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Basic Factors for Dynamics of Net International Investment Position: Polish Case

Abstract. *The dynamics of changes of net foreign liabilities specifies the condition of financial sustainability of the country. It is important therefore to indicate these factors which decide on relations between net international investment position and GDP. This applies to the factors recorded in the balance of payments and to these, beyond this account - the valuation of foreign assets and liabilities. The value and the structure of net foreign liabilities is result of these decisions made in the past. These past choices have an impact on a significant part of the current account – specifically the net investment income, which as fixed by exogenous decisions, remain outside country's management direct control. The decomposition of changes of the ratio of NIIP to GDP identifies the factors which, as in the case of Poland, determine country's external balance sheet. These factors also indicate the freedom of choice for the decision-makers, if they have to alter foreign net liabilities of the country and their relationship with GDP.*

Keywords: *net international investment position, unregistered capital flows, stabilization of foreign finances*

Introduction

In this paper, we made an analysis of long-term international financial stability of an economy by examining the dynamics of net international investment position (NIIP) and the changes in the ratio of NIIP to GDP (hereinafter for simplification called as “the *S* ratio”). The current account balance indicates country's competitiveness level and measures an effectiveness of foreign and residents

capital investments. On the other hand, the structure of gross capital flows decides on the category of investment, its currency and time structure and is responsible for financial stability at a given amount of net export and GDP growth. The basic research question was: to what extent is it possible in an economy functioning in a liberal system of capital flows and floating exchange rate with considerable net foreign liabilities, to alter, by decisions of economic policy and without reducing GDP growth rate, the size and structure of NIIP. Using the Polish case we estimated significance of main components of the balance of payments and valuation of assets and liabilities on the dynamics of the S ratio. The decomposition of the changes of the S ratio was used to demonstrate how the valuation influenced the NIIP.

1. NIIP and long-term balance

The NIIP exhibits the state of foreign liabilities of residents towards non-residents, as an effect of foreign direct investment, portfolio investment (equity securities and debt securities), credit and loan decisions and the like which occurred in the past. The state of NIIP is a result of a sort of the specific game between creditors and debtors. Markets can tolerate growing foreign indebtedness as result of information asymmetry. Nevertheless if in some point they find the level or structure of foreign liabilities as inappropriate to the economy's fundamentals we could observe sudden stops, capital flights, costs of capital rise and in consequences financial crisis. That requires financial relations with the foreign partners to be constructed in a way which could enable to absorb external shocks. That invokes to a long-term approach to the balance of payments. Described in theory by among others Gourinchas and Rey [Gourinchas & Rey 2013] it demonstrates that the amount of net foreign liabilities is time limited by the terms of its repayments. In other words, excess absorption over income is carried out in a given country by the commitments to foreign investors to repay accumulated gross foreign liabilities by means of future surpluses generated on the current account of the balance of payments or by reducing gross foreign assets.¹

The decreasing net foreign liabilities enforced by the markets (creditors) or as a result of internal conditions (e.g. too high costs of servicing lowering national disposable income) makes it necessary to increase domestic savings in a form of net exports or surplus of foreign capital (investment) income. The higher the ratio of the net international liabilities to GDP the higher must be the economy's future savings used for debt repayments. Therefore apart from the state of net foreign

¹ The important difference between the economy's net foreign liabilities and domestic liabilities of the public sector lies in the fact that net foreign liabilities stipulate movements of value between countries, and domestic ones across generations of the same country.

liabilities it is necessary to examine the dynamics of the S ratio. The economy's financial stability to be kept in a steady state requires proper management of the relationships between net foreign liabilities changes and growth of GDP. The key role in stabilization process is played by the capability to change "path dependent" level and structure of main components of the balance of payments.

The shift in the ratio of NIIP to GDP (called the S ratio) can be expressed in the following way:

$$(M_t - M_{t-1}) / N_{t-1} = (Y_t - Y_{t-1}) / Y_t, \quad (1)$$

next, if

$$M_t / Y_t = M_{t-1} / Y_{t-1}, \quad (2)$$

because

$$M_t = M_{t-1} + BCC_t, \quad (3)$$

then

$$BCC_t / M_{t-1} = y_t^* \quad (4)$$

where:

M – NIIP,

BCC – balance in the current and capital account,

Y – GDP,

y_t^* – level of GDP growth which, at a given balance in the current and capital accounts, stabilizes the share of foreign liabilities in GDP (hypothetical growth).

