

# AN ANALYSIS OF THE SAVING BEHAVIOR IN ROMANIA. COMPARATIVE STUDY FOR 2012 AND 2011 BASED ON THE “FINANCIAL SITUATION OF THE ROMANIAN HOUSEHOLDS” ENQUIRIES

Ileana Gabriela Niculescu-Aron<sup>1</sup>

Bucharest Academy of Economic Studies, Buchares, Romania

## ABSTRACT

Emergence from recession and economic recovery in the EU countries are complex processes that imply massive investments aimed at capital (human, physical and financial) productivity increase. The issue of finding financing funds is crucial and the solutions are not many, since they can only come from internal or external savings. External sources are very restrictive and expensive, thus, economic recovery mostly depends on national savings.

The main sector of a national economy that is saving is the household sector and for this reason the saving and consumption behaviour are of utmost importance for the financial stability of a country. Therefore, the anti-crisis and economic recovery governmental programmes should include financial policies that stimulate savings, based on an as rigorous knowledge of these behaviours as possible. Pertinent results in the analysis of the saving behaviour of the households may be quickly obtained with the help of data from selective studies. To this purpose, the aim of the present paper is to highlight some particularities of the Romanian households saving behaviour from the perspective of their importance for economic recovery and financial stability of the economy, starting from the results of two enquiries that took place during 1-15 October 2011 on a sample of 1800 respondents, respectively 1-15 May 2012 on a sample of 1728 respondents, constituted with quota sampling. Besides the transversal analysis, the two also allowed for highlighting the changes between the respective moments of time.

## JEL CLASSIFICATION & KEYWORDS

■ C14 ■ C25 ■ D14 ■ SAVING BEHAVIOUR ■ DETERMINANTS OF POPULATION SAVINGS ■ LOGISTIC REGRESSION

## INTRODUCTION

The empiric approach of the households saving behaviour is usually done on two levels: macroeconomic and microeconomic (individual).

From the macroeconomic perspective, many empirical studies investigate, both in developed and developing countries, the determinants of private saving rates in order to explain the diversity in saving rates in the world (Kessler et al., 1993, Muradoglu & Ttaskin, 1996). Many economic and demographic variables have been identified as saving determinants: income (temporary/permanent), uncertainty (political instability), rates of return (interest rate), domestic and foreign borrowing constraints, inflation, fiscal policy, pension system, demographics (old or young age, urbanization). Various model specifications related to data samples and econometric strategies are suggested. However this literature provides ambiguous results. Numerous saving determinants are not significant and/or the estimated sign is not consistent with the theory. These ambiguous results are determined by the individual particularities of the countries or some characteristics of the

groups (economic development level, financial education, stage of transition to market economy).

Few studies assess the determinants of saving at the individual level generally due to the lack of data. The microeconomic approach, through surveys or enquiries, allowed for the identification of those characteristics of the households that influence the saving behaviour. Some of the most recent studies (Abdelkhalek et al., 2009, Kulikov et al., 2007, Rehman et al., 2011), have indicated a series of results, some predictable, others less predictable: the saving rate depends positively on regular household income, but more pronouncedly on transitory income; the saving propensity for households receiving income from self-employment is lower; the possession of a range of durable consumer goods, in particular cars, reduces household saving. The above results suggest that:

- larger debts and/or debt-servicing payments reduce household saving;
- the young and the elderly appear to save more than middle-aged persons;
- higher levels of education lead to lower saving.

The literature on saving behaviour is vast. Most studies highlight the considerable heterogeneity of the households' reasons for saving (Abdelkhalek et al., 2009, Alessi & Lusardi, 1997, Browning & Lusardi, 1996).

