	-0.731003	0.522765	-1.398339	0.1838
D2	-3.171848	1.073317	-2.955183	0.0104

R-squared	0.978782	Mean dependent var	18.33546
Adjusted R-squared	0.957564	S.D. dependent var	4.189248
S.E. of regression	0.862983	Sum squared resid	10.42636
Durbin-Watson stat	2.353787	Long-run variance	0.368258

4.19 In the **fourth equation**, financial deepening (FDEP) as measured by the ratio of M3 to GDP and the public saving rate were statistically significant. The sign of FDEP was positive indicating that financial deepening had facilitated household saving. The negative sign of PUBR was indicative of Ricardian equivalence. The overall fit of the equation was also good. The overall results broadly remained unchanged when the sample period was extended from 1970-71 even though DW turned to be much lower, signifying autocorrelation.

Dependent Variable: HSR Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1980 2008 Included observations: 29 after adjustments Cointegrating equation deterministics: C D1 Fixed leads and lags specification (lead=1, lag=1) Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDEP	0.369009	0.019499	18.92474	0.0000
PUBR	-0.921572	0.094252	-9.777730	0.0000
C	4.388241	0.814254	5.389278	0.0000
D1	-1.002655	0.361498	-2.773613	0.0121
R-squared	0.984225	Mean dependent var		18.33546
Adjusted R-squared	0.976753	S.D. dependent var		4.189248
S.E. of regression	0.638735	Sum squared resid		7.751655
Durbin-Watson stat	2.321764	Long-run variance		0.245887

4.20 Having obtained statistically sound estimates of the household savings equation, the Sub-Group deliberated on the use of such equations for projection purposes. It was felt that notwithstanding the statistical soundness, the use of such equations for projections of household savings would require assumptions about the evolutionary path of the various determinants, including the public saving rate,

dependency ratio and real interest rate. It was also felt that while projection of the public saving rate would entail making assumptions about the evolution of the fiscal path of the Governments, the dependency ratio is likely to be (negatively) correlated with the income variables and, thus, the inclusion of both dependency ratio and income variables as determinants in the same equation would lead to multicollinearity problems<sup>2</sup>. It was acknowledged that projecting the real interest rate would be trickier. For these reasons, it was considered appropriate for the purposes of projection to consider a model that largely includes variables that are uncorrelated and whose evolutionary paths are easier to formulate. Accordingly, the following savings equation was used for projection purposes:

Dependent Variable: HSR Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1982 2008 Included observations: 27 after adjustments Cointegrating equation deterministics: C D1 Fixed leads and lags specification (lead=1, lag=1) Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RYG	0.821114	0.396178	2.072588	0.0537
INFL	-0.473157	0.235580	-2.008475	0.0608
C	13.73832	3.241909	4.237725	0.0006
D1	5.163317	1.105481	4.670654	0.0002
R-squared	0.848712	Mean dependent var		18.76044
Adjusted R-squared	0.768619	S.D. dependent var		4.017527
S.E. of regression	1.932515	Sum squared resid		63.48843
Durbin-Watson stat	1.397558	Long-run variance		5.449729

4.21 As in the other two cases, all the determinants are statistically significant and the overall fit is good. The household savings rate was found to be positively impacted by real income growth and negatively impacted by inflation rate. The

<sup>&</sup>lt;sup>2</sup> In fact, when real GDP growth was regressed (under DOLS) on the dependency ratio for the period 1980-81 to 2009-10, the coefficient of the dependency ratio was estimated at (-) 0.47, which was statistically significant.

advantage of using this equation is that the evolution of real income growth and WPI inflation could be simply taken as per the six given scenarios.

## D. ARIMA-based approach

4.22 The third approach that was adopted for projection purposes was **ARIMA** modeling under which the household savings rate evolves on the lines of its past intrinsic dynamics. Consequently, this approach obviates the need for relating the household saving rate to any other variable (such as GDPcmp, real GDP growth or WPI inflation) for projection purposes. As a corollary, the projections from this approach are impervious to say, different scenarios of real GDP growth and inflation. Given that the household saving rate is I(1) and its first difference is I(0), the results of the ARIMA estimation are set out below:

Dependent Variable: D(HSR) Method: Least Squares

Sample (adjusted): 1972 2009 Included observations: 38 after adjustments Convergence achieved after 32 iterations MA Backcast: 1971

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C AR(1) MA(1)	0.385329 0.639798 -0.963860	0.051933 0.134652 0.032041	7.419717 4.751497 -30.08181	0.0000 0.0000 0.0000
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.143895 0.094974 1.188280 49.42030 -58.91239 2.941411 0.065952	Mean depend S.D. depende Akaike info cr Schwarz crite Hannan-Quin Durbin-Watsc	0.344886 1.249074 3.258547 3.387830 3.304545 1.831467	
Inverted AR Roots Inverted MA Roots	.64 .96			

4.23 It may be observed that the coefficients [AR(1) and MA(1)] were individually and jointly statistically significant. It may also be noted that the period of estimation was 1970-71 to 2009-10. This was because the ARIMA estimates for the period 1980-81 to 2009-10 were not found to be statistically satisfactory.

