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VALUE AND STRUCTURE OF HOUSEHOLDS' FINANCIAL ASSETS IN POLAND

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Abstract. Households decide to spend a part of their income on goods and services and to save the rest of it. Household's assets can be cumulated as financial assets and as non-financial assets.

The aim of the article is to identify and evaluate changes of households' financial assets value and structure in Poland in 2003-2014. As a background of research, the author considered changes in economic environment. The analysis was conducted with the use of statistical tools: index of the structure and growth rate. The paper also includes Pearson correlation coefficient between real GDP growth rate and households' financial assets real growth rate. The author compared the value of households' financial assets as a percentage of GDP in European countries in 2014.

The results of the research are as follows. Between 2003 and 2014, households' financial assets in constant prices in Poland increased by over 100%. However, households' financial assets value as a percentage of GDP in Poland is still relatively low among European countries. Transferable and other deposits dominate in the structure of households' financial assets in Poland. Shares, equity and a currency have also the significant share in total assets. The value of transferable deposits, listed shares, investment fund shares or units and currency increased at constant prices in analysed period. Correlation analysis shows that there is almost no significant correlation between real annual GDP growth rate and real annual growth rate of households' financial assets.

Key words: financial assets, households.

JEL code: D10, D14, D31.

Introduction

Households decide on distributing of their income between consumption and savings in such a way as to maximize their individual utility function. Households use credit and deposit market and choose between present and future consumption (Utzig, 2013). Lifetime resources, the distribution of these resources, and the age play a critical role in saving decisions. Households who expect rich pensions may not need to accumulate a lot of private savings to provide for themselves when they stop working (Lusardi, 2008). Households' savings are voluntary, when decision about consumption decreasing is made without external pressure, or involuntary, when consumption decreasing results from legal requirements or economical pressure (Bywalec, 2009).

The pattern of financial asset changes with the decrease of household's disposable income. Macroeconomic conditions also affect the amount of household's savings, which can be accumulated as financial assets as well as non-financial assets. The propensity to saving goes up with the increase of household's income (Wojcik, 2007). Factors strongly affecting households' saving are: public and corporate savings, growth and demography. Households' savings are also determined by: inflation, unemployment, the real interest rate and financial deregulation (Callen, Thimann, 1997). Among socioeconomic factors affecting saving patterns in Polish households the income in the household and the householder's level of education are of great importance. (Aniola-Mikolajczak, Golas, 2014). The age is also an important factor determining household's financial asset structure. Shares of high-risk assets in total households' financial assets are lower in both the younger (under 35) and the older (55-64 and 65+) age groups, compared to the 35-54, and tend to rise with wealth (Bertaud and Starr-McCluer, 2000). The allocation of households' financial assets is determined by the risk level, amount of predicted profit, inflation rate and asset liquidity (Rytelewska, Klopocka, 2010). Household propensity to risky investment is lower within labour income uncertainty and poor health (Cardak, Wilkins, 2009). After the financial crisis in 2007-2009, household saving rate increased (Walden, 2012).

It is also worth indicating that households' financial assets are highly concentrated. The

relevant question for poor households in low-income countries is not how much of financial assets they have, but whether they have any (Honohan, 2006).

The aim of the paper is to identify and evaluate changes of households' financial assets volume and structure in Poland between 2003 and 2014 on the background of GDP growth rate. The tasks of the research are to calculate the growth rate of households' financial assets, to compute the Pearson correlation coefficient between growth rate of analysed assets' categories and GDP growth rate in Poland and to present the value of households' financial assets as a percentage of GDP in European countries.

The analysis was conducted on the basis of the National Bank of Poland and the Central Statistical Office in Poland data covering the period of 2003-2014. The comparison between the value of households' financial assets as a percentage of GDP in European countries in 2014 was made with the use of Eurostat data.

Research results and discussion

A household is the unit consisting of all its members, related or unrelated, who share the same dwelling unit. The most important fact is that household members are sharing their incomes or resources (Smeeding, Weinberg, 2001).

According to the European System of Account definition (2013), financial assets consist of all financial claims, equity and the gold bullion component of monetary gold.

