

## ANALYSIS OF SAVING WITH THE POPULATION OF REPUBLIC OF MACEDONIA-CONDITIONS AND PERSPECTIVES

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*Abstract – This paper will discuss saving with the population of Republic of Macedonia. Saving is defined as a difference between spending and income, or as a deferred spending at the moment. The basic aim of the paper is analysis of the saving status of the population in Republic of Macedonia and its determinants towards its higher inclusion into economic activities. For realization of this aim, besides analysis of theoretical aspects, we shall perform a survey on a representative sample, which will highlight some factors influencing decision making for saving with the population in the Republic of Macedonia.*

**Key words:** saving, population, interest rate, bank system

**JEL Classification:** E21, E43, G21.

### 1. Introduction

Typically saving is measured from the national accounts as the difference between income and consumption in the sense of a flow. Saving is a small part of the available income and usually private saving is used for: investing, covering of deficit in the state budget and financing of the current balance of payments. While the aggregate saving has influence on the national wealth of the country and saving growth leads to increase of the capital volume in the country through increasing investments in domestic economy and increasing the volume of foreign net assets through investing abroad.[4]

There are number of reason that influence the savings decisions both at the microeconomics and macroeconomics level. Usually, when households make decision for spending, they make decision for saving, as well. As per the Nobel prize winner Kuznets, there is not significant correlation of the current income per capita and the saving rate.

This issue on determinants of saving and spending, is also given in the analyses of many economists, among which those of Milton Freedman and Franco Modigliani. Namely, according to Milton Freedman, permanent income is significant determinant of saving. In his theory for spending functions, Freedman sees difference between the income received by the households and the income on which base the consumer creates the spending, which he calls permanent income. Hence, the permanent income is an amount that the consumer is able to spend, while his property remains unchanged. [3]

While, on the other side, Modigliani claims that in the sphere of saving, the person as a rational consumer, maximizes his/her benefit not on the basis of the current income, but on the basis of the total income he/she will receive during his/her whole life, i.e. wealth. [5] The wealth can be accumulated, and the income generated by the wealth can be used as a compensation and for planning of the income unexpected changes on the basis of labour. Hence, the hypothesis for the spending life cycle refers to the level of income and wealth available for a person in a different period of his/her life. As per the theory for the saving life cycle, the person saves and accumulates wealth

in the period of his/her active work, while at the moment of his/her retirement, he/she spends the gained wealth and then a negative saving appears.

On the decision for saving and spending, the height of the real interest rate has a big influence. Increasing of the interest rate stimulates the saving and vice versa. Despite a recent rise, reflecting the cyclical expansion in the global economy, long-term nominal interest rates in the major industrialized countries have declined to levels not seen since the 1970s. There is widespread agreement, however, that the real interest rate is determined by the forces of productivity and thrift, equilibrating desired savings (providing the net supply of funds) with desired investment (generating the net demand for funds). In an increasingly integrated world with internationally mobile capital, these two forces interact in global capital markets to determine a world real rate of interest. Thus the debate centres around whether real rates are low because of an excessive supply of global savings, or a low level of global investment. [1]

Also the concept of opportunity cost affects the decision of savings of an individual gravely. Before going for purchasing a good or service the individual thinks about the opportunity cost of that particular purchase and hence decides on saving. Another important factor that affects the savings decision is the theory of diminishing returns. Also known as the diminishing marginal returns, the diminishing return says that after a certain point, the additional variable input unit does not yield the same but rather yields less additional output. [5]

Brigitte Desroech and Michael Francis in their analysis mention the following factors that could have influence on saving: demography, fluctuations in the income, development of the financial sector, the companies' profit fluctuations and regulatory environment. [1]

When we talk about determinants of saving, we must not neglect the importance of the financial system stability and the development of the financial institutions, especially of the bank institutions. In the past, the savings banks had big importance, which are in fact financial institutions with primary task to collect savings deposits. The basic function of these banks is to offer saving products to all population groups. The first savings bank was established in France in 1765, but it is considered that the first idea for opening such institution originates from England in 1697. Today, although banks tend to universality, European savings banks keep the focus on working with the population, including payment operations, savings deposits, credits and insurance.

Considering the previous the main objective of this paper will be analysis of saving in Macedonia and it's determinates in order to create measures that should be taken in future for increase savings.

