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Varieties of dependent growth models: External finance in Central and Eastern European economies

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ABSTRACT

This paper explores the changing landscape of external finance in Central and Eastern Europe (CEE) following the global financial crisis of 2008. Through comparative statistical analysis, it traces shifts in the primary sources of external finance, including foreign direct investment (FDI), EU subsidies, remittances, and external debt. The findings reveal a significant decline in the importance of FDI and external debt, offset by an increasing dependence on EU subsidies and remittances. The paper categorises countries into three groups according to their dominant source of external finance, with only one cluster remaining primarily FDI-led. By unpacking these varied forms of financial dependence, the paper provides a more nuanced understanding of post-crisis growth models in the CEE region. It concludes that, while the composition of external finance has shifted, overall dependency has persisted.

KEYWORDS

external finance, growth models, Central and Eastern Europe, foreign direct investment, dependence

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1. INTRODUCTION

Dependence on foreign capital is at the heart of growth models in Central and Eastern Europe (Sass, 2024). Following the pioneering work of Nölke and Vliegenthart (2009), the region's

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varieties of capitalism are referred to as dependent market economies. Moreover, the emerging growth model literature describes the countries of the area as FDI-driven, export-led dependent growth models (Ban & Adascalitei, 2020). In recent years, however, two essential debates have emerged about the region's dependent growth model. Firstly, there is a growing stream in the literature arguing that dependence seems to be decreasing after the 2008 crisis (Bluhm & Varga, 2020), while others stress that dependence is still present (Bohle & Greskovits, 2019; Bohle & Regan, 2021). Secondly, there is also a debate on how this dependency manifests itself. While some authors refer to the entire region as simply dependent on foreign capital (Ban & Adascalitei, 2020), others separate the dependence of the Baltic states from that of the V4 countries (Bohle, 2018; Vukov, 2021).

This paper aims to contribute to these debates by examining the varieties of dependence in the region.[1] It argues that the current literature on the region's dependence is narrowly focused on foreign capital, but to understand dependence, one needs to look at the region's external financing in a broad sense, including the role of external debt, EU subsidies and remittances. The paper aims to show that the region is not homogeneous in terms of external finance and that there are different varieties of dependence.

The growth models literature provides the theoretical background to the research. This literature emerged as a response to the critique of the varieties of capitalism approach, creating a new theoretical framework to capture the diversity of capitalism. The growth model approach defines different models of capitalism on a post-Keynesian foundation, based on a demand disaggregation of growth (Baccaro & Pontusson, 2016; Stockhammer, 2016). However, an essential shortcoming of the literature is that it focuses mainly on developed countries, thus ignoring the specific developmental challenges of semi-peripheral regions. Nevertheless, in recent years, the literature has begun to expand to developing countries (see Akcay et al., 2022; Mertens et al., 2022; Stockhammer, 2023). The paper joins this line of research. It argues that semi-peripheral growth models cannot be analysed without examining external financing. The paper contributes to the development of the literature on growth models by integrating the semi-peripheral experience.

The paper utilises comparative statistical analysis to examine the external financing of the growth models in Central and Eastern Europe. External financing contains foreign direct investment (FDI), European Union subsidies, remittances and external debt (Bohle, 2018; Gerőcs & Pinkasz, 2017). Twelve countries are included in the analysis.[2] The paper first makes a comparison over time, comparing external financing before and after the 2008 crisis. Then it uses descriptive statistical tools to identify different external financing models for the region in the post-2008 crisis period. The results show that the role of FDI and external debt in external financing declined after the crisis, while the importance of EU subsidies and remittances increased. The study distinguishes three different varieties of dependency, only one of which is FDI-led. This challenges the dominant view that the region is FDI-dependent.

[1]An earlier version of this research was published in Hungarian in the journal Külgazdaság (see Csontos, 2024). This article is a substantially revised and extended version of that manuscript, examining an expanded range of countries over a broader time interval and incorporating net data on external finance.

[2]Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Hungary, Croatia, Romania, Bulgaria and Slovenia, and we also analysed Austria for comparison.

The paper is divided into seven parts. The first part presents the theoretical background of the research. The second part describes the growth models of Central and Eastern Europe and the debates surrounding them. The third part introduces the research methodology, the fourth, fifth and sixth parts present the results. The paper ends with a conclusion.

2. GROWTH MODELS APPROACH AND THE SEMI-PERIPHERY

In response to criticisms of the varieties of capitalism approach, a new theoretical framework known as the growth model approach has emerged in the literature on comparative political economy since the mid-2010s. Rooted in post-Keynesian economics, this approach emphasises the demand side of the economy, stressing the importance of effective demand and the distribution of income between capital and labour in sustaining economic growth (Stockhammer, 2022).[3] It categorises models of capitalism according to growth drivers. These drivers can be based on the demand components of GDP, including consumption, government spending, investment, or net exports.

The development of this approach is linked to the work of Baccaro and Pontusson (2016). The authors argue that before the 1980s, a consumption-led model based on wage growth prevailed in developed Western European countries. However, this growth model faded during the structural crisis of the 1970s, and three new growth models emerged from the 1980s onwards: a credit-financed consumption-led model exemplified by the UK, the export-led German model, and the balanced Swedish model based on both exports and consumption (Baccaro & Pontusson, 2016). A similar approach is taken by Stockhammer (2016), who identifies an export-led model for Germany, Northern Europe, China and Japan, and a debt-led model for the Anglo-Saxon countries and Southern Europe. He argues that the emergence of these two models is linked to the neoliberal turn of the 1980s, which favoured capital in distribution. Stockhammer (2016) argues that this was a misguided economic policy that led to a decline in effective demand, which had to be supported by external stimulus. This stimulus included financial deregulation and trade liberalisation, leading to debt-led and export-led growth models.