It can be concluded from equation (4) that maintaining or improving the S ratio and therefore stabilization of foreign finances depends on the capability to shape appropriate proportions between overall domestic expenditures (i.e. domestic absorption) and the rate of national income growth. From the bookkeeping point of view, the NIIP changes should strictly correspond with the current and capital account balance. That is however another issue which could play important role in that stabilization process. It is a difference between the "hypothetical" NIIP calculated as a sum of the current and capital accounts balances and the actual, statistical NIIP (reported by relevant authorities). The latter introduces into the picture the subject unrecorded in the balance of payments, namely valuation of foreign assets and liabilities. The IMF studies show that correlation coefficient between the actual balance of the current and capital accounts and "hypothetical" NIIP in developed and developing countries has been going down in time [Lane & Milesi-Ferretti 2006] and this phenomenon has been growing in importance since the late 1990s [Gourinchas 2008; Gourinchas et al. 2011; Körner & Zemanek 2012; Lane & Milesi-Ferretti 2014]. M. Obsfeld [2012] indicates the sources

of these transformations which are taking place between the balance of payments and actual NIIP. In the past, we observed the growing role of valuation effects on a wealth's creation and wealth's transfers between nations. They result, apart from clearly statistical issues (errors, omissions, investments in transit, etc.) from the valuation changes of assets and liabilities emerging from foreign exchange and assets price changes.

The weak correlation between the accumulated balance of the current and capital accounts and NIIP calls for, from the point of view of economic policy, answering the question: to what extent does the actual, real state of foreign net liabilities is a result of recorded and unrecorded capital transfers between a given country and its economic partners and to what extent it is a consequence of the capital valuation of foreign liabilities and assets?

2. The issue of valuation of foreign assets and liabilities

Since the end of the 20th century the strategy of a country's adjustment to changing world markets has been more and more dependent not only on the size and symmetry of capital flows² but also on its type, currency and time structure [Gourinchas & Rey 2013], that is on the factors that affect the size and changeability of valuation of country's foreign assets and liabilities.

The scale of valuation depends, as we have already indicated, apart from statistical errors, on foreign exchange currency volatility and asset's price changes and is carried out over the whole analyzed time and calculated at the end of the reporting period [Gourinchas & Rey 2013; Lane & Milesi-Ferretti 2005]³. Growing volatile cross-border capital flows (in relation to GDP), volatile currency and time structure have increased a role of valuation. On the other hand, the capital flows influenced the exchange rate and interest rates levels consequently affecting the amount of net exports, net investment income and therefore the balance of payments position and the foreign balance sheet.

The research by P. Lane and G. Milesi-Ferretti indicates presence of a significant relationship between excess deficit in the current account (in relation to economy's fundamentals) and the tendency of foreign currency to depreciate, which in turn may cause, through the exchange currency channel, valuation changes alter-

² Forbes and Warnock [2012] conduct an analysis of factors causing capital flow ("push and pull factors").

³ In his work in 2007, Curcucu contends that apart from revaluation changes resulting from currency rates and asset prices the differences are due to "other" unidentified statistical causes [Curcucu et al. 2007]. The issue of identification sources of valuation change has also been discussed by Hausmann and Sturzenegger [2007].

ing the ratio of NIIP to GDP. The strength of correlation between valuation and depreciation/appreciation of the national currency depends on the share of different types of foreign assets denominated in the foreign currency in gross country's foreign position [Lane & Milesi-Ferretti 2014]. For example, it is more likely for equities rather than debt securities to respond to the foreign exchange changes. The debt securities could be also more responsive to interest rates shifts. The fast changing and increasing share prices of companies in emerging markets play a significant role altering assets value, especially when the valuation is performed not at book value but at the market-to-market principle. If foreign liabilities are denominated mostly in the foreign currency, depreciation of domestic currency (*ceteris paribus*) will deteriorate the S ratio (when denominated in local currency). In case the foreign assets and liabilities are incurred in local currency only depreciation does not change the S ratio, although amount of assets and liabilities calculated in the foreign currency will vary.

The size of valuation depends also on the relationship between amount of gross foreign assets and foreign liabilities, i.e. the symmetry of capital flows in an economy, which is measured by the transformed Grubel-Lloyd index [Obsfeld, 2004]. At present, valuation of assets and liabilities, alongside with the increased capital flows in many economies affects the NIIP level more than changes in net exports [Hausmann & Sturzenegger 2007; Gourinchas 2008; Gourinchas et al. 2011; Gourinchas & Rey 2013]. Lynn and Miles-Ferretti gave examples of the significance of valuation for the size of the economy's net foreign liabilities. The USA and Great Britain capitalized on the differences between assets and liabilities valuation, however Germany, the Netherlands, Finland, Sweden, to name a few, lose. In Holland since 1990 valuation changes have brought about negative differences between the accumulated current account and an actual ratio of NIIP. In 2002, the ratio of NIIP was over 100% of a nominal GDP⁴ [Jansen & Rojas-Romago 2015]. During that time, the BRIC countries experienced also considerable wealth losses measured by the ratio between the accumulated current account and real NIIP.

