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THE EVOLUTION OF EXTERNAL STOCK IMBALANCES IN CENTRAL AND EAST EUROPEAN COUNTRIES

Ewa BILEWICZ

University of Szczecin, Faculty of Economics, Finance and Management; ewa.bilewicz@usz.edu.pl,
ORCID: 0000-0003-0155-506

Purpose: The primary purpose of this paper is to examine external stock positions of Central and Eastern European (CEE) economies from the viewpoint of external sustainability risks in the aftermath of global financial crisis (GFC).
Design/Methodology/Approach: Research method applied in this study includes the overview of theoretical concepts, literature review and a comparative analysis based on statistical data.
Findings: The results of research show that since the end of the GFC stock imbalances of CEE countries has fallen towards safer levels. As a result, the external sectors of these economies appear more resilient to sudden stops in external financing. However, external sustainability concerns remain about external debt levels, especially in Hungary and Romania.
Practical Implications: Identifying potential risks to external sustainability is essential for designing appropriate economic policies that can prevent excessive foreign indebtedness and strengthen the resilience. The research results can be used to formulate economic policy, which influence the scale and the composition of external assets and liabilities, both in gross and net terms and help to minimalize external sustainability risks.
Originality/Value: While the analysis of external stock positions is well-documented in the literature for the euro area, similar studies focusing specifically on CEE countries remain limited. This paper aims to fill this gap by providing a comprehensive assessment of the external asset and liability positions in this region.
Keywords: stock imbalances, international investment position, CEE countries.
JEL classification: F34.
Paper type: Research study.

1. Introduction

Significant imbalance in external position of a country is a key channel through which financial crises can arise, in both developed and developing countries (Monastiriotis, Tunali, 2020). The dramatic increase in international financial integration in the last decades caused, that counties are much more vulnerable to cross border financial shocks, than in earlier periods.

The frequency and costs of crises stimulated interest in methods to assess whether a country's external position can be regarded as sustainable.

This issue has become particularly relevant after the global financial crisis, due to rapid accumulation of current account (flow) imbalances and large net external positions (stock imbalances) prior to the crisis. In the aftermath of the GFC flow imbalances were reduced in most countries, but stock imbalances still remain a major vulnerability in some countries (Pierluigi, Sondermann, 2018; Alberola et al., 2020). The process of sustainable rebalancing is essential for economies in order to prevent future crisis and ensure long-term stability.

Diagnosing post-crisis trends in external positions is important for identifying potential risks to external sustainability, particularly because external sectors have been strongly affected in recent years by the impact of the pandemic crisis and more recently Russian-Ukraine war. It has also policy implications, as policy makers need a clear understanding of external imbalances to design effective policies that can prevent excessive foreign indebtedness and strengthen resilience of economy.

The aim of the paper is to examine external stock positions of selected Central and Eastern European economies, from the viewpoint of external sustainability in the aftermath of GFC. Two key research questions are formulated in this study: (1) are current NIIP levels are prudent from the viewpoint of external stability risks? (2) which instruments and sectors lie behind most of the dynamics of the NIIP? For this purpose an investigation of international investment position (IIP) data for the five CEE economies, that are members of European Union, but not of euro area (Bulgaria, Czech Republic, Hungary, Poland and Romania) in the years 2010-2023 was carried out. While the analysis of external stock positions is well-documented in the literature for the euro area, similar studies focusing specifically on CEE countries remain limited. This paper aims to fill this gap by providing a comprehensive assessment of the external asset and liability positions in this region.

2. An overview of the literature

Traditionally assessing country's external balance on the basis of current account and corresponding net financial flows was sufficient (Lambert, Laurent, 2002). In the context of the growing openness of countries to international capital flows evaluating external sustainability solely on the basis of the current account balance does not reflect all the problems associated with ensuring external balance. The current account balance reflects the net flow of fund, but it does not capture accumulated external liabilities. As financial flows in the net category are typically significantly lower than in the gross category, a country may have balanced current account but accumulate large net external liabilities over time, increasing vulnerability to external shocks.

