

# *Households consumption and savings in volatile social and economic environment*

Olga Kozlova

Institute of Economics, Ural Branch of the Russian  
Academy of Sciences  
Ural State University of Economics  
Yekaterinburg, Russia  
olga137@mail.ru

Yevgenya Tuhtarova

Institute of Economics, Ural Branch of the Russian  
Academy of Sciences  
Yekaterinburg, Russia  
tyevgeniya@yandex.ru

Natalia Neklyudova

Institute of Economics, Ural Branch of the Russian Academy of Sciences  
Yekaterinburg, Russia  
nnp81@mail.ru

**Abstract** — The paper provides an overview of social and economic features of household savings as one of the major sources of internal investments. Additionally, it analyses the influence of external and internal factors on the formation of household saving and consumption as exemplified by the 2000-2015 review of the Ural Federal District. The paper also considers the influence of the inflationary component in the region's economy and interest rates for deposits on saving dynamics being an indicator of the living standard and a source of population investment growth. The obtained results indicate that the factors influencing redistribution of the population income between consumption and saving depend not only on economic stability, economic climate, inflationary expectations, but also on conditions of the population spare cash accumulation within the banking sector.

**Keywords** — *consumption; savings; population incomes; volatile economy; inflation expectations*

## I. INTRODUCTION

Households social and economic potential and efficiency of its realization is becoming more important in modern economies of Russian regions. The economic situation demonstrates that developing successful countries tried to obtain considerable investments due to a high ratio of domestic savings. This fact confirms that population savings do not only form a powerful investment resource of the economy, but also serve as one of the most important criteria to evaluate the living standard.

World practice testifies that population savings in a minimum degree are subject to influence of the external factors caused by political or globalized economic issues. In times of economic crisis, the foreign capital outflows from domestic and world market whereas the domestic investments raised within the economy are not subject to such influence. Therefore, dependence on foreign, especially speculative

capital, decreases.

At the same time, the governments seeks not only to create favorable conditions for population savings. There is an urgent need to secure the population trust to the policy of households' funds attraction.

Up to the early 1990s, neither the USSR nor Russia tackled the problem of a 'consumption-saving' interrelation mechanism as a major factor of domestic resources accumulation in the economy.

One of the early studies of the Russians' savings behavior was the paper published at the Institute of Economics of the Russian Academy of Sciences in 1995 [1], where the authors tried to estimate savings potential throughout various income groups of households. The research testified great inequality of income or wealth in society, and only highly-income groups of the population had the savings potential, which could be transformed into investments. At the same time, Russian researchers concluded that high differentiation of income across the population as a result of inefficient social policy may be considered an obstacle for a steady investment resource.

According to the same study, the savings ratio of the Russian population in the 1990s made 25-26%. Moreover, a huge part of these savings rotated beyond financial institutions. Such high savings ratio during the decline in output against the background of hyperinflation was also explained by the lack of societal stability and the need to form an emergency stash [1].

I. Pogosov tried to estimate the unseized opportunities of population savings transformation to investments. According to conclusions made against data obtained from NAS for 2005, uncommitted household savings made approximately 0.8 trillion rubles, whereas in the public sector this indicator remained at the level of 2.1 trillion rubles, and in the corporate sector - only 17 billion rubles [2]. So, a considerable part of

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all savings (28%) available in the economy as of 2005 accounts for the households sector.

Despite numerous studies of household consumer and savings behavior, they are mainly focused on macro level processes. At the same time, there are a few studies dealing with the assessment of factorial influence of regional features on the population savings dynamics and the opportunity of their transformation into investment. In this regard, the study of current tendencies in income distribution and its influence on consumption and saving in households of Russian regions presents a particular interest for further evaluation of opportunities to attract household resources and thus foster regional development.