It is worth to observe that the changes of valuation levels in medium-sized countries are often independent from their economic policy, as Pierre-Olivier Gourinchas and Helene Rey stated. In many countries including emerging economies the valuation became a dominant factor that shapes the level of NIIP thus confirming their partial dependency on the world market dynamics. The valuation processes constitute channels for wealth transfers between countries in different directions, especially when valuation changes get accumulated in time. Hence it could also make sense to include in the calculation of the foreign liabilities' servicing ratio a valuation not recorded in the balance of payments accounts. In

⁴ In Holland, valuation losses rose again after 2008.

other words, in the process of stabilizing external balances, one should be able to assess, with certain probability, how a macroeconomic policy carried out in a country and abroad will affect valuation and therefore change the level of NIIP, hence a future benefit distribution between the investor and the recipient of capital [Lane & Milesi-Ferretti 2014].

As already has been mentioned the ratio of NIIP to GDP is essential while assessing the stability of foreign finances by international institutions (EC, the IMF, the World Bank, etc.) rating agencies or investment banks. This ratio has an impact on the assessment of a country's creditworthiness and its access to the credit market. Published statistics do not generally provide information about the level of valuation impact on international investment position. In other words, the assessment of a country's financial stability is carried out without taking into account the ongoing valuation processes and their *raison être* which may lead to erroneous conclusions as to the country's economic performance. It is an important issue for the domestic financial stability management. Registering by respective authorities the valuation is a deferred process. This delay results from the necessity to verify the consequences of capital flows which are taken as provisional during the year. Moreover, it is burdened with substantial uncertainty originated from the exchange rates and asset prices changes that are hard to forecast. It requires inductive inference of valuation trends and the profile of resident's and foreign investments.

John B. Taylor assumed that in the long run the ratio of the current account to GDP is statistically stationary, i.e. in a given period the current deficit in relation to the long-term mean will decrease heading towards stationary average [Obsfeld, 2004]. It requires, however (according to Nigel Lawson's doctrine) that the dynamics of the ratio of NIIP to GDP should not be co-determined by the valuation of foreign assets and that the up-to-present imbalance on the current account should not result from the policy of public sector (budget deficit) [Edwards 2001]. The policy assuming lack of public intervention into the stabilization processes passes over structural reasons of external disequilibrium and restricted markets efficiency. If these assumptions are not valid it could imply that in practice the economic authorities should intervene and take decisions in order to improve or, at least, safeguard the *S* ratio accepted by the markets. Such actions require knowledge of the relationship between all components of the balance of payments as well as assets valuation processes and GDP.

3. Implications for unrecorded capital flows

To examine the dynamics of the *S* ratio, in other words, the trend of financial stability, it is important to analyze two streams of capital corresponding with the

current and capital accounts, financial accounts including the so-called balance of errors and omissions.

Recorded financial flows are well defined and include direct investments (equity and debt), portfolio investments (equity securities and debt securities), other investments (credits, current accounts, trade credits, etc.) and official reserve assets (foreign currency reserves) and errors and omissions. The balance of errors and omissions (*BEO*) is a result of unrecorded capital flight, errors connected with statistics of trade flows (customs and bank statistics) and/or purposeful actions of business entities (e.g. VAT fraud in exports, under – or – over invoicing, etc.) [Lane & Milesi-Ferretti 2006].

From the balance of payments definition errors and omissions (*EO*) equal to the difference between the balance on current and capital account and the flows of the net foreign direct investments (ΔFDI), portfolio investments (ΔP), other investments (ΔO) and the changes of official foreign reserves (ΔR). Unregistered capital flight could be therefore interpreted as a unilateral transfer which change structure of the financial account of balance of payments. In 2013, BIS suggested that high *EO* balance could undermine the quality of balance of payments information. Global Financial Integrity estimated illegal transfers in the years 2003-2012 as an effect of dishonest invoicing of exports and imports from developing countries at around USD 5.1 trillion. As a result of unrecorded flows of short-term capital these countries confronted an outflow of around 1.485 trillion US dollars [Kar & Spanjers 2014]. This was an inference made based on the interpretation of the *EO* reported in the official balance of payments statistics and not confirmed by an explicit research. The IMF statistics for developing countries shows an outflow of unrecorded capital of USD 1.276 trillion in the years 2000-2014 (in the Asian countries alone, the accumulated negative balance of errors and omissions was USD 2.632 trillion).

4. Estimates of revaluation of foreign assets and liabilities

The valuation of foreign assets and liabilities is a result of exchange rate and price of assets changes calculated at the end of the investment year carried out over the whole analyzed period. Below are estimated calculations of the valuation of foreign assets and liabilities according to the following formula [Hobza & Zeugner 2014; Curcuru et al. 2007]:

$$W_t^z = \hat{A}_t^z - (\hat{A}_{t-1}^z + \sum F_t^{Az}) \quad (5)$$

where:

W_t^z – asset valuation level in period t ,

\hat{A}_t^z – state of assets z (according to NBP data) in period t ,
 \hat{A}_{t-1}^z – state of assets z in period $t-1$ (according to NBP data),
 F_t^{Az} – change of assets z in period t (inflow or withdrawal of investment in period t – data according to NBP balance of payments),
 t – particular years from 2005 to 2014.

