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Macroeconomic Savings in Poland

Introduction

Savings maintain a relatively stable level at 22% of the world gross domestic product. In high income countries savings reached the level of 20% of GDP in 2012 after diminishing from 23% since 2000. At the same time savings increased in fast developing economies of East Asia and Pacific by 11 points to the level of 46% of GDP (due mainly to savings of China of 51% of GDP) and by 5 points in South Asia to the level of 30% of GDP. Latin America kept the saving rate at the level 18–19% during 2000–2012 while Europe and Central Asia lowered savings to 17% of GDP in 2012 from 19% in 2000 (WDI, 2014).

During the last two decades one can observe considerable changes in the structure of macroeconomic savings in the world. In many developed economies the household sector lost its position as the main supplier of investment funds for corporate sector. The nonfinancial corporate sector savings are rising in total gross savings and often in relation to GDP since the 1990s. Growth of corporate profits mirrors the declining share of households and governments in creating savings.

A profound shift from households to corporations in creation savings has its origins in a global decline of costs of capital observed since 1980s due to a significant technological change associated with the information and computer technologies. Lower cost of capital led to a shift from labor toward capital in corporate value added and in firms investment decisions. Firms finance larger part of investments from increasing corporate profits (equal to firms savings) (IMF, 2009; Karabarbounis and Neiman, 2012).

Corporate sector savings increased faster than corporate investment during the last 20 years and the corporate sector has become often the net lender for other sectors of the economy. That changed the expected behavior of firms to finance investments mainly through credits and issuing equity (André *et al.,* 2007; Cardarelli and Ueda, 2006). Positive net corporate lending led to decreasing stock

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of corporate indebtedness in relation to GDP and in relation to corporate assets as well as to equity (ECB 2012; OECD 2013).

The cost of capital fell also due to reductions in corporate tax payments and due to demand for equity from pension funds which lower the average cost of equity for firms by not paying dividends, income and capital gain taxes (ECB 2008; Özmen 2012; Armenter and Hnatkowska, 2011).

An increasing part of corporate savings is kept in cash. Firms keep costly cash holdings due to precautionary reasons because of the occurrence of operating losses, industry sales volatility, new investment opportunities, an increasing role of intangible assets and a high risk of new R&D investment during fast technological progress (Opler *et al*., 1999; Pinkowitz *et al.,* 2013). Other reasons of high corporate savings are: the greater access to capital markets and a rise of property income on globally developed financial markets as well as relatively low interest rates (ECB 2013).

The rise of nonfinancial corporate sector savings in total savings in Poland and a substantial decline of households savings was one of the most spectacular among European countries between 2000 and 2012. The shares of households savings in GDP are much lower than shares of nonfinancial corporate savings in GDP. In this paper we analyze trends and changing structure of macroeconomics savings and reasons for these phenomena.

1. Macroeconomic identities and macroeconomic savings

Before we analyze trends and structure of savings let us begin with basic macroeconomic identities indicating relations of savings with other macroeconomic variables.

Gross disposable income *YD* is spent on consumption and savings:

$$YD = C + S,$$

where C = consumption, S = gross savings.

Gross disposable income is a sum of gross domestic product *Y* (composed of consumption, gross capital formation and net export), net income from assets abroad and net current transfers from abroad:

$$YD = Y + NI + Tr,$$

$$Y = C + I + XN,$$

where NI = net income from abroad, Tr = net current transfers from abroad, I = gross capital formation, XN = net export of goods and services.

Net income and net current transfers from abroad form a part of the net current account balance above the net export of goods and services:

$$NI + Tr = CA - XN,$$

where CA = net current account balance of the balance of payment.

Substituting the above into disposable income equation, we obtain:

$$YD = Y + CA - XN,$$

$$YD = C + I + XN + CA - XN = C + I + CA,$$

$$S = YD - C = C + I + CA - C,$$

$$S = I + CA.$$

Saving is a sum of gross capital formation and net current account balance, e.g. domestic savings finance the domestic gross capital formation and net current account balance (net export of savings):

$$I = S - CA.$$

Gross capital formation is equal to gross savings minus the net current account balance, e.g. the domestic gross capital formation is financed by gross domestic savings and net foreign savings (the net current account balance with opposite sign).

Net lending of the economy is the net current account balance adjusted for the net capital transfers from abroad:

$$NL = CA + TR.$$

where NL = net lending of the economy, TR = net capital transfers from abroad.

