Model of the Influencing Factors of the Household Savings

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Abstract: *In my research, I analyze the public's long term self-care behavior, the development of state incentives system and the state's influencing role on the households' financial management. I would like the research results to be utilized by helping the large-scale government actions and decision making, as every household needs primary schools to be introduced into teaching financial literacy in daily life.*

1. INTRODUCTION

During their different life cycles, households make a series of long-term financial decisions. The approach of self-caring is present in individual and family life, but not with the same intensity. We live the global financial world's real estate-based lending crisis. The balance between lending and savings has shifted. The lack of self-control leads the households to consume more than their income, so they reach out for loans (KIM, 2010). While shopping, people are affected by temptation and impulsivity. The lack of self-control has a negative impact on household savings (KARLSSON-GÄRLING-SELART,1997). We need to change the thinking of mankind about loans and savings. In the current situation the role of the state's market monitoring and awareness rising has increased.

1.1. Timeliness of the Topic

The self-caring population delays their purchases, and they often supplement their shopping by borrowing loans. Long-term saving is one of the essential condition for secure loan borrowing. I pay particular attention to personal income tax discount, and the state's aid in building society accounts. I examine the money management of households in different life cycles, how can the state increase the propensity to save by using a variety of incentives, as the balanced household, corporate and financial management is a societal interest, and has a major impact on proper financial knowledge of citizens. In my thesis I examine the households. The role of savings has always been an important area of economics and economic analysis. Today it is an important factor too, since the majority of Hungarian households have more loans then saving, and the repayments of the loans takes a high proportion of the household's net income. This problem is often traced back to inadequate financial literacy, so my research to analyze current issues. Politicians are beginning to recognize, the central role of financial literacy in a well-functioning economy (LUSARDI-MITCHELL, 2009). Savings will reduce the uncertainty and enhance the possibility to be able to live with dignity in retired years (STARR, 2006). Pension saving is influenced by life expectancy (BLOOM et al, 2006). The amount of real estate and pension assets determines the consumer behavior in senior years (BLAKE, 2004). Sefton and his author associates examined the political reforms in pension savings (SEFTON-VEN-WEALE, 2008). High proportion of households do not take care for retirement security (LUSARDI, 2001). Preventing poverty in old age is a social interest. To do this, radical measures are needed. To enhance savings, teaching financial literacy, proper family upbringing, effective functioning of social organizations and broadcast by the media is required (STARR, 2006). Development of human capital and proper quality education is essential, in which the state plays an important role (STIGLITZ, 2013). Fisher and Montalto found the "contingency reserve" and pension-related savings are the motivating factor to increase regular savings significantly. They focused on the need for educational programs. The financial experts and advisory teachers have a prominent role in this topic. We need to emphasize the necessity of savings and households' long-term financial planning with educational programs (LEE-PARK-MONTALTO, 2000), as household savings are indispensable and they have a direct impact on the economy (HIRA, 1987). Financial education can help the households to become savers, and to be able to plan their financial future for themselves and for their children. Financial education is necessary in schools and workplaces too (HOGART-ANGUELOV, 2003). Many individuals are

psychologically unable to save, they are characterized by impatience and lack of self-control and they are only able to think in short term. For them, managing complex financial plans causes a problem (GRAHAM-ISAAC, 2000).

The formation of the financial motivation is a long process, and the result of the behavior can be traced to deep-rooted causes. In addition, as a result of formal education, people become familiar with basic financial concepts and will be able to use them (ALAMIL-SAUPERII, 2012). Financial education must be marked as a political goal, as financial literacy relates to financial proficiency, which increases the savings, which is essential to achieve economic growth. Moreover, the policy for the dissemination of financial literacy will not only increase savings, but it will also affect the diversification of household savings (BECKMANN-HAKE-URVOVA, 2013). Financial literacy is essential throughout the world to ensure a secure retirement. Nevertheless, the financial literacy throughout the world is at very low level, regardless of the development of financial markets in the country (LUSARDI-MITCHELL, 2011). It is true in all countries, that higher educational attainment is strongly correlated with the financial knowledge, but even with the highest level of education, financial literacy generally is on low levels (LUSARDI-MITCHELL, 2011). Many household savings are not sufficient to ensure secure retirement. Policy makers often try to encourage this, in form of tax breaks. Another way is more education of financial literacy (WIENER-DOESCHER, 2008). Further research is needed to examine the relationship between financial education and saving behavior, the relationship between financial education and financial literacy of households and the long-term changes in the financial behavior (COPUR-GUTTER-ERKAL, 2010).