To compute valuation of assets and liabilities we estimate a hypothetical NIIP calculated as the value and structure of the NIIP provided (in case of Poland) by the National Bank of Poland (NBP) for each year increased by the balance on current and capital account in each subsequent year according to the equation $M_t = M_{t-1} + BCC_t$.

In Table 1 data for yearly and cumulative valuation are presented.

Table 1. Revaluation of foreign assets and liabilities

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	NIIP data (NBP)	BCC (NBP)	NIIP at beginning of year t	Hypothetical NIIP at end of year t (2) + (4 $t+1$)	Valuation in year t (2)-(5)	Hypothetical NIIP (2)+(7 $t+1$)	Valuation accrued (7)-(2)
2004	-381 179	-46 689	–	–	–	–	–
2005	-413 723	-22 641	-381 179	-403 820	-9 903	-403 820	-9 903
2006	-480 786	-36 260	-413 723	-449 983	-30 803	-440 080	-40 706
2007	-584 536	-62 379	-480 786	-543 165	-41 371	-502 459	-82 077
2008	-714 760	-71 539	-584 536	-656 075	-58 685	-573 998	-140 762
2009	-786 782	-32 164	-714 760	-746 924	-39 858	-606 162	-180 620
2010	-940 609	-52 065	-786 782	-838 847	-101 762	-658 227	-282 382
2011	-977 919	-50 879	-940 609	-991 488	13 569	-709 106	-268 813
2012	-1 064 733	-24 766	-977 919	-1 002 685	-62 048	-733 872	-330 861
2013	-1 142 250	16 818	-1 064 733	-1 047 915	-94 335	-717 054	-425 196
2014	-1 174 085	7 303	-1 142 250	-1 134 947	-39 138	-709 751	-464 334

Source: author's calculations based on the NBP data in PLN of 8.02.2016.

The estimation of valuation, which is a consequence of exchange rates and assets prices alterations, calls for information on the foreign currency and time structure of assets and liabilities. But this is restricted data available only to respective institutions (NBP in Poland). An approximate estimate of the impact of foreign exchange and asset prices on the level of valuation may be deducted from the correlation between foreign exchange and yearly contribution of valuation to gross assets and liabilities. Subsequently the correlation coefficient can be a proxy for the significance of the exchange rate for yearly levels of valuation.

The correlation coefficient, in the years 2005-2014, between the level of valuation of gross foreign assets (calculated as the share of valuation of liabilities of

a given investment class at the end of the year) and changes of the exchange rate of the US dollar and euro (at end of year⁵) was high and diverse. For the US dollar the correlation coefficient was 0.93, for the euro 0.72. The high correlation coefficient for asset valuation was probably due to the significance of official foreign currency reserves in the value of total foreign assets (on average 44%).

The correlation between gross liabilities valuation and foreign exchange was much weaker. The correlation coefficient for valuation of the liabilities with the USD rate of exchange was 0.62, and 0.38 for the euro. The correlation coefficient for the liabilities could suggest that the valuation in the range from 40% to 60% was due to foreign exchange swings, and the remaining part due to price changes.

Table 2. Foreign currency structure of assets and liabilities

Assets	Euro	USD	PLN	Pound and other currencies	Assets in total
	301.0	199.0	134.0	174.3	808.3
Liabilities	Euro	–	PLN	other	Liabilities in total
	581.8	–	1157.6	246.2	1985.6

Source: author's estimates based on NBP data of 8.02.2016. The ratio of NIIP to GDP following rate was taken: PLN/Euro = 4 and PLN/USD = 3.5 was taken. In 2014 GDP amounted to PLN 1719.1 billion, thus the ratio of NIIP to GDP was 65.8%.

In Table 3 we present a sensitivity of the ratio of the NIIP to GDP to the exchange rate changes, given assumptions presented in Table 2.

Table 3. Estimated sensitivity of ratio of NIIP to GDP to exchange rate changes

Deviation from the base exchange rate of euro and USD	0.90	0.95	1.00	1.05	1.10	1.15
NIIP/GDP (%)	66.6	67.5	68.4	69.4	70.4	71.3
Difference (%)	–1.87	–0.91	–	0.99	1.95	2.90

Source: author's estimates.

We took the foreign currency structure of NIIP given in Table 2 as a base for the sensitivity estimation. The depreciation of the zloty by 5% (identical for both currencies) causes an increase in the S ratio by around 0.9 percent points. Taking for the calculation January 18 2016 exchange rate of the zloty, the ratio of NIIP to GDP (*ceteris paribus*) would have increased, compared to one reported at the end of 2014, by 2.9 percent points, i.e. to 71.3%. However the depreciation of foreign currency improves export competitiveness rise and could add to export

⁵ Currency exchange rates according to NBP Table C – NBP archives.

net upswing, on the other hand, with a specific currency structure of foreign assets and liabilities it increases the ratio of NIIP to GDP.