**II. METHODS AND DISCUSSION**

According to Keynesian theory, it is the dynamics of consumption and saving that explains oscillatory processes at the level of macroeconomy. The analysis of changes within the aforesaid dynamics provides for better understanding of how consumption influences the national income, how saving and investment interact with each other and influence the value of the national income [3]. Cyclic processes in the economy as well as factors causing such processes generated a great interest in recent years, especially in 2007 - 2010. Transmission of this methodical approach to the regional level demonstrated rather fascinating results. For instance, over the last 15 years, regions of the Ural Federal District experienced certain cyclicity in dynamics of real disposable money income, consumption and savings. Three time spans can be

specified within this cyclicity (Fig. 1):

- 1) 2001 – 2008 – pre-crisis period
- 2) 2008 – 2010 – crisis period
- 3) 2011 – 2012 – post-crisis period

The first period is marked by individual micro cycles, which are mostly demonstrated by the savings and investments dynamics. The cycle within the savings dynamics “rise – decline – rise” has a three-year period. For example, 2001 is noted by the decline; 2002 experienced the peak point of the decline in savings followed by rise until 2003 and so on. Such unstable savings dynamics indicates high sensitivity of the population savings to changes in social and economic conditions of the region.

The investment dynamics up to 2005 is characterized a one-year time lag of savings influence on investments. So, if the savings ratio rose in 2003, then the investments rose in 2004 alongside with the decline in savings, whereas the decrease in investments already took place in 2005. However, for pre-crisis and post-crisis periods, these two indicators were in the antiphase and apparently did not correlate with each other.

In general, the pre-crisis period is characterized by higher-than-market growth of consumption in comparison with the growth of disposable money income and unstable household savings behavior. It should be noted that micro cycles within the savings dynamics during the pre-crisis period contradict the underlying principles of economics to some extent. It is known that with the growth of income, the savings ratio

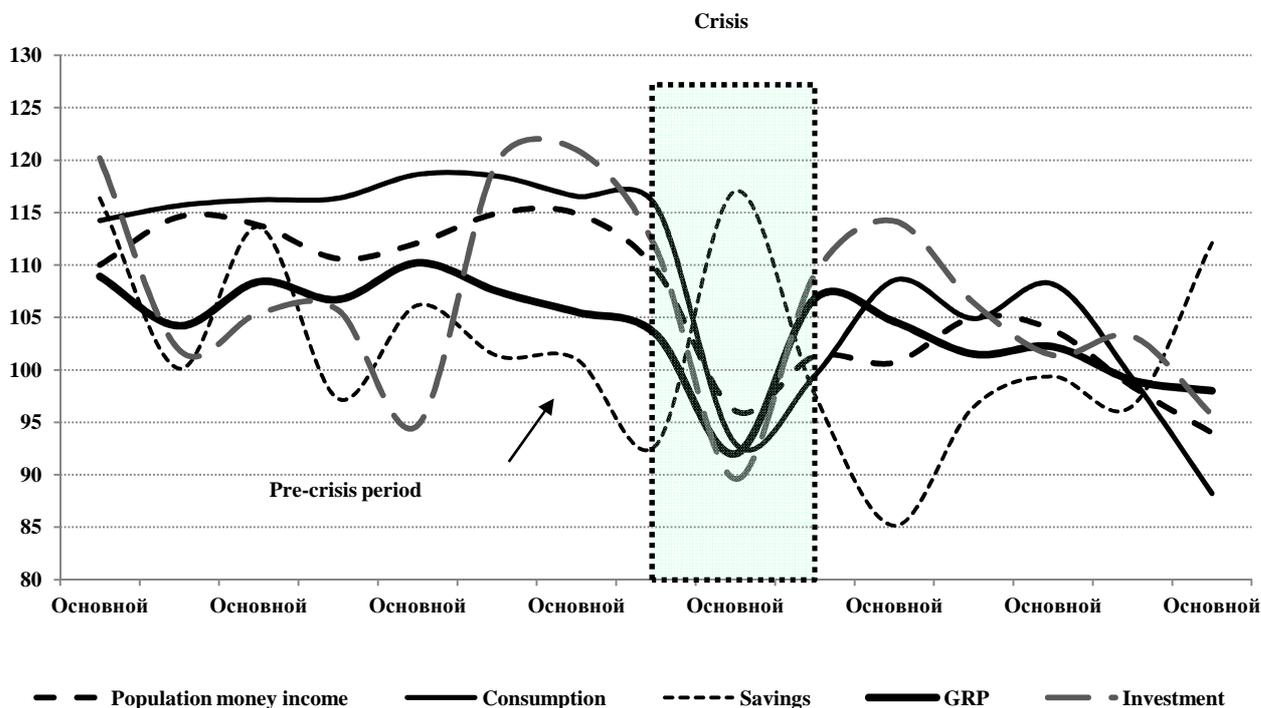


Fig. 1. Dynamics of households real disposable money income, consumption and savings, GRP and investment in UFD in 2001 – 2015. (%)