The literature indicates a large number of reasons for household saving. The following major motives leading to such a decision can be distinguished (Sturm, 1983):

1. Retirement saving. Generally considered the most important reason for saving, it is the basis of the Life Cycle Hypothesis (LCH). Savings are positive during the pre-retirement phase and negative after retirement.
2. Precautionary saving. In the basic LCH model the household bases its decision on events the dates and magnitudes of which are assumed to be known (the future income, the time of death and the interest rate in each period). But in reality future events are uncertain and individual behaviour will be modified. Individuals seek to save for security, regardless of the life cycle stage they are in.
3. Saving for bequest. Up to a certain degree this reason cannot be precisely differentiated from precautionary saving. An amount saved currently may simultaneously serve as a precautionary life-cycle function (guarding against future contingencies such as health shocks or other emergencies) and as a bequest function because, in the likely event that the money is not absorbed by these contingencies, it will be available to bequeath to children or other worthy causes. However, the bequest motive changes the size of the saving ratio only in an economy expanding due to population growth, productivity growth or both.

<sup>1</sup> gabriela\_aron@yahoo.com

4. **Target saving.** We are referring especially to saving with the view to buy durable goods, but also for expenses caused by special events, holidays or education.

From a psychological point of view, saving can be considered the result of a deliberate decision making process and to save, the act of regularly putting away some resources. A hierarchy of the saving reasons based on the study of Canova et al. (2005) is presented in Table 1. The main reasons determining the propensity to save of the population are related to ensuring the physical and psychological comfort for present and near future (quality of life, security for unforeseen situations), as well as "target saving" (holidays, durable goods).

Table 1: Ranking of saving reasons					
Rank	Saving reason	%	Rank	Saving reason	%
1	Self-gratification	72	9	Autonomy	33
2	Precaution	60	10	Retirement	31
3	Household	56	11	To avoid debt	31
4	Security	53	12	Speculation	28
5	Purchases	47	13	Saving habit and money value	28
6	Holidays/hobbies	39	14	Old age/illness	22
7	Money availability	39	15	Projects	10
8	Self-esteem	37			

Source: Canova et al. (2005)

In an empirical study made for Estonia, Kulikov et al. (2007) found dwelling purchase and saving money for precautionary reasons among the main saving reasons. Saving in view of old age or for medical care is last in the ranking of the Estonian respondents.

### Research methodology

The paper aims to highlight some particularities of the Romanian households saving behaviour from the perspective of their importance for economic recovery and financial stability of the economy., starting from the results of two enquiries that took place during 1-15 October 2011 on a sample of 1800 respondents, respectively 1-15 May 2012 on a sample of 1728 respondents, constituted with quota sampling.

In designing the questionnaire, the following objectives were followed: assessing the financial situation and the saving capacity of the households; identifying the main saving reasons and preference for various saving instruments. The second survey allowed for the highlight of the changes occurred between the two moments.

Starting from the economic theory regarding household savings and the empirical studies focusing on the analysis of the saving behaviour, we advanced the following hypotheses:

1. The saving capacity of the households is low. As a consequence of the economic crisis, the financial situation of the households has worsened, the disposable income has decreased and, consequently, we expect a decrease in the saving capacity. It is possible that there are households that dissave.
2. The main aims for saving are dwelling purchase, unforeseen household expenses or precautionary savings. It is expected that Romanian households have a saving behaviour similar to that in Estonia since the macroeconomic analysis for both countries indicates a series of similarities.
3. Preference for classical financial products. The lack of confidence shown by the population towards financial

institutions determines the placement of savings in banks, considered to have a higher level of security, the main option being bank deposits.

### Analysis of survey results on the proposed objectives

Centralising the data of the two surveys resulted in two databases, which were verified for completeness of the information. Partial non-responses were treated through methods of imputation with mean or median of nearby observations, formed with the help of auxiliary variables. The obtained database was processed using SPSS, with the view to allowing for a complex analysis of households saving behaviour.

- Financial situation and saving capacity

On a scale from 1 to 10 the satisfaction level regarding own financial situation was 5.01 for the first wave and 4.99 for the second one. Statistically, there is no significant difference between the two satisfaction levels, for a probability close to one. The coefficients of variation (42.7% and 43%) suggest a heterogeneous distribution of the respondents by satisfaction level. Thus, we intended to identify the demographic, economic and social variables that influence the satisfaction level regarding own financial situation, leading to the constitution of homogenous sub-groups.