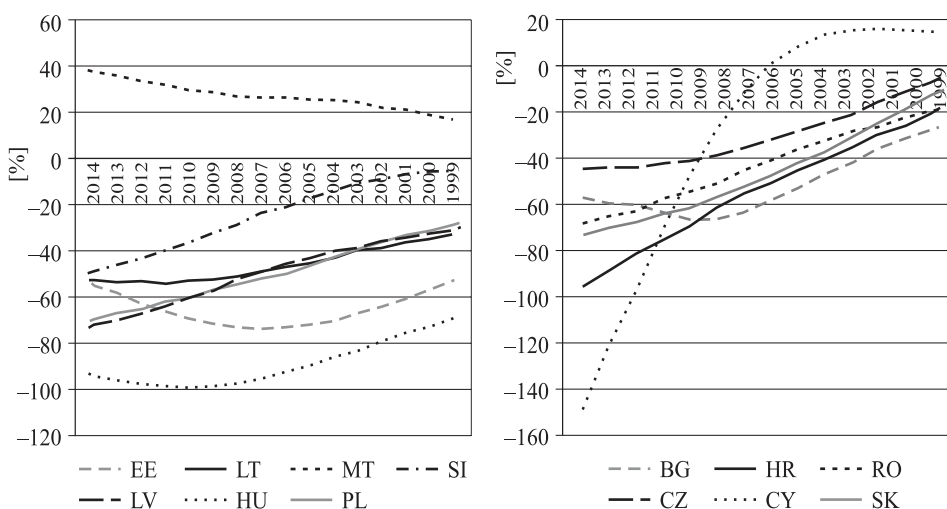
5. Stability of the dynamics of the ratio of NIIP to GDP

The NIIP adjusted by the valuation of foreign assets and liabilities determines, with a given current and capital account, the minimal growth rate of GDP, which holds the ratio of NIIP to GDP stable. In order to assess the dynamics of an economy's stability it is important therefore to examine the trend of differences between the actual growth rate of GDP (y) and the hypothetical growth (y^*) which stabilizes the S ratio. If $y < y^*$ the share of foreign liabilities in GDP rises.

At Charts 1 and 2 trends (Hodrick-Prescott.100) of the differences between y and y^* , observed in EU13⁶ in 2004-2014 are presented.

Chart 1 was constructed using the statistical data provided by Eurostat and Chart 2 using the hypothetical NIIP, without valuation of assets and liabilities.

Chart 1. Dynamics of the ratio of NIIP to GDP – statistical data

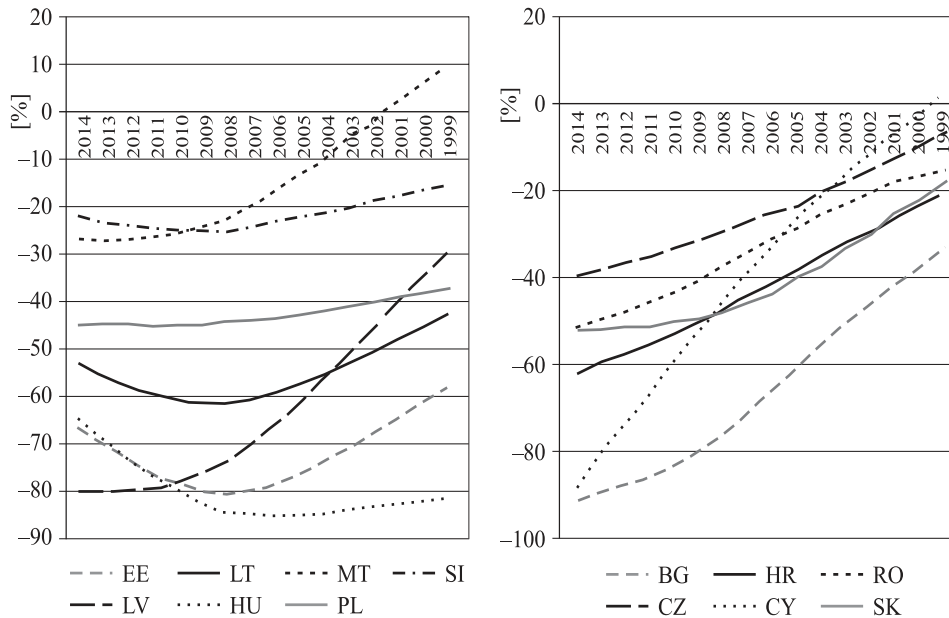


Source: author's calculations (data by Eurostat and Alert Mechanism CE of 8.02.2016). Country codes - Eurostat.