The experience of the 2008-2009 GFC proved that balanced current accounts were not the correct benchmark for external sustainability (Lane, Milesi-Ferretti, 2012). In the years leading up to the GFC, expansion of current account deficits resulted in a high level of net foreign liabilities of countries, that borrowed heavily (Lane, Milesi-Ferretti, 2012). As a result, an approach that has been increasingly used to assess a country's external sustainability (i.e. its vulnerability to sudden stops) is through the net international investment position (NIIP) (Pantelopoulos, 2024). The usefulness of the international investment position data in assessing the external balance of the economy stems from the fact, that it provides comprehensive information of a country's stocks of cross-border claims and liabilities and allows the analysis of both net and gross figures, as well as the their composition (Lambert, Laurent, 2002), thereby offering a more complete assessment of potential instability.

According to literature large net foreign liabilities can be a threat to external sustainability (Zorell, 2017). Countries with large net liability positions are more exposed to external sustainability risks. In times of global uncertainty, investors may withdraw funds quickly, leading to financial instability (Obstfeld, 2012). (Binici, Ganioglu, 2020) found that the net external position of a country significantly affects the likelihood of a systemic crisis. For countries with low to moderate financial development, being a net foreign creditor implies that a country could significantly reduce the risk of banking crises. NIIP in relation to GDP is one of fourteen scoreboard indicators applied by the EU's Macroeconomic Imbalance Procedure (MIP), which aims to identify, prevent and address the emergence of macroeconomic imbalances, that could adversely affect economic stability in the EU. The reference value is set at -35% GDP (The Maroeconomic Imbalance, 2016). Empirical studies show that when net external liabilities exceeds 50% GDP and is higher than 20% of the country specific historical mean, the risk of external crises rises sharply (Cato, Milesi-Ferretti, 2014). The results of (Harms et al. 2022) suggest that low-income countries face external sustainability risks at less negative NIIP levels than richer countries and creditor countries do not run external sustainability risks.

Another strand of literature, has focused on the composition of external assets and liabilities. Some authors pointed out that not only the level of the NIIP, but also its composition pose a variety of risks for external sustainability (Zorell, 2017; Catão, Milesi-Ferretti, 2014; Lane, Milesi-Ferretti, 2012). Vulnerabilities may be related to size of external assets and liabilities, excessive debt, sectoral distribution, currency mismatches, maturity mismatches or reliance on volatile funding sources (Zorell, 2017).

The prevailing view is that debt liabilities are a less stable source of financing than equity (Harms et al., 2022). They require fixed interest payments, regardless of the borrowers' economic situation, whereas the transfer of income from equity and foreign direct investment (FDI) liabilities depends on the profits achieved from economic activity and the macroeconomic situation of the country. Cato, Milesi-Ferretti (2014) found that only foreign debt instruments are a robust indicator of external crises in contrast to equity assets and estimated a threshold for

net external debt liabilities (NED) around 35% GDP (Galstyan, Herzberg, 2018). In contrast, (Reinhart, Rogoff, 2010) highlighted the role of gross external debt (GED) as a source of vulnerability vis-a-vis the rest of the world. They estimated a threshold of 60 % GDP above which the likelihood of crises increases. Also (Blanchard et al., 2010) showed that large external debt positions were an important predictor of output losses during the global financial crisis. (Boukef et al., 2017) distinguished among the gross stocks of foreign assets and liabilities to determine how debt and the components of equity differ in their impact on the occurrence of banking crises. Their results indicate that FDI liabilities reduce the probability of a crisis, while debt liabilities increase the likelihood of such crises. Portfolio equity seems to have little or no effect. In addition, lowering overall financial or political risk partially offsets the impact of debt liabilities on the incidence of the banking crises. Joyce (2017) examined the determinants of equity and debt liabilities on external balance sheets in a sample of 21 emerging market economies and 20 advanced economies over the period of 1981-2013 and found that, the composition of the external liabilities of emerging market economies switched from primarily debt to equity in recent decades and that countries with higher economic growth rates have larger amounts of equity liabilities. The development of domestic financial markets is also linked to an increase in equity liabilities, and in particular, portfolio equity. Similarly (Faira et al., 2007) found that shift towards equity financing is stronger among larger, more open economies with a better institutional quality score. As far as structure of assets is concern (Cato, Milesi-Ferretti, 2014) found that exchange reserves reduce the likelihood of crisis more than other foreign asset holdings.