Trends and levels of the above categories are analyzed in the next section.

2. Trends of domestic and foreign savings in Poland

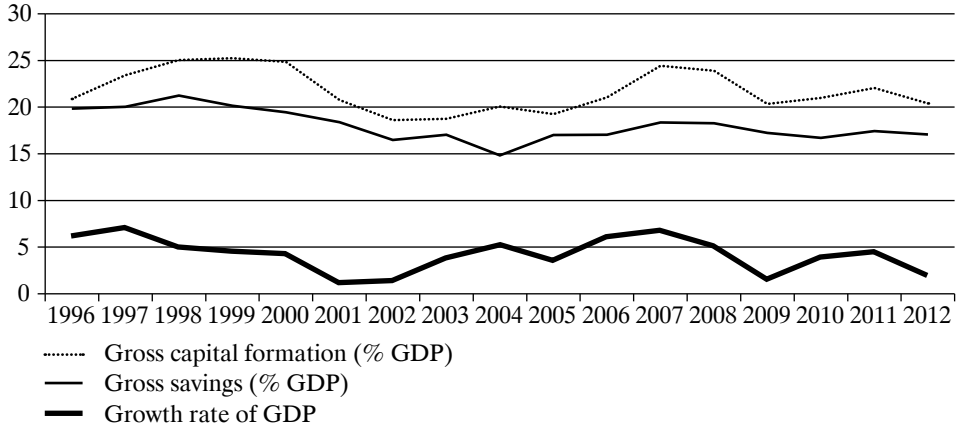
Macroeconomic savings in Poland are relatively low by international standards. The Polish saving rate of 17.1% of GDP in 2012 was below the average saving rate for 28 European Union countries which stood at the level of 19% in 2012. During 2000–2012 the average savings relative to GDP in Poland were also lower than in most European countries that saved above 20% of GDP, with Switzerland and Norway saving more than 30% of GDP (Eurostat, 2014).

After recovery of the Polish economy from the transformation shock, domestic savings rose to 20% of GDP in the second half of the 1990s. Since 2001 the saving rate in Poland exhibits very flat cycle around 18% of GDP, except for the accession year 2004 when the consumption boom occurred and savings fell. Neither financial boom in 2005–2008 nor financial crisis of 2008–2010 did not push off the saving rate in Poland from a relatively low level (Fig. 1). Saving rate is positively

correlated with GDP growth and follows variations of GDP growth with one year delay, except for 2004 (Liberda, 2013).

Figure 1

Gross savings, gross capital formation and GDP growth rate in Poland, 1996–2012



Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

In the period 1996–2012 gross capital formation in Poland exceeded gross domestic savings by 2–6% of GDP. The capital formation reached maximum levels of 24–25% of GDP during fast economic growth in 1997–2000 and a decade later at the peak of the financial boom in Poland in 2007–2008. During most of the 2000s domestic investments were kept at 19–22% of GDP, correlated with lower saving rates and lower GDP growth rates (Fig. 1). According to growth modelling and simulations, current levels of savings and investments are insufficient to speed per capita economic growth in Poland and sustain it in future at the level of 3.5% annually (World Bank, 2014).

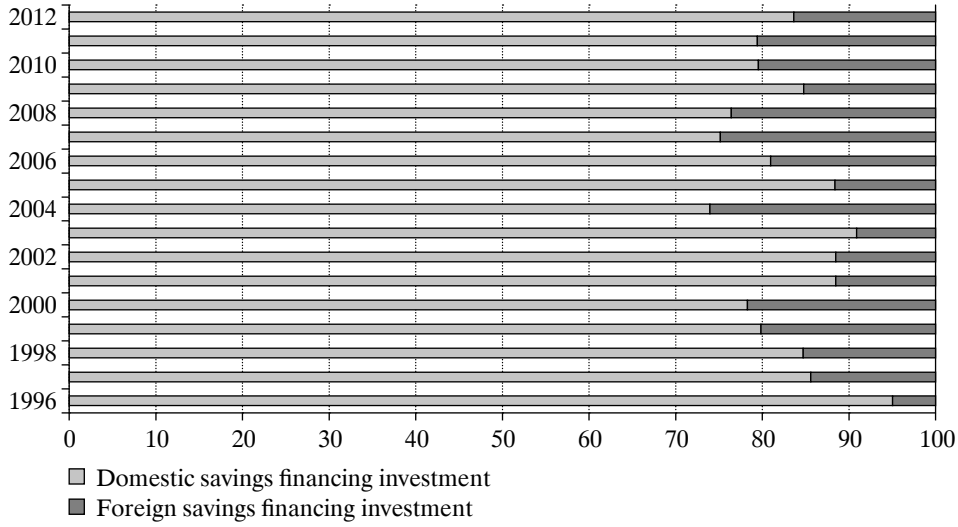
For almost two decades between 1996 and 2012 foreign savings (net current account balance with opposite sign) financed from 1/20 to 1/4 of total gross investment in Poland (Fig. 2).