The perception of self-caring should be taught in young age by setting an example and teaching, because developing the individual is very important for households and for the society. In my opinion, experience, practice, upbringing of the family greatly affect the future of our adult behavior, our responsible and irresponsible savings actions. I agree, that parents are primarily responsible for shaping the children's value system. The most important educational role stays for the parents (SZŰCS, 2011), but the parents can be savers in vain if they do not teach their children how to save (COPUR-GUTTER-ERKAL, 2010), but school systems are very important in broadcasting financial and economic knowledge as well. Education changes the way individuals think on finance, so it is important to achieve wider range of financial education (BERNHEIM-GARRETT, 1996). Financial education and social incentive programs can only be successful if the individual has the ability to change domestic settings, preferences, priorities and mindset. More and more households must be convinced to accept those rules, which are designed for increasing the savings (YUH-HANNA, 2010). Those households who are financially better educated, because they have learned financial skills in school, have much greater financial competence (HOGART-ANGUELOV, 2003). Higher financial knowledge pairs with more responsible, conscious financial decisions, so financial literacy has a positive effect on the saving behavior of households (SABRI-MACDONALD, 2010).

1.2. Objectives of the Research

During my research the first task was to review the economic and theoretical background of relevant national and international literature, the exploration of main factors affecting the savings based on the research of some authors and a description of the related previous major researches in domestic savings. I meant a major role to changes of personal income tax incentives to encourage savings. My second task was to analyze the impact of these changes. My first objective is to create a theoretical model based on gathering and processing secondary information, regarding household saving decisions. My second objective is to assess the domestic saving decision making behaviour, by primary research, using representative questionaries. I aim for a thorough examination of the role of the state in the impact of household savings. My third objective is to categorize Hungarian households based on their saving habits and the main characteristics of financial culture, since the household's behavior of financial affairs may be different for different household types.

2. SUBJECT AND METHOD

During my research I followed a predetermined logical sequence. I began my research with the overview of economic theories related to the topic, from relevant domestic and foreign authors, and I acquainted the recent domestic saving related researches, I examined the Hungarian households' saving, as the aim of my research is on this area. Then I worked on the theoretical background of income tax, then I examined the closely related laws of each topic, especially the changes in tax laws,

then, I made an analysis in connection to this and based on secondary data. In my secondary research I analyzed and used the annual reports of the Hungarian National Bank, the National Tax and Customs Office, the Financial Supervisory Authority, Central Statistical Office and the Association of Hungarian Insurers. During the processing of the literature, it turned out that the authors, KEYNES, 1965; MODIGLIANI, 1988; and FRIEDMAN, 1996 know, that the combined effects of more factors are influencing the households' financial saving decisions. However, different factors have different influence, and the factors do not influence with the same intensity of saving habits in each individual household. Therefore, in my primary research I look for the answer if I could allocate households with different saving habits in Hungary. If so, my goal then is to determine what are the characteristics of these households, what factors can influence the behavior of their savings. I focus on that government incentives are able to influence the financial decisions of different types of households, as it appeared in more theories, that state tax policy may influence savings, as KEYNES, 1965; and MANKIW, 2005; also wrote. In addition the level the quality of financial literacy of the population and is also significant, since the saving literaturers (LUSARDI-MITCHELL, 2009, 2011; COPUR et al., 2010 and LABRI, 2013) give priority to the importance of financial literacy. Consider all these, with quantitative research methodology I made a questionnaire survey on households (not individuals) in which I compiled my goals listed above. The questionnaire survey was implemented in two phases, where I asked the households about their saving habits and about the structure of their financial assets. The participation in the research was without prior selection, was anonymous and voluntary. The comprehensive research questionnaire survey was carried out between 2012 November and 2013 May. The incomplete questionnaires were not evaluated. The sample consisted of 4,106 households. That's because on the basis of census data, in 2011 there were 4,105,708 households in Hungary. I realized a representative survey by county and type of settlement. I chose this point of view, because not only regionally (county, region), type of settlement but also discrepancies between the financial literacy, the savings habits, and public aspects of their suggestibility.