## Section V: Projection Results Based on Alternative Approaches

A. Bottom-Up Approach: Elasticities of individual instruments

5.1 The elasticities based on this approach are juxtaposed against those estimated by the Eleventh Plan Sub-Group/Working Group in the Table below:

					New I	Elasticit	ies	
							OLS	
		Eleventh	OLS	OLS	OLS	OLS	Average	DOLS
	Instrument	Elasticities	1970-	2004	2006	2009	2009)	2009
1	Currency	1.50	1.096	1.14	1.117	1.148	1.125	1.141
2	Bank Deposits	1.60	1.211	1.094	1.327	1.349	1.245	1.355
3	Non-Bank Deposits	0.24	0.379	0.562	0.379	0.152	0.368	0.007
4	Shares and Debentures	3.00	1.085	0.855	1.173	1.209	1.081	1.098
5	Claims on Government	0.77	1.975	2.117	1.518	0.718	1.582	1.441
6	Life Insurance	1.70	1.483	1.4	1.58	1.808	1.568	1.623
7	Provident Funds	1.40	1.052	1.138	1.032	0.938	1.040	0.961
0	Changes in Gross	1.04	1 212	1 010	1 1 2 1	1 174	1 250	1 551
Ø		1.94	1.313	1.218	1.431	1.474	1.359	1.554
9	Physical Savings	1.16	1.301	1.270	1.262	1.260	1.273	1.286

5.2 It may be observed that elasticities have generally declined across different financial instruments and gross financial liabilities but has increased in the case of household physical assets.

5.3 The year-wise instrument-wise projections based on the revised elasticities are set out in **Annex 1**. The estimates of total household savings rate under different scenarios are summarized in the Table below:

Scenario	OLS (1980-2009)		OLS ('A	verage')	DOLS (1980-2009)	
	Elasticit	ty-based	Elasticit	y-based	Elasticit	y-based
	2016-17	12 <sup>th</sup> Plan	2016-17	12 <sup>th</sup> Plan	2016-17	12 <sup>th</sup> Plan
		Average		Average		Average
1	31.1	28.7	30.0	28.0	30.4	28.3
2	31.3	28.8	30.2	28.1	30.5	28.4
3	31.7	29.0	30.5	28.3	30.9	28.6
4	31.5	28.9	30.4	28.2	30.7	28.5
5	32.1	29.3	30.9	28.5	31.3	28.8
6	31.7	29.0	30.5	28.3	30.9	28.6

5.4 Thus, using the instrument-wise elasticity approach, the household savings rate is projected to increase between **30.0 per cent and 32.1 per cent** in the

terminal year (2016-17) of the Twelfth Plan, under the six scenarios, as compared with the actual rate of 23.5 per cent in 2009-10. The increase in the household savings rate over the Twelfth Plan period (i.e. the terminal year 2016-17 over the base year 2011-12) would vary between around 5 and 7 percentage points. The household saving rate in 2016-17 was the lowest under Scenario 1 (Real GDP growth of 8.5 per cent and WPI inflation rate of 5 per cent) and the highest under Scenario 5 (Real GDP growth of 9.5 per cent and WPI inflation rate of 6.5 per cent), corresponding to the lowest and highest implied growth rates of GDP at current market prices.

*B.* Variant of the Bottom-up approach: Elasticities of broad categories of Household Savings

5.5 As mentioned earlier, under this approach, the elasticity of the households' (changes in) gross financial assets, and not that of individual financial instruments, is obtained. The estimates of elasticity of changes in gross financial assets (GFA) with respect to GDPCMP using OLS (1980-81 to 2009-10), average of the OLS estimates of the four samples and DOLS (and in each case, using dummy variables D1 and D2, as defined earlier) are set out below:

Twelfth Plan Elasticity of (Changes in ) Gross Financial Assets						
OLS 1970- 1999	OLS 1975- 2004	OLS 1977- 2006	OLS 1980- 2009	OLS Average (1970-2009)	DOLS 1980-2009	
1.165	1.155	1.194	1.208	1.181	1.218	

5.6 The elasticities of changes in gross financial liabilities (GFL) and physical assets (savings) were the same as those obtained under approach (A).

5.7 Given that the elasticity of (changes in) GFA has turned out to be lower than that of (changes in) GFL, even though the difference between the elasticities is small (0.2), this approach seems to suggest that the bulk of the increase in household savings over the future would be supported by physical savings. The year-wise

projections of the total household savings rate are given in **Annex 2** while the summary results are as under:

Scenario	OLS (1980-2009) Elasticity-based		OLS ('A Elasticit	verage') zy-based	DOLS (1980-2009) Elasticity-based	
	2016-17	12 <sup>th</sup> Plan	2016-17	12 <sup>th</sup> Plan	2016-17	12 <sup>th</sup> Plan
		Average		Average		Average
1	27.8	26.5	28.0	26.7	28.0	26.7
2	27.9	26.6	28.1	26.7	28.1	26.7
3	28.1	26.7	28.3	26.9	28.3	26.9
4	28.0	26.7	28.2	26.8	28.2	26.8
5	28.4	26.8	28.6	27.0	28.5	27.0
6	28.1	26.7	28.3	26.9	28.3	26.9

5.8 The projected household savings rate under this approach is placed between **27.8 per cent and 28.6 per cent** in 2016-17 under the six scenarios, showing an increase of around 3 to 4 percentage points over 2011-12. The projections under this approach are around 2 to 3 percentage points lower than those under approach (A). But, as in the case of approach (A), the lowest and highest household saving rate in 2016-17 were under Scenarios 1 and 5, respectively.