Professional status significantly influences the satisfaction level ( $F=18$  for the first wave and  $F=12$  for the second wave). The influence of the professional status is statistically significant for a probability close to one. For the first wave, we identify three homogenous sub-groups with the help of Tuckey's Post-Hoc test (the homoskedasticity condition is fulfilled). The first group, with a very low satisfaction level (average level around 4) is formed by: housewives, pensioners, unemployed, working in own household and employed in government sector; the second group, with a moderate satisfaction level (average level approximately 5) is formed by those employed in private sector; the third group, with a medium satisfaction level (average level about 6.5) is formed by free-lancers and employers.

Even though the overall satisfaction level did not change significantly in 2012 as compared to 2011, the situation is different between groups formed by professional status. There was a deterioration of the satisfaction level for those working in own household, for housewives and for employers. Thus, in the second wave there are only two homogenous subgroups. The first group, with a very low satisfaction level (average around 3) is formed by: housewives and working in own household, and the second group, with a moderate satisfaction level (average approximately 5) is formed by those employed in private sector; pensioners, unemployed, and employed in government sector, free-lancers and employers.

Following the effects of the economic crisis, the financial situation of the households worsened (Figure 1A), in October 2011 44.24% of the respondents declaring that their financial situation is worse than the one in the previous year. This process continues in 2012 (Figure 1B), when 34.7% declared that their financial situation is worse than in the previous year.

Given these aspects of the saving and dissaving behaviour, we intended to sketch the profile a person with saving capacity. To this end, we used the binomial logistic regression, determining the odds that a person has saving potential.

The dependent dichotomic variable is "Saving" (1 YES, 0 No), denoted by "S". The model for binary logistic

Figure 1A: Financial situation in 2011 compared to the one for the previous year

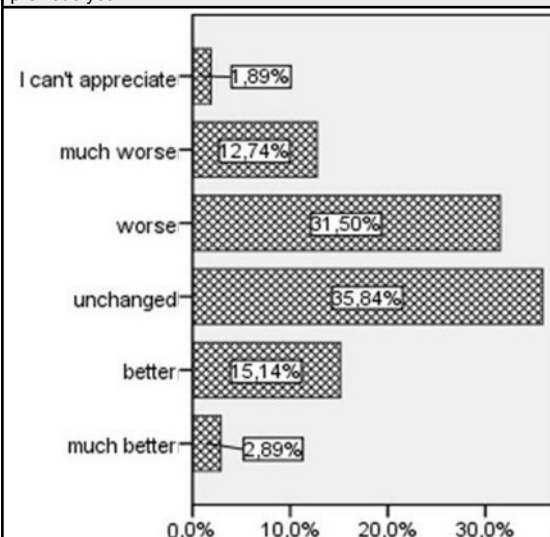
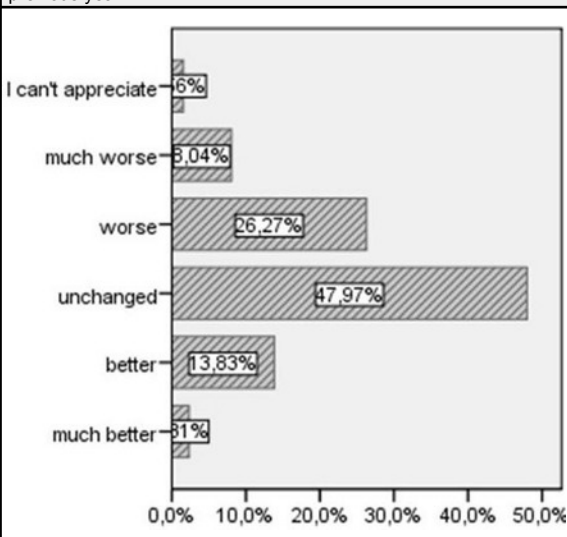


Figure 1B: Financial situation in 2012 compared to the one for the previous year



Source: author's computations

regression assumes that the outcome variable,  $S$ , is dichotomous but the equation does not model this outcome variable directly. Rather, the logistic regression is based on conditional probability of the form  $P(S=1|X_i)$ , where  $X_i$  are independent variables. That is, it is assumed that "success" is more or less likely depending on combinations of values of the predictor variables.

