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PAPER

Impact of Foreign Investment Income on External Positions of Emerging Market Economies

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Abstract The impact of income from foreign investments onto the formation of external economic positions of nine emerging market economies of Central and Eastern Europe and Latin America is identified in the paper by using several approaches to assess financial stability. Constructing vector autoregression models and performing Granger causality tests reveal the negative impact of income on foreign investments onto the formation of external debt. Countries are grouped according to the extent of their dependence on external financing, based on the analysis of the coefficient of coverage of foreign investments, which is constructed as a share of the foreign direct, portfolio and other investment income repatriated by investors in the foreign capital received by the country. Countries, for which the investment income payouts are exceeding 100% of the direct investment inflows, are highlighted: Czech Republic and Poland. Investment income outflows of almost 100% of received foreign direct investments were observed in Chile and Argentina. Due to the huge amount of investment income outflows and large share of foreign currency, located outside the country's banking system, Argentina might face a new monetary and financial crisis in the nearest future. Formally, for Ukraine the ratio of investment income payments to FDI was the smallest among the studied countries, but this is explained by the active use of non-market transfer pricing in trade operations between Ukrainian affiliates and their "parent" companies that lead to a reduction of the official income of foreign affiliates in Ukraine.

Keywords: Foreign Investment income; External debt; International investment position; Stability of the national financial system; Emerging Market economies

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1. Introduction

Foreign investments have been playing a very important role in the development of national economies. For the developed countries they help multinational companies to extend the goods life cycle, find the new ways to increase sales on the foreign markets, lower the internal costs of production, etc. For the developing countries foreign investments bring new technologies and management skills, increase the level of national production and export, and become the source of foreign currency inflow. However, the positive effects of attracting foreign investments, especially of foreign direct investments, are often accompanied by an outflow of financial resources in the form of foreign investment income and by general deterioration of the current account balances of the recipient countries. The difference in interest rates between developed and developing countries, which increased during the post-crisis development of the world economy, also became one of the factors leading to an outflow of the investment income from the emerging market economies.

In the majority of the emerging market economies these negative consequences of the foreign investments attraction lead to the increase of the amount of debt obligations and to the overall deterioration of the international investment position of the countries. That is why it is necessary to study the influence of the structure of the national external financial liabilities of the countries that have been receiving the foreign investments, since the forms of attracted investments – foreign direct investments, portfolio investments or other investments determine servicing corresponding debt obligations.
This paper explores the influence of various forms of investment inflows on the investment incomes and external debt obligations of nine emerging market economies of Central and Eastern Europe (CEE) and Latin America (LA). The choice of these countries is grounded by their rapid and efficient integration into the world financial market, the preservation of their own currency and the corresponding ability to implement a relatively independent own monetary and fiscal policies.

2. Literature review

The issues of international investments in general and of the foreign investments influence on the recipient countries in particular have been widely studied in the literature. According to Bracke & Schmitz (2010) for most foreign investments there are two distinct channels of returns: the first one is the direct investment income channel, taking the form of dividend or interest payments. This income is recorded in the primary income balance of the current account balance. The second channel is the increase in the market value of the foreign investment assets which is explained by changes in the formal price of the financial assets nominated in the domestic currency. Capital gains may therefore result from changes of the market price of the financial asset as well as from changes in exchange rates of national currencies. In case of devaluation of the national currencies capital gain is negative.There are researchers, who point out

that foreign investors tend to locate their assets in countries that have low employment protections. That is why the main objective of Polat & Soo (2017) study was to examine the causal relationship between foreign investment income return rate and employment protection. Results of their research show that employment protection has no significant effect on rate of return on investment income. From another side, the market size and the GDP dynamics increase the foreign investment income return.

Becker & Fuest (2011) analyze old, new and a "pragmatic" view on the taxation of foreign investors' income. According to their paper, while both the old and the new view focus on the implications of taxation for the international allocation of foreign investments assets, the "pragmatic" view emphasizes the compliance and administration costs of taxing foreign investment income. According to this view, foreign investors have many ways of avoiding taxes on repatriated income, that is why countries that are recipients of foreign investments should not introduce new taxes for the foreign investments` profit repatriation as such actions do not have any positive fiscal consequences.