### C. Model-based Approach

5.9 The year-wise projections of the household savings rate using the modelbased approach are set out below:

Scenario	2010- 11	2011- 12	2012- 13	2013- 14	2014- 15	2015- 16	2016- 17	12th Plan Average
1	21.3	22.6	23.5	23.5	23.5	23.5	23.5	23.5
2	21.3	22.6	23.9	23.9	23.9	23.9	23.9	23.9
3	21.3	22.6	23.5	23.5	23.5	23.5	23.5	23.5
4	21.3	22.6	24.3	24.3	24.3	24.3	24.3	24.3
5	21.3	22.6	23.6	23.6	23.6	23.6	23.6	23.6
6	21.3	22.6	22.2	22.2	22.2	22.2	22.2	22.2

5.10 The projected household savings rate under this approach is placed between **22.2 per cent and 24.3 per cent** in 2016-17, showing an increase of (-) 0.8 to (+) 1.7 percentage points over 2011-12. The projections under this approach are even lower

than those under approach (B). This is not surprising as the household savings rate is found to respond negatively to the inflation rate under the model-based approach. Moreover in contrast to approaches (A) and (B), the projected household saving rate in 2016-17 was the lowest under Scenario 6 (Real GDP growth rate of 8 per cent and WPI inflation rate of 7 per cent) and the highest under Scenario 4 (Real GDP growth rate of 9.5 per cent and WPI inflation rate of 5 per cent).

### D. ARIMA-based Projections

5.11 As per the ARIMA model, the household savings rate is projected to increase from 24.7 per cent in 2011-12 to 26.8 per cent in 2016-17, showing an increase of 2.1 percentage points over the Twelfth Plan.

Year	Projected Household Savings Rate (per cent)
2010-11	24.1
2011-12	24.7
2012-13	25.1
2013-14	25.6
2014-15	26.0
2015-16	26.4
2016-17	26.8
Average for the	
12 <sup>th</sup> Plan	26.0

#### Section VI: Summing Up

- 6.1 Four sets of projections for household savings have been made:
  - (i) Using the instrument-wise elasticities, the household savings rate is projected to increase between **30.0 per cent and 32.1 per cent** in the terminal year of the Twelfth Plan, under different scenarios, using different estimation techniques. The increase in the household savings rate over the Twelfth Plan period would be between around 5 and 7 percentage points.
  - (ii) Using broad elasticities, the household savings would reach between 27.8 per cent and 28.6 per cent in 2016-17 under the six scenarios, showing an increase of around 3 to 4 percentage points over 2011-12;
  - (iii) Using the macro model-based approach, the household savings rate would reach between 22.2 per cent and 24.3 per cent in 2016-17, showing a change of (-) 0.8 to (+) 1.7 percentage points over 2011-12; and
  - (iv) Using the ARIMA-based approach, the household savings rate is projected to increase from 24.7 per cent in 2011-12 to 26.8 per cent in 2016-17, showing an increase of 2.1 percentage points over the Twelfth Plan

6.2 While the first approach is simple and was adopted by the previous Working Group, the sample data taken for estimation purposes shows non-stationarity. The second approach overcomes this limitation but (as in the case of the first approach) does not distinguish between the differing impact of real GDP growth and inflation. The last two approaches (iii and iv) are statistically the most sound.

6.3 It is felt that notwithstanding its simplicity, the first approach assumes the persistence of past trends for individual financial instruments. Given the limitations in the household savings data as well as the sharp changes that have occurred in the composition of financial savings over the years and the likely changes going forward, it may be reasonable to set aside the estimates from this approach *purely for projection purposes*. Having done so, the average of the estimates of the household savings rate from the other three approaches, works out to **25.6 to 26.6 per cent in 2016-17**, the terminal year of the Twelfth Plan. This implies an increase of **1.6 to 2.6** 

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**percentage points** in the household savings rate over the Twelfth Plan. Going by the recent trends this appears to be the most likely scenario.

6.4 It may be added in this context that a recent study [Berry, Williams and Waldron (2009)] had attributed the decline in the household saving ratio in the United Kingdom during 1995 to 2007 to a host of factors such as declining real interest rates, looser credit conditions, increase in asset prices and greater macroeconomic stability. Lower household saving was also offset to some extent by higher corporate saving (which is also evident in India). While noting that the global financial crisis and subsequent recession had unwound some of these factors which may lead to an increase in household saving in the United Kingdom, the study emphasized that all such changes are highly uncertain and that history did not provide a clear guide. While recognizing that one of the key differences in the evolving household saving scenario between the United Kingdom and India is the impact of demographics (dependency ratio), anecdotal evidence on increasing consumerism and the entrenchment of (urban) lifestyles in India, apart from the easier availability of credit and improvement in overall macroeconomic conditions is perhaps indicative of some 'drag' on household saving over the past few years as well as going forward. Moreover, econometric estimations in this Report also point towards a statistically significant negative impact of inflation and the public savings rate on the household savings rate in India. Factors such as these could impact the composition of household saving (i.e. between financial and physical assets and within financial assets, the share of different financial instruments), as much as the overall level of household saving. The most likely scenario of household saving in India during the Twelfth Plan, as espoused by the Sub-Group, may be viewed in this context.