Hein et al. (2021) offer a different interpretation, distinguishing between export-led mercantilist, weakly export-led, domestic demand-led and debt-led private demand models. They also point out that there have been significant changes since the 2008 crisis. There has been a shift towards export orientation in developed countries, with debt-led models disappearing. This is, of course, related to the unwinding of the neoliberal financial deregulation process. In contrast, Kohler and Stockhammer (2020) find more minor changes, with a convergence towards greater export orientation, but with weak domestic demand. Pontusson and Baccaro (2021) also find post-crisis shifts towards export dependence in Italy, Germany and the UK, while Sweden became less export-oriented.

[3]However, there is also a branch of growth model literature that examines growth models from a neo-Keynesian perspective rather than a post-Keynesian one (see, for instance, Hope & Soskice, 2016). This creates greater harmony between the demand and supply sides. Nevertheless, the post-Keynesian, demand-oriented approach continues to dominate the literature.

The first wave of the growth model approach focused on developed countries and did not deal with the semi-periphery. However, the growth models of the semi-periphery differ significantly from those of developed countries. Stockhammer (2023), for example, points out that developed and peripheral models are structurally different. Significant technological backwardness, large labour reserves, dependence on capital imports and illiquid financial markets characterise peripheral countries. As a result, he emphasises that peripheral growth models may face significant real and supply-side constraints and that the role of the state is more important but more vulnerable. Mertens et al. (2022) highlight that growth models in developing countries differ from those in developed countries, for example: a greater emphasis on investment due to underdeveloped infrastructure, greater exposure to international commodity cycles and foreign capital, and more pronounced regional disparities, which may lead to distinct regional growth models.

Therefore, the second wave of growth model literature tried to extend the theory to peripheral regions. Mertens et al. (2022) show that many large catching-up economies are not primarily export-led, identifying a new investment-led model in Mexico and China, with Mexico relying on foreign capital and China on domestic sources. Akcay et al. (2022) find that post-2008, developing countries predominantly followed domestic demand-led and debt-led models, with a declining role for exports, except in Russia. However, they view the post-2008 models of China and Mexico as weakly export-led rather than investment-led.

Nevertheless, the main shortcoming of the second wave of the growth model approach is that it fails to incorporate the role of external finance, which cannot be ignored in the analysis of semi-peripheral economies. External financing is a necessity in semi-peripheral growth models, where the issue is not growth per se but catching up. These countries aim to catch up with developed countries, but they suffer from a chronic gap in technology, knowledge, and capital. To overcome this gap, internal resources are insufficient, and they are forced to resort to various forms of external financing: international loans, aid, foreign capital (Gerőcs & Pinkasz, 2017) and remittances (Bohle, 2018). Semi-peripheral countries are therefore trying to catch up by using various external sources of finance to overcome their knowledge, capital and technology gaps. If catching up is successful, external financing can be expected to decrease while internal capital, knowledge and technology gaps are eliminated. According to Stockhammer (2023), export-led models based on foreign capital will succeed if they can channel external finance (mainly foreign capital) into industrial upgrading. Debt-led models can succeed if external debt is used for production rather than consumption.

Therefore, in this article, we argue that it is insufficient to examine only the demand side to define semi-peripheral growth models, as is the case in traditional growth model literature. It is asserted that a more comprehensive approach is required, and that this should entail an examination of the supply side, with particular emphasis on external financing. The semi-peripheral growth models have an external financing structure that provides stable support for the convergence process over a given period. If this external financing structure changes, it alters the essence of the entire convergence process, ultimately leading to a different type of growth model. Consequently, this structural element must be considered. The growth models of the semi-periphery should be defined not only by certain demand elements (e.g., exports and consumption), but also by the presence of a dominant external financing structure.

3. GROWTH MODELS IN CENTRAL AND EASTERN EUROPE

Central and Eastern Europe is a typical example of a semi-periphery that relies heavily on external finance to catch up. After the regime change, the region moved from a failed socialist catch-up attempt to a capitalist model. Early analysts argued that this capitalist model was a hybrid, combining elements of German and Anglo-Saxon capitalism. However, Nölke and Vliegenthart (2009) have argued that a unique model of capitalism emerged in the region, which they call a dependent market economy. A key feature of the dependent market economy is its heavy reliance on foreign capital, which also determines its institutional structure. Dependent market economies are geared towards attracting foreign capital, which is reflected in flexible labour market regulations, weak trade unions, wage moderation and tax cuts for companies (Nölke & Vliegenthart, 2009). This type of model exacerbates competition between countries in the region, as each tries to become the most advantageous destination for foreign capital (Drahokoupil, 2009). This is known as the competition state phenomenon, which leads to low corporate taxes and thus underfunded welfare states (Drahokoupil & Piasna, 2019).

Farkas (2017) also reinforces the region's unique model of capitalism, pointing out that the post-socialist countries have not converged with the models of the old EU member states. Instead, a new version of capitalism has emerged, with FDI-driven modernisation, low R&D spending, foreign banks dominating foreign investment, a moderately flexible labour market, weak trade union involvement, and lower levels of social protection and education spending than in the old EU member states.

The circumstances of the regime change can explain the importance of foreign capital. Given the limited scope for internal capital accumulation under the socialist system, there was little capital available for use in the private economy after the regime change. In some countries, such as Hungary, the privatisation process also contributed to the emergence of foreign capital, as the privatisation process in this country was aimed at finding external investors, who were almost exclusively foreign (Szanyi, 2020). The inflow of foreign capital was also facilitated by the fact that the region experienced a transformation crisis after the regime change, which led to significant deindustrialisation and a decline in employment. Economic policy had to address this, and foreign capital was a helpful tool. Thus, from the mid-1990s, a re-industrialisation of the region based on foreign capital was initiated (Lux, 2017), which was able to stabilise the economy. The start of foreign capital inflows thus contributed significantly to the catching-up process before the 2008 crisis (Szanyi, 2020).

However, dependent market economies have a comparative advantage in industrial, predominantly standardised assembly activities, and this is the type of capital that has flowed into the region. This also means that the region has settled into a manufacturing position in global value chains, which in turn generates low value added (Mudambi, 2008). This is confirmed by Kordalska and Olczyk (2022), who point out that the region has become the manufacturing backbone of the German economy. However, this manufacturing position raises the possibility of a middle-income trap (Csontos, 2023; Győrffy, 2022; Myant, 2018).