The paper of Rogach & Dziuba (2017) investigates the role of exchange rate risk of investing in Ukrainian and other frontier equity markets during the period between 2006 and 2016. It is proved that frontier markets group represents substantial exchange rate risk for foreign investors and that among frontier markets Ukraine had the biggest exchange rate risk for foreign investors.

Authors study the influence of foreign investments on European economic integration – Beer et al. (2017) and disintegration processes within the European Union – Sydorova & Yakubovskiy (2017), assess the effect of foreign direct investments and their income outflows on exchange rate of national currencies Combes et al. (2011). One of the approaches to the study of the influence of capital inflow on financial stability of the countries is to analyze their potential for servicing external obligations. At the same time, since for the developing countries, external obligations are denominated in foreign currency, an important indicator of solvency is the value of exports of goods and services. Based on it, the World Bank experts, when analyzing the sustainability of the national financial systems, suggest calculating the ratio of foreign debt to GDP and to national exports of goods and services. Under these criteria the economies can be divided into three groups: with high, medium and low levels of foreign obligations. The first group consists of nations in which the ratio of foreign obligations either to GDP is more than 80%, or to the export of goods and services exceeds 220%. For the second group, these indicators should be in the intervals between 80% and 48%, 220% and 132%. For the third group of countries – with the most stable situation, ratio of external obligations to GDP is less than 48%, and the ratio of obligations to exports of goods and services is less than 132%. At the same time, this methodology does not take into account foreign financial assets of the nations including the volume of official reserves and foreign financial assets of banks, enterprises and population. That is why one of the effective criterion in assessing the financial imbalances of the developing countries in which nominal GDP is measured in non-convertible currency is the ratio of net international investment position (NIIP) to GDP. Due to this criterion the countries can be divided into three groups: with high (the ratio of negative NIIP to GDP is higher than

60%), with a medium (ratio of negative NIIP to GDP ranges between 60% and 36%) and low (negative NIIP to GDP is less than 36% or NIIP is positive) levels of dependence on foreign capital inflows. This approach was used in Sandru & Yakubovskiy (2018).

For a more comprehensive assessment of the influence of foreign capital on the recipient countries Rodionova (2013) introduced a new economic indicator, the "coefficient of coverage of foreign investments", which is the ratio of total investment income in the corresponding cumulative financial account inflows. According to the results of the research foreign direct investment income outflow had large negative impact on the balance of payments of Peru, Chile, Czech Republic, Poland and Slovakia.

3. Hypothesis, methodology and data

In general, in empirical studies the influence of different types of foreign investments on the external debt position of the countries has not received enough attention. Given the heterogeneous nature of financial flows, it is inappropriate to combine them to assess the influence of investments inflows on foreign debt growth. Foreign direct investments and portfolio or other investments are fundamentally different, since the foreign direct investments are associated with participation in the management of companies, while portfolio or other investments are not.

To test the hypothesis that the cost of servicing external liabilities is an important factor causing external imbalances in emerging economies, the vector autoregression (VAR) framework is chosen since it provides a systematic way to capture the rich dynamics in multiple time series.

Specifically, to provide evidence on the dynamic interactions between the external debt (the total values of external direct debt instruments, portfolio investments debt securities, other investments debt instruments) and the income on foreign investment liabilities of the CEE and LA countries, the following VAR systems are estimated to test Granger non-causality:

$$\begin{aligned} ED_t &= \alpha_1 + \sum_{i=1}^{p} \beta_{1i} Inc_{t-i} + \sum_{i=1}^{p} \gamma_{1i} ED_{t-i} + \varepsilon_{1t} \\ Inc_t &= \alpha_2 + \sum_{i=1}^{p} \beta_{2i} ED_{t-i} + \sum_{i=1}^{p} \gamma_{2i} Inc_{t-i} + \varepsilon_{2t} \end{aligned} \quad (1),$$