The analysis of trends in the new EU member states in the years 2000-2014 indicates different behavior of the financial stability. Comparing the 2014 data (HP) for the statistical and hypothetical ratio we found that the hypothetical ratio

⁶ EU13 – countries which entered the EU in 2004.

Chart 2. Dynamics of the ratio of NIIP to GDP – hypothetical data



Source: author's calculations (data by Eurostat and Alert Mechanism CE of 8.02.2016). Country codes - Eurostat.

was lower than the statistical one in Hungary, Poland, Cyprus, Slovakia, Croatia and Romania. In these countries valuation processes decreased relationship of the NIIP in GDP.

In Table 4 we present the differences, in 2014, between the statistical and hypothetical ratio between NIIP and GDP, provided the NIIP from 2000 changes only by the current and capital balance (in national currency).

Table 4. NIIP difference between statistical and hypothetical data

Country	EE	LV	LT	HU	MT	PL	SI	BG	CZ	HR	CY	RO	SK
%	-7	2	7	31	-56	32	34	16	37	-22	-5	122	13

Source: author's calculation.

The difference between the statistical and hypothetical data demonstrates how diverse was sensitivity of the foreign assets and liabilities to price and exchange rates changes in these countries. In this context Poland's net international liability was highly vulnerable to exogenous foreign exchange and asset price changes.

6. Decomposition of the dynamics of the ratio of NIIP to GDP

Stabilization of foreign finances requires knowledge of dynamics between GDP and the current and capital accounts and the capital flows. From the balance of payments equation we get the following identity:

$$M_n \cong M_{n-1} + CCA_t + \Delta V_n = \Delta F + \Delta EO - \Delta R$$

where:

- F – registered capital flows,
- EO – errors and omission,
- R – official foreign reserves,
- V – valuation net,
- CCA – current and capital account.

The decomposition of the dynamics of the ratio of NIIP to GDP indicates what factors and to what extent determine the registered changes. Let's denote in lower-cases the share of variables in GDP. We get equations (6) and (7):

$$m_t - m_{t-1} = x_t + xs_t + dp_t + dbiz_t + dpor_t + dpoz_t + dpdp_t + dw_t + dk_t - y_t/(1 + y_t) \times m_{t-1} + v_t$$

$$m_t - m_{t-1} = biz_t + por_t + poz_t + r_t + po_t + bo_t - y_t/(1 + y_t) \times m_{t-1} + w_t$$

where:

- m – MPIN,
- x – net export of goods,
- xs – net export of services,
- dp_t – compensation employees,
- $dbiz_t$ – FDI income,
- $dpor_t$ – portfolio income,
- $dpdp_t$ – other primary income,
- $dpoz_t$ – other income,
- dw_t – secondary income,
- k – capital account,
- v – valuation,
- y_t – nominal GDP growth in t .

In the years 2005-2014, an increase in the ratio of NIIP to GDP was caused by the balance of primary income from direct investments, valuation effects and negative balance of net export of goods. The stability of foreign finances was maintained due to the balance on the capital account and the nominal GDP growth rate.

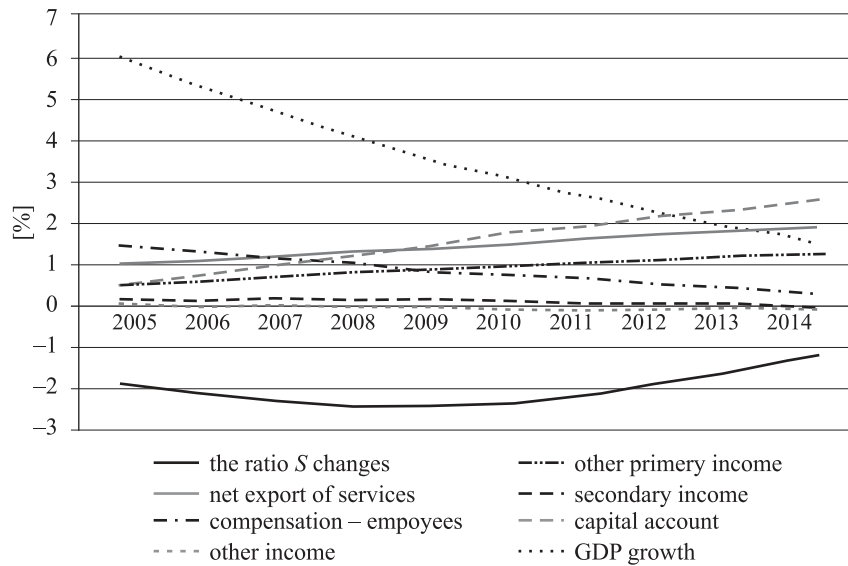
Table 5. Impact of current and capital accounts on the dynamics of the ratio of NIIP to GDP (in %)

Category	ratio S	x	xs	dp_t	$dbiz_t$	$dpor_t$	$dpoz_t$	$dpdp_t$	dw_t	k	y	v
2005-2014	-21.1	-28.4	14.1	7.8	-34.1	-8.8	-0.8	8.5	0.4	15.4	34.3	-29.4
Average	-2.1	-2.8	1.4	0.8	-3.4	-0.9	-0.1	0.8	0.0	1.5	3.4	-2.9
St.dev.	6.2	1.8	0.4	0.4	0.5	0.2	0.1	0.2	0.2	0.7	4.2	5.0

Source: author's calculations.