The literature on growth models also confirms the role of foreign capital dependence in regional growth models. Ban and Adascalitei (2020) argue that the region is an export-led dependent growth model, while highlighting that in the Baltic countries and countries with larger domestic markets (such as Romania and Poland), debt-driven consumption is also a significant growth driver. In contrast, Bohle (2018) interprets the export-led dependent model

as applicable to the Visegrad Four. He argues that the Baltic countries should be described as a debt-driven dependent model. This is confirmed by Vukov (2021), who points out that the dependence on foreign capital in the Baltic countries is mainly found in the financial sector, where foreign-owned banks finance growth. In the Visegrad countries, foreign industrial capital dominates, especially in the export sector. However, Kalanta (2019) points out that the Baltic countries also became an export-led growth model after the 2008 crisis, abandoning their previous consumption and debt-led growth. Szanyi (2020) also argues that the crisis was a disruption for the region as the previously essential inflow of foreign capital started to decline. This is because the parent companies of foreign firms also suffered from the crisis and preferred to repatriate capital. Thus, after the crisis, the foreign capital-driven model began to saturate.

The 2008 crisis has therefore shaken the inflow of foreign capital, which has intensified efforts to strengthen the domestic economy. This was particularly the case in Hungary and Poland, where an illiberal restructuring of the growth model took place (Éltető & Medve-Bálint, 2023). In Hungary, for example, a policy of selective nationalism was initiated, distinguishing between bad and good foreign capital (Bohle & Greskovits, 2019). The former category included companies producing for the domestic market, which economic policy sought to bring under Hungarian ownership. The latter category included companies in export sectors, which continued to be supported. In Hungary, the policy of national ownership was most successful in the financial industry, a process referred to as financial nationalism (Johnson & Barnes, 2015; Sebők & Simons, 2022).

This was also significant in Poland, where managers working in foreign banks supported Polish ownership of the banking sector to increase their autonomy (Naczyk, 2022). Poland also began to develop a new type of industrial policy based on the model of Asian developmental states (Morewiezkci, 2016). This industrial policy significantly supported innovation and the strengthening of industrial capacities (Bluhm & Varga, 2020). However, this developmental state approach was not unique to Poland. In Estonia, for example, significant industrial policy efforts were made to strengthen the digital sector (Győrffy, 2022; Kalanta, 2024). Furthermore, Romanian development policy has also moved in this direction, but has not been able to achieve breakthrough results (Ban, 2019).

These developments are interpreted by Bluhm and Varga (2020) as a shift towards a conservative developmental state in Poland and Hungary, which represents a new catching-up model. In contrast, Bohle and Greskovits (2019) show that much of the change in Hungary has been in rhetoric rather than in actual economic policy practice. This is confirmed by Scheiring (2020), who points out that substantial support for foreign capital has remained in the Hungarian model. In the case of Hungary, the authors interpret the changes not as a model change but as a path correction (Bohle & Greskovits, 2019; Bohle & Regan, 2021). Similarly, Bohle (2018) shows that dependency in the region remains strong, but it has diversified.

While the literature on the Central and Eastern European growth models highlights the role of foreign direct investment (FDI) as a key source of external financing in the region, it does not comprehensively examine other sources of external financing. For this reason, it may be necessary to supplement the literature in this area. Furthermore, the literature clearly shows that changes occurred in the growth model after the 2008 crisis. Therefore, it would be worthwhile to examine these changes in terms of external financing structures, as this could indicate whether external dependence in this area has begun to decline.

4. RESEARCH METHODOLOGY AND DATA

This research sought to answer two questions: (1) How has external finance in the CEE region changed after the 2008 crisis? (2) What types of external finance have emerged in the region after the crisis? By examining changes in external financing, we can study external dependency in Central and Eastern European economies. It is essential to recognise, however, that external dependence may extend beyond external financing. In this paper, we therefore focus solely on this aspect of external dependence.[4]

A comparative statistical analysis answers these questions. The paper examines four types of external financing: foreign capital, EU subsidies, remittances and gross external debt. As a general rule, the figures in the main text show gross data for these external sources. However, during the research, we also calculated net data, which will be available in the annexes. Eleven Central and Eastern European countries are included in the analysis.[5] In addition, to facilitate comparison, we also included a small, open, developed economy. Due to the availability of data, this was Austria. As our primary research objective was to compare external financing structures before and after the 2008 crisis, this also informed the timeframe of our study. We compared the periods spanning 2001–2007 and 2014–2019. However, in the case of time series, we also prepared longer time series (up to 2024) to ensure timeliness.

For the analysis of FDI, the research uses FDI data from the Vienna Institute of International Economics, which excludes data on Special Purpose Entities (SPEs), thus providing a clearer picture of FDI trends than the World Bank database (see Wiiw, 2025b). SPE data would distort the image by conflating long-term investments with rapid and short-term flows (Szanyi, 2020). There are also other methodological problems with FDI data. There is the phenomenon of round-tripping, which means that domestic capital returns to the domestic economy through offshore channels, so it is not foreign (Antalóczy & Sass, 2014; Éltető & Antalóczy, 2017). This methodological consideration needs to be taken into account when interpreting the data, i.e., the actual FDI figures may be lower than those reported. In addition to examining foreign direct investment (FDI) inflows, we also calculated net FDI flows (FDI inflows minus FDI outflows). This will be available in the annexes.

For European Union subsidies, we analysed the European Commission database (European Commission, 2025). For remittances, we used data from the United Nations Conference on Trade and Development (UNCTAD, 2025). We calculated the gross and the net data for both variables; the net data can be found in the annexes.

We have used data on gross external debt from the Vienna International Institute of International Economics (Wiiw, 2025a). Gross external debt includes the share of public and private debt held by foreigners. Unlike the others, gross external debt is a stock indicator. To capture its change, we calculated the increase or decrease in the gross external debt stock each year and compared this to that year's GDP, thus obtaining the change in gross external debt. In addition, we also calculated the change in net external debt, which captures the macroeconomic vulnerability of the countries and is available in the annexes.