where ED and Inc and ε denote respectively the growth of total external debt to GDP ratio, income on individual investment category (depending on type of foreign capital: direct, portfolio and other investment income) and error term; α is a constant term; β and γ denote the coefficients to be estimated, p is the lag order selected. The null hypothesis of Granger non-causality from Inc to ED and from ED to Inc are $\beta_{1i}=0$ and $\gamma_{2i}= 0$, respectively. The rejection of the null hypothesis of the Granger non-causality from Inc to ED implies that the past investment income can help predict the external debt and vice versa. The model is estimated as follows. First, an unrestricted VAR is estimated. Then Granger causality testing is performed. The optimal number of lag length was chosen by looking at AIC and SIC criteria. The stability of VAR was checked: all AR roots are

inside the unit circle and Autocorrelation LM test states that no serial correlation in the residuals was detected. All investment income flows and debt series are I (0).

Quarterly data are used, taken from the International Financial Statistics and Balance of Payments statistics of the International Monetary Fund.The coefficient of coverage of foreign investment will be calculated for each country as a share of the investment income repatriated by investors in the foreign capital received by the country (the sum of liabilities for all types of investments in the balance of payments).

$$Cover^{x} = \frac{\sum INCd_{t}^{x}}{\sum xl_{t}} \tag{2}$$

where Cover – coefficient of coverage of foreign investments of type x direct, portfolio and other investments) for a specific time period.

This coefficient will be also used as an indicator of instability in the country. The high level of profitability of foreign investments has serious negative consequences for the financial systems during the crisis, and therefore countries should pay attention to the analysis of the sustainability of such flows in order to take timely economic or even administrative measures to cut these flows.

4. Results

In the table 1 the summary of the net international investment positions and values of the external debt instruments and securities of Argentina, Brazil, Bulgaria, Chile, Czech Republic, Hungary, Poland, Romania and Ukraine in 2011, 2014 and 2017 is presented. According to the World Bank criteria two of the explored countries – Argentina and Brazil, in which the ratio of the value of external debt instruments and securities to GDP is less than 48%, could be considered as the countries with the high level of financial stability to external financial shocks. Bulgaria, Chile, Poland and Romania could be considered as countries with the middle level of financial stability to external financial shocks. Czech Republic, Hungary and Ukraine, where the ratio of value of external debt instruments and securities to GDP is higher than 80%, are the countries with the high level of dependence on external financing. However, it should be mentioned, that this approach for the evaluation of the stability of national financial systems does not take into account the possibility of rapid devaluation of national currencies which in a short period of time can dramatically reduce the value of GDP in foreign currency, that thereby will greatly increase the ratio of value of external debt instruments and securities to national GDP.

Table 1. Macroeconomic imbalances, in % GDP

	Net International Investment Position			External debt instruments and securities		
	2011	2014	2017	2011	2014	2017
Argentina	8.9	10.3	2.6	23.8	25.7	36.2
Brazil	-31.4	-28.7	-32.1	19.5	28.9	32.2
Bulgaria	-77	-66.3	-45.6	82.9	87.8	77.5
Chile	-8.0	-8.9	-20.9	39.6	57.9	64.7
Czech Republic	-40.1	-33.2	-29.1	50.4	61.5	94.4
Hungary	-88.3	-72.1	-56.5	150	131	104
Poland	-54.1	-62.2	-66.4	60.9	65.1	72.4
Romania	-61.3	-52.2	-48.3	70.7	57.3	52.8
Ukraine	-25.6	-37.5	-22.9	76.7	91.8	102

Source: ECB (2019), Eurostat (2019), IMF (2019), World Bank (2019).

Using another approach for the evaluation of the countries` financial stability that is based on the state of the international investment position, Argentina, Brazil, Chile, Czech Republic and Ukraine, for which the ratio of net negative international investment position is less than 36%, could be considered as the countries with the high level of financial stability to external financial shocks. Bulgaria, Hungary and Romania could be considered as the countries with the middle level of financial stability to external financial shocks. Poland, where the ratio of net negative international investment position to GDP is higher than 60%, is the country with the high level of dependence on external financing.