The Charts 3 and 4 show (in PLN) an impact of the changes of components of current and capital account on the share of the NIIP in GDP. Chart 3 shows data stream, which in the analyzed period used to increase the S ratio, and Chart 4 demonstrates data stream which diminished the S ratio.

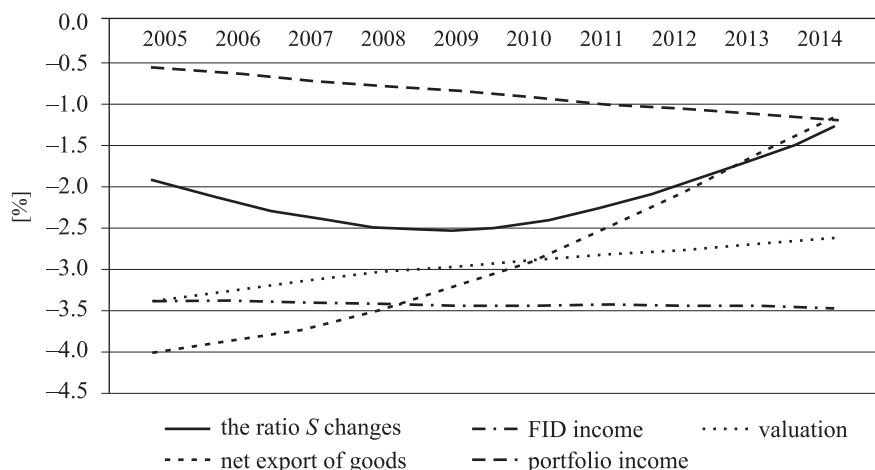
Chart 3. Increasing impact of the current account components on the dynamics of the ratio of NIIP to GDP



Source: author's calculations based on NBP data of 8.02.2016;

The dynamics of the ratio of NIIP to GDP (black unbroken line) indicates the improvement of the stability measured by the S ratio. To maintain the growing trend requires further improvement of the net export, net capital inflow and a higher nominal GDP growth rate. These factors could be shaped by organizing e.g. an appropriate macro-prudential policy.

Chart 4. Decreasing impact of components of the current account on the dynamics of the ratio of NIIP to GDP



Source: author's calculations based on NBP data of 8.02.2016.

The financial stability could be adversely affected by the following factors: a decreasing trend of employee transfers, the growing deficit on the balance of portfolio income and a lingering high deficit of primary income generated by FDI. Also valuation may deepen the erosion of financial stability measured by the S ratio. The impact of gross capital investments flow on changes of the ratio S is presented in Table 6.

Table 6. Impact of financial account on the ratio of NIIP to GDP (in %)

Category	Ratio S	FDI A	FDI L	Port. A	Port. L	Other A	Other L	Reserves	Der.	EO	y	v
2005-2014	-21.1	12.0	-33.6	4.8	-22.2	3.2	-20.3	16.0	0.7	13.5	34.3	-29.4
Average	-2.1	1.2	-3.4	0.5	-2.2	0.3	-2.0	1.6	0.1	1.3	3.4	-2.9
St.dev.	0.4	0.6	1.1	0.2	0.1	0.1	1.1	0.4	0.1	0.5	1.4	0.2

A – assets, L – liabilities, Port. – portfolio, Der. – derivatives.