I used for processing questionnaires Microsoft Excel spreadsheet program and SPSS 14.0 software. During the test, I tried to find the answer, that how can the examined households be divided into groups and the saving habits of the groups, what are the main characteristics of their saving related thinking. First, I used univariate statistical methods - especially average, mode, median and standard deviation - in the analysis. They are designed, that based on the information summarized in typical primary image position to formulate, because statistical data in large quantities is difficult to understand (JÁNOSA, 2011). I have tried to depict graphically the statistical data and the results of the research the in dissertation with figures and tables, because the information displayed and demonstrations is an important tool, which makes it easier to draw conclusions (KERÉKGYÁRTÓ et al., 2009). For better clarity and distinctness I gave the same color to the same household types, and regions in my figures and tables. In addition to the univariate statistical methods I examined the multi-factor relationship quality with the Cramer's association coefficient, since you can better understand the phenomenon, if you examine not only itself. Many factors can affect the development of test criteria. The Cramer association coefficient shows the close relationship (JÁNOSA, 2011).

In my research I used cluster analysis, and discriminant analysis. With the help of factor analysis the information derived from the data, it allows the joint consideration of multiple criteria. It is used for the characterization of complex phenomenon. This method is based on the relationship between the variables, and in each of the variables, variables are artificially produced, that extracts them to factors (JÁNOSA, 2011). It aims to establish groups of variables within which the variables are correlated (KERÉKGYÁRTÓ et al., 2009). The application of factor analysis was checked on the basis of Kaiser-Meyer-Olkin (KMO) criteria. If the Kaiser-Meyer-Olkin (KMO) value is below 0.5 the factor analysis can not be performed because of the inadequate level of correlation between the variables. Bartlett's test also helped me in the decision. If the Bartlett test's significance level is less than 0.05, then it means the variables that are suitable for factor analysis, since there is a correlation between them (KERÉKGYÁRTÓ et al., 2009). After checking the terms of the factor analysis, I determined the number of factors with the help of Scree Plot Figure. The Scree Plot Figure depicts the eigenvalues in order of the factors. The x-axis shows the number of the factors, the y-axis shows the eigenvalues. The eigenvalues shows that how many times a factor is in relation to the information content per unit of containing variable information (JÁNOSA, 2011).

After the completion of the factor analysis, I made correlation analysis of K-centered cluster, in which the variables on the financial culture were analyzed using ANOVA table. I used Kendall's agreement

coefficient to determine, to know how much the surveyed household agree on the factors that influence their decision on savings. It also helped to define the number of clusters. The purpose of the cluster analysis is the segmentation of the population elements so, that the difference in groups is as small as possible and the difference between groups is as big as possible. Within the clusters of the segment members are similar to each other, but differ from other group members (SZŰCS, 2004). Based on the variables I created homogeneous groups, in which properties of the member of the group are close to each other, that is similarity is maximal within the group. Not too low, not too high, to enter number of clusters is not practical; it does not lead to adequate results. In the cluster analysis, the target is the creation of types (JÁNOSA, 2011). In my case, using this method I planned to classify types of Hungarian households based on their attitudes and decisions to save. After determining the types of households discriminant analysis was performed. With the help of discriminant analysis each clusters are also illustrated. The discriminant analysis is a multivariate method, which it can establish, what are the variables, that distinguishes the groups formed during the cluster analysis. Finally, I determined that in the cluster analysis what was the percentage of group of households could be classified correctly.