The vulnerabilities created by debt can be further magnified by the presence of maturity mismatches (Bruneau et al., 2017). The share of short-term liabilities in debt is particularly important, as in the event of a "sudden stop", the repayment of these liabilities could be difficult. Analysing sectoral composition can also lead to a better understanding how each sectors' holdings are associated with the NIIP (Cian, 2019). The value of net external liabilities of particular sectors can vary greatly, which can also have implications for external sustainability. When a specific sector becomes too dependent on foreign capital, a sudden stop can trigger steep drops in asset prices and cause widespread financial instability. Banks dependent on foreign funding are especially vulnerable to rollover risks, currency risks, and global interest rate shock. Additionally, liabilities in foreign currencies heighten the fragility of domestic banks when exchange rates depreciate (Boukef et al., 2017). External liabilities concentrated in the public sector may create risks of sovereign default, particularly if government debt is high and foreign investors hold a large share (Boukef et al., 2017). Finally, the share of foreign liabilities denominated in foreign currency in total foreign liabilities exposes countries to exchange rate risk, since currency depreciation increases the burden of servicing and repaying foreign currency debt (Afonso et al., 2017).

3. Research methods

Research method applied in this study includes the literature review and a comparative analysis based on statistical data. The methodological approach is descriptive in nature, aiming to highlight structural differences and common trends within the region. The analysis focuses on the composition and dynamics of international investment positions, across selected CEE economies in time period from 2010 to 2023. The time frame of the analysis 2010-2023 allows for examining the changes that occurred in the post GFC years and during COVID-19 pandemic and post-pandemic recovery. In order to maintain comparability of data, the study was conducted on the basis of data from the Eurostat database, ensuring consistency and comparability across countries and time periods. For certain countries and variables, the data cover a shorter time span given their availability.

4. Results and discussion

The evolution of NIIP in relation to GDP of CEE countries is shown in Figure1. All countries were net debtors in the analysed period. Theirs' NIIPs in relation to GDP surpassed prudential benchmark, used in the scoreboard of the EU's macroeconomic imbalance procedure, for most of the years in the period under review. Since the GFC, the region has substantially reduced its net foreign liabilities, supported by strong GDP growth that helped narrow the negative NIIP-to-GDP ratio across all countries. Bulgaria and Hungary (countries with the largest negative positions at the end of 2010) stand out in the magnitude of the net declines. From 2010 to 2023, theirs' net foreign liabilities improved by 85 and 70 percent of GDP respectively. Despite the outbreak of the global COVID-19 pandemic in early 2020, this pattern continued in the region, except Romania and Hungary. In these two countries the NIIP position slightly deteriorated during the pandemic, but it significantly improved by the end of 2023. However, despite rebalancing efforts Romania and Hungary had negative NIIP in excess of 35% GDP at the end of 2023. Achieving the NIIP to GDP ratio that ensures external sustainability would require substantial and sustained improvements in current accounts of these countries.