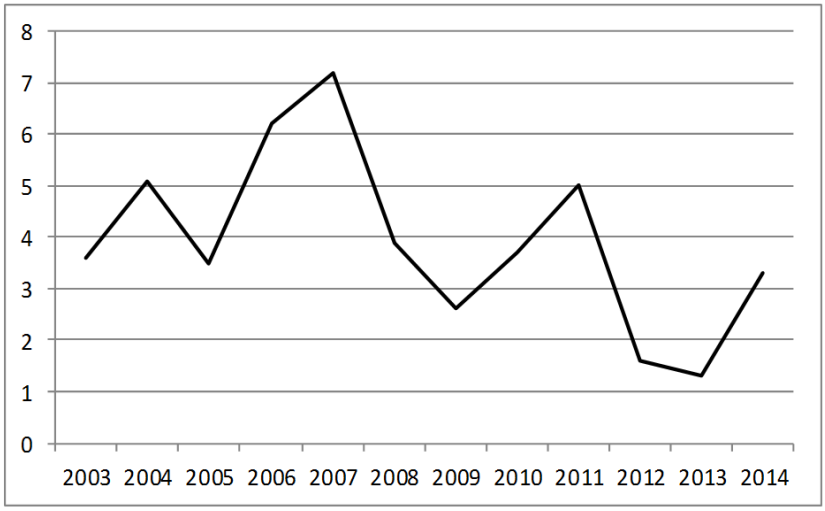
Households' financial assets according to the National Bank of Poland specification are (the National Bank of Poland dataset):

- currency;
- transferable and other deposits;
- short- and long-term debt securities;
- short- and long-term loans (including households deposits in brokerages and saving bonds posed by households);
- listed shares;
- unlisted shares and other equity;
- investment fund shares or units;
- non-life insurance technical reserves;
- net equity of households in pension fund reserves;
- prepayments of insurance premiums and reserves for outstanding claims;
- other account receivable.

According to the European System of Accounts (2013), transferable deposits are deposits exchangeable for currency on demand and which are directly usable for making payments by cheque, draft, giro order, direct debit/credit, or other direct payment facilities, without penalty or restriction. Other deposits include time deposits, which are not immediately disposable and saving deposits.

Some of household's financial assets are collected voluntarily (currency, deposits, debt securities, shares and equity, investment fund shares or units) and some of them are collected obligatorily (equity of households in pension fund reserves). Some of household's financial assets are characterised by high liquidity (currency, transferable deposits) and some are not liquid.

The most popular measure of economic development is gross domestic product growth rate. A business cycle is often defined in terms of the alternation between periods of expansion and recession in the level of economic activity or as transitory fluctuations in economic activity around a permanent or "*trend*" level (Morley, Piger, 2012). The value of real GDP growth rate (%) in Poland in the period of 2003-2014 is presented in Figure 1.

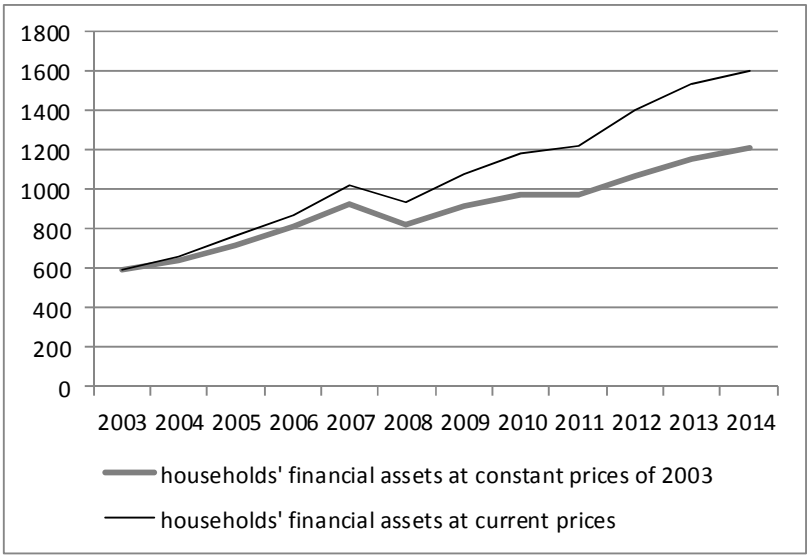


Source: author's construction based on the data of the Central Statistical Office in Poland

Fig. 1. **Real GDP growth rate in Poland,%**

In Poland, only economic slowdown was observed in the years 2007-2009, and recession did not occur. The second wave of economic slowdown was observed during years 2011-2012. The highest real GDP growth rate was observed in 2007, just before the economic and financial crisis in Europe.

Figure 2 presents value of households' financial assets in 2003-2014 at current prices against its level at constant prices of 2003.



Source: author's construction based on the data of the National Bank of Poland

Fig. 2. Households' financial assets at current and constant prices, billions of national currency – PLN

In the years 2003-2014 households' financial assets value increased by 171 % at current prices and by 105 % at constant prices. The decrease was observed only in 2008, the year when financial and economic crisis began. It can be stated that households in Poland are becoming more and more interested in accumulating financial assets.