3. RESULTS

When I created my model of saving, my primary goal was to make a more complex and more complete description of the factors, which are affecting savings, with the correlations taken into account. When creating the model that point was that, the state is directly and indirectly has an effect on the factors influencing the savings, hereby onto the households' savings. In the chapter of theories, I strived to display the theory of Keynes, Friedman's life cycle hypothesis, and Modigliani's permanennt income hypothesis, and many other authors's opinion about the factors influencing savings. I considered Kasilingham's and Jayabal's (2011) figure also, which distinguished saving capability of saving willingness. According to them, the determining factor of savings is propensity and not ability. I didn't make a distinction between these two, since they also depend on the combined effect and strength of many factors. I highlighted both with orange color. In my own model, I tried to indicate the combined effects of saving potentials and factors affecting the propensity to save on saving purposes, savings behavior and eventually on the magnitude of savings. In my opinion, individuals and households can be classified and characterized by their propensity to save and their financial behavior.
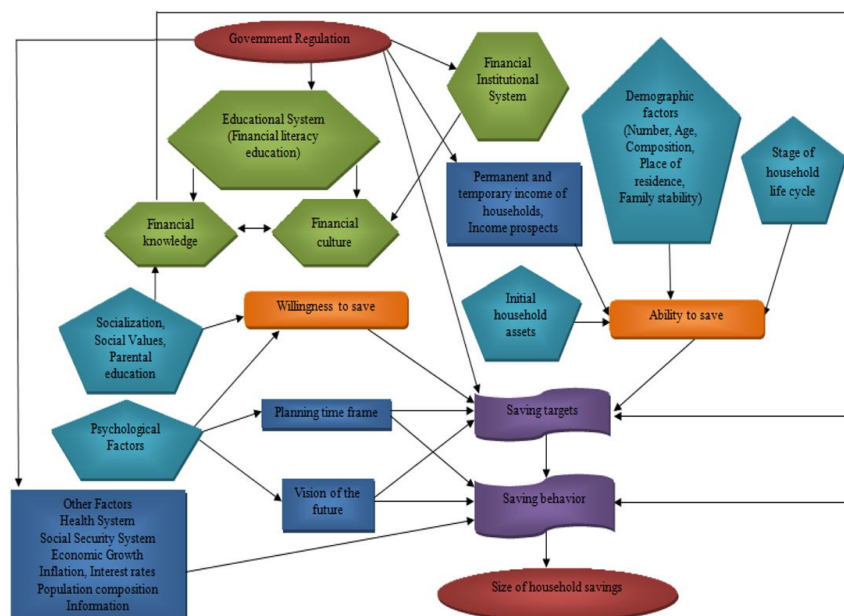

Fig. *Model: Factors influencing the household savings*

Source: *Own research*

I made a distinction between controllable and non-controllable factors. The non controllable factors are shown as pentagonal, light blue figures. The title of my dissertation: „ The effects of state regulations on the population's long term savings" also refers to the process shown in the model. As a

starting factor I marked „ government regulation" and as the final product I picked „ size of household savings." With the color green I marked the financial system, the financial education and the financial knowledge. The role of government regulation has an enormous influence and social responsibility through the households' saving goals and saving behavior. Because saving goals and saving behavior are affected by the many factors that I listed and illustrated, these units are marked in purple in my model, as they are equally important, as it is a featured coefficient of the savings decision process. The controllable factors are shown blue in the figure, so I could separate them from other factors.

During my research, I also examined, how personal income tax allowances developed, how durable are they, and how they can influence long-term self-reliance. These changes were mainly caused by the appearance of various tax breaks, continuous changes in tax system and possible sudden disappearance of tax types. The tax rate and the tax allowances are influenced by the combined effects of factors each year. Changes in tax breaks creates uncertainty in long-term financial, saving decisions. Tax incentives can greatly affect the average tax burden of income within the consolidated tax base.

In the analytical examination of clusters I found, that the clusters have similar properties to the clusters occurred during the exploratory research (HORVÁTHNÉ KÖKÉNY, 2014). Accordingly, I considered it appropriate to keep the former designations.