[4]External dependencies can manifest themselves in many different ways. They can even be present in developed countries, for example, in the form of security issues or vulnerability relating to critical raw materials and products.

[5]Estonia, Latvia, Lithuania, Poland, Czechia, Slovakia, Hungary, Croatia, Romania, Bulgaria and Slovenia.

The analysis is divided into three parts. The first part focuses on the comparison over time. It compares the averages between 2001–2007 and 2014–2019. It is appropriate to choose these periods because they are two periods of growth in the region, which facilitates the comparison. FDI inflows, EU subsidies, remittances and nominal changes in gross external debt are examined over the two periods. The analysis uses GDP percentage data for comparison. We analysed foreign capital in more detail as it is one of the most essential sources of dependency. Using a longer time series (1994–2024), we examined not only inflows but also foreign capital stocks to observe trends in more detail. To analyse dependence, we also considered the proportion of foreign companies in total added value. This provides an adequate picture of dependence on foreign companies, thus supplementing the analysis of FDI trends (Eurostat, 2025b). Taking into account the limitations of statistical monitoring, we examined the time series from 2008 to 2020. As a general rule, we have included all Central and Eastern European countries in our figures, alongside the regional averages. However, showing all countries in the region in the time series would have made the figures too complex. For clarity, we have only included data for four countries (Estonia, Hungary, Romania and Poland), as well as the regional average. This illustrates the diversity of the region.

In the second part, the regional comparison focused on the period 2014–2019. Descriptive statistical tools were used to define groups based on external financing in the region. In this section, our analysis focused exclusively on gross data, with a particular emphasis on the role of EU subsidies, foreign direct investment (FDI) inflows, and remittances. The relationship between EU subsidies and growth performance is also examined (Eurostat, 2025a). We analyse EU subsidies and growth rather than other forms of external finance because EU subsidies are the most advantageous type of external financing. Unlike loans, there is no interest to pay; unlike foreign capital, there is no risk of repatriation of profits; and unlike remittances, there is no need for citizens to leave their home country. The variables examined and their description are shown in Table 1.

The third part of the research provides a short overview of current processes, i.e., a brief examination of the changes that have taken place in the external financing structure in the post-COVID period. To capture changes in external financing after the COVID crisis, a comparison was made between data for 2014–2019 and the post-COVID period (2022–2023/4).

5. THE CHANGE IN EXTERNAL FINANCING AFTER THE 2008 CRISIS

The literature suggests that foreign direct investment (FDI) inflows are the dominant form of external financing in the Central and Eastern European region. It is no coincidence that these countries have been described as having FDI- and export-led growth models (Ban & Adascalitei, 2020). Figure 1 shows that this was an accurate description in the pre-crisis period of 2008, with the regional average of FDI inflows reaching 6.2% of GDP, and 10% in countries such as Bulgaria and Estonia. Meanwhile, annual average GDP growth stood at 6%. Additionally, there was no significant FDI outflow; therefore, net FDI flows were at 5.2%. By contrast, this figure stood at −1.7% in Austria, a developed and open economy (see Figure A1 in Appendices). This highlights the much more significant role that FDI inflows played in the region before the 2008 crisis compared to developed regions. This is confirmed by FDI stock data, which showed that it accounted for 7.7% of GDP in 1994. This figure had more than doubled by 2007, reaching 50.6% of GDP (see Figure 2). In some countries, such as Estonia, this figure rose to 70%.

Table 1. Variables used and their sources

Variable	Description	Source
FDI inflows	Foreign capital inflows as a share of GDP.	Wiiw (2025b), OECD (2025)
Net FDI flows	Foreign capital inflows minus foreign capital outflows as a share of GDP	Wiiw (2025b)
FDI stock	Foreign capital stock as a share of GDP	Wiiw (2025b)
Value added generated by foreign enterprises.	Value added generated by foreign enterprises as a share of total economy value added.	Eurostat (2025b)
EU subsidies	Gross EU subsidies as a share of GDP	European Commission (2025)
Net EU subsidies	Net EU subsidies as a share of GDP	European Commission (2025)
Remittances	Remittances (receipts) as a share of GDP.	UNCTAD (2025)
Net remittances	Remittance receipts minus remittance payments	UNCTAD (2025)
Nominal change in gross external debt	Annual change in gross external debt as a share of GDP.	Wiiw (2025a)
Gross external debt stock	Gross external debt stock as a share of GDP.	Wiiw (2025a)
Nominal change in net external debt	Annual change in net external debt as a share of GDP.	Eurostat (2025c)
GDP growth	Real GDP growth in a given year	Eurostat (2025a)

Source: own edition.

However, the current literature on growth models does not take into account another crucial element of the external financing structure before the 2008 crisis: the significant acceleration of external indebtedness, which was in line with hyperglobalisation and the 'credit boom' that unfolded globally before the crisis. This significant increase in external indebtedness occurred in all countries, with gross debt rising by an average of 10% per year and net external debt by 5% between 2001 and 2007 (see Figure 4 and Figure A2 in Appendices). Meanwhile, a decline in net external debt was observed in Austria. Consequently, gross external debt in the region averaged 50% of GDP in 2000, doubling to 100% by 2010 (see Figure 5). Therefore, the growth model before the 2008 crisis was characterised not only by foreign direct investment (FDI) orientation, but also by significant external indebtedness - a factor that must be taken into account.