increases under the general declining tendency of consumption. However, such tendency is not confirmed in the Ural Federal District. Thus, 2001 was marked by the growth tendency of households income and consumption, the dynamics of which was approximately at the same level, while the level of savings considerably declined. Such irrationality can be explained by inert and lagged influence of the 1998 - 1999 financial crisis on households savings. The same tendency was observed during the post-crisis period of 2011 - 2012. The new cycle is characterized by the shift in population behavior models from consumption to savings that demonstrates the lack of income security.

As Fig. 1 shows, the crisis period was characterized by a simultaneous decrease in income and consumption accompanied by savings increase. While the economy was recovering from crisis, the households experienced fewer saving.

The level of disposable money income serves the main determinant of savings. However, besides this factor, there are many other factors influencing the savings behavior to a greater or lesser extent. L. Mayorova [4] identifies the following key factors that influence the savings volumes of the Russian population:

- uncertainty in effective functioning of financial institutions and tools applied in their activity;
- changes in tax and pension policy of the government;
- anticipation of price changes;
- development of the insurance system and its availability for the public;
- uncertainty of earned income sizes;
- level of awareness with regard to efficient savings utilization;
- life expectancy, retirement time [4].

Within the framework of social and economic development of the Russian society, G. M. Rossinskaya in her research paper [5] links the process of social stratification with two autonomous economies – the economy of the rich and the economy of the poor through the “consumption and savings” mechanism. According to the research findings, these two economies are independent and low-connected among themselves. The “rich” possess a significant amount of financial resources which are not invested in the development of national economy, whereas the “poor” are ready to take part in social and economic development of the country, but have no sufficient investment potential to do so.

Considerable inequality of population income as a result of inefficient social and economic policy also plays a negative role in the formation of savings potential. V. Bobkov [6] points out the negative impact of this factor thus demonstrating the society stratification process during 2008 - 2009 crisis. The stratification was to a large extent caused by inefficiency of social policy measures aimed at material support of low-income social groups. As a result, the adverse situation of society differentiation, concerning the population income, has been aggravated, thus generally affecting both the consumer behavior and the savings component of the population income in Russia [6].

The study clearly demonstrates a twofold increase in capital gains of rich families in Russia against the growing number of families living below the poverty line. V. Bobkov notes the increased tendency towards the decline in savings and consumption in times of economic crises. Moreover, the fact that different social groups experience lower consumption options demonstrates the decline in their quality of life. Thus, the analysis of population consumption showed the overall unfavorable scenario with regard to the prosperity level of the population, where almost 80% of households belong to a low-income population group.

The conducted studies also demonstrate that the population savings are strongly dependent on a family life cycle. A. Ya. Burdyak notes that throughout various stages of a life cycle savings have U-character. At the early stage of a family existence, its savings are activity growing. About 32% of families have an opportunity to save some part of their income. However, when there are children, a family loses its chances for current savings. The lowest share of savings is observed in families with children under five and in single-parent families with children (29%). When the children become older, the families have more opportunity to save some part of their income rather than spend it all at once [7].

In this case, the defined tendency in household savings can be explained with several reasons. The first one is likely caused by psychological motivation to save in conditions of instability, as well as difference in income within the region and among high- and low-income groups. The second one can indicate the pent-up demand which was created during the crisis. With the increase in confidence in the future the households realize earlier deferred consumption. This fact is confirmed by the negative dynamics of the population savings during the post-crisis period.

Throughout almost the entire period the dynamics of accumulated inflation in the region calculated against the consumer price index (CPI) exceeded the growth rate of disposable income and investments, being at the same level as consumption growth rates (Fig. 2). During the crisis the consumption rates increased considerably, which also demonstrates that the population in the region tried to transform their savings to real and personal property to save earlier accumulated monetary resources.