# Select References

- Agrawal P, P. Sahoo and R.K. Dash (2010), "Savings Behavior in India: Co-Integration and Causality Evidence", The Singapore Economic Review, Vol. 55, No. 2.
- 2. Athukorala, P and K. Sen (2001). "*The Determinants of Private Savings in India*", ASARC Working Paper 2001-13, Australian National University.
- 3. ----- (2004), "The Determinants of Private Savings in India" World Development, Volume-32, 491–503.
- 4. Berry S., R. Williams and M. Waldron (2009), "*Household Saving*" Bank of England Quarterly Bulletin, Q3.
- 5. Edwards, S. (1996), "Why Are Latin America's Savings Rates So Low? An International Comparative Analysis" Journal of Development Economics 51(1):5–44.
- 6. Horioka C.Y. and A. Terada-Hagiwara (2010), "*Determinants and Long-term Projections of Saving Rates in Developing Asia*" ADB Economics Working Paper Series No. 228, October
- Loayza, N, K Schmidt-Hebbel and L Serven (2000), "What drives private savings across the world?" The Review of Economics and Statistics, 82, 226– 238.
- 8. Loayza N and R. Shankar (2000), "*Private Saving in India*", The World Bank Economic Review, Vol 14, No.3
- 9. Masson P. R., T. Bayoumi, and H. Samiei (1995), "International Evidence on the Determinants of Private Saving" IMF Working Paper No. 95/51
- Schmidt-Hebbel, K, S.B. Webb and G. Corsetti (1992), "Household Saving in Developing Countries: First Cross-Country Evidence" World Bank Economic Review, Vol. 6, No. 3.

	Scenario 1(GDP =8.5 % & WPI=5 %)											
	2009-	2010-			2013-	2014-	2015-	2016-				
	10	11	2011-12	2012-13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5			
Bank deposits	6.8	7.2	7.5	7.8	8.2	8.5	8.9	9.3	8.5			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.2	4.6	5.1	5.6	6.1	6.7	7.4	6.2			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4			
Claims on Government	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4			
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.1	18.0	18.9	19.9	20.9	19.0			
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.6	4.1			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.4	13.8	14.3	14.7	13.8			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.3	12.9	13.5	14.1	14.8	15.5	16.3	14.9			
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.5	27.5	28.6	29.8	31.1	28.7			

# Annex 1: Projections of Household Savings Rate based on Instrument-wise Elasticities

A: OLS-based (1980-81 to 2009-10)

	Scenario 2 ( GDP =9.0 % & WPI=5 %)											
	2009-	2010-			2013-	2014-	2015-	2016-				
	10	11	2011-12	2012-13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5			
Bank deposits	6.8	7.2	7.5	7.8	8.2	8.5	8.9	9.3	8.6			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.2	4.6	5.1	5.6	6.2	6.8	7.5	6.2			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4			
Claims on Government	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4			
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.2	18.0	19.0	20.0	21.1	19.1			
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.4	4.6	4.1			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.4	13.9	14.3	14.8	13.9			
Net Financial Savings(instrument-wise) (NFS =												
GFA-GFL)	11.7	12.3	12.9	13.5	14.2	14.9	15.6	16.5	14.9			
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.5	27.6	28.7	30.0	31.3	28.8			

	Scenario 3 ( GDP =9 % & WPI=6 %)												
	2009-	2010-			2013-	2014-	2015-	2016-					
	10	11	2011-12	2012-13	14	15	16	17	Average				
Currency	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6				
Bank deposits	6.8	7.2	7.5	7.9	8.2	8.6	9.0	9.4	8.6				
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Life insurance fund	3.7	4.2	4.6	5.1	5.7	6.3	7.0	7.7	6.4				
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4				
Claims on Government	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4				
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.8				
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.2	18.2	19.2	20.3	21.5	19.3				
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.2				
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.5	13.9	14.4	14.9	14.0				
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.3	12.9	13.5	14.2	15.0	15.8	16.8	15.1				
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.6	27.7	28.9	30.3	31.7	29.0				

	Scenario 4 ( GDP =9.5 % & WPI=5 %)											
	2009-	2010-			2013-	2014-	2015-	2016-				
	10	11	2011-12	2012-13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6			
Bank deposits	6.8	7.2	7.5	7.9	8.2	8.6	9.0	9.4	8.6			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.2	4.6	5.1	5.6	6.2	6.9	7.6	6.3			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4			
Claims on Government	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4			
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.2	18.1	19.1	20.1	21.3	19.2			
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.4	4.7	4.2			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.4	13.9	14.4	14.9	13.9			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.3	12.9	13.5	14.2	14.9	15.7	16.6	15.0			
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.5	27.6	28.8	30.1	31.5	28.9			