Nevertheless, significant changes took place in the structure of external financing after the 2008 crisis, making it necessary to further refine the notion of the FDI-led growth model. These

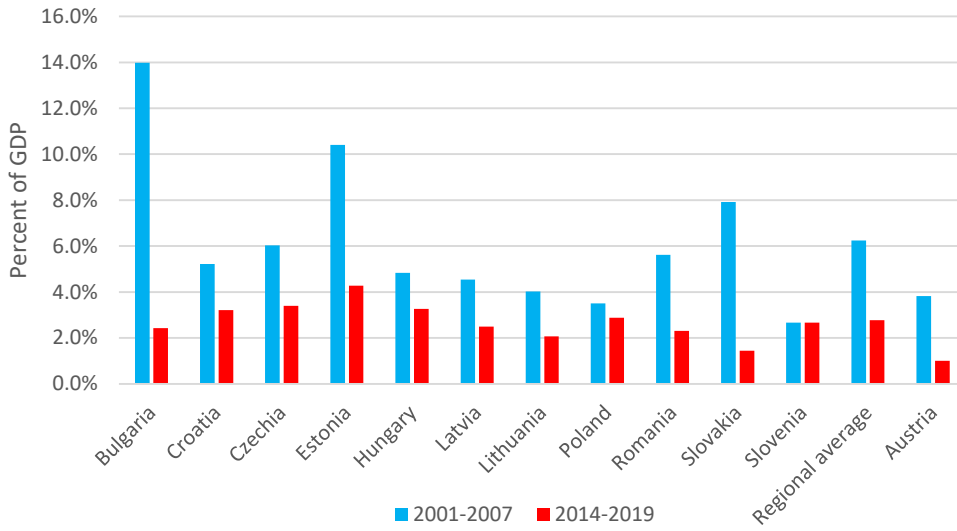

Fig. 1. FDI inflows as a percentage of GDP (percent of GDP, annual average)
Source: own calculation based on OECD (2025), wiiw FDI database (Wiiw 2025b).[6]

changes centred on three key phenomena: FDI saturation, reduced external debt, and the diversification of external financing through remittances and EU funds.

5.1. FDI saturation

The first phenomenon, which Szanyi (2020) described as 'FDI saturation', was a relative decline in the proportion of foreign direct investment (FDI) in external financing, i.e., a stagnation in FDI dependency. This is a natural consequence of 'catching up', whereby nominally similar inflows become a smaller proportion of GDP as the economy grows. Additionally, the crisis caused significant disruption among Western European partners, who consequently did not make new capital investments but instead withdrew their capital. Between 2014 and 2019, FDI inflows did not return to pre-2008 levels. FDI inflows as a percentage of GDP fell to an average of 2,8 per cent across the region, with GDP growth falling to 3.5 per cent. Net FDI flow data fell to 1.9%. This decline is evident in all countries except Slovenia. This can be partly explained by Slovenia's specific situation. It is the country that has begun opening up to foreign capital at the latest (Vaupot, 2018).

[6]For Austria, the averages for 2001–2007 refer to 2005–2007 due to a lack of data.

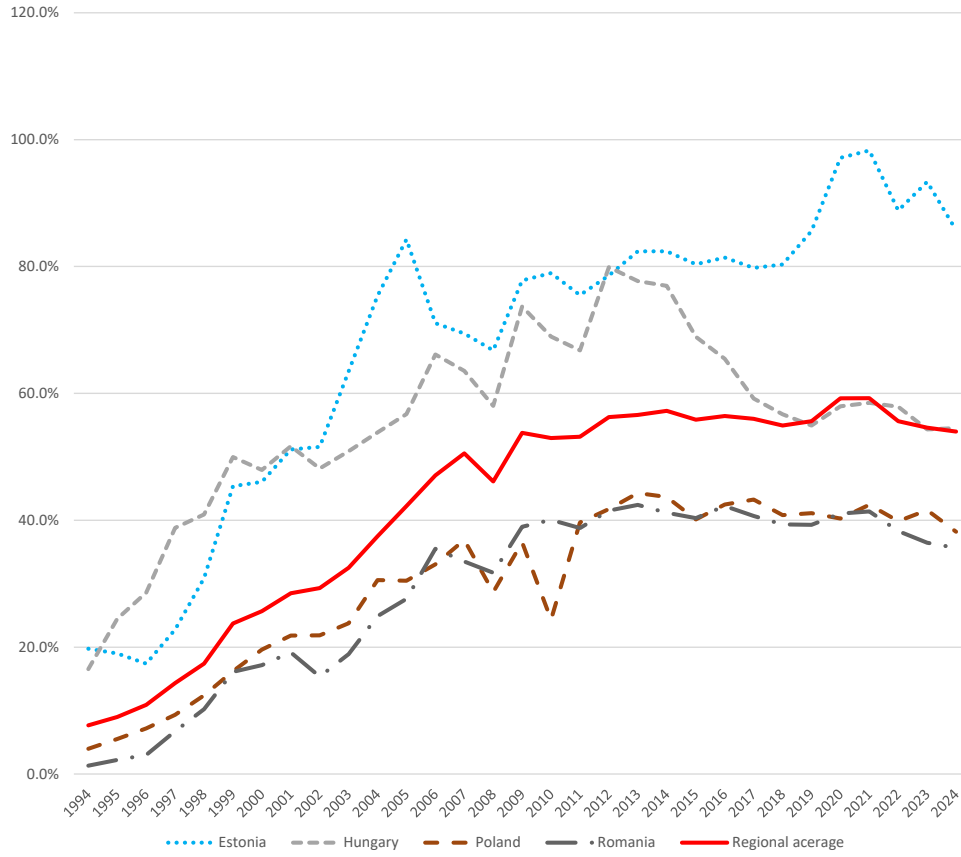

Fig. 2. FDI stock as a percentage of GDP
Source: wiiw FDI database (Wiiw 2025b).

FDI saturation is also confirmed by stock data (Figure 2). Since the 1990s, the region's FDI stock has increased significantly, peaking around the time of the 2008 crisis. Consequently, stagnation of the FDI-led growth model has been evident since the crisis. However, this does not imply a reduction in dependence, as the FDI stock has stabilised at a relatively high level. Rather, it demonstrates the stagnation of FDI dependence in the region. The regional average FDI stock was still around 60 per cent in 2020. It is even higher in Estonia and Hungary.