The independent variables of the logistic regression model are:

- LNIP= numerical variable, equal to the logarithm of the income per person in a household;
- NO=number of household members aged 18 and over;
- AGE =categorical variable age;
- G=gender of the respondent (1-male, 0-female);
- C=the respondent has a credit (1 YES, 0 No);
- ED= the respondent has attained higher education (1 YES, 0 No);
- ST= professional status of the respondent, categorical variable.

The logistic regression model obtained after processing the two databases resulted from the two waves is synthesised in equation 1. Table 2 presents the coefficients of the logistic regression models computed for the two enquiries.

$$\ln \left( \frac{P(S=1|X_j)}{1-P(S=1|X_j)} \right) = -\alpha_j + \beta_{(NO)_j} \times NO_j + \beta_{(LNIP)_j} \times LNIP_j + \beta_{(AGE)_j}^{k-1} \times AGE_j + \beta_{(G)_j} \times G_j + \beta_{(ED)_j} \times ED_j - \beta_{(C)_j} \times C_j + \beta_{(ST)_j}^{h-1} \times ST_j \quad (1)$$

Where  $j=1,2$  and they represent the wave of the enquiry,  $k$  represents the number of categories for the variable AGE and  $h$ , the number of categories of the variable ST. If the independent variable is numeric (NO and LNIP), the exponent of the coefficient in the regression model show the change in the odds of an event ( $S=1$ ) if the independent variable increases by one. If the independent variable is dichotomous (G, ED and C), the exponent of the coefficient shows how the odds of the event change if the respondent is part of the category coded with one as compared to the one coded with zero. For the polytomous variables (AGE and ST), the number of the coefficients is equal to the

number of the categories, excluding the reference category. The exponent of these coefficients shows the change in the odds of the event if the respondent belongs to that category as compared to the reference category.

The independent variables "Income per person in the household" and "Number of adult members in the households" have a positive influence on the dependent variable, both in 2011 and in 2012, a one unit increase in the predictors leading to increases in the odds that a household will have saving capacity.

In the case of the independent variable "Age\_groups", the reference category is the "less than 30 years age group". Even though the Wald test shows that not all the coefficients associated to the age groups are statistically significant, the variable was kept in the model because there are age groups with a significant value of the test.

In 2011 the odds that a person aged (30; 50] has saving capacity are 1.5 times higher than the reference age group (under 30 years). The saving behaviour is significantly different for the 65 years and more age group, even though the average amount saved monthly or the savings quantum is smaller. In 2012 the situation changes, the odds that a person aged (30; 50] has saving capacity are 43% less than for the reference group.

The odds that a male has saving capacity are 1.39 times higher in 2011, respectively 1.36 times in 2012. We may only talk about the positive influence of education level in 2011, when the odds of having saving capacity for those with higher education were 1.39 times higher than for those with medium and primary education.

In the case any type of credit exists, the financial resources will be directed towards the payment of the credit, thus the odds of having saving capacity are approximately 28% smaller for both periods.

For the independent variable "Professional status", the reference category is the "employer". Initially, the odds of having saving capacity are smaller for all other categories than for the reference category. The deterioration of the financial situation (the satisfaction level is significantly smaller in 2012 than in 2011) leads to a decrease in the

