

Analysis of the Interdependencies Among the Factors Influencing the Amount and Structure of the Private Savings

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Abstract: Our main objective is to present the amount and composition of private savings in Hungary and in Europe. Making savings is primarily the interest of individuals, but it also serves the interests of the state as it must recognize the potential in the individuals' financial decision-making behaviour. The state can achieve real results through various supports: it can increase the amount of savings, thereby increase the self-supporting nature of the general public. Unfortunately, a significant part of Hungarian households does not have any savings. On the contrary, they have a significant loan portfolio, the proportion of which (in percentage) is a high net income of the households. The primary objective of our research is to present the savings rate in Hungary and the European countries between 2004 and 2015, as well as to examine how the amount of the savings and the individual savings of different forms have changed in Visegrad countries. In 2009, the EU-28 households had the highest savings rate (13%), but they have not been able to approach this value since 2017 and presented a value below 10% in 2017. We used trend analysis to find differences between different saving rates of examined countries.

Key words: savings rate; household income; trend analysis; composition of savings

JEL codes: E21, H24

1. Introduction

The size and composition of savings is an important measure of wealth in the economy. According to Pearce (1993), income is all that is not spent on purchasing products and services for the purposes of current consumption, that is, the unspent portion of income is savings. Savings can be studied from many aspects. Economists even disagree with what motivates economic players to make their savings decisions. Savings can be generated both in households and in companies but in this paper, we only deal with household savings. Households decide how much they spend on current consumption and postpone their future consumption, i.e. how much they save is of microeconomic nature, as it is geared to the individual behaviour of decision-makers. On the other hand, it is also important from a macroeconomic point of view as the decisions of households affect the economy as a whole both in the long run and in the short term. In the financial market, the funds are based on the portfolio of passive assets collected by financial institutions. If there is not enough savings in one economy, there is not enough capital to invest so the economy cannot function properly (Horváthné et al., 2013).

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The amount of savings is both dependent on income and fiscal policy variables, but many other factors also influence individuals' decisions, such as

• yield;

• risk;

• the stability of the financial service provider;

• the type of financial and investment services;

• the extent of the guarantee to be used and how it is used (National Deposit Guarantee Fund, Investor Protection Fund);

• the amount and incursion of investment costs;

• which investment form best suits our needs, in what period of time our savings are becoming temporarily "unnecessary";

• the life stage may be an influencing factor because we may use different forms of investment in different living situations;

• the economic growth;

• inflation;

• the demographic composition, including the growth of the population and age composition.

In addition to the long list and the list above, there are many factors that affect our savings and investment decisions.

Our savings decisions have always played a central role in the lives of our economists as they have been studied in many ways with the factors that affect them. In the next chapter, we only highlight a few theories.

2. Theories on Savings

The role of savings has always been an important area for economics and many economists have been concerned with the economic analysis of their efficiency. Economic and social processes have an impact on households, including individuals. In today's developed societies, the accumulation of material goods is becoming less and less important, and often the focus is on leisure and gathering experiences. The world is changing, and, in turn, the needs of individuals are also transformed.

One of the connections of macroeconomics is whether the savings serve as the basis for the investments. The equilibrium interest rate is generated where the savings equal the investments (Mankiw, 2005). "Finance, like all other fields of economics, is a mixture of two basic approaches. A positive or descriptive approach analyses the reality of facts by presenting various financial problems. The normative approach explores and formulates the conditions for optimizing the various levels and types of financial decisions (Vigvári, 2008, p. 39)." Samuelson-Nordhaus (1993) writes that people buy financial assets (e.g. bonds, shares), they deposit money on a savings deposit account or reserve for their retirement age. Using the tools listed above, we make money from savers to capital goods users, i.e. investors.

For citizens to be able to live with dignity in retired years savings will reduce the uncertainty and enhance their possibilites (Starr, 2006). The amount of real estate (house or flat) 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, serious measures are needed.

To enhance savings, teaching financial knowledge, 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 necessarity of savings and households' long-term financial planning needs to be emphasized with educational programs (Lee, Park, Montalto, 2000), as household savings are indispensable and they have a direct impact on the economy (Hira, 1987).