The deficit of resources to finance investments is covered by net lending or by capital transfers from abroad. From 1996 till 2003 net lending to the Polish economy was equal to the current account deficit, as net capital transfers from abroad were negligible or zero in these years. From 2004 onwards the net capital transfers from abroad, mainly from the European Union, made the indebtedness of the Polish economy increase less (by 1–2% of GDP) than the negative current account would require if there were no capital transfers from abroad (Fig. 3).

Till 2003 the main cause of the negative current account of the Polish economy was the negative value of net export. The economy was importing more than exporting to finance increasing domestic investments. From 2001 onward exports have started increasing faster than import, and the net export became less

Figure 2

Domestic and foreign savings as percent of gross capital formation in Poland, 1996–2012

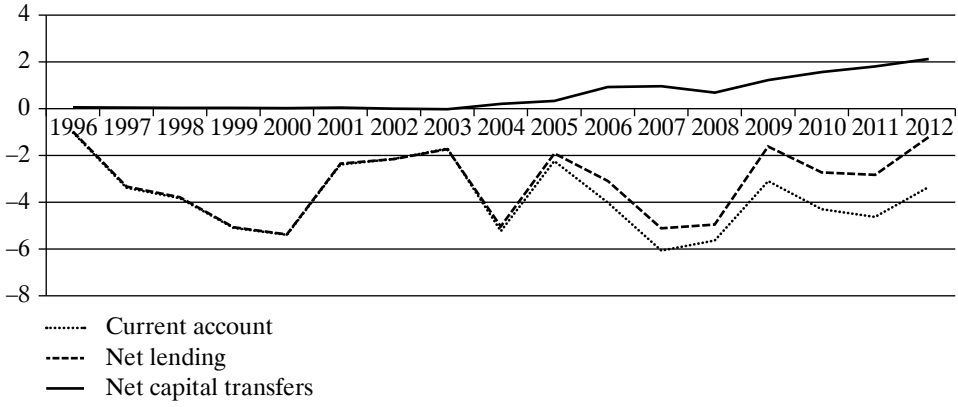


Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

negative (except for 2006–2008). However, the negative current account deficit diminished only in 2001–2003 and since 2004 it became more negative again till the onset of financial crisis at the end of 2008 (Fig. 4).

Figure 3

Current account, net lending, net capital transfers to Poland, 1996–2012 (% GDP)



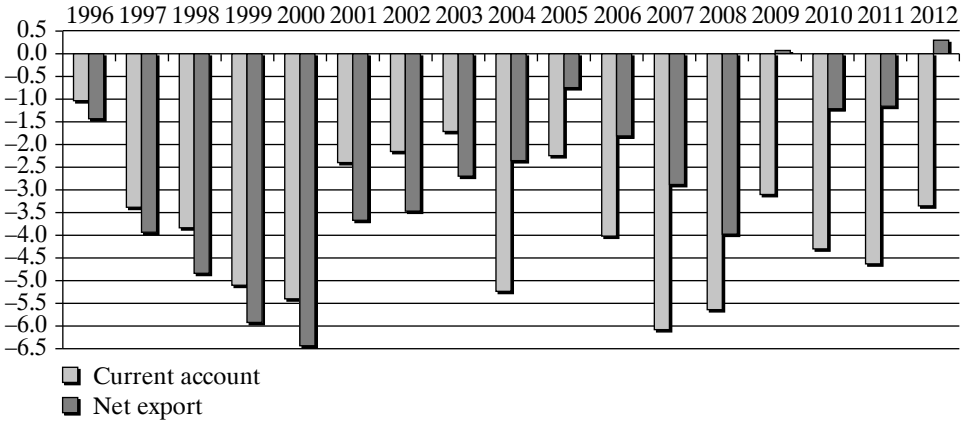
Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

The dispersion between net export and net current account widened due to the rising share of the negative net property income from abroad that exceeded the positive net current transfers from abroad, making the sum of these two negative

in 2004. The sum of net income and net current transfers from abroad is exposed as the difference between two bars (of net export and net current account) in Figure 4. This (negative) sum of the net property income to be paid abroad to nonresidents and net current transfers from abroad composed a higher share of the current account than did the net export during 2004–2011, except only for 2008 (Fig. 4).