## 2. Analysis of saving in Republic of Macedonia

In the previous years of transition, increasing of gross saving is a key characteristic of the banking system of Republic of Macedonia. Namely, saving is a complex phenomenon, that is determined by several fundaments, among which the income, interest rates, inflation, stability of banking system, confidence of financial institutions, political situation in the country etc.

Regarding the saving in the households, it depends more or less on the height of their permanent income (current income and the income they expect to realize in future). The aim of their saving is to buy a house, a car, to provide money for their children's education etc, in some future period of time, or simply to increase the volume of their financial resources. They mainly save during their active working life. By mediation of financial mediators (banks, savings banks, funds etc.), the saved money is invested, and these investments increase the volume of investments in the country. [7]

Empirical data on available income of the households in R. Macedonia confirm the income growth. Namely, in 2012 the available income was increasing, but slowly, and growth of 8.840 million denars was realized, or only 2,6% compared to 2011.[5] While data on the movement of the percentage from the available income saved by the households, are shown in table no. 1.

Table no 1: Movement of the saving rate of the available income in Republic of Macedonia, 2009-2012

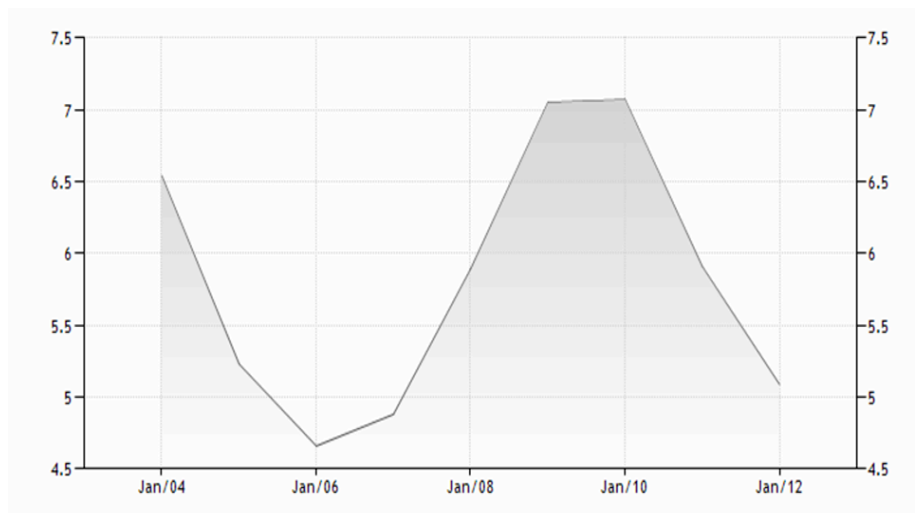
year	2009	2010	2011	2012
Saving rate of available income	1,8%	2,6%	-0,9 %	-0,8%

Source: www.nbrm.mk (accessed 18 March 2014)

As it can be seen from the shown data, saving rate of the available income in R. Macedonia is significantly increased in 2010 compared to the previous period, but unfortunately in 2011 it got negative value, i.e. -0,9%. This negative value is due to rather faster growth dynamics of the personal spending compared to delayed growth of the available income. [5]

In fact, the banks in R.Macedonia do not offer some innovative products which will encourage saving, but in contrary, they are trying to attract savers through the height of interest rates. Usual interest rates vary depending on the currency, term of payment and deposit height. The height of interest rates of deposits in R. Macedonia for the period 2004-2012 is shown in figure no.1.

Figure no 1: Interest rate on deposits in Macedonia, 2004-2012



Source: [www.worldbank.com](http://www.worldbank.com) [11], accessed 25 February, 2014

The mentioned data clearly reflect instability of the deposits interest rate, but in the recent years it has been decreasing and reflexes negatively on the saving.

Besides the available income and interest rate, another key determinant of saving is stability of the banking system. With the independence of the country, especially with passing of several legal acts from the area of monetary and foreign currency policy, monetary independence of R.Macedonia was established, but significant development of the banking system has been achieved during the last several years. The key problem that has still existed, is insufficient degree of banks consolidation. Namely, besides the large number of banks, there is high concentration of bank capital, bank assets and bank deposits in a small number of banks. In R. Macedonia, there are so called “big three” banks, i.e. Stopanska Banka AD Skopje, Komercijalna Banka AD Skopje and Tutunska Banka AD Skopje. Those three banks participate with about 66,1% in the total bank assets, while all other banks with 33.9%. The banking system of R. Macedonia is considered as an open one towards the foreign capital and participation of the foreign capital in the total bank capital is 69,1%.