Having the domestic situation analyzed we have to be faced with the fact that the majority of the Hungarian households do not have any savings. On the other hand they have a meaningful amount of loans and its ratio to the household's net income is quite high in percentage (Tatay, Vagyi, Varga, 2011)

It is certain that time horizon influences the income spending between present and future. The income of households is different according to the life cycles. The typical life cycle shows and increasing trend and by reaching the end of the active ages suddenly decreases. The most important motivation of savings to balance the consumption during the life cycle. Households make their consumption independent from gaining income during time. They can make by the help of savings and loans.

Adam Smith wrote in his book in 1776 that the individual is able to increase both individual and social wealth by means of savings. Without saving, which lasts all our lives, we cannot accumulate wealth (Bekker, 2002). According to Adam Smith, a good government does not intervene in economic activity, even though he has already stated that the government has an influence on making economic decisions. The task of the state is to perform only the role of the night watchman and supervise the production of public goods. An "invisible hand" provides the common good (Nemec & Wright, 2000).

Keynes thinks there is nothing to ensure that demand for capital goods is equal in size to savings (Keynes, 1965). According to Keynes, the private sector cannot adequately care for socially-needed goods and services. He attributed a significant role to the development of savings from the point of view of economic development (Dombi, 2005). According to Keynes, saving is the unearned income. Based on the characteristics of the human mind, it leads to the consumers' willingness. He thinks that the subjective and psychological motives of people are important. In Keynes's theory, the interest rate appears as a reward for liquidity, so if the consumer classifies income based on usefulness between the periods, then this cannot be the only determinant, so other stimuli are also needed to save. Keynes goes further and does not interpret savings as a reduction in consumption that the individual replaces with future surplus consumption, but rather as wealth that can spend on unspecified assets at a future date.

According to Keynes, consumers are not therefore able to save in exchange for a certain amount of consumption in the future, but they make savings primarily because the future is uncertain (Keynes, 1965).

According to Keynes, the decision to make individual savings is not a pre-consumption order, but a cancellation of a current order. In saving, people only want to create wealth that can be spent on unforeseen events at unforeseen times. Keynes distinguishes three treasury motifs:

- the transaction money demand, which is used to finance normal costs;
- the precautionary money demand to finance unexpected expenditure; and
- aspeculative money demand, which promotes accumulating wealth.

He argues that the interest rate only affects the speculative money demand, the transactional and

precautionary money demand depends on income, and the interest rate controls the form of saving rather than its amount (Bekker, 2002).

Subsequent research has shown that Keynes' assumption according to which the average willingness to consume is decreasing with income growth has not occurred since higher earnings do not result in a higher savings rate (Mankiw, 2005).

According to Kasilingham and Jayabal (2011) the relation of the savings and factors influencing savings is based on Keynes's eight motives. In their opinion in default of target savings the main reason for saving is the fear of unexpected incidences and insecurity. They identified that the extent of savings rather depends on saving willingness than saving capability (Kasilingham & Jayabal, 2011).

In 1947, Brady and Friedman, as a relationship between saving and family income, proved that the development of savings did not depend on the absolute value of the income of families but on the relative size of the aggregate average income.

In 1952, Brown proposed the replacement of the former highest income to the previous consumption maximum (Modigliani, 1986). Modigliani's formulation and development of a life cycle hypothesis on household savings was a big step forward, although it was not him who started researching this area (Bodie, Merton, Cleeton, 2011).

Duesenberry and Modigliani have drawn the following novel conclusions, which were later proved (Bekker, 2005):

(1) A country's savings rate is independent of per capita income.

(2) Different macroeconomic rates are observed for different individual behaviour.

(3) The countries with the same individual savings the rate of savings will be bigger where the economy's long-term growth rate is greater.

If the growth rate is zero, then the savings rate will be the same.

(4) The wealth and income ratio move against the growth rate. Its value will be greatest when growth is zero.

(5) In a farm compared to current earnings substantial assets can accumulate even though the estate property is zero.

(6) Time spent in retirement affects both the wealth/income ratio and the savings rate.