	Scenario 5 ( GDP =9.5 % & WPI=6.5 %)												
	2009-	2010-			2013-	2014-	2015-	2016-					
	10	11	2011-12	2012-13	14	15	16	17	Average				
Currency	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6				
Bank deposits	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.6	8.7				
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Life insurance fund	3.7	4.2	4.6	5.1	5.7	6.4	7.1	8.0	6.5				
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4				
Claims on Government	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4				
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.8				
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.3	18.3	19.3	20.5	21.8	19.4				
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.7	3.9	4.2	4.5	4.8	4.2				
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.5	14.0	14.5	15.1	14.0				
Net Financial Savings(instrument-wise) (NFS =													
GFA-GFL)	11.7	12.3	12.9	13.6	14.3	15.1	16.0	17.0	15.2				
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.6	27.8	29.2	30.6	32.1	29.3				

		Sce	nario	6 ( GD	P = 8%	6 and	WPI =	7%)	
	2009- 10	2010- 11	2011- 12	2012- 13	2013- 14	2014- 15	2015- 16	2016- 17	Avera de
Currency	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6
Bank deposits	6.8	7.2	7.5	7.9	8.2	8.6	9	9.4	8.6
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Life insurance fund	3.7	4.2	4.6	5.1	5.7	6.3	7	7.7	6.4
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4
Claims on Government	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Shares & debentures	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.8
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.4	17.2	18.2	19.2	20.3	21.5	19.3
Changes in Gross Financial Liabilities (GFL)	3	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.2
Household Physical Savings(HPS)	11.7	12.2	12.6	13	13.5	13.9	14.4	14.9	14
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.3	12.9	13.5	14.2	15	15.8	16.8	15.1
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.5	26.6	27.7	29	30.3	31.7	29.0

## B: 'Average' OLS-Based

	Scenario 1(GDP =8.5 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.5			
Bank deposits	6.8	7.1	7.3	7.5	7.7	8.0	8.2	8.5	8.0			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.0	4.3	4.6	5.0	5.3	5.7	6.1	5.3			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5			
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8			
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.4	16.0	16.6	17.2	17.9	18.6	19.3	17.9			
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.2	3.8			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.0	13.5	13.9	14.4	14.9	13.9			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.1	13.6	14.1	14.6	15.1	14.1			
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.1	27.1	28.0	29.0	30.0	28.0			

	Scenario 2 ( GDP =9.0 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.5			
Bank deposits	6.8	7.1	7.3	7.5	7.8	8.0	8.2	8.5	8.0			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.0	4.3	4.6	5.0	5.3	5.7	6.1	5.4			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5			
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8			
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.4	16.0	16.6	17.3	17.9	18.7	19.4	18.0			
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.2	3.8			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.1	13.5	14.0	14.5	15.0	14.0			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.1	13.6	14.1	14.7	15.2	14.1			
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.2	27.1	28.1	29.1	30.2	28.1			

	Scenario 3 ( GDP =9 % & WPI=6 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5			
Bank deposits	6.8	7.1	7.3	7.5	7.8	8.0	8.3	8.6	8.0			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.0	4.3	4.7	5.0	5.4	5.8	6.3	5.4			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5			
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8			
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.4	16.0	16.7	17.3	18.1	18.8	19.7	18.1			
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.9	4.0	4.2	3.9			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.1	13.6	14.1	14.6	15.1	14.1			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.1	13.7	14.2	14.8	15.4	14.2			
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.2	27.2	28.3	29.4	30.5	28.3			

	Scenario 4 ( GDP =9.5 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5			
Bank deposits	6.8	7.1	7.3	7.5	7.8	8.0	8.3	8.5	8.0			
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.0	4.3	4.6	5.0	5.4	5.8	6.2	5.4			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5			
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8			
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.4	16.0	16.6	17.3	18.0	18.7	19.5	18.0			
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.2	3.9			
Household Physical Savings(HPS)	11.7	12.2	12.6	13.1	13.5	14.0	14.5	15.0	14.0			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.1	13.6	14.2	14.7	15.3	14.2			
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.2	27.2	28.2	29.2	30.4	28.2			

	Scenario 5 ( GDP =9.5 % & WPI=6.5 %)												
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-					
	10	11	12	13	14	15	16	17	Average				
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5				
Bank deposits	6.8	7.1	7.3	7.5	7.8	8.1	8.4	8.7	8.1				
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Life insurance fund	3.7	4.0	4.3	4.7	5.1	5.5	5.9	6.4	5.5				
Provident and pension fund	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5				
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.9	0.8				
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8				
Changes in Gross Financial Assets (GFA)	14.7	15.4	16.0	16.7	17.4	18.2	19.0	19.9	18.2				
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.9	4.1	4.3	3.9				
Household Physical Savings(HPS)	11.7	12.2	12.6	13.1	13.6	14.2	14.7	15.3	14.2				
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.7	14.3	14.9	15.6	14.3				
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.3	27.4	28.5	29.6	30.9	28.5				