It is obvious that as the economic situation in the country became worse, this led not only to the income drop (with the growth of consumption rate), but also to the decline in investment activity. It should be noted that the growth rates of investments demonstrated unstable dynamics in general during 15 years, and slightly depended on the population income. This fact allows assuming that the majority of available households' monetary resources in the region rotate beyond the banking sector. It also demonstrates insufficient policy at the level of national and regional institutions to stimulate the attraction of households' savings.

Coming back to the analysis of factors exerting negative impact on the attraction of households' savings and development of financial environment in the region, it should be noted that the high level of accumulated inflation is the key factor in this respect. Inflation expectations among households

also demonstrate this. In many respects, inflation expectation is an important factor defining economic behavior of households. This factor is a certain reference point serving the basis for decision-making among households: what part of income shall be saved and what to be consumed.

The high level of inflation and inflation expectations do not only have a negative impact on the population incomes, but also promote their considerable differentiation, thus restraining sustainable long-term development of regional economy.

$$CONS = 46.5^1 + 1.38 * MON\_ICN - 0.81 * CPI - 0.72 * AR(1) \quad (1)$$

P-value (0.10) (0.00) (0.03)

**R<sup>2</sup> = 0.97    DW = 2.38**

where CONS is consumption, MON\_ICN is household disposable money income with one year time lag, CPI is a consumer price index.

A relatively high level of households' sensitivity to consumption under the income growth can indicate the accumulated consumer demand of the population, which cannot be realized due to negative impact of external and

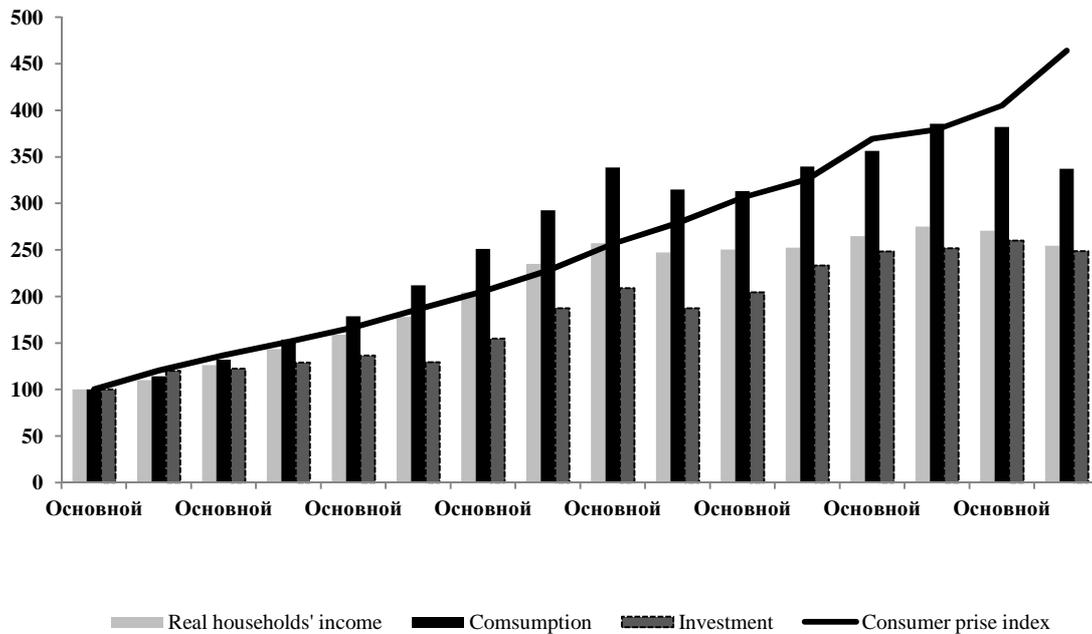


Fig. 2. Dynamics of accumulated inflation, households' real incomes and expenditures, and investments in the Ural Federal District for 2000 – 2015. (%), made on the basis of [8]

The negative influence of inflation expectations on households' income is also confirmed by econometric analysis of the consumption function with the consumer price index (CPI) being its part. As the analysis showed, with the increase of disposable money income by 1 pp, a household will increase its current expenses by 1.38 pp. Reliability of obtained findings is confirmed by numerous tests carried out during data analysis: Dickey – Fuller test (ADF-test) was carried out to bring indices to stationary time series.