Figure 4

Current account and net export in Poland during 1996–2012 (% GDP)



Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

Net current transfers from abroad to Poland (compensation for employees, taxes and subsidies and other current transfers) were positive throughout the period of 1996–2012, but not high enough to compensate since 2004 for the negative net property income to be paid abroad to nonresidents. Net property income from abroad (interests, distributed income of corporations and reinvested earnings on foreign direct investment) which accounted for ca. minus 1% of GDP during 1998–2003 fell to minus 3–5% of GDP during 2004–2012 (Fig. 5).

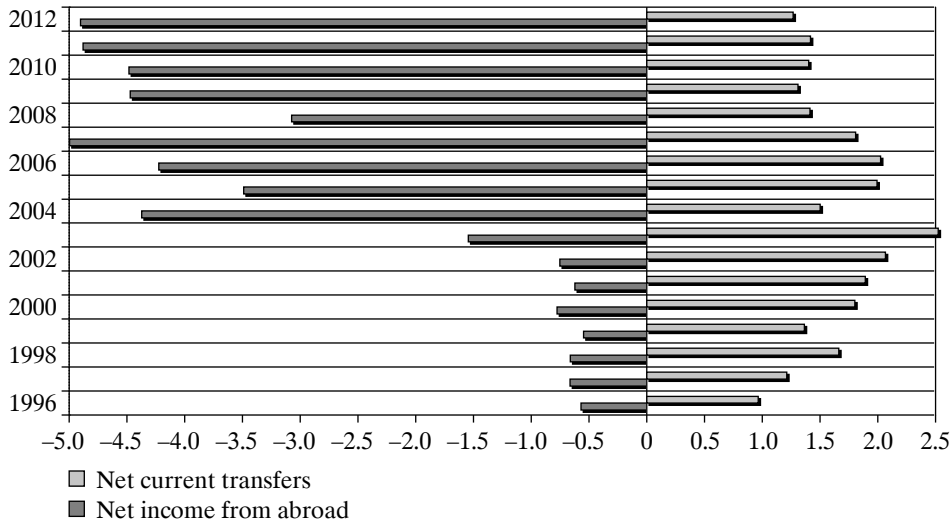
The main reason for this change was the rise of reinvested earnings on foreign direct investment in Poland which became negative in Polish current account from 2004 onwards (except for 2008). This originated from faster inflow of foreign direct investment to Poland since Poland's accession to the European Union in 2004. The net reinvested earnings on foreign direct investment accounted for minus 1.5% of GDP on average during 2004–2011, except for 2008 (CSO, 1995–2012). The net property incomes from abroad show more negative levels than the net exports since 2004, except for 2008 (Fig. 4 and Fig. 5).

During the last 19 years (1995–2013), the sum of current account deficits that led to an increasing indebtedness of the Polish economy is not alarming yet. However, the rising costs of foreign capital invested in Poland (high negative net property income from abroad) are already a concern. The net international investment position, which is the difference of foreign liabilities and assets abroad, was at the level of minus 69% of GDP in 2013. It is the difference between foreign liabili-

ties of the Polish economy, amounting to minus 109% of GDP, and Polish assets abroad of 40% of GDP (NBP, 2014). The long term net international investment position of Poland will depend thus on the amount of capital created at home, which requires raising permanently the domestic gross saving rate. To answer the question whether it is feasible, one should analyse the sources (structure) and determinants of macroeconomic savings.