It is important for the government to provide a stable financial framework for the economy. To this end, the government must provide a general legal and economic framework that enables individuals to generate economic growth if they are in line with individual goals and interests. Economic stability is promoted by monetary and fiscal policies (Friedman, 1996) and the fact how the state can influence the financial management and the willingness to save of the various life cycles of the household, with the help of various incentives, since it is also a common interest to continue balanced household, corporate and budgetary finances, which is also heavily influenced by the citizens' financial knowledge and awareness (Horvathne Kokeny & Szeles, 2013).

3. Applied Methods and Research Findings

3.1 Savings Rate

During the research, we examined the household income, the savings rate and its components, the amount of gross savings and the gross disposable income of the European Union's 28 Member States, Iceland, Norway, Switzerland. The data used are from the European Central Bank and the OECD database. The period

under review is not too long since it has only been a few years since the economic and financial crisis has exploded but it has also had an impact on savings during this period.

Figure 1 describes the average savings rate of the EU28. The savings rate was calculated as the ratio of gross savings and gross disposable income. It is well-observed that the amount of savings rose to 12.89% by the crisis in 2009. This is a 18.5% increase compared to 2008, which is very significant. The population was trying to prepare for any unexpected expenditures, but this fear did not last long, since 2009 the savings rate of the EU countries is steadily decreasing. During the period under review, the lowest was 10.27% in 2016. Table 1 shows household savings rates in the examined countries between 1999 and 2015.



Source: authors' editing based on the data of the Eurostat http://ec.europa.eu/eurostat/web/sector-accounts/data/annual-data

We examined the gross disposable income of EU households per capita in real terms in the 12 years examined in percentage of the previous period. The lowest change in disposable income was between 2010 and 2013 compared to the previous year, while the most significant increase was seen in 2016 in the last surveyed year. The Visegrád countries are analyzed, but there are significant differences as well, whereas in Poland the savings rate is 1.77%, the highest in the Czech Republic is 11.8% and Hungary 9.62%, Slovakia 8.81% is ranked mid-range based on 2015 data.

Some countries have been highlighted, so those at the beginning and end of the rankings are examined in more detail. As a first step the savings rates of each country was described by trend calculation. Analytic trend calculation is the most commonly used method of trend calculation. The constant tendency of the time series can be expressed with some well-matched function (Barrow, 2006).

Trend analytic determination is the most commonly used form of trend calculation. The long-term trend of the time series is expressed by a well-matched function type. As in the function approach, like the regression calculation, using the least squares method, we look for the trend line that most closely matches the time series values. Similarly, higher-ranking countries such as Norway, Sweden, Austria and Slovenia have similar results. The differences between the different years are characterized by the negative rates of Bulgaria, Cyprus, Latvia and Lithuania.

Switzerland must be stressed at 23.2% (in 2015) with the highest savings rate, with a trend showing that 0.4418% is the average growth rate of the savings rate. In addition to Switzerland, Sweden, Slovenia, Austria, the

Netherlands, Italy, France, Ireland, Denmark, the Czech Republic and Belgium, the surveyed countries had a saving rate of over 10% in the year under review. For Switzerland, a linear trend between 2004 and 2015 was applied but it is important to mention that the impact of the economic and financial crisis that started in 2007 has influenced the result. The line trend was as follows:

$$y = 0.4418 x + 18,853 \tag{1}$$

Trend alignment is tight as $R^2 = 0.8614$. The annual growth rate of the savings rate is 0.4418 %. In countries with high savings rates similar amounts have been generated. We tried to find a different after crisis situation and analyzed the linear trend between 2009 and 2015, in this case, the annual growth rate of savings is 0.9154%, that is almost 1%.

Countries with negative savings rates in Bulgaria, Cyprus, Latvia and Lithuania, so in their case, a trend could not be set up as the differences between the 2004 and 2015 were enormous. The result changes, if we change the examined period from 2004-2015 to 2009-2015, in this case at Cypus and Lithuania, the trend alignment is tight. For Cyprus, the annual growth rate of the savings rate is 2.9696% and for Lithuania, this rate is 1.4314 %.