It should be mentioned, that this approach for the evaluation of the stability of national financial systems has also shortcomings, as it does not take into account the structure of the assets of the international investment positions of the countries. For example, the major part of other investment assets, which are calculated as amount of foreign currency outside the national banking system, make up to 50% of the total assets of the international investment position of Argentina and up to 74% of Ukraine. Without these amounts the ratio of net international investment position of Argentina is -23.5%; of Ukraine – -109%.

For a more reliable analysis of the impact of investment inflow on the national economies the results of the Granger causality test for external debt growth and all types of investment income flows for Brazil, Poland, Chile, Hungary, Czech Republic, Argentina, Ukraine, Romania and Bulgaria are presented in the Table 2. In most cases it is portfolio and other income flows which have impact on external debt accumulation.

Table 2. Granger causality test for external debt growth and all types of investment income flows

Country	Indicators	Lags			
		External debt	FDI income	Portfolio income	Other income
Argentina (2000: 2017)	ED FDI income Portfolio Other	4.53 (0.10)c 14.6 (0.01)a		2.68 (0.10)c	6.30 (0.01)a
Chile (2007 Q1: 2018Q3)	ED FDI income Portfolio Other	14.6 (0.01)a			
Czech Republic (2004 Q1: 2018Q3)	ED FDI income Portfolio Other	15.9 (0.01)a 9.05 (0.01)a 2.79 (0.09)c			
Brazil (2001 Q1: 2018Q3)	ED FDI income Portfolio Other		12.0 (0.01)a		7.80 (0.02) b
Hungary (2000Q1 : 2018Q3)	ED FDI income Portfolio Other	7.11 (0.01)a 5.23 (0.02)b 7.65 (0.02)b	5.32 (0.02)b	10.7 (0.01)a	14.6 (0.01)a
Bulgaria (2007Q1: 2018Q3)	ED FDI income Portfolio Other	4.96 (0.02)b 10.7 (0.01)a 11.1 (0.01)a		5.96 (0.05)b	6.48 (0.03) b
Romania (2000Q1: 2017Q4)	ED FDI income Portfolio Other	3.49 (0.06)c 19.5 (0.01)a			
Poland (2004Q1: 2018Q3)	ED FDI income Portfolio Other	22.7 (0.01)a 2.55 (0.10)c 8.74 (0.01)a			

Country	Indicators	Lags			
		External debt	FDI income	Portfolio income	Other income
Ukraine (2002Q1: 2018Q3)	ED				
	FDI income	4.44 (0.03)b	3.65 (0.01)a		5.48 (0.06)c
	Portfolio				
	Other	16.6 (0.01)a			

Note: ED denotes external debt growth. Behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a, b, c represent the 1%, 5%, and 10% significance levels, respectively. Only significant coefficients are filled in the table.

According to the Granger causality test for Argentina portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI and other income flows. For Chile the level of external debt causes portfolio income flow. For Czech Republic the level of external debt causes FDI, portfolio and other income flows. For Brazil portfolio and other income flows have impact on external debt accumulation. For Hungary there is mutual causality for all variables considered – FDI, portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI, portfolio and other income flows. For Bulgaria portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI, portfolio and other income flows. For Romania the level of external debt causes portfolio and other income flows. For Poland the level of external debt causes FDI, portfolio and other income flows. For Ukraine FDI and other income flows have impact on external debt accumulation; the level of external debt causes FDI and other income flows.

Coefficients of coverage of foreign investments as a share of the foreign direct, portfolio and other investment income repatriated by investors in the foreign capital received by the country are presented in the Table 3.

Table 3. Coefficients of coverage of foreign investments, 2000-2017

	Coefficients of coverage of foreign investments, in %			In billion dollars		In %
	for FDI	for Pi	for OI	Total capital inflow	Total income inflow	Coefficients of coverage
Brazil	47.5	87.7	46.9	1475	825	55.9
Poland	104	51.9	44.6	467	358	76.7
Chile	98	33.8	49.8	356	278	78.9
Hungary	84.7	183	66.9	308	277	89.9

	Coefficients of coverage of foreign investments, in %			In billion dollars		In %
	for FDI	for Pi	for OI	Total capital inflow	Total income inflow	Coefficients of coverage
Czech Republic	148	29	27	276	242	87.7
Argentina	96.9	162	73.5	246	259	105
Ukraine	37	62.5	44.4	202	89	44.1
Romania	53.3	35.5	62.2	166	88	53
Bulgaria	44.8	344	44.2	84	40.3	50

Source: ECB (2019), Eurostat (2019), IMF (2019), World Bank (2019).