Table 1 presents internal structure of households' financial assets in Poland and real growth rate of households' financial assets in 2003-2014. Only non-zero financial assets were included in the table.

Table 1

Internal structure of households' financial assets in Poland and its real growth rate in 2003-2014, %

	Internal structure												Real growth rate in 2003-2014
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Currency	7.8	7.0	6.7	7.3	7.0	9.0	7.8	7.4	7.9	7.0	7.2	7.9	106
Transferable deposits	10.6	9.9	11.0	12.5	13.5	15.5	17.2	19.1	19.0	16.9	18.2	18.8	263
Other deposits	26.0	22.5	18.9	15.7	13.1	21.2	19.3	17.3	20.7	20.7	18.3	19.4	53
Short-term debt securities	0.5	0.6	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	-94
Long-term debt securities	1.4	1.2	1.0	0.8	0.7	0.8	0.5	0.5	0.6	0.6	0.3	0.3	-61
Short-term loans	0.2	0.2	0.3	0.5	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	282
Long-term loans	1.3	1.2	1.1	0.9	0.6	0.9	0.8	0.6	0.6	0.6	0.6	0.6	-5
Listed shares	2.0	2.9	3.3	5.8	5.9	3.0	3.8	4.4	3.2	2.7	3.0	2.6	169
Unlisted shares	9.0	13.7	12.6	10.7	10.7	6.2	7.0	5.7	5.8	6.8	5.2	3.5	-19
Other equity	18.7	17.5	17.4	13.8	13.7	10.6	10.2	9.6	9.0	11.0	12.7	12.6	39
Investment fund shares or units	5.2	4.6	6.8	9.1	10.8	5.7	6.1	5.9	4.8	4.8	5.6	6.1	140
Non-life insurance technical reserves and provisions for calls under standardized guarantees	2.4	2.2	2.0	1.8	1.7	2.0	1.8	1.8	1.8	1.7	1.6	1.7	42
Life insurance and annuity entitlement	5.1	5.3	5.4	5.9	6.0	7.1	6.1	6.1	5.5	5.3	5.0	4.9	97
Pension entitlement, claims of pension funds on pension manager and entitlement to non-pension benefits	7.7	9.5	11.6	13.8	14.3	15.4	17.2	19.4	19.0	20.0	20.4	10.3	174
Other accounts receivable/payable, excluding trade credits and advances	2.2	1.8	1.6	1.2	1.6	2.1	1.8	1.7	1.7	1.5	1.4	11.0	930

Source: author's calculations based on the data of the National Bank of Poland

Transferable and other deposits dominate in the pattern of households' financial assets (27-40 %). It is worth indicating that the relationship between transferable and other deposits changed in the analysed period. In 2003-2005, the share of other deposits was about two times higher than the share of transferable deposits. In 2007 and 2010 the share of other deposits in total households' financial assets were lower than the share of transferable deposits, in contrast to the rest of analysed period.

The share of currency in total households' financial assets was rather stable (7-8 %). Only in 2008, the first year of economic slowdown, the share of currency was higher at the level of 9 %. The significant change in the share of pension entitlements in 2014 was caused by transferring

PLN 150 bln from open pension funds to the Polish Social Insurance Institution (ZUS).

The decrease of the value of listed shares and investment fund shares or units in 2008 was caused by the downturn at the Warsaw Stock Exchange, when WIG index decreased by 51 % as the reflection of the financial crisis.

The highest increase was observed in the category of assets: other accounts receivable/payable but this increase results from transferring assets from open pension funds to the Polish Social Insurance Institution in 2014. Among significant financial assets' categories, the values increased at constant prices in categories: transferable deposits (by 263 %), listed shares (by 169 %), investment fund shares or units (by 140 %) and currency (by 106 %).

The Pearson correlation coefficient between growth rate of analysed asset's categories and GDP growth rate in 2003 constant prices was computed to examine if there is any correlation between real value of households' financial assets categories and economic slowdown in Poland.

Pearson correlation coefficient was defined as:

$$r_{XY} = \frac{\operatorname{cov}(X,Y)}{\sigma_X \sigma_Y} \quad (1)$$

When $\operatorname{cov}(X,Y)$ is the covariance between X and Y, σ_X and σ_Y - standard deviations of X and Y.

Correlation significance was examined by comparing empirical value

$$t_0 = |r_{XY}| \frac{\sqrt{n-2}}{\sqrt{1-r_{XY}^2}} \quad (2)$$

to t statistic for n-2 degrees of freedom (Starzynska, 2002). The results are presented in Table 2.