Figure 5

Net income from abroad and net current transfers from abroad in Poland, 1996–2012 (% GDP)



Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

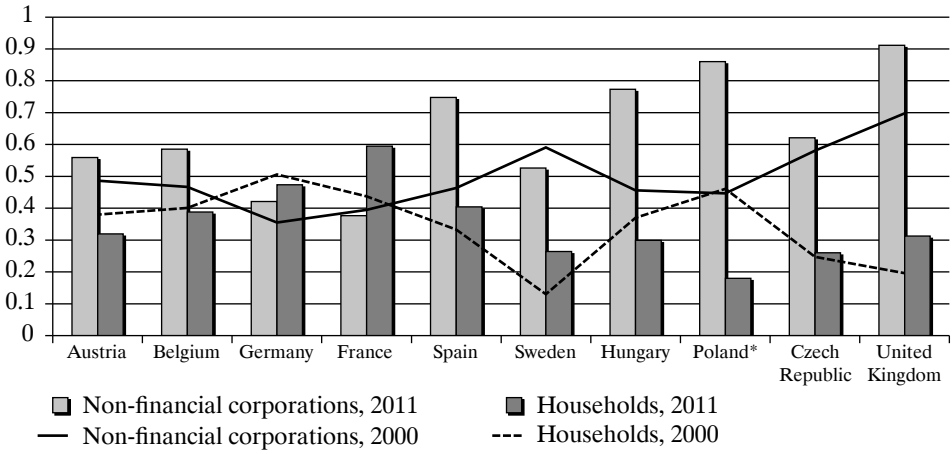
3. Composition of savings in Poland by institutional sectors

The structure of gross savings in Poland during 1995–2012 exhibits two opposite trends: a rising share of nonfinancial corporate sector savings and a declining share of household sector savings in total gross savings of the economy and in GDP. This structural change was more profound in Poland than in many European economies in the 2000s (Fig. 6 and Fig. 7).

In most European countries shown in Figure 6 the shares of households savings in total savings are much lower than shares of corporate savings, with exception of Germany and France. The shares of nonfinancial corporate sector savings in total savings increased between 2000 and 2011, with exception of Sweden, where the corporate sector lowered its share in total savings, and France, where corporate savings share was marginally lower in 2011 as compared to 2000. Bars on Figure 6 show sectors' shares in total savings in 2011 (2012 for Poland) and lines show the corresponding sectors' shares in total savings in 2000.

Figure 6

Shares of households and nonfinancial corporations in total gross savings in 2000 and 2011



* Poland: data for 2000 and 2012.

Source: Eurostat and GUS, 2014.

The substitution of household savings by nonfinancial corporate savings in Poland was very spectacular: in 2000 households and nonfinancial corporations formed similar shares of total savings but in 2012 the nonfinancial corporate savings were 5 times bigger than households gross savings.

However, one should treat the households gross saving data with caution because gross savings contain the net increase of value of households assets in mandatory pension funds which vary with stock markets cycles (Fig. 7). Households in Poland do not decide about management of their assets in mandatory pension funds before retirement and they do not treat a net increase of these assets as part of their current savings. Only 3% of total households assets in pension funds in 2011 was in non-mandatory pension funds (CSO, 1995–2012).

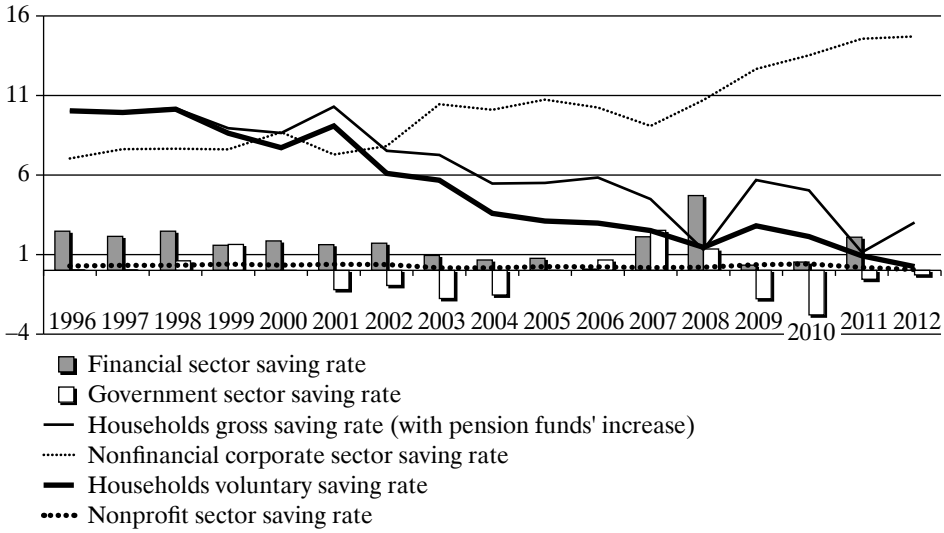
Thus we calculated the households voluntary savings as the gross households savings less the increment of net equity of households in pension funds reserves. On Figure 7 these two aggregates of households savings display a declining trend in relation to GDP (except for 2001), with voluntary saving rate falling faster than the gross households saving rate (except for 2009). The space between the lines of gross and voluntary households saving rates demonstrates changes in the value of households net equity in pension funds. In 2001 a slowdown of the economy reduced savings of nonfinancial corporations and led to a rise of precautionary savings of households.