The share of value added generated by foreign affiliates confirms that dependence on foreign companies is not reducing, but stagnating (Figure 3). On average, foreign companies generated 38% of total value added in the region in 2019. This figure is particularly high in some countries, such as Hungary and Slovakia. In Hungary, for instance, this figure has consistently exceeded 50% throughout the 2010s, challenging the notion that dependence has significantly decreased since the 2008 financial crisis.

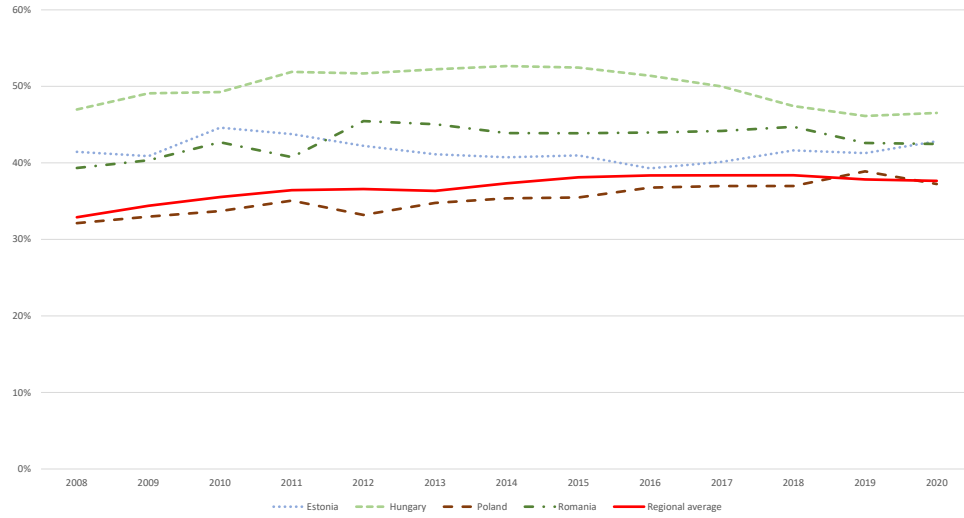

Fig. 3. Value added generated by foreign companies (in percent of value added of the business economy)
Source: own calculation based on Eurostat (2025b).

5.2. Reducing external indebtedness

In the pre-crisis period, external debt was a crucial element of external financing, alongside the importance of foreign direct investment (FDI) inflows. After the crisis, however, there was a significant reduction in external debt. Between 2014 and 2019, the growth of gross external debt averaged 2.3% per year, while certain countries, such as Croatia and Hungary, experienced a decline in gross external debt. In terms of net external debt, the entire region was characterised by a reduction in debt, with net external debt decreasing in almost all countries (except Slovakia) by an average of 2.3%. Only Slovakia experienced an increase in net external debt, at an annual rate of 2.7%, but this remains below pre-crisis trends. Gross debt increased in the Czech Republic (by 7% annually), but there was a decrease in net external debt. This trend aligns with that observed in advanced economies, where the role of debt in generating growth has diminished after the financial crisis (Hein et al., 2021).

Figure 5 also confirms the trend of reducing external debt, showing the change in gross external debt stock. Until the 2008 crisis, the region had a significant gross external debt stock, reaching an average of 100% of GDP across the region. After the crisis, a deleveraging process began. However, this has not been uniform; in some countries, such as the Czech Republic and Slovakia, gross external debt increased after the crisis.

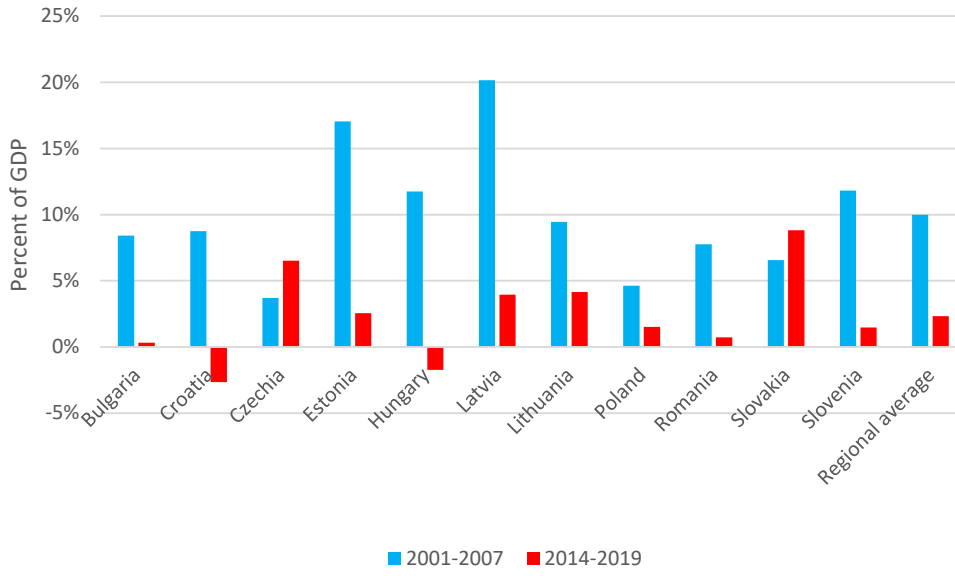

Fig. 4. Nominal change in gross external debt (percent of GDP, annual average)
Source: own calculation, wiiw Annual Database (Wiiw 2025a).[7]

5.3. Diversification of external finance

The third major change that followed the 2008 crisis was the diversification of external financing. This was evident in the increased importance of remittances and EU funds.

Of these, EU funds played the most significant part. As Figure 6 shows, a large part of the decline in FDI inflows as a percentage of GDP was offset by an increase in EU subsidies. On average across the region, inflows of EU subsidies as a percentage of GDP increased from 1.1% to 3.2% after the crisis, with all countries experiencing significant growth. This represents an almost threefold increase, and in some countries the increase was even greater. Consequently, in most countries, EU subsidies have overtaken FDI as a source of external finance. Net EU subsidies also grew significantly: while they reached an average of 0.8% of GDP between 2001 and 2007, this figure increased to 2.3% between 2014 and 2019, exceeding 3% of GDP in certain countries, such as Hungary and Bulgaria (see Figure A3 in Appendices).