To confirm the alienation between a random error and dependent variable (DW statistics), the first order autoregressive parameter (AR1) was entered into the equation; at the same time, the conventional significance level for each coefficient made 99-90% that confirms high reliability and validity of the null hypothesis (P-value).

internal factors on the region's economy.

According to the results of econometric analysis, when inflation in the region increases by 1 pp, the households reduce their consumption level by 0.83 pp. Such relatively high sensitivity provides for more complicated influence of inflation on consumption than simple correction retraction. In this case, it is postponed inflation (confirming considerable inflationary potential within the region) that can serve the factor, influencing the level of households' consumption.

The essential gap in CPI value and GRP deflator also demonstrate the existence of inflation potential. It should be noted that the developed countries do not consider this problem at all. For example, in Germany and the USA, the difference between these indices varies within approximately

<sup>1</sup> Received constant – inclination angle of autonomous consumption confirming that in case of income lack, the autonomous consumption will make 46.5%. Autonomous consumption is defined as a household share based on previous income.

1 pp. In developing countries, such as Belarus, this gap makes 20-15 pp [9].

In general, Russia and the Ural Federal District in particular face a significant gap in values of such indicators with an upward tendency existing since 2010 (Fig. 3). In this case, the inflation expectations impact to a greater degree the “consumption – savings” mechanism.

The essential difference in inflation indices is explained by the difference in income between the territorial entities of the Russian Federation forming the Ural Federal District, which are not considered through raw data collection. It can also demonstrate that the consumer price index (CPI), by which households are guided, does not reflect the real inflation rate in the region.

As the analysis showed such factors as inflation and the deposit rate do not influence savings in the regions of the Ural Federal District. Lack of direct links between savings and dynamics of the deposit interest rate can testify to the absence of significant interest of the population in the banking system as in financial institution allowing not only keeping savings in terms of inflation but also accumulating them. For example, as of 2012, the average interest rate in banking institutions of Russia made 9.1% [10]; the maximum rate was recorded at the level of 12%. At the same time, the rate of inflation on GRP

monetary depreciation up to date that constrains inflow of population savings to the sphere of investments. The lack of confidence results in deficiency of reliable savings tools in economy, therefore the population, being an active saver, does not trust domestic financial institutions, thus launching mechanisms undesirable to the economy.

Influence of the population real disposable money income on savings behavior is typical for regions of the Ural Federal District, which correlates with the concept of A. Marshall [12] who used the concept of “consumer surplus” as one of the major factors of investment incentives in the economy.

For the regions of the Ural Federal District, the households’ disposable money income is the major factor defining savings behavior, and its explaining ability makes 44% (equation 2). It should be noted that this model considers the influence of a seasonal factor (MA), which in general has improved the indicator of the households’ monetary income.

The elasticity coefficient received for the savings function with current income made 0.42 that demonstrates that in the absence of consumption, the households are ready to save 42% of the income. It is a rather high savings ratio.