During the financial crisis household gross savings collapsed in 2008 and 2011 (by 3 percentage points of GDP in 2008 and 4 points in 2011) due to a loss of value of net equity in pension funds (by 2 points of GDP in 2008 and

3 points in 2011) and a fall of households voluntary savings (by 1 point of GDP in 2008 and 1 point in 2011). After cyclical collapse gross households savings increased in 2009 and 2012 mainly due to an increase of net equity value in pension funds. Voluntary savings upturned too due to implementing austerity measures in granting mortgage loans. However, the voluntary savings of households improved only in 2009 and kept falling in the following years to 0,1% of GDP in 2012 (Fig. 7).

Figure 7

Saving rates of institutional sectors in Poland, 1996–2012 (% GDP)



Source: Calculations based on SNA/ESA95 for Poland, 1995–2012, CSO, Warsaw, Poland.

One of the reasons of the decline of households voluntary saving rate is the diminishing share of disposable income of households in GDP that fell from 72% in 1998 to 61% of GDP in 2012 (CSO, 1995–2012). Firms savings which are equal to profits and firms disposable income rose much faster than disposable income of households since 1998. Disposable income of nonfinancial corporate sector (firms disposable income = profits = savings) increased fivefold between 1998–2012 and households disposable income rose only twofold during that period (in nominal terms).

Comparisons of growth of households savings and firms savings looks much worse due to a decline of households voluntary savings in relation to households disposable income (with exception of 2001). At the macro scale, households voluntary savings in Poland exhibit exceptionally low levels in relation to disposable income of the household sector in the 2000s (below 6% after 2002 and below 1% in 2011–2012). In addition, since 2002 households savings have been declining in nominal terms, with a single exception of 2009–2010, while corporate profits have been growing very fast (CSO, 1995–2012).

However, the micro survey data from household budget surveys for Poland (HBS, 1995–2012), do not confirm this fall of household saving rates from current (monthly) disposable income. Quite the opposite, household budget surveys bring a picture of rising household savings in relation to current disposable income from 2000 onward (Liberda, 2013). We will come to this point in Section 4.

As regards nonfinancial corporate sector saving rate, its slight decrease in 2007 by one percent of GDP (nominally corporate savings fell only marginally) was correlated with an increase of government savings and financial sector savings in GDP. The rise of government savings was caused by the beginning of many government investments co-financed by the European Union funds since 2005. The financial sector savings climbed during the boom in financial markets till 2008, but also during stock market collapses in the last quarters of 2008 and in 2011, which was correlated with intensity of transactions at financial markets.

4. Determinants of corporate and household saving

Why do firms save so much?

There is no consensus in the literature as to why firms keep high savings, often in liquid assets, and do not invest them fully. Many researchers point to the precautionary reasons due to increasing risk of investment in new technologies depending highly on R&D expenditures (intangible assets). On the other hand, firms expect new opportunities for investment and they are likely to keep undistributed profits for such occasions. However, a high proportion of tangible assets in total assets may impede new investment in fixed assets.

The global markets may affect firms savings positively as they offer vast demand for firms products and also for firms savings which can be offered on global financial markets. Another reason for high undistributed profits may be the high leverage of firms built up during periods of easier access to capital markets and relatively low interest rates. According to the literature, many other micro and macroeconomic factors affect firms saving: firm size, age of a firm, sales growth, export turnover, Tobin Q, profitability from assets or sales, GDP growth and output gap in the economy.

In Poland micro firms of self-employed and firms up to 9 employees form the largest part (40%) of the sum total of firms profits. However, in national accounts micro firms are included into the households sector. The nonfinancial corporate sector consists thus of small firms (10–49 employees), medium firms (50–249 employees) and large firms (more than 250 employees).