In addition to EU subsidies, the importance of remittances has increased significantly since the crisis (see Figure 7). On average, remittances have increased from 2.3% to 2.8% of GDP in the region. This increase has continued to offset the decline in FDI inflows as a percentage of

[7]Austria is not included due to a lack of data.

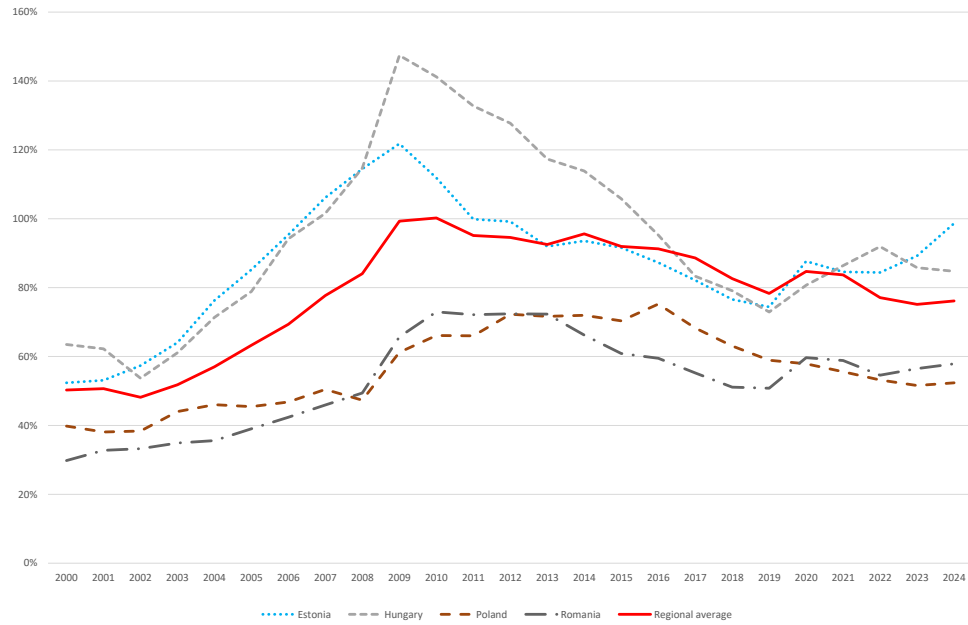

Fig. 5. Stock of gross external debt (percent of GDP)
Source: own calculation, wiiw Annual Database (Wiiw 2025a).

GDP. Of course, there are regional differences: for example, remittances decreased in Bulgaria, Lithuania and Poland. Moreover, in some countries, such as Croatia, remittances account for a very high proportion of GDP, at 6%. Hungary, Latvia, and Czechia experienced the highest growth rates in remittances from the pre- to post-crisis period.

The results show that foreign direct investment (FDI) inflows to the region have declined, which is consistent with Szanyi's (2020) findings. The region has reached a saturation point in terms of FDI. However, this does not imply a reduction in dependence on foreign firms. Prior to the 2008 crisis, external debt also played a significant role in the region. Since then, most countries in the region have been reducing their external debt. Nevertheless, the declining significance of FDI and external debt has been partially counterbalanced by a substantial increase in the importance of EU subsidies and remittances since 2008. While the structure of dependence has changed, its importance has not diminished. Rather, the region is witnessing a diversification of dependence, with EU subsidies and remittances playing an increasingly important role.

6. VARIETIES OF DEPENDENCY AFTER THE 2008 CRISIS

The role of external financing in the region remained significant after the crisis (see Table A1 in Appendices). On average, between 2014 and 2019, 8.8 per cent of GDP came from foreign

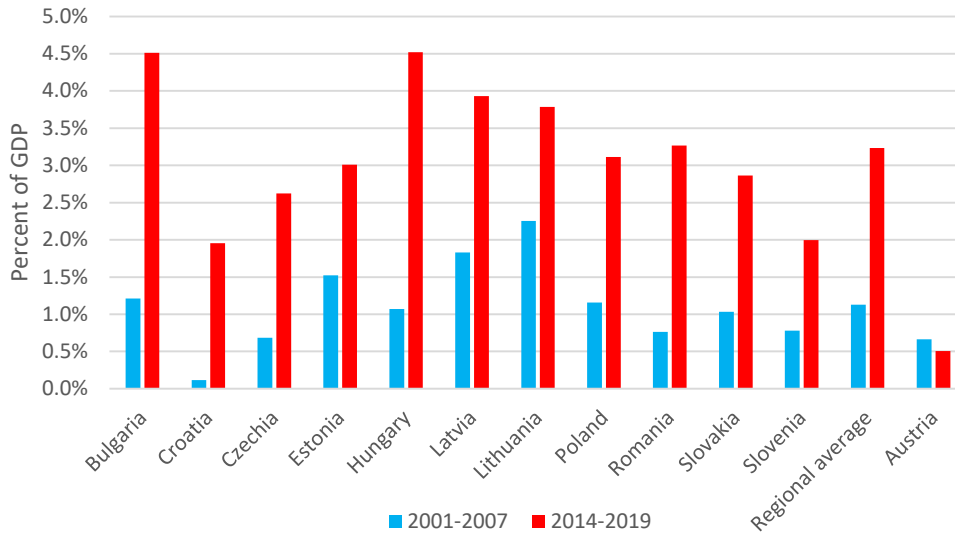

Fig. 6. EU subsidies (percent of GDP, annual average)
Source: own calculation, EU Commission (2025).

capital, EU funds and remittances. This significant external financing has enabled the region to achieve GDP growth of 3.5 per cent. However, the region is not homogeneous in terms of external finance, but there are different regional varieties. In some countries, the role of external financing is smaller, such as in Slovenia, where these three external financing elements together account for less than 6 percent of GDP. In Hungary, Croatia, Bulgaria and Latvia, the inflows from these three external sources exceeded 10 per cent of GDP in the post-crisis period. It should be added, however, that Hungary and Croatia have experienced external deleveraging after the crisis.