		Scei	nario (	6 ( GD	P = 8%	6 and	WPI =	: 7%)	
	2009 -10	2010 -11	2011 -12	2012 -13	2013 -14	2014 -15	2015 -16	2016 -17	Aver age
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5
Bank deposits	6.8	7.1	7.3	7.5	7.8	8	8.3	8.6	8
Non- banking deposits	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Life insurance fund	3.7	4	4.3	4.7	5	5.4	5.8	6.3	5.4
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5
Claims on Government	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8
Shares & debentures	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Changes in Gross Financial Assets (GFA)	14.7	15.4	16	16.7	17.3	18.1	18.8	19.7	18.1
Changes in Gross Financial Liabilities (GFL)	3	3.2	3.4	3.5	3.7	3.9	4	4.2	3.9
Household Physical Savings(HPS)	11.7	12.2	12.6	13.1	13.6	14.1	14.6	15.1	14.1
Net Financial Savings(instrument- wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.1	13.7	14.2	14.8	15.4	14.2
Total Household Savings Rate (NFS+HPS)	23.3	24.4	25.3	26.2	27.2	28.3	29.4	30.5	28.3

	Scenario 1( GDP =8.5 % & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5		
Bank deposits	6.8	7.2	7.5	7.8	8.2	8.5	8.9	9.3	8.6		
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Life insurance fund	3.7	4.1	4.4	4.7	5.1	5.5	5.9	6.3	5.5		
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.7		
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8		
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	16.9	17.7	18.5	19.3	20.2	18.5		
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.0	4.3	4.6	4.9	4.3		
Household Physical Savings(HPS)	11.7	12.2	12.7	13.1	13.6	14.0	14.5	15.0	14.1		
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.3	14.2		
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.3	27.2	28.2	29.3	30.4	28.3		

# C. Dynamic Ordinary Least Squares (DOLS)-based

	Scenario 2 ( GDP =9.0 % & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5		
Bank deposits	6.8	7.2	7.5	7.9	8.2	8.6	9.0	9.4	8.6		
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Life insurance fund	3.7	4.1	4.4	4.7	5.1	5.5	5.9	6.4	5.5		
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.7		
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8		
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	17.0	17.7	18.6	19.4	20.4	18.6		
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.0	4.3	4.6	5.0	4.4		
Household Physical Savings(HPS)	11.7	12.2	12.7	13.1	13.6	14.1	14.6	15.1	14.1		
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.7	14.2	14.8	15.4	14.3		
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.3	27.3	28.3	29.4	30.5	28.4		

	Scenario 3 ( GDP =9 % & WPI=6 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5		
Bank deposits	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.5	8.7		
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Life insurance fund	3.7	4.1	4.4	4.8	5.2	5.6	6.1	6.6	5.6		
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4		
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.7		
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8		
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	17.0	17.8	18.7	19.7	20.7	18.8		
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.1	4.4		
Household Physical Savings(HPS)	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.3	14.2		
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.8	14.3	15.0	15.6	14.4		
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.4	27.4	28.5	29.7	30.9	28.6		

				5	Scenario	o 4 ( G	DP =9.5	% & W	PI=5 %)
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-	
	10	11	12	13	14	15	16	17	Average
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5
Bank deposits	6.8	7.2	7.5	7.9	8.2	8.6	9.0	9.4	8.6
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Life insurance fund	3.7	4.1	4.4	4.8	5.1	5.6	6.0	6.5	5.6
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.7
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	17.0	17.8	18.6	19.6	20.5	18.7
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.0	4.4
Household Physical Savings(HPS)	11.7	12.2	12.7	13.1	13.6	14.1	14.7	15.2	14.2
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.7	14.3	14.9	15.5	14.3
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.3	27.4	28.4	29.6	30.7	28.5

	Scenario 5 ( GDP =9.5 % & WPI=6.5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6			
Bank deposits	6.8	7.2	7.5	7.9	8.3	8.7	9.2	9.6	8.7			
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.1	4.4	4.8	5.2	5.7	6.2	6.7	5.7			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4			
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.7			
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8			
	447	45.0	40.0	474	47.0	10.0	10.0	04.0	10.0			
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	17.1	17.9	18.9	19.9	21.0	19.0			
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.1	4.4	4.8	5.2	4.5			
Household Physical Savings(HPS)	11.7	12.2	12.7	13.2	13.7	14.3	14.9	15.5	14.3			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.8	14.4	15.1	15.8	14.5			
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.4	27.6	28.7	30.0	31.3	28.8			

	Scenario 6 (GDP = 8% and WPI = 7%)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Currency	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.5			
Bank deposits	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.5	8.7			
Non- banking deposits	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Life insurance fund	3.7	4.1	4.4	4.8	5.2	5.6	6.1	6.6	5.6			
Provident and pension fund	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4			
Claims on Government	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.7			
Shares & debentures	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8			
Changes in Gross Financial Assets (GFA)	14.7	15.6	16.2	17.0	17.8	18.7	19.7	20.7	18.8			
Changes in Gross Financial Liabilities (GFL)	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.1	4.4			
Household Physical Savings(HPS)	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.3	14.2			
Net Financial Savings(instrument-wise) (NFS = GFA-GFL)	11.7	12.2	12.7	13.2	13.8	14.3	15.0	15.6	14.4			
Total Household Savings Rate (NFS+HPS)	23.3	24.5	25.4	26.4	27.4	28.5	29.7	30.9	28.6			