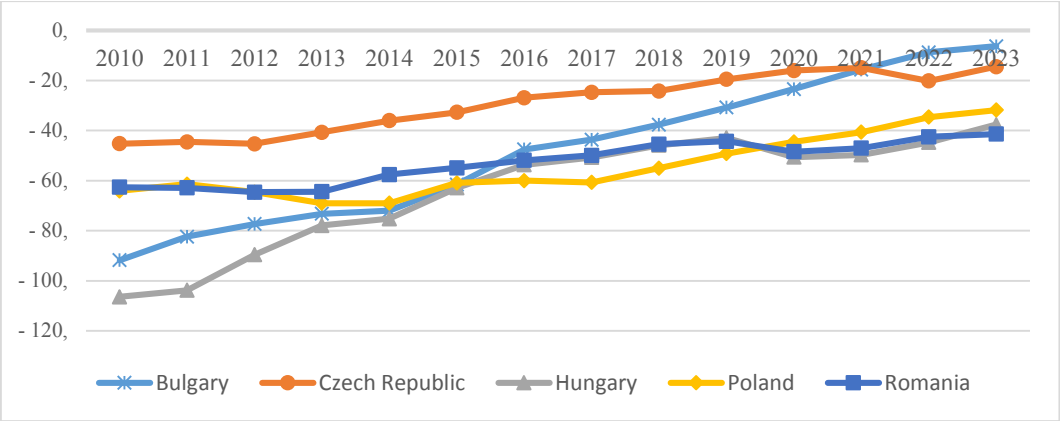


Figure 1. Net international investment position of CEE countries (as a percentage of GDP).
Source: Eurostat data: https://ec.europa.eu/eurostat/databrowser/view/bop_iip6_q/.

Table 1 reveals changes in the composition of NIIP by debt and equity instruments in relation to GDP (excluding official reserve assets). Since the Global Financial Crisis, CEE countries have experienced an increasing reliance on net equity liabilities in their external financing—a trend consistent with developments observed in several other countries worldwide (Joyce, 2019). In 2010, the region—excluding the Czech Republic—relied predominantly on net debt instruments to obtain external financing. Between 2010 and 2023, the improvement in the net foreign liability position was largely driven by developments in debt instruments, with the average net external debt position of the region narrowing significantly from a markedly negative level of –56% of GDP to –27% of GDP. It is worth noting, that part of the debt financing came from foreign direct investors, which made it more solid, than financing from entities not linked by capital. The value of net debt financing from direct investors, relative to GDP, remained broadly stable across the region, with the exception of Bulgaria, where it declined significantly—by 22 percentage points—since 2010. As of the end of 2023, net debt owed to foreign direct investors accounted for approximately one-quarter of total net foreign debt in the Czech Republic and Romania, and around one-third in Poland. In contrast, Hungary was a net creditor in this category, which partially offset its net debt in other components of the international investment position. Net liabilities in equity instruments also declined over time, albeit at a slower pace. Consequently, by the end of 2023, net equity instruments constituted a more prominent component of net liabilities compared to net debt instruments in most CEE countries, with the exception of Romania, which continued to exhibit substantial net debt liabilities at the end of 2023.