Table 2: The coefficients of the logistic regression model

	2011					2012				
	B	S.E.	Wald	Sig.	Exp(B)	B	S.E.	Wald	Sig.	Exp(B)
No	0,1	0,05	3,44	0,06	1,11	0,03	0,01	10,73	0	1,03
Lnlp	0,66	0,09	53,61	0	1,94	0,31	0,09	12,92	0	1,37
Age			16,29	0				20,89	0	
Age (30;50]	0,21	0,16	4,13	0,04	1,5	-0,56	0,2	7,69	0,01	0,57
Age (50;65]	0,33	0,18	3,42	0,06	1,39	-0,31	0,21	2,24	0,13	0,73
Age (>65)	0,87	0,22	16,28	0	2,38	0,4	0,27	2,12	0,15	1,49
Gn(masculine)	0,33	0,11	8,39	0	1,39	0,3	0,12	6,19	0,01	1,36
Ed(higher)	0,33	0,13	6,32	0,01	1,39	0,09	0,12	0,63	0,43	1,1
C(yes)	-0,33	0,14	5,96	0,02	0,72	-0,29	0,12	5,66	0,02	0,75
St			25,99	0				16,97	0	
St (employee)	-1,13	0,31	13,79	0	0,32	0,35	0,28	1,51	0,22	1,41
St (free-lancer)	-0,47	0,43	1,16	0,28	0,63	0,41	0,36	1,3	0,25	1,51
St (other situation)	-1,5	0,33	20,63	0	0,22	-0,33	0,31	1,12	0,29	0,72
Constant	-4,88	0,79	38,33	0	0,01	-2,95	0,71	17,33	0	0,05

Source: author's computations

saving capacity for employers. Thus, in 2012 the odds of having saving capacity are not influenced by this predictor anymore.

For both surveys approximately 70% of the respondents declared that they do not own any saving instrument. For this reason, the following analysis only refers to the 30% of the respondents who declared that they have savings. The distribution by the amount saved in 2011 indicates that more than half of the respondents (55.36%) have small amount savings (regardless of the currency used), of up to 2000 lei (approximately 450 Euros). In 2012 the weight of those who have savings of up to 2000 is 80%.

In 2011, 12.7% of the respondents closed a saving account or a deposit during the last 12 months. The sum was mainly directed towards consumption for covering urgent (55.8%) or current (21.9%) expenses or for purchasing goods. Only 5.2% were invested using a different instrument than the banking one. The situation is similar in 2012, 14% having used a deposit for the same reasons. Among them, 53% needed the money for covering urgent

expenses, 20% needed them for current expenses and 28% for purchasing various goods. Changing the saving instrument was a reason for only 10% of the closed bank deposits.

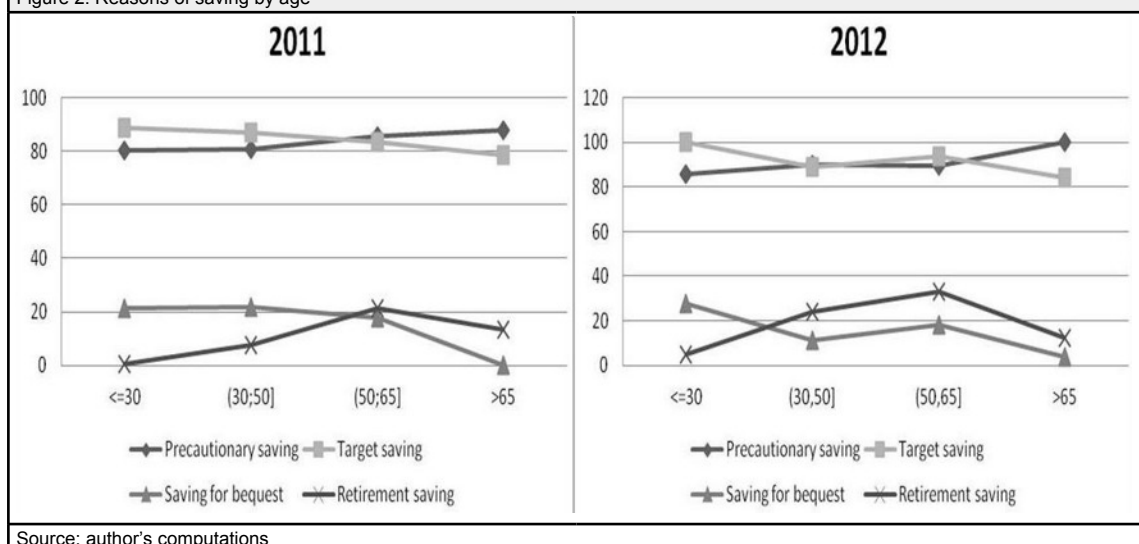
The analysis of this objective confirms the first hypothesis of our study: The saving capacity of the households was low in 2011 and 2012 does not bring any improvement. On the contrary, there are professional status groups (employers and workers in own household) for which the financial situation and the saving capacity deteriorated. As expected, we may talk about a decrease in the saving capacity and, moreover, some households spent previous savings.