In the Table 3 emerging market economies are ranked due to the nominal terms of the amount of foreign capital that have been received by the countries. In nominal terms, Brazil, Poland and Chile received the largest amount of foreign capital during the period from 2000 to 2017. The ratio of total repatriated income in cumulative inflows of the financial account was 55.9% in Brazil, 76.7% in Poland and 78.9% in Chile. In a worse position are Argentina, Hungary and Czech Republic, which received US$246 billion, US$308 and US$276 billion respectively over 18 years, while the coverage ratio was 105% in Argentina (Argentina is the only one from the explored countries, where the ratio of total repatriated income in cumulative inflows of the financial account exceeds 100%), in Hungary 89.9% and in Czech Republic 87.7%.

Formally, in a somewhat better situation are Ukraine, Bulgaria and Romania, which received US$202 billion, US$84 and US$166 billion respectively over 18 years, while the coverage ratio was 44.1% in Ukraine, 50% in Bulgaria and 53% in Romania.

Considering each investment categories, those countries should be highlighted, for which investment income payments on FDI are exceeding 100% of the incoming FDI inflows: Czech Republic and Poland. Investment income outflows of almost 100% of received FDI were observed in Chile and Argentina.

For Ukraine the ratio of investment income payments to FDI is the smallest among the studied countries. It could be explained by the active use of non-market transfer pricing in trade operations between Ukrainian affiliates and their "parent" companies, the majority of which are registered abroad as the companies with offshore jurisdiction. These operations lead to a reduction of the official income of foreign affiliates in Ukraine. For Bulgaria, Hungary and Argentina investment income payments on portfolio investments are exceeding 100% of the incoming portfolio capital. For Bulgaria the extremely high level of coefficient of coverage of foreign portfolio investment – 344% is explained by the huge outflow of the foreign portfolio investments from the country – 3.4 billion of the US dollars during 2000-2011 which led to a significant reduction of total foreign portfolio assets in Bulgaria. For all of the explored countries income payments on other investments are less than 100% of the incoming capital.

5. Conclusions

Empirical estimations of the impact of returns on foreign investments on external positions showed that in countries with emerging economies these indicators have a significant impact on the deterioration of the external debt dynamics. The results of the comparative analysis of financial stability of the countries shows that Hungary and Ukraine with the ratio of value of external debt instruments and securities higher than 100% of GDP and Poland, where the ratio of net negative international investment position to GDP is higher than 60%, belong to the group of countries with the highest dependence on foreign financing.

The results of the Granger causality test for external debt growth and all types of investment income flows shows that for the majority of the explored countries portfolio and other income flows have influence on the external debt accumulation. This is the case for Argentina, Brazil, Hungary, Bulgaria and Ukraine. In Hungary there is mutual causality for all variables considered. In Czech Republic, Hungary, Bulgaria and Poland the level of external debt causes income flows. FDI income flows are significant for the debt accumulation in Brazil, Hungary and Ukraine.

The results of the calculations of the coefficients of coverage of foreign investments show the significance of the foreign direct, portfolio and other investment income repatriation from the emerging markets economies, especially for the countries of Eastern and Central Europe. In particular, for the period of 2013-2017 for Poland, Hungary, Ukraine, Romania and Bulgaria the coefficients of coverage of foreign investments exceeded 150%. In this case countries of Central and Eastern Europe must find the new ways to regulate foreign investors` activity, which from one side will correspond to the European Union norms, from another – will create effective barriers to foreign investment income outflow from the countries.

Argentina has the least stable financial system among the countries of Latin America. This is caused by two factors: by the significant volumes of the foreign direct, portfolio and other investment income repatriation from the country and by the large share of foreign currency, located outside the country's banking system. Thus, most likely Argentina will face a new monetary and financial crisis in the nearest future.

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