3.2 Composition of Savings

In the past few years the amount of annual savings increased considerably. The annual accumulated funds of the Hungarian population in 2015 grew nearly by 80% as of 2012. In 2015 the net financing capacity of the households was 2665 billion forints while this only amounted to 1512 billion forints in 2012 according to the National Bank of Hungary (MNB) data. Based on the Hungarian Statistical Office in 2015 the gross domestic product (GDP) per capita reached 26 699.2 dollars on purchasing power parity in Hungary. According to a Credit Suisse survey in 2015 wealth per capita was 30 796 dollars. The net savings of households in 2015 corresponded with 7.9 percent of GDP. Households continued buying considerable amount of gilt-edged securities in 2015, which further increased the role of the state in financing and reducing the amount of necessary external sources (Voo, 2016).

OECD classifies savings in the following categories:

- currency and deposits;
- securities other than shares;
- shares and other equity;
- mutual fund shares;
- life insurance reserves;
- pension funds;

Figure 2 illustrates the ways of saving the inhabitants of the Czech Republic, Slovakia, Poland and Hungary based on data from 2016. There are really three obvious differences, while Hungarians save only 27.6% of their savings in deposits. In the Slovakian population this is a very popular form that is more than 60%. This is also due to the fact that the central bank base rate has declined considerably in Hungary, it does not reach 1% today and it is no longer worthwhile to choose deposits with low interest rates. Another important finding is that the investment in the shares (stocks) in Hungary is more than 30%, while in the neighbouring Slovakia it is less than 1%. The third issue for us (and a cause for concern) is that the investment in pension funds is lowest in Hungary by 3.4%, while in Slovakia it is 13%, but higher in the Czech Republic and Poland.

Nowadays, due to known and anticipated problems related to retirement, the topic is important and timely on a social level. Savings reduce the uncertainty of retirement years; life expectancy affects retirement savings.

Unfortunately, a large part of households does not provide timely care of their retirement years, although this is indispensable, and the state should do more to encourage savings of this kind.



Source: OECD database

3.3 The Base Rate Effects for Debit and Credit Rates

The base rate is an important tool of the monetary policy that is influencing the amount of money flowing into the economy. After the economic and financial crisis in 2007 many countries started to use the base rate decreasing mechanism to boost the possibility of the players in the economy to reach sources. It did not only result in lower loan rates and but also in decreased debit rates. This is one of the reasons why the Hungarian citizens do not keep their savings in debit, but they use alternative saving forms.



Figure 3 Forint Credits for Households and Their Annual Interest Rate (%) Source: MNB (Hungarian Natinal Bank)

Hungary was reached by the crisis in autumn 2008. In October 2008 the base rate was 11.5% and it has been decreasing since then continuously. At present it does not reach 1% and we cannot expect any further increase in the short-run. The short-term average debit rate was 3.36% and it has also been decreasing. In 2008 it was 0.05% according to the Hungarian National Bank statistics, that is almost zero percent. As you can see on Figure 3 the long-term debit rates starts a bit later to follow the base rate changes and the tendency is very similar to the short-term debit rates. In March 2018 the long-term debit rate was 0.65%.

4. Conclusions

One of the basic assumptions of macroeconomics is that savings are the basis for investment. Attention to our long-term self-care is even more important in the current financial crisis. Households have become more aware of their financial decisions. There is a very different regulatory system in each country, and the state contributes in a variety of ways and to the increase in the volume of savings and changes in its structure. It is a challenging task to demonstrate and analyze the reasons of the differences between countries.

Between 2004 and 2015 the rate of savings was examined. Significant differences can be observed. Countries with the highest savings rates are Switzerland, Sweden and Germany, while at the end of the ranking, Bulgaria, Cyprus, Latvia and Lithuania have the lowest rates.

Between 2004 and 2015, the rate of savings was examined. Significant differences can be well-observed, and savings increased to 12.89% in 2009. The population was trying to prepare for any unexpected expenditures, but this fear did not last long, as since 2009 the savings rate of the EU countries has steadily been decreasing.

Looking at the Visegrad countries, three differences can be observed:

- Hungarians keep their savings in low deposits compared to other countries, one of the main reasons being the low central bank base rate;
- investing in equity (share) is the highest in Hungary since the deposit does not provide a sufficient return and thus other forms of investment are favoured;
- investing in pension funds in Hungary is the lowest, i.e., 3.4 % of the Visegrád 4, which may have some concerns for the future.

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