#### • Identification of the main saving reasons

The analysis of the saving behaviour from the motivations point of view was done only for those who declared they have savings.

Both in 2011 and in 2012 more than 80% of the respondents were saving in order to reach certain objectives or for having

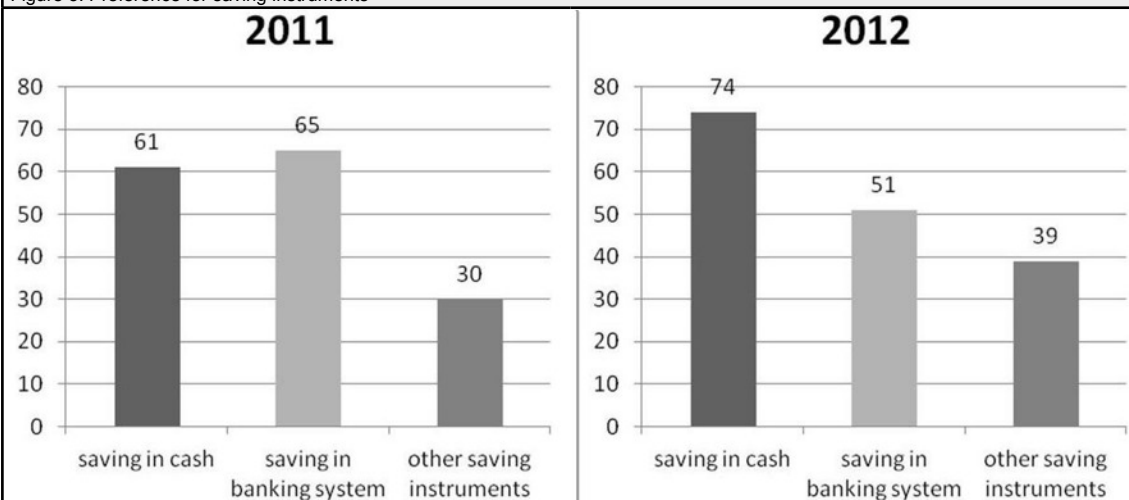
Figure 2: Reasons of saving by age



Source: author's computations

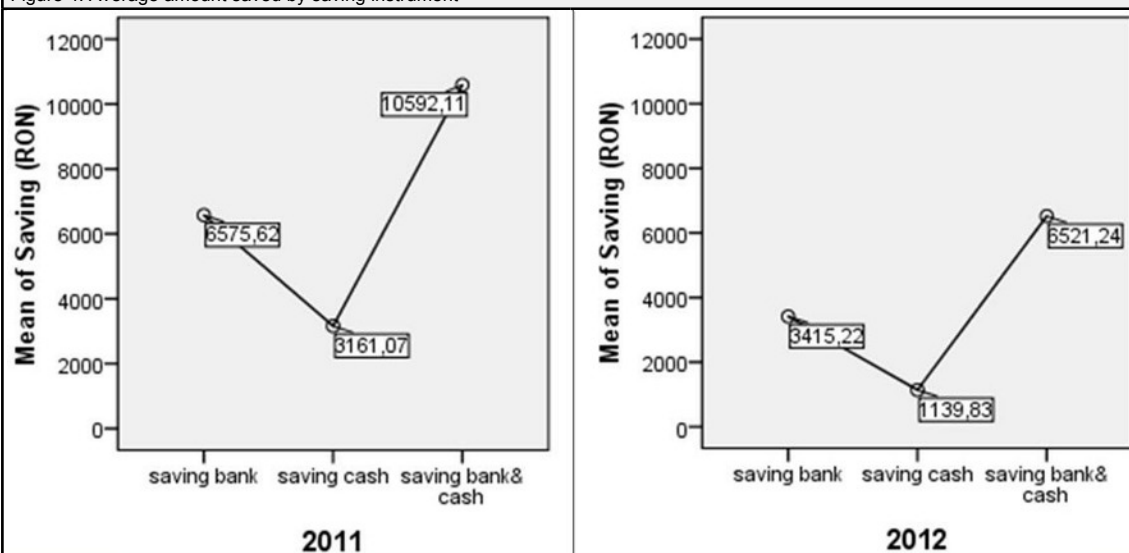


Figure 3: Preference for saving instruments



Source: author's computations

Figure 4: Average amount saved by saving instrument



Source: author's computations

a reserve in case of unforeseen situations (Figure 2). This behaviour is rather uniform for all age groups and refers to financial plans on the short-term.

In 2011 only 8.8% managed to save for having extra-incomes after retirement, but in 2012 their percentage doubled (16.7%). Accumulation with the view to transmitting the goods to the next generation are mainly concerns for the 50-65 years age group. The lack of attractiveness of these saving methods is given by the poor financial situation. Those who save in order to transmit the goods (in this category are also included saving for buying dwellings or land) or for ensuring themselves an additional income after retirement are approximately 2 points more satisfied with their financial situation.

The analysis of this objective partially confirms the second hypothesis of the paper. Cautionary saving is important for more than 80% of the respondents. Unexpectedly important, however, is also saving for short-term objectives. We explain this through the fact that the financial situation does not allow

for the immediate purchase of some consumption goods and services.

The most important saving reason, retirement saving, has a surprisingly low weight (8.8% in 2011 and 16.7% in 2012). Nevertheless, the saving behaviour of the Life Cycle Hypothesis is recognizable. The economically active age groups save more for the retirement period.

- Preference for various saving instruments