At the significance level of 0.05 only the real growth rate of long-term loans is significantly correlated with real GDP growth rate. Previous research using quarterly data shows that there is significant correlation between real GDP growth rate and households' financial assets real growth rate (Utzig, 2013) so it can be stated that annual data are insufficient to evaluate if there is any correlation between analysed variables.

To evaluate the value of households' financial assets in Poland it was compared to the value of households' financial assets in European countries (Figure 3).

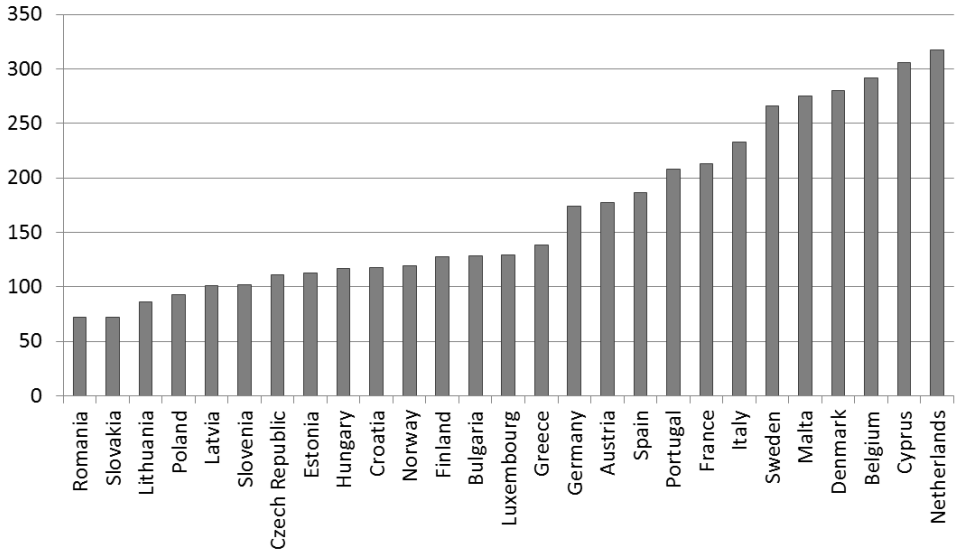
It was observed that in Poland, Lithuania, Latvia, Slovenia, households' financial assets as a percentage of GDP are at the level of 90-100 %. Households in those countries do not pose as much of financial assets as in the Netherlands, Cyprus, Belgium, Denmark, Malta and Sweden, where households' financial assets exceed 250% of GDP.

Table 2

Correlation between annual GDP growth rate and households' financial assets categories annual growth rate at constant prices of 2003 in Poland

Specification of households' financial assets	Pearson correlation coefficient between households' financial assets annual real growth rate and GDP annual real growth rate
Currency	0.359
Transferable deposits	0.225
Other deposits	-0.134
Short-term debt securities	-0.191
Long-term debt securities	0.321
Short-term loans	-0.013
Long-term loans	-0.623
Listed shares	0.288
Unlisted shares	0.136
Other equity	-0.460
Investment fund shares or units	0.084
Non-life insurance technical reserves and provisions for calls under standardized guarantees	-0.105
Life insurance and annuity entitlement	0.486
Pension entitlement, claims of pension funds on pension manager and entitlement to non-pension benefits	0.190
Other accounts receivable/payable, excluding trade credits and advances	-0.086

Source: author's calculations



Source: author's construction based on Eurostat data

Fig. 3. **Households' financial assets as a percentage of GDP in European countries in 2014**

Conclusions

The paper analyses households' financial assets value and structure in Poland in the years 2003-2014. The analysis shows that:

1) households' financial assets in Poland increased by over 100% in constant prices in the period 2003-2014; this increase can be evaluated as significant;

2) in Poland, households' financial assets value as a percentage of GDP is rather low (about 100%) among European countries (even 200-300%); relatively low level of households' financial assets is also observed in Romania, Slovakia, Lithuania, Latvia and Slovenia;

3) transferable and other deposits dominate (30-40%) in the structure of households' financial assets in Poland with the significant role of shares and equity (20-30 %) and a currency (7-9 %);

4) among significant households' financial assets the value increased in categories: transferable deposits (by 263 %), listed shares (by 169 %) and investment fund shares or units (by 140 %);

5) correlation analysis shows that there is almost no significant correlation between real annual GDP growth rate and households' financial assets categories real annual growth rate; using quarterly data may lead to different conclusion.

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