In the conditions of world recession, that reproduces high uncertainty, accessibility to the financial resources is decreased and financial health of the world financial systems has eroded, causing increase of psychological pressure on the people and the firms, when they make decision on saving. But, besides numerous risks, the banking system has remained healthy, stabile and safe. Soon, negative implications from the crisis should be overcome and more attention should be paid on the people’s saving habits that have big importance not only for their comfortable life, but also, generally for the country development, because money will be later included in the economic flows through investments. The bankers admit that in such conditions, deposits are very important for them, as they help in avoiding ‘domino’ effects from the financial markets’ fall. Deposits participation in financing the banking sector in Macedonia is approx. 80%, while credit/deposits relation is 95%, which means that with one denar deposit, 0,95denars credits can be financed. Furthermore, in the conditions of not-sufficiently developed market of capital, as it is the case with our Stock Exchange, the banks get even more importance, but besides all a.m., R. Macedonia still belongs to the group of countries with low participation of bank activities in the total economic activity. [7]

### 3. Scope, goal and theoretical framework of the research

Necessity for this research is generated by realizing the importance of saving for uncertainty decreasing, i.e. creation of safe future and higher economic development of the country. The basic goal of the research is assessment of the saving status with the population in R. Macedonia and identification of relevant factors that influence the decision for saving.

Within the frames of this goal, some sub-goals are also defined, i.e.:

- Analysis of population's perception on the saving conditions in R. Macedonia;
- Identification of the population's attitude to the interest rate height;
- Assessment of the banking sector stability.

Theoretical framework of the research comprises:

- collecting relevant data for saving;
- definition of hypotheses;
- creating the content of the questionnaire;
- distribution of the questionnaire in paper and electronic form to the previously defined representative and random sample;
- realization of empirical research with relevant statistical tools.

Expected results from the research: The research is directed towards identification of current saving status with the population and conditions for saving and its determinants, and stimulation of consciousness for the importance of saving for better future.

### 4. Descriptive statistics of the research

In the survey carried out on the basis of questionnaire, the following results have been obtained:

- 60,38% are female participants, while 39,62% are male. Most of them, almost a half, or 47,17% of the participants are with high education, while the smallest part, 15,09%, are Masters of Science or Ph.D-s. It means that this survey covers most (almost 85%) people with secondary, college and higher education.
- 33,33% of the participants are 28-37 years old, 31,37% are 48-57 years old, 24,51% are 38-47, while the smallest part or 10,78% belong to the youngest group of 18-27 years old.
- Most of the participants or 37,74% have monthly income from 10 000 to 20 000 denars, while the smallest part or 9,43% have monthly income up to 10 000 denars. More precisely, more than a half of the participants, or 53,77% have monthly incomes above 20000 denars, which is more than an average salary in R. Macedonia for the examined period.
- 81,13% of the participants are enough informed for the saving conditions, while 18,87% are not informed.
- 65,09% of the participants save, while high 34,91% do not save.
- 81,13% of the participants, give the following decisive factors for their decision for saving: future safety and height of the monthly incomes. 13,21% think that the decision for saving is a result from the perceived possibility for saving, while only 3,77% think that their safe jobs have been crucial for the decision for saving.
- Time deposits and frequent deposits in the bank are balanced as per the offered time framework. Namely, 23,81% of the participants do that once a month, 19,05% quarterly, 34,52% annually and 22,62% per three years.
- Every third of four persons who save (or 75,58% of the participants) put his/her deposit in denars. This means that there are three times more participants who save in denars than those who save in foreign currencies.
- 42,42% of the participants think that the height of the interest rate on deposits is low, and 38,38% as modest. Only 11,11% of the participants assess the height of the interest rate on deposits as high or extremely high.
- 59,18% of the participants are not satisfied by the saving conditions.
- 77,14% think that the banking sector in R. Macedonia is stabile. 23,86% or almost every fourth participant thinks that the banking sector in R. Macedonia is instabile.