The main saving instruments used by the respondents are savings with the help of the banking system (saving accounts, deposits, current accounts) and, in an alarmingly large proportion (61% and 74%), money saved in cash. Moreover, among those who chose to save in cash, 31.7% in 2011 and 41.7% in 2012 only use this saving method. The lack of financial education makes the other saving instruments quite unattractive.

The high percentage of those who prefer to keep their money "under the mattress" is determined by the lack of

confidence in the banking system. Those preferring such a saving method, in both surveys, appreciate bank security at a medium level (a 2.5 score on a 1 to 5 scale) as compared to the very high security (above 3.85) given to saving in cash.

Regarding the profitability of savings in the banking system, this is appreciated as weak (below 2.5 for both periods).

The profile of the respondent who prefers to keep their money in cash is given by a number of demographic and socio-economic characteristics:

- Lives in the urban area – above 40% of the respondents in rural area rather keep their money in cash, as compared to only about 23% in the urban area.
- Has a low education level – approximately 40% of those without higher education keep their savings in cash, as compared to 25% of those with higher education.
- Has low saving potential (see Figure no 4). In 2011 those who have savings in banks save on average 6575 lei (about 1460 Euros), double the amount saved by those who prefer to keep them in cash (3161 lei or approximately 700 Euros). The highest amount is saved by those who chose to keep part of the money in the bank and part in cash (10592 lei that is around 2355 Euros). The same ratio is kept in 2012 as well, but the average sums are halved. The differences between the average amounts saved by saving instrument groups are statistically significant for a probability of one.

The analysis of the third objective confirms the last hypothesis of the study. The saving instruments used by the respondents were preponderantly banking system products, but also the "money under the mattress", to an alarmingly high extent. The lack of financial education, of trust in the banking system, as well as the bank high commissions that lower the profitability of the savings render the saving instruments present on the market less attractive.