# Annex 2: Projections of Household Savings Rate based on Elasticities of Broad Categories

#### A: OLS-based (1980-81 to 2009-10)

			Sce	nario 1( G	DP =8.5	% & WPI	=5 %)		
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-	
	10	11	12	13	14	15	16	17	Average
Changes in Gross Financial Liabilities									
(GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.6	4.1
Changes in Gross Financial Assets (GFA)	14.7	15.2	15.6	16.0	16.4	16.8	17.2	17.7	16.8
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.4	13.8	14.3	14.7	13.8
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	12.7
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.7	25.3	25.9	26.5	27.2	27.8	26.5
			Scei	nario 2 ( G	DP =9.0	% & WP	l=5 %)		
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-	
	10	11	12	13	14	15	16	17	Average
Changes in Gross Financial Liabilities									
(GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.4	4.6	4.1
Changes in Gross Financial Assets (GFA)	14.7	15.2	15.6	16.0	16.4	16.9	17.3	17.8	16.9
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.4	13.9	14.3	14.8	13.9
Net Financial Savings (aggregate) (NFS =									
GFA –GFL)	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	12.7
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.7	25.3	26.0	26.6	27.3	27.9	26.6

	Scenario 3 ( GDP =9 % & WPI=6 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Changes in Gross Financial Liabilities												
(GFL)	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.2			
Changes in Gross Financial Assets (GFA)	14.7	15.2	15.6	16.0	16.5	16.9	17.4	17.9	17.0			
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.5	13.9	14.4	14.9	14.0			
Net Financial Savings (aggregate) (NFS =												
GFA –GFL)	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.2	12.8			
Total Household Savings Rate												
(NFS+HPS)	23.3	24.1	24.7	25.4	26.0	26.7	27.4	28.1	26.7			

	Scenario 4 ( GDP =9.5 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Changes in Gross Financial Liabilities												
(GFL)	3.0	3.3	3.5	3.7	3.9	4.1	4.4	4.7	4.2			
Changes in Gross Financial Assets												
(GFA)	14.7	15.2	15.6	16.0	16.5	16.9	17.4	17.8	16.9			
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.4	13.9	14.4	14.9	13.9			
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.6	12.8	13	13.1	12.7			
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.7	25.4	26.0	26.7	27.3	28.0	26.7			

	Scenario 5 ( GDP =9.5 % & WPI=6.5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Changes in Gross Financial Liabilities												
(GFL)	3.0	3.3	3.5	3.7	3.9	4.2	4.5	4.8	4.2			
Changes in Gross Financial Assets												
(GFA)	14.7	15.2	15.6	16.1	16.5	17.0	17.5	18.1	17.0			
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.5	14.0	14.5	15.1	14.0			
Net Financial Savings (aggregate) (NFS												
= GFA –GFL)	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.3	12.8			
Total Household Savings Rate (NFS+HPS)	23.4	24.1	24.7	25.4	26.1	26.8	27.5	28.4	26.8			

			Scen	ario 6 ( G	DP = 8%	and WF	Pl = 7%)		
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-	
	10	11	12	13	14	15	16	17	Average
Changes in Gross Financial Liabilities									
(GFL)	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.2
Changes in Gross Financial Assets									
(GFA)	14.7	15.2	15.6	16.0	16.5	16.9	17.4	17.9	17.0
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.5	13.9	14.4	14.9	14.0
Net Financial Savings (aggregate) (NFS									
= GFA –GFL)	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.2	12.8
Total Household Savings Rate									
(NFS+HPS)	23.3	24.1	24.7	25.4	26.0	26.7	27.4	28.1	26.7

## B. Average OLS-based

	Scenario 1( GDP =8.5 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Changes in Gross Financial Liabilities	3.0	30	3 /	35	37	38	4.0	12	38			
Changes in Gross Financial Assets	5.0	5.2	5.4	5.5	5.7	5.0	4.0	7.2	5.0			
(GFA)	14.7	15.1	15.5	15.8	16.2	16.5	16.9	17.3	16.5			
Household Physical Savings (HPS)	11.7	12.2	12.6	13.0	13.5	13.9	14.4	14.9	13.9			
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	12.7			
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.4	26.0	26.6	27.3	28.0	26.7			

	Scenario 2 ( GDP =9.0% & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.8	4.0	4.2	3.8		
Changes in Gross Financial Assets											
(GFA)	14.7	15.1	15.5	15.8	16.2	16.6	16.9	17.3	16.6		
Household Physical Savings (HPS)	11.7	12.2	12.6	13.1	13.5	14.0	14.5	15.0	14.0		
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	12.7		
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.4	26.0	26.7	27.4	28.1	26.7		

	Scenario 3 ( GDP =9 % & WPI=6 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.9	4.0	4.2	3.9		
Changes in Gross Financial Assets (GFA)	14.7	15.1	15.5	15.9	16.2	16.6	17.0	17.4	16.6		
Household Physical Savings (HPS)	11.7	12.2	12.6	13.1	13.6	14.1	14.6	15.1	14.1		
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.6	12.8	13.0	13.2	12.8		
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.4	26.1	26.8	27.6	28.3	26.9		