### 5. Hypothetic framework of the research

On the basis of the scope, goals and tasks of the research in this paper, the following general hypothesis can be defined: different characteristics of the participants in the survey (population) do not have influence on their attitude towards saving. On the basis of such defined general hypothesis, the following separate hypotheses can be differentiated:

*Hypothesis 1: The decision for saving does not depend on the height of the participants' incomes*

Considering the fact that income is a one of the determinates for saving, in our research we will test the dependence by using  $\chi^2$  test.

Table No 2: Empiric (theoretical) frequencies of variables: decision for saving ( in rows) and height of the participants' monthly incomes ( in columns).

Do you save?	monthly income			
	to 10 000	10 000 to 20 000	20 000 to 30 000	above 30 000
Yes	7 (6,509)	21 (25,387)	22 (21,481)	19 (15,623)
No	3 (3,491)	18 (13,613)	11 (11,519)	5 (8,377)

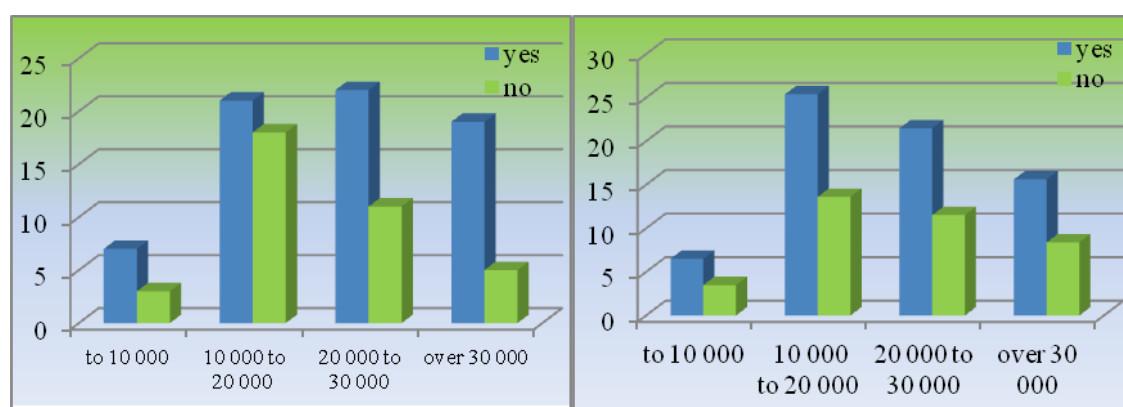


Figure no 2: Decision for saving depending on participants' monthly incomes (empiric and theoretic frequencies).

Results of $\chi^2$ - test					
	X1	X2	X3	X4	Total
	6.509	25.387	21.481	15.623	69
	3.491	13.613	11.519	8.377	37
<b>Total</b>	10	39	33	24	106
<b>Critical chi-square:</b>					7.8147
<b>Computed chi-square:</b>					4.4052
<b>p value:</b>					0.2163

Conclusion: Do not Reject Hypothesis

The estimated value of the test is:  $\chi_{pr}^2 = 4,4052$ . For a risk for a mistake of 0,05% and number of freedom degrees of theoretical (critical) value of the test is:  $\chi_{(0,05;3)}^2 = 7,8147$ . Since the estimated test value ( $\chi_{pr}^2 = 4,4052$ ) lower than the theoretical value ( $\chi_{(0,05;3)}^2 = 7,8147$ ) the appointed hypothesis is accepted and it can be concluded that the decision for saving does not depend on the height of monthly incomes. That is also

confirmed by the fact that the defined risk for a mistake is, i.e.  $p=0,05$  is less than the value of the realized level of the risk for a mistake, which is  $p=0,2163$ .