## Conclusion

Following the effects of the economic crisis, the financial situation of the households worsened, 44.24% of the respondents declaring in 2011 that their financial situation is worse than the one in the previous year. The worsening process continues, 34.7% declaring that in 2012 their financial situation was worse than in 2011. The evolution of the average satisfaction level shows that the most impacted social categories are the employers and those working in their own household.

The age has a negative influence on the satisfaction level, the persons aged over 50 years being statistically significantly less satisfied than the younger and adults ones.

The odds that a household has saving capacity are directly influenced by the income per person and the number of adult members in the household. Those households with heads who are males, with higher education and with no credits manage to save to a higher extent.

Only approximately 30% of the respondents have savings, and their amount is low (less than 450 Euros).

The main reason that caused the closing of a saving account or deposit during the last 12 months was financial difficulty. The amount was mainly directed towards consumption for covering some urgent or current expenses.

The main types of savings are the precautionary and the target ones. The precarious financial situation makes the population save in order to reach certain small objectives,

for the near future and, to a very little extent, for future plans, investments, and security after retirement.

The lack of financial education, of trust in the banking system, as well as the bank high commissions that lower the profitability determine a concentration of savings in cash. We believe that through substantiated policies these amounts may be attracted into the banking system.

## Acknowledgment

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

## References

- Abdelkhalek, Touhami, Arestoff, Florence., El Mekkaoui de Freitas, Najat. and Mage, Sabine. "A microeconomic analysis of households saving determinants in Morocco" 2009. 19 april 2012 <<http://basepub.dauphine.fr/bitstream/handle/123456789/5550/A27CA046d01.pdf?sequence=1>>.
- Alessie, Rob. and Lusardi , Annamaria. "Saving and income smoothing: Evidence from panel data" *European Economic Review* 41 July 1997: 1251-1279.
- Boesch-Supan, Axel. and Brugiavini, Agar. "Savings: The policy debate in Europa" *Oxford Review of Economic Policy* 17 March 2001: 116-143.
- Browning, Martin. and Lusardi, Annamaria. "Household Saving: Micro Theories and Micro Facts" *Journal of Economic Literature* 34 December 1996: 1797-1855.
- Canova, Luigina., Manganelli Rattazzi, Anna Maria. and Webley, Paul. "The hierarchical structure of saving motives" *Journal of Economic Psychology* 26 2005:21-34.
- Kessler, Denis. and Perelman, Sergio. "Savings behavior in 17 OECD countries." *Review of Income and Wealth* 39 March 1993: 37-49.
- Kulikov, Dmitry., Paabut, Annika. and Staehr, Karsten. "A Microeconomic Analysis of Household Saving in Estonia: Income, Wealth and Financial Exposure" *Working Paper Estonian National Bank* 2007. 20 March 2012 <[http://www.eestipank.ee/print/en/dokumentid/publikatsioonid/seeriad/uuringud/\\_2007/\\_8\\_2007/\\_wp\\_807.pdf](http://www.eestipank.ee/print/en/dokumentid/publikatsioonid/seeriad/uuringud/_2007/_8_2007/_wp_807.pdf)>.
- Mihăescu, Constanta., Niculescu-Aron, Ileana. and Căplescu, Raluca. "Recent Developments In The Borrowing Behavior Of Romanian Households" *Economic Calculation and Cybernetics Studies and Researches* 1 2010:6-11.
- Muradoglu, Gulnur. and Ttskin, Fatma. "Differences in household savings behavior:evidence from industrial and developing countries" *The Developing Economies*, XXXIV-2 June 1996:138-153.
- Pailwar, Veena, Kaur, Jaspreet., Saxena, Khushboo. and Nijhara, Mitesh. "Impact of membership of financial institutions on rural saving: a micro-level study", *International Business & Economics Research Journal*, 10 October 2010:139-148.
- Rehman, Hafeez., Bashir, Furrukh. and Faridi, Muhammad Zahir. "Saving behavior among different income groups in Pakistan: a micro study" *International Journal of Humanities and Social Science* 10 August 2010:268-277.
- Sturm, Peter H. 1983. "Determinants of Saving: Theory and Evidence" *OECD Economic Studies* 1 1983:147-96.