The analysis of corporate sector in Poland based on micro data for firms (CSO, 2013) shows that nonfinancial firms report higher profitability in relation to assets and sales since Poland's accession to the EU in 2004 and the following economic

and financial boom. During the financial boom till 2008 small firms collected the highest savings (net profits) on their assets and sales, more than medium and large firms. During the financial crisis of 2009–2011 large firms earned the highest net profits in relation to sales. In relation of profits to assets large firms outperformed medium firms in 2010 and reached the same profitability as small firms in 2011.

The relation of firms investment to assets is much higher in large and medium firms than in small firms in Poland. Tangibility of nonfinancial corporations (relation of tangible assets to total assets) is higher in large than in medium and small firms. However, the relation of intangible to tangible assets of nonfinancial corporate sector is showing a rising trend since 2007, despite and probably also due to the financial crisis. Most firms fund investment mainly from their own sources and much less from credit flows.

Increasing exports of small size exporters went in line with rising profitability of sales till 2007. Since 2008 the profitability of total sales of small exporters lowered, but their export share in total sales was still rising. Medium size exporters reported rising profitability of total sales till 2007, but almost no increase since 2009, with rising export share in total sales. Large size exporters reported stable profitability of total sales during 2005–2011 and relatively stable export share in total sales.

The regression analysis for nonfinancial corporate saving rate (profits to assets) indicates positive effects of the demand (sales) and cyclical factors (output gap) on firms savings. The size of firm provides negative effect on firm savings, confirming that smaller firms are more profitable. The expected negative effects on firms saving of tangibility and leverage were verified. The effects of export revenues on savings were positive for large firms and negative for small firms. This demonstrates that export markets are generally more competitive than a single domestic market and exporters are likely to generate lower profits than non-exporters when they enter foreign markets, but may become more profitable if they secure strong market position (Liberda, Smyk, Hardy, 2013).

Why are macro savings of households so small?

The determinants of households savings are more rooted in economic theory than the determinants of corporate savings. The life cycle theory, the permanent income hypothesis and the Ricardian equivalence hypothesis help to explain the process of saving decisions and factors determining them. The standard determinants of household savings have been widely tested in literature (see eg. Loayza et al., 2000, pp. 393–414 and Mody et al., 2012). In a companion paper (Kolasa, Liberda, 2015, pp. 124–148) we have overviewed the literature and tested empirically the determinants of private and households savings in Poland and in OECD.

Our results bring evidence that the main factors determining household savings in Poland are: households income growth (positive effect) and the financial

depth (negative effect). The Ricardian equivalence hypothesis, e.g. the negative effect of government savings on households savings, has been confirmed. In addition, the effect of corporate savings on households savings was also proved negative ('households piercing the corporate veil'), which may explain to some extent the opposite trends of households and nonfinancial corporate savings in Poland.

What requires explanation is a puzzle of diverging trends of macro and micro household savings in Poland as discerned in the macro and micro data sources. Since 1999 the macroeconomic households voluntary saving rate from household sector disposable income is falling (CSO, 1995–2012) and the micro household saving rate from current disposable income is increasing (Household Budget Surveys for Poland, 1995–2012; Liberda, 2013, 26–27). Similar differences between micro and macro data on households savings are present in many economies (Barrett et al., 2012).

The conceptual differences in measurement and other factors can explain some differences between micro and macro household saving rates.

- Savings constitute a balancing item in the disposable income account of SNA with many factors drawing statistical discrepancies of both income and consumption expenditure accounts that affect savings in different directions.
- Survey data on household income and expenditures are subject to all shortcomings of surveys and are sensitive to errors or omissions in data provided by respondents. It is due to: insufficient participation of more affluent households in surveys, lack of response to some questions, especially on income, as well as under-reporting of sensitive expenditure.
- The institutional sectors cannot be precisely separated in national accounts. Households run small businesses and financing of nonprofit institutions is not precisely separated from the household income.
- In national accounts three items are added to the disposable income of households: the imputed rents for ownership of a house, the estimated unpaid value added tax for goods bought in the untaxed economy, and the indirectly measured value of financial services not paid directly to financial intermediaries. These three items may constitute together almost 10% of the household disposable income. By increasing household disposable income they lower the household saving rate from this income.
- The macro aggregate household saving rate is calculated as a mean value, and it depends positively on unequal distribution of household income. The micro saving rate of household based on survey data is calculated as median (as the mean is sensitive to outliers), but it is also affected positively by unequal distribution of income among households.
- Household Budget Surveys for Poland, which is the single comprehensive source of data on income and expenditure of households, show an increasing inequality of household income expressed by Gini coefficient during the period of 1994–2011.