$$SAV = 56.2^2 + 0.42 * MON\_ICN - 0.89 * MA(1) \quad (2)$$

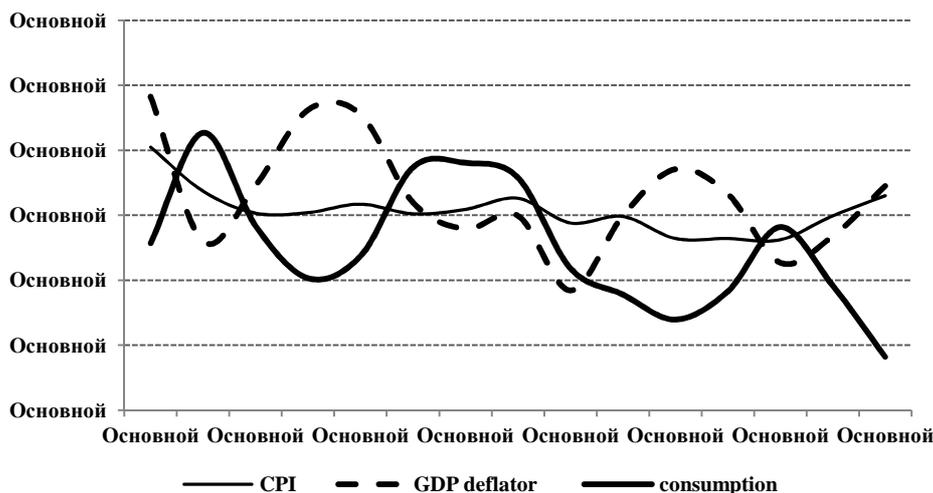


Fig. 3. Inflation and consumption level in the Ural Federal District in 2000 – 2015, made on the basis of [8]

deflator in 2012 for the Ural Federal District made 12.7%.

Based on these data, the real deposit income for the population was negative. Even with the maximum deposit rate of 12%, the revenues in 2012 on average for regions of the Ural Federal District made -0.7%.

Inefficient state policy to attract savings of the population to national economy is confirmed by the fact that so far the population is not willing to entrust banks with their savings. S. Semenov explains this fact with betrayal of public credibility in state reforms and depreciation of the income accrued in the early nineties [11]. In his opinion, it is the suspense of

P-value (0.00) (0.09) (0.00)

$$R^2 = 0.44 \quad DW = 1.64$$

where, SAV is savings, MON\_ICN is households’ disposable money income, MA(1) is moving average of the first order. In the equation, real growth rates of indicators are used. The elasticity coefficient received for the savings function at current income made 0.42 that demonstrates that in

<sup>2</sup> Real autonomous consumption, which will be based on the households saving 42% of their income.

the absence of consumption, the households are ready to save 42% of the income. It is a rather high savings ratio.

However, in the analysis of the absolute income function, the current situation with the savings ratio is slightly different. On average across the Ural Federal District, households direct the bulk of their income (up to 75%) to the current consumption whereas for savings they allocate only 19% of the income (equation 3). As can be seen from the econometric analysis of the absolute income function, 6% of the income size accounts for autonomous consumption.

$$\text{MON\_ICN} = 5.93 + 0.75 * \text{CONS} + 0.19 * \text{SAV} \quad (3)$$

P-value (0.55) (0.00) (0.04)  
**R<sup>2</sup> = 0.92      DW = 2.02**

where Mon\_Icn is real households' disposable money income, CONS is consumption, SAV is savings. In the equation, real growth rates of indicators are used.

The analysis of the absolute income functions for the Ural Federal District revealed the following ratio: in the distribution of income into consumption and savings, the population distributes the income in the ratio of 75 to 19. At the same time, autonomous consumption for the Ural region makes 6%. In this case, it turns out that the main part of the income (81%) is spent for the current consumption whereas only 19% is saved. This indicator is lower than in general across Russia. It is confirmed by Rosstat official data, according to which at present the population's savings ratio fluctuates between 28 - 25% in general across Russia [13].

At the same time, the savings ratio of 19% is a high rate for the developed countries. However, in the Ural Federal District, a high savings ratio almost does not somehow affect the growth of their attraction into the investment sphere. Low income levels, underdevelopment of financial markets, lack of incentives undermine confidence of the population to the banking sector in the economy. All these factors act against the general background of inflation expectations.

### III. CONCLUSION

As the international experience demonstrates, the transformation of savings into investment shall always be supported by the national financial system. The high savings ratio will only benefit the national economy if the quality of [14]

financial institutions increases. Otherwise, the high level of savings serves the indicator of lack of confidence in the future. It allows making a conclusion that the development of national economy is more consistent and successful in the conditions of accumulation of internal investments in the country than due to the inflow of foreign capital.

The successful investment model can be built only if some key principles are complied with: people's trust in authorities, effective social policy, a reliable banking and financial system. This can only be achieved through close interrelation between social and macroeconomic policies. This mutual interaction shall become the basis not only for the sustainable "consumption – savings" mechanism but also for the "savings-investments" mechanism being key components of the any economic growth.

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