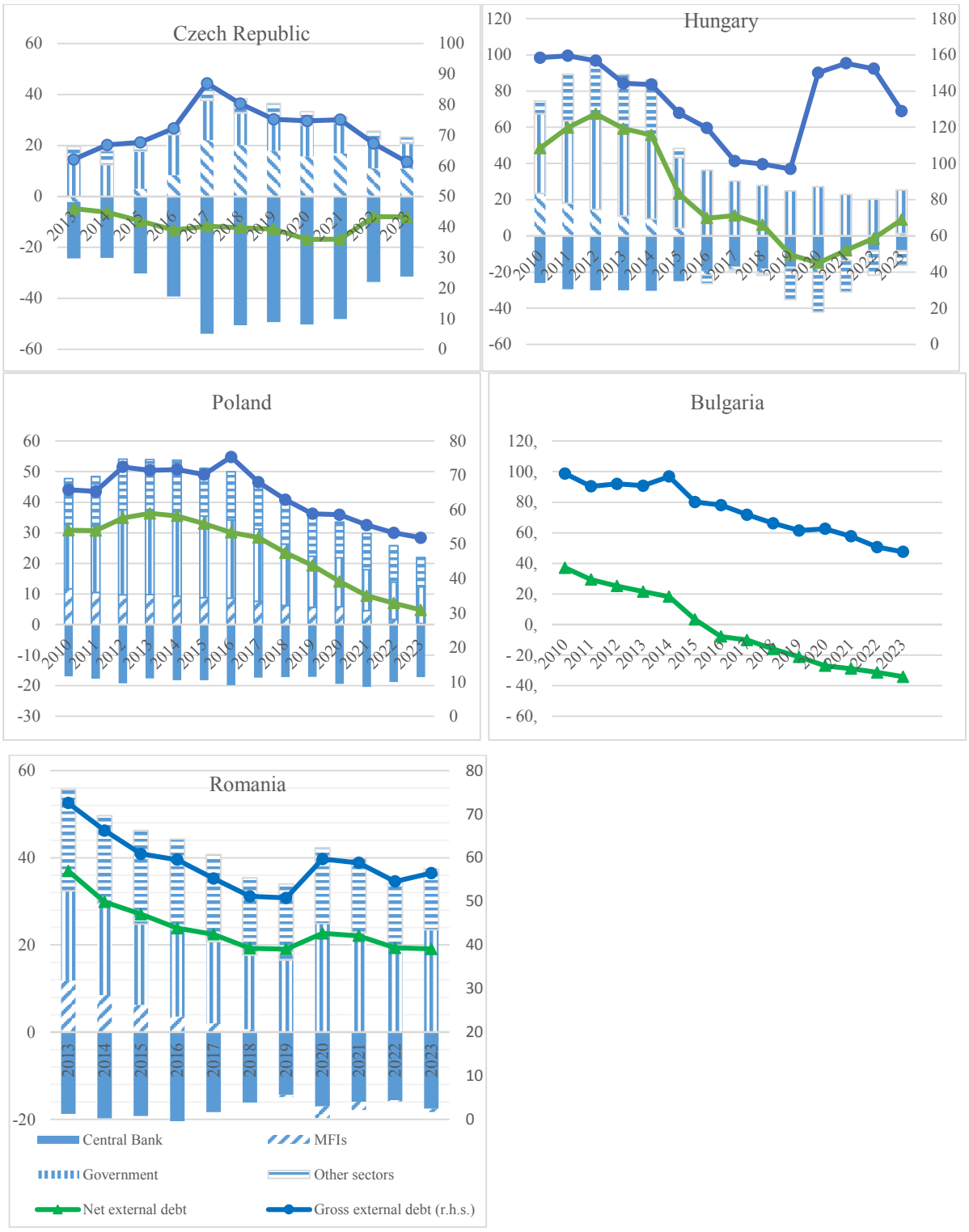
Table 1.

Net international investment position by instrument of CEE countries (%GDP)

	Financial instruments	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Bulgaria	Net equity instruments	-54	-53	-53	-51	-53	-60	-58	-56	-56	-54	-53	-47	-43	-42
	Net debt instruments (PI and OI)	-43	-35	-33	-28	-29	-25	-21	-15	-11	-3	-6	-6	-4	-2
	Net debt instruments (FDI)	-28	-27	-28	-28	-28	-21	-18	-18	-15	-14	-15	-11	-8	-7
Czech Republic	Net equity instruments	-48	-44	-49	-46	-45	-46	-44	-43	-41	-39	-41	-40	-36	-30
	Net debt instruments (PI and OI)	-12	-11	-11	-14	-13	-18	-22	-41	-35	-33	-29	-31	-24	-20
	Net debt instruments (FDI)	-5	-5	-6	-4	-6	-3	-5	-5	-6	-6	-6	-5	-6	-5
Hungary	Net equity instruments	-56	-32	-21	-18	-19	-41	-47	-41	-41	-54	-65	-61	-49	-32
	Net debt instruments (PI and OI)	-86	-96	-102	-92	-88	-49	-30	-29	-25	-8	-8	-13	-18	-27
	Net debt instruments (FDI)	4	4	4	4	4	4	4	3	3	3	3	3	2	2
Poland	Net equity instruments	-34	-27	-33	-34	-33	-27	-30	-35	-32	-33	-32	-34	-30	-33
	Net debt instruments (PI and OI)	-42	-42	-46	-45	-44	-42	-44	-38	-33	-30	-27	-24	-20	-18
	Net debt instruments (FDI)	-7	-8	-9	-10	-10	-10	-10	-10	-9	-8	-8	-8	-8	-7
Romania	Net equity instruments	-28	-27	-29	-29	-30	-30	-30	-29	-28	-27	-28	-27	-25	-24
	Net debt instrument(PI and OI)	-51	-51	-49	-45	-38	-35	-31	-28	-23	-22	-27	-26	-25	-27
	Net debt instruments(FDI)	-11	-11	-12	-14	-12	-12	-13	-12	-11	-12	-12	-12	-11	-10

Note. Financial instrument according to the broad groupings (equity and investment fund shares, debt instruments (PI – portfolio investment, OI – other investment), debt instruments (FDI – foreign direct investment). Official reserve assets are excluded.