- The households micro saving rates (based on household budgets survey data) are also highly correlated with the level of household income (Liberda, 2013).
- The loss of value of household financial assets during financial crisis of 2008–2009 and in 2011 accelerated the earlier falling tendency of macro household saving rate.
- The conceptual differences in measurement of macro and micro household saving rates can explain partially the differences in levels, but not in trends of micro and macro household saving rates.
- Because household saving rates depend strongly on household income growth, the reasons of falling macro household saving rates seem to lie in the slow growth of disposable income of the total household sector.
- At the same time richer households (reviewed in surveys) saved more causing the micro saving rate to rise.

The households voluntary saving at the macro scale may be underestimated and households micro savings in survey data may be overestimated. The determinants of corporate and households savings at micro scale are crucial for the macroeconomic domestic savings.

Conclusions

In this paper we analyze trends and changes of structure of macroeconomic savings in Poland since transformation in the 1990s. We indicate that the relatively low level of savings in relation to GDP in the 2000s was not altered neither by Poland's accession to European Union nor by financial crisis. Secondly, the rising nonfinancial corporate sector savings dominate national savings since 2002. Thirdly, the macro household savings display a declining trend which is not in accord with increasing micro household savings discernible in survey data. Fourthly, the main determinants of household and corporate savings are incomes/revenues as well as cyclical and financial factors. And fifthly, the improvement of the net international investment position of Poland requires raising the domestic saving rate.

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OSZCZĘDNOŚCI MAKROEKONOMICZNE W POLSCE

Streszczenie

Artykuł zawiera analizę trendów i zmian w strukturze oszczędności makroekonomicznych w Polsce w okresie od 1996 r. do 2012 r. Analiza pokazuje rosnący udział oszczędności sektora przedsiębiorstw niefinansowych w ogólnej sumie krajowych oszczędności i malejący udział oszczędności gospodarstw domowych. Autorka analizuje determinanty obydwu strumieni oszczędności oraz komentuje rozbieżne tendencje stopy oszczędności gospodarstw domowych ujawnione w makroekonomicznych rachunkach dochodu narodowego i w mikroekonomicznych badaniach ankietowych. Następnie autorka ocenia zapotrzebowanie inwestycyjne na krajowe i zagraniczne oszczędności i konkluduje, że poprawa międzynarodowej pozycji inwestycyjnej Polski wymaga wzrostu stopy oszczędności krajowych.

Słowa kluczowe: oszczędności, gospodarstwa domowe, oszczędności przedsiębiorstw, inwestycje, Polska

MACROECONOMIC SAVINGS IN POLAND

Abstract

This paper examines trends and structural changes of macroeconomic savings in Poland in the period between 1996 and 2012, showing the rising share of nonfinancial corporate sector savings in domestic savings and the declining share of macro households savings. The author analyzes the determinants of nonfinancial corporate sector savings and households savings. A puzzle of diverging trends of macro and micro household saving rates have been explored. We investigate investment needs for domestic and foreign savings and conclude that the net international investment position of Poland requires raising the domestic saving rate.

Key words: saving, households, corporate saving, investment, Poland

МАКРОЭКОНОМИЧЕСКИЕ СБЕРЕЖЕНИЯ В ПОЛЬШЕ

Резюме

Статья содержит анализ трендов и изменений в структуре макроэкономических сбережений в Польше в период с 1996 по 2012 год. Анализ указывает на растущую долю сбережений сектора нефинансовых предприятий в общей сумме отечественных сбережений и уменьшающуюся долю сбережений домашних хозяйств. Автор анализирует детерминанты обоих потоков сбережений и дает комментарий относительно разных тенденций в нормах сбережений домашних хозяйств, обнаруженных в макроэкономических расчетах национального дохода и в микроэкономических анкетных исследованиях. Затем автор оценивает инвестиционную потребность в отечественных и иностранных сбережениях и делает заключение, что улучшение международной инвестиционной позиции Польши требует повышения нормы отечественных сбережений.

Ключевые слова: сбережения, домашние хозяйства, сбережения предприятий, инвестиции, Польша