Cluster 1: Wishing to self-care

They consider the needs for financial security of households the least important, but even in their case this value is high 4,64. They know the financial products above the average, and they are moderately trying to take advantage of various tax allowances. The 2. *„Lives for today"* cluster's members think, that it is more important to them to archive financial knowledge. 29% of surveyed households included.

Cluster 2: Lives for today

They have the least confidence in the future state pension, but they do not do anything about it. The average value is only 1,93 on 5 grade scale. Nevertheless, they are the least familiar with some of the potential savings. The use of state tax incentives is uninteresting for them. However, they consider the importance of financial security. They consider teaching financial skills is only moderately necessary. It is less important to them, as for the other cluster members. In my opinion, this is a kind of disinterest, since they do not know the options for each tax benefits, thus they do not make use of these, so they do not consider it important, for the new generation will be able to study these in the classroom. 19% of surveyed households included.

Cluster 3: Conscious Self-carer, with financial literacy

The state is able to influence them the most with tax reliefs, during their savings decisions, although they trust the most, that later state pension will cover their needs. However, the value of their case is very low too (the average value of 2.61564 on 5-point scale). They also urge the need to develop financial literacy, although they are most familiar with the variety of savings products and the associated tax benefits and state aids. They do everything for themselves and for their family members to achieve financial security. 29,6% of surveyed households included.

Cluster 4: Self-carer, without financial literacy

For them, financial security is the most important. Less than, the 3. *„Conscious Self-carer, with financial literacy"* cluster members, but the future of their children, housing and taking care of retirement years are very important for them. Nevertheless, they have very low financial literacy however, they realize, how important it is to develop the financial skills in primary school (4,09). Although they are not familiar with the various financial options, they seek to take advantage of the tax benefits (3,77-4,05). 22,4% of surveyed households included.

4. CONCLUSIONS AND RECOMMENDATIONS

In my research I concluded, the state can't influence long-term goals equally, whether it is the tax relief, or non-refundable state aid. It turns out that the geographical location of each household is not the main determinant of saving behavior. The major determinant is their financial attitudes. The type classification is a major determining factor, so in one hand it is the state's ability to influence in form of tax benefits, in the other hand is how the households recognize different forms of savings. These

two factors explain 40.435% of the knowledge and saving habits of households, and they take financial decisions on the basis of these. However, it also became clear, that the state is not equally able to influence each household types, that I defined and characterized.

The economic models emphasize that the decision-maker is well-informed and rational. I think, this is the root of the problem. This is currently not implemented in Hungary. The majority of the adult population never learned financial, economic knowledge in school and many of them haven't during their adult life.

I concluded, that in the public related savings, the use of state tax breaks and aids have two hindering factors. This is knowledge and confidence. We must teach people how to handle money in the young age. This can help both the knowledge and the development of trust.

In my opinion, which was confirmed during my research, there is a need for primary schools to introduce teaching practical financial skills, as it is in great need for every household to know this for themselves and to the society as well.

5. SUMMARY

The examination of the state role was my emphasized aim in the look of the effect it has on the households' savings: the state's long-term politics in motivating the population to save, the law regulation of the state supports and the analysis of the population's long-term saving habits, its inclination and the exploration of its contexts.

The financial system, education system, changes in household income, incentives to encourage savings, state aids and a variety of other factors can influence the ability to save, the saving aims, the saving behaviour and finally the size of domestic saving. Another important factor is the propensity to save, what rather is an individual psychological factor and is influenced by the parental and societal values, the socialization process and the parental education. During my research I distinguished four different types of households, based on their financial attitudes. In my opinion, the state participation affects the proportion of each type too. Subsequent studies will be able to demonstrate that the „Conscious self-caring, with financial knowledge" cluster's ratio will rise significantly among Hungarian households as that age group reaches adulthood, who studied basic financial knowledge from the 7th grade of primary schools. I would like to do this for future research and hope, that I can do it during my active life.

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