	Scenario 4 ( GDP =9.5 % & WPI=5 %)											
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-				
	10	11	12	13	14	15	16	17	Average			
Changes in Gross Financial Liabilities	3.0	3.2	34	35	37	3 8	4.0	4.2	3.0			
Changes in Gross Financial Assets	0.0	0.2	0.4	0.0	0.7	0.0	0	7.2	0.0			
(GFA)	14.7	15.1	15.5	15.8	16.2	16.6	17.0	17.4	16.6			
Household Physical Savings (HPS)	11.7	12.2	12.6	13.1	13.5	14.0	14.5	15.0	14.0			
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.3	12.5	12.7	13.0	13.2	12.8			
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.4	26.1	26.8	27.5	28.2	26.8			

	Scenario 5 ( GDP =9.5 % & WPI=6.5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in Gross Financial Liabilities (GFL)	3.0	3.2	3.4	3.5	3.7	3.9	4.1	4.3	3.9		
Changes in Gross Financial Assets (GFA)	14.7	15.1	15.5	15.9	16.3	16.7	17.1	17.6	16.7		
Household Physical Savings (HPS)	11.7	12.2	12.6	13.1	13.6	14.2	14.7	15.3	14.2		
Net Financial Savings (aggregate) (NFS = GFA –GFL)	11.7	11.9	12.1	12.4	12.6	12.8	13.0	13.3	12.8		
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.5	26.2	27.0	27.8	28.6	27.0		

	Scenario 6 ( GDP = 8% and WPI = 7%)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in Gross Financial Liabilities											
(GFL)	3.0	3.2	3.4	3.5	3.7	3.9	4.0	4.2	3.9		
Changes in Gross Financial Assets											
(GFA)	14.7	15.1	15.5	15.9	16.2	16.6	17.0	17.5	16.6		
Household Physical Savings (HPS)	11.7	12.2	12.6	13.1	13.6	14.1	14.6	15.1	14.1		
Net Financial Savings (aggregate) (NFS											
= GFA –GFL)	11.7	11.9	12.1	12.3	12.6	12.8	13.0	13.2	12.8		
Total Household Savings Rate (NFS+HPS)	23.3	24.1	24.8	25.4	26.1	26.8	27.6	28.3	26.9		

# C. DOLS-based (1980-81 to 2009-10)

	Scenario 1( GDP =8.5 % & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.0	4.3	4.6	4.9	4.3		
GFA	14.7	15.2	15.6	16.1	16.5	16.9	17.4	17.8	16.9		
HPS	11.7	12.2	12.7	13.1	13.6	14.0	14.5	15.0	14.1		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.6	12.8	12.9	12.6		
Household(A)	23.3	24.1	24.8	25.4	26.0	26.7	27.3	28.0	26.7		

	Scenario 2 ( GDP =9.0% & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.0	4.3	4.6	5.0	4.4		
GFA	14.7	15.2	15.6	16.1	16.5	17.0	17.4	17.9	17.0		
HPS	11.7	12.2	12.7	13.1	13.6	14.1	14.6	15.1	14.1		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.6	12.8	13.0	12.6		
Household(A)	23.3	24.1	24.8	25.4	26.1	26.7	27.4	28.1	26.7		

	Scenario 3 ( GDP =9 % & WPI=6 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.1	4.4		
GFA	14.7	15.2	15.6	16.1	16.6	17.1	17.6	18.1	17.1		
HPS	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.3	14.2		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.7	12.8	13.0	12.7		
Household(A)	23.3	24.1	24.8	25.5	26.2	26.9	27.6	28.3	26.9		

	Scenario 4 ( GDP =9.5 % & WPI=5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.0	4.4		
GFA	14.7	15.2	15.6	16.1	16.5	17.0	17.5	18.0	17.0		
HPS	11.7	12.2	12.7	13.1	13.6	14.1	14.7	15.2	14.2		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.7	12.8	13.0	12.6		
Household(A)	23.3	24.1	24.8	25.4	26.1	26.8	27.5	28.2	26.8		

	Scenario 5 ( GDP = 9.5 % & WPI=6.5 %)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.1	4.4	4.8	5.2	4.5		
GFA	14.7	15.2	15.6	16.1	16.6	17.1	17.7	18.2	17.2		
HPS	11.7	12.2	12.7	13.2	13.7	14.3	14.9	15.5	14.3		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.7	12.9	13.1	12.7		
Household(A)	23.3	24.1	24.8	25.5	26.2	27.0	27.8	28.5	27.0		

	Scenario 6 ( GDP = 8% and WPI = 7%)										
	2009-	2010-	2011-	2012-	2013-	2014-	2015-	2016-			
	10	11	12	13	14	15	16	17	Average		
Changes in financial liabilities	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.1	4.4		
GFA	14.7	15.2	15.6	16.1	16.6	17.1	17.6	18.1	17.1		
HPS	11.7	12.2	12.7	13.2	13.7	14.2	14.7	15.3	14.2		
Net Financial Savings (aggregate)	11.7	11.9	12.1	12.3	12.5	12.7	12.8	13.0	12.7		
Household(A)	23.3	24.1	24.8	25.5	26.2	26.9	27.6	28.3	26.9		