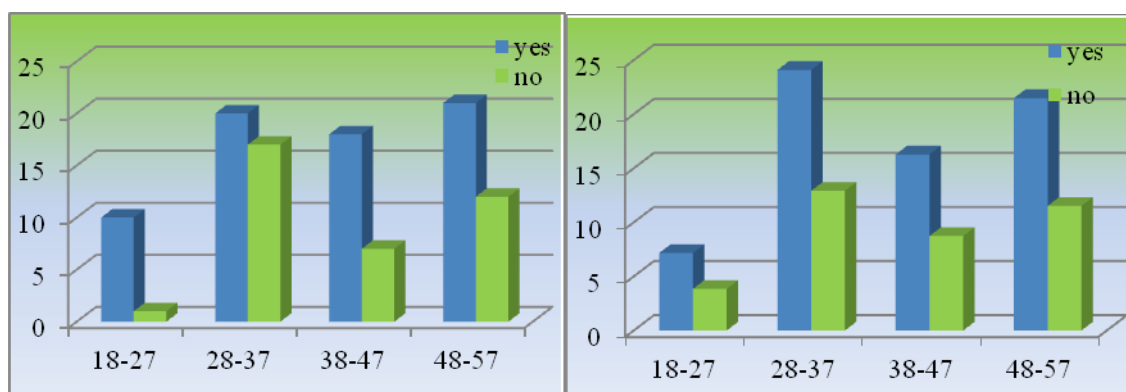
*Hypothesis 2: The decision for saving does not depend on the participants' age*

The data from descriptive analysis show that saving is a prevalent among adult and young population. In fact in our country the children's savings is very attractive and accompanied by high interest rate. All these conclusions will be tested with  $\chi^2$  test in way to prove that the decision for saving does not depend on the respondents' age.

Table no 3: Empiric (theoretical) frequencies of variables: decision for saving (in rows) and demographic structure of the participants (in columns).

Do you save?	Age (years)			
	18-27	28-37	38-47	48-57
Yes	10 (7,160)	20 (24,085)	18 (16,274)	21 (21,481)
No	1 (3,840)	17 (12,915)	7 (8,726)	12 (11,519)

Figure no. 3: Decision for saving depending on the participants' age ( empiric and theoretical)



Results of $\chi^2$ - test					
	X1	X2	X3	X4	Total
1=	7.160	24.085	16.274	21.481	69
2=	3.840	12.915	8.726	11.519	37
<b>Total</b>	11	37	25	33	106
<b>Critical chi-square:</b>	7.8147				
<b>Computed chi-square:</b>	5.7666				
<b>p value:</b>	0.1205				

Conclusion: Do not Reject Hypothesis

The estimated test value is:  $\chi_{pr}^2 = 5,7666$ . For a mistake for a risk of 0,05% and number of freedom degrees  $r = (m - 1)(n - 1) = (2 - 1)(4 - 1) = 3$ , the theoretical (critical) test value is:  $\chi_{(0,05;3)}^2 = 7,8147$ .

Since the estimated test value  $\chi_{pr}^2 = 5,7666$  is lower than the theoretical value  $\chi_{(0,05;3)}^2 = 7,8147$ , the stated hypothesis is accepted and it can be concluded that decision for saving does not depend on the participants' age.

That is also confirmed by the fact that the defined risk for a mistake is  $1 - \alpha$ , i.e.  $p=0,05$  is less than the value of the realized level of a risk for a mistake, that is  $p=0,1205$ .

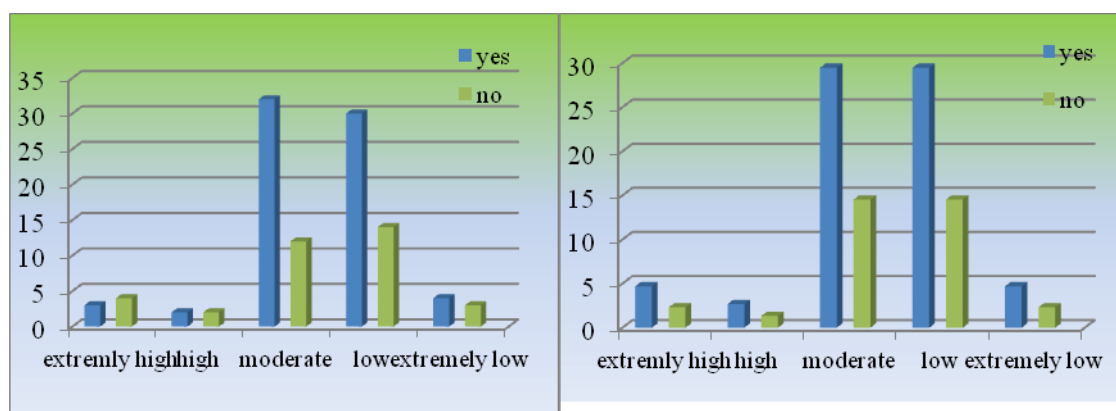
*Hypothesis 3: The decision for saving does not depend on the estimation of the interest rates on deposits height.*

The interest rate is one of the key determinates of saving. The data from descriptive analysis shows that respondents aren't satisfied of interest rates height, but the negative value of net savings is due to rather faster growth dynamics of the personal spending compared to interest rate. There are many factors that influence of saving decision.