Source: own study based on Eurostat data: https://ec.europa.eu/eurostat/databrowser/view/bop_iip6_q/.



Note. Sectoral breakdown of net external debt is not available for Bulgaria.

Figure 2. Gross external debt, net external debt by sector (as a percentage of GDP).

Source: own study based on Eurostat data: https://ec.europa.eu/eurostat/databrowser/view/bop_iip6_q/.

In the CEE countries, the net external debt-to-GDP (NED-to-GDP) ratio—including official reserve assets—remained significantly more favorable than the NIIP-to-GDP ratio and did not exceed the safety thresholds commonly referenced in the literature (Figure 2). This outcome can be attributed to the substantial share of net equity investments in the NIIP, as well as

significant holdings of foreign debt assets, primarily in the form of official reserve assets managed by central banks—the principal agents of outward investment in the region (Śliwiński, 2022). Notably, the Czech Republic recorded a negative NED-to-GDP ratio throughout the period, indicating that its residents were in a net creditor position vis-à-vis the rest of the world. Similarly, Bulgaria has maintained a net creditor status since 2016, and Hungary also held this position between 2019 and 2022 (Figure 2). In Romania, the COVID-19 pandemic led to a temporary increase in net external debt, although this was reversed by the end of 2023. In subsequent years, a deterioration in net creditor position in both Hungary and the Czech Republic was observed. The remaining countries did not experience a significant rise in net external debt as a result of the pandemic. The latest available results from (Alert Mechanism Report, 2025) support these findings.

Figure 2 reveals composition of net external debt in relation to GDP by sector in CEE countries. Despite substantial decline of net debt liabilities since GFC, government accounted for the significant part of the net external stock imbalances in region (except Czech Republic). This reflects the fact that the sovereign's gross foreign assets tend to be negligible, while its debt is often held by foreign investors (Zorell, 2017). At the end of 2023 the government sector remained the biggest net borrower in Hungary (24% of GDP), Romania (23% of GDP) and Poland (12% of GDP)**.** However, in the case of Poland, the government sector's debt-to-GDP ratio only marginally surpassed that of other sectors. A sectoral breakdown further reveals that, during the COVID-19 pandemic, the share of net government debt in relation to GDP increased substantially in Romania and to a lesser extent in Hungary, as countries resorted to external borrowing to counteract the economic fallout and finance public health expenditures. By the end of 2023, government net debt to GDP ratio in Hungary returned to pre-pandemic levels, but remained at higher level in Romania. The net foreign debt in relation to GDP of the other sectors category has also declined since the GFC. In Hungary, the net debt position of other sectors shifted into positive territory, while in the Czech Republic it became nearly balanced. In contrast, Poland and Romania continued to register sizeable negative net external debt positions in this category, which constitute a significant share of their overall net foreign liabilities. During the period under analysis, CEE countries also experienced a deleveraging of the monetary financial institutions (MFI) sector. By the end of 2023, banks in Hungary, Poland, and Romania held relatively small net debt positions, whereas the Czech Republic remained an outlier with a more pronounced position. It is important to note, however, that the net positions of the MFI sector often obscure substantially larger gross positions (Zorell, 2017). Central banks across the region maintained positive net debt positions, primarily due to their holdings of official reserve assets. Elevated levels of foreign exchange reserves serve as a mitigating factor against external vulnerabilities.

Although net debt position are currently more balanced in the region, gross external debt in relation to GDP still remain a source of external high at the end of 2023 in the region. Csonto, Chen (2024) also pointed to this risk to external sustainability of CEE countries. All countries

except Bulgaria, had debt ratios above 50% of GDP (Alert Mechanism Report, 2025). The most indebted economy in relation to GDP was Hungary, where the ratio surged during pandemic crisis from an already high level of 97% in 2019 to 157% in 2020 and is currently estimated at about 130%. These levels are generally associated with an increased vulnerability to external crises. However, a significant portion of this debt is owed to foreign direct investors, which partially mitigates associated risks.