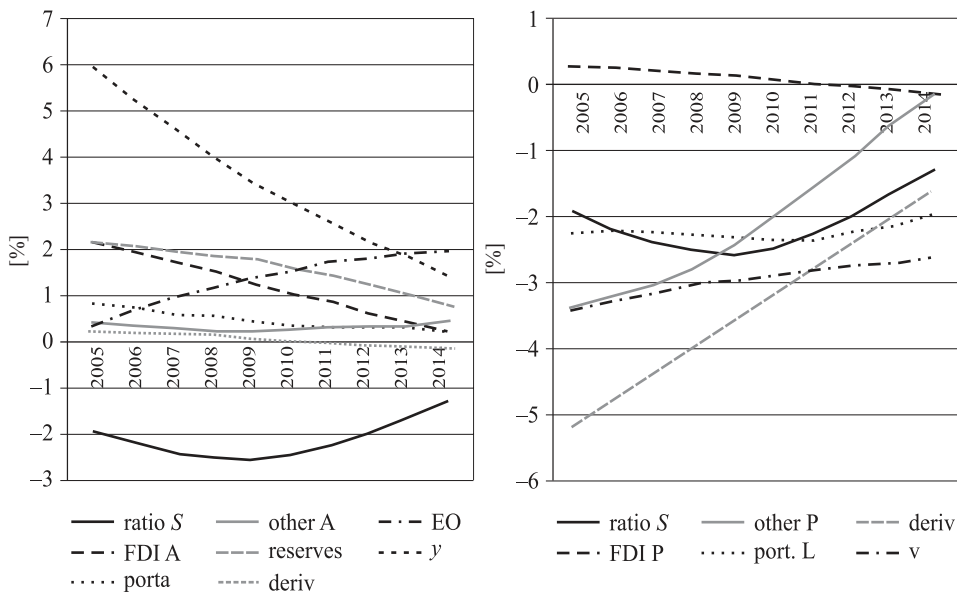
Source: author's calculations.

In the period of 2005-2014, the 21.1% fall of the S ratio was mainly due to the inflow of direct investment and valuation processes. The inflow of portfolio investment and the other investments had a similar adverse impact on the financial stability. The growth of official foreign reserves stabilized the long-term external balance and the impact of errors and omissions was likewise paradoxically posi-

tive. An increase in the capital outflow registered on the financial account as errors and omissions could have been offset by a reserves' decline or by the inflow of e.g. portfolio investment. Poland's foreign direct investment played also a relatively significant role for the stabilization of foreign finance stability.

The impact of gross capital flows on the S ratio (HP trends) was presented separately: for the flows, which increased, and these which decreased the S ratio.

Chart 5. Impact of streams of capital investment on the dynamics of the ratio of NIIP to GDP (chart on the left shows capital streams increasing the ratio, and on the right – decreasing)



Source: author's calculations.

The dynamics of the ratio of NIIP to GDP (black unbroken line at Charts 5) indicates improvement of the foreign financial stability. It is due to the following phenomenon: a lesser significance of flows of direct and other investment and a positive impact of foreign reserves (although decreasing) and the balance of errors and omissions. The strongest stabilization factor is still the nominal GDP growth rate however, its power decreases. It is also worth to stress that it is falling in significance, although at a slowing pace, the valuation role as a factor worsening the S ratio. Poland's foreign accounts receivable in the form of FDI, portfolio investment and other investments have a minor significance for the foreign financial stability.

Conclusion

The assessment of the stability of foreign financial should reflect the current state as well as the forecasted level of the relationship between NIIP and GDP. Such judgment is a complex issue since the dynamics of the ratio of NIIP to GDP depends not only on the development of net exports but increasingly on recorded and unrecorded capital flows, their structure, efficiency, and valuation. The stabilization, or rather reduction in the ratio of NIIP to GDP, is dependent on the internal factors e.g. the extend of financing budget deficit by non-residents or currency rates intervention and external factors as price of the cross-country capital flows which shift rate of return on portfolio investment, credit costs, or propensity to risk causing rapid capital movements. They determine freedom of action for the authorities when they intend to change the state of a country's net liabilities share in GDP. Using the Polish case we examine decomposition of this ratio and the implications of the different components of the current and capital and financial account of the balance of payments for the foreign financial stability.

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Podstawowe czynniki zmian międzynarodowej pozycji inwestycyjnej netto – przypadek Polski

Streszczenie. Dynamika zmian zobowiązań zagranicznych kraju, tj. międzynarodowej pozycji inwestycyjnej netto, określa stan stabilności finansów zagranicznych kraju. Istotne w związku z tym jest wskazanie czynników decydujących o relacji międzynarodowej pozycji inwestycyjnej do PKB. Dotyczy to zarówno czynników rejestrowanych w bilansie płatniczym, jak i pozostających poza tym rachunkiem, tj. waloryzacji zagranicznych aktywów i pasywów. Stan zobowiązań zagranicznych netto kraju w danym momencie jest wynikiem historycznie podejmowanych decyzji. Wynik tych decyzji skutkuje określoną strukturą zagranicznych aktywów i pasywów. Struktura ta ma wpływ na istotną część rachunku bieżącego – dochody inwestycyjne netto – i jest korygowana zjawiskami egzogenicznymi, pozostającymi poza decyzjami kierownictwa kraju. Dekompozycja zmian udziału MPIN w PKB pozwala na wskazanie tych czynników, które – jak w przypadku Polski – decydowały o zmianach tego wskaźnika. Określa także swobodę korekty stanu zobowiązań zagranicznych netto dla decydentów gospodarczych.

Słowa kluczowe: międzynarodowa pozycja inwestycyjna, nierejestrowane przepływy kapitałowe, stabilizacja finansów zagranicznych