Table no 4. Empirical (theoretical) frequencies of variables: decision for saving (in rows) and height of interest rates on deposits (in columns).

Do you save?	How do you evaluate the level of interest rates on deposits?				
	Extremely high	High	Moderate	low	extremely low
Yes	3 (4,689)	2 (2,679)	32 (29,472)	30 (29,472)	4 (4,689)
No	4 (2,311)	2 (1,321)	12 (14,528)	14 (14,528)	3 (2,311)

Figure no. 4: Decision for saving depending on the estimation of the interest rates on the deposits height



Results of  $\chi^2$  - test

	X1	X2	X3	X4	X5	Total
1=	4.689	2.679	29.472	29.472	4.689	71
2=	2.311	1.321	14.528	14.528	2.311	35
<b>Total</b>	7	4	44	44	7	106
<b>Critical chi-square:</b>						9.4877
<b>Computed chi-square:</b>						3.3554
<b>p value:</b>						0.4965

Conclusion: Do not Reject Hypothesis

The estimates test value is:  $\chi_{pr}^2 = 3,3554$ . For a risk for a mistake of 0,05% and number of freedom degrees  $r = (m - 1)(n - 1) = (2 - 1)(5 - 1) = 4$ , theoretical (critical) test value is:  $\chi_{(0,05;4)}^2 = 9,4877$ . Since the estimated test value  $\chi_{pr}^2 = 3,3554$  is lower than the theoretical value  $\chi_{(0,05;4)}^2 = 9,4877$ , the stated hypothesis is accepted and it can be concluded that the decision for saving does not depend on the height of interest rates on deposits. That is confirmed by the fact that the defined risk for a mistake is  $1 - \alpha$ , i.e.  $p=0,05$  is less than the value of the realized level of a risk for a mistake, that is  $p=0,4965$ .

That is also confirmed by the correlation coefficient ( $R=0,067062$ ) between these two variables. Namely, there is very weak correlation between the attitude to saving and the estimation of the height of the interest rates on deposits.

Table no 5: Indicators of interaction between the attitude to saving and the estimation of the height of the interest rates on deposits.

Regression Statistics	
Multiple R	0,067062
R Square	0,004497
Adjusted R Square	-0,00507
Standard Error	0,477037
Observations	106

Furthermore, with the table ANOVA, the above claim that the estimation of the height of the interest rates on deposits by the participants does not influence the decision for saving, is confirmed. (Table no 6). That means that the regression model should comprise other factors influencing the decision for saving, which is confirmed by the low value of the determination (R Square = 0,004497).

Table no 6: Table ANOVA – testing the dependence of the attitude to saving and the estimation of the height of the interest rates on deposits.

ANOVA					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0,106918	0,106918	0,469838	0,494587
Residual	104	23,66667	0,227564		
Total	105	23,77358			

This means that not only that the interest rate is not crucial, i.e. decisive factor for saving, but in fact it has very small influence on the decision for saving.

## 6. Conclusion

Having in mind theoretical knowledge, the importance of saving for better and safer future of the people, can be clearly seen. The saving is positively reflected on the country economic development, namely, deferred spending at the moment is later included through investments into the economy circle. In R. Macedonia, the saving of the population's available income is decreasing, due to the faster dynamics of personal spending growth.

On the basis of data from the performed research on the saving status with the population in R. Macedonia, it can be concluded that 81,13% of the participants in the survey give the safe future and height of monthly incomes as decisive factors for the decision for saving; 13,21% think that the decision for saving is a result from the perceived possibility for saving, while only 3,77% think that their safe jobs have been crucial for the decision for saving.

Having in mind the importance of saving, in future people should overcome their conservative attitude towards saving. Because of that, it is of high importance for the future researches and analyses to be directed to development of innovative products, which will be attractive for the households and will be reflected in the saving, because it is obvious that the interest rate is not crucial factor.

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