More in-depth analysis of external balance also require determining the maturity structure of external debt. Eurostat data offer a maturity breakdown only for portfolio and other investment external debt (excluding FDI). Liabilities with maturities of less than 1 year constituted a smaller part of total liabilities in all countries except Czech Republic at the end of 2023 (Table 2). The largest part of gross external "portfolio debt" in the region was of a longer-term nature, with an original maturity of more than one year. The maturity structure of external debt in the "other investment" category was also dominated by long-term liabilities across the region (except the Czech Republic), but the margin by which long-term debt exceeded short-term debt was narrower. The government sector exhibited a favorable maturity profile in all countries, contributing to the mitigation of external sustainability risks. By contrast, the monetary financial institutions (MFI) sector in the Czech Republic held a relatively high share of short-term external debt, indicating a less favorable maturity composition. The government sector is the primary contributor to net external debt in the form of foreign portfolio and other investment liabilities.

Table 1.
External debt in relation to GDP (excluding FDI) at the end of 2023 of CEE countries (%GDP)

	% of GDP		By financial instrument				By sector					
	Total		Portfolio debt		Other investment		MFIs		General Government		Other sectors	
Country	Long term	Short term	Long term	Short term	Long term	Short term	Long term	Short term	Long term	Short term	Long term	Short term
Bulgaria	23	8	9	0	14	8	3	4	12	0	9	3
Czech Republic	21	23	14	1	7	22	5	15	10	0	5	6
Hungary	48	14	24	4	24	11	10	3	26	1	9	6
Poland	25	6	14	0	11	6	5	2	15	0	5	3
Romania	25	4	15	0	10	4	1	1	19	0	4	3

Source: own study based on Eurostat data: https://ec.europa.eu/eurostat/databrowser/view/bop_iip6_q/.

5. Conclusions

In summary, the analysis of external stock imbalances in the CEE countries suggests that, since the end of the Global Financial Crisis, external stock imbalances in Central and Eastern European countries have declined toward safer levels. By the end of 2023, these economies

exhibited diminished external sustainability risks due to reduced net foreign liabilities to GDP, an increased role of equity financing in net liabilities and the favorable maturity structure of debt instruments. Although the outbreak of the COVID-19 pandemic temporarily increased net and gross external debt ratios relative to GDP in parts of the region, a trajectory of gradual improvement has since resumed. Nonetheless, the high level of gross external indebtedness—particularly in Hungary and Romania—continues to present a source of vulnerability and limits resilience to adverse external shocks.

Based on the findings of this analysis, several policy recommendations can be proposed to strengthen the external sustainability of CEE countries and reduce persistent vulnerabilities, particularly in Hungary and Romania. To reduce high levels of gross external debt, it is essential that CEE countries maintain sustained current account surpluses. The region should continue the shift toward equity-based external financing, as this can enhance resilience by reducing exposure to debt-related risks. Strengthening domestic capital markets and fostering transparent corporate governance frameworks can help attract long-term equity investment. To mitigate vulnerabilities associated with elevated gross external debt, targeted debt management strategies should be adopted. These include lengthening the maturity profile of external obligations, reducing reliance on short-term borrowing, and enhancing debt transparency.

An important direction for further research is to determine the currency composition of foreign assets and liabilities and to examine its' impact on the external vulnerabilities of CEE countries. Since these countries maintain their own national currencies and are not part of the euro area, fluctuations in exchange rates can cause substantial changes in the valuation of external assets and liabilities. These valuation effects can distort the measurement of net and gross positions over time, making it difficult to distinguish between genuine improvements or deteriorations in external sustainability and those driven by currency movements. As a result, comparing IIP metrics across countries without accounting for exchange rate effects may lead to misleading conclusions regarding relative external vulnerabilities and risk exposure.

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