The region can be divided into three varieties based on external financing after the crisis (see Figure 8). The first is the FDI-oriented group, which includes the Czech Republic, Estonia and Slovenia. These are the three countries where FDI remained the most important form of external financing after the crisis, with both EU subsidies and remittances playing a smaller role. However, the Czech Republic stands out from this group as its FDI inflows are characterised by a significant round-tripping phenomenon, i.e., part of the FDI is actually domestic capital. From 2014, on average, 12.2% of the stock of foreign capital was actually Czech capital (OECD, 2024). This shows that the role of FDI in the case of the Czech Republic is smaller than the data would suggest.

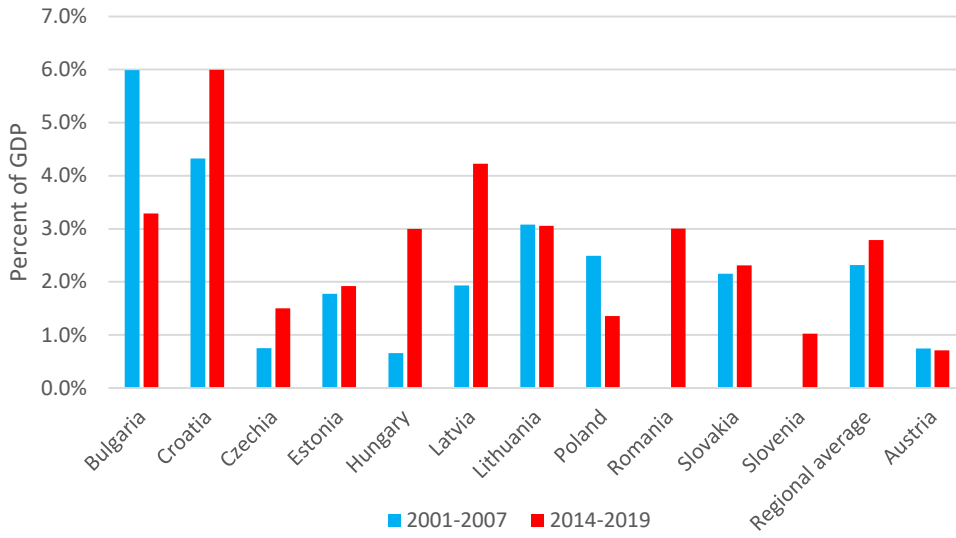

Fig. 7. Remittances (percent of GDP, annual average)
Source: own calculation, UNCTAD (2025).[8]

The second group includes Latvia and Croatia, where remittances play the most important role.[9] The Latvian and Croatian models differ, however, in that in Croatia, the role of FDI inflows is ahead of EU subsidies. This kind of exceptionality can be explained by the fact that Croatia, as a new EU member, has access to the least EU funds. Croatia is also in the process of a strong deleveraging of its external debt.

The remaining countries form a third group for which EU subsidies have become more important in external financing than FDI or remittances. This group can be divided into two parts. Romania, Lithuania, Slovakia and Bulgaria are the countries where remittances come after EU subsidies, and FDI plays the smallest role. Hungary and Poland are the countries where FDI plays an important role alongside EU subsidies, followed by remittances.

In addition to the three varieties of dependency, three groups can be distinguished based on EU subsidies and growth success (see Figure 9). On the one hand, there are those that received more money per year as a percentage of GDP than they were able to achieve in terms of GDP growth, which can be described as less successful models. On the other hand, there are the successful models: those who received less EU money than the growth they achieved. A third group comprises countries close to the line, with growth success that is approximately similar to the amount of EU money received. Latvia and Bulgaria are in the less successful group. This result may be explained by the fact that these countries received the most EU funding;

[8]Due to the availability of data, the averages for the period 2001–2007 refer to the years 2005–2007 for Austria, and to the years 2004–2007 for Estonia, Lithuania, Poland and Slovenia. No data is available for Romania prior to 2007.

[9]Croatia is not shown in Figure 8 due to the high importance of remittances.

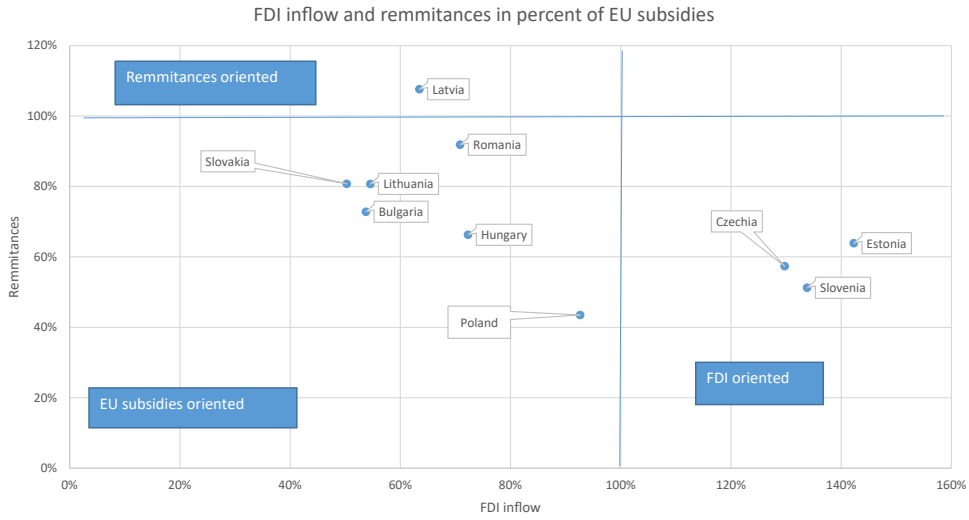

Fig. 8. External financing models
Source: own calculation, wiiw FDI Database (Wiiw 2025b), UNCTAD (2025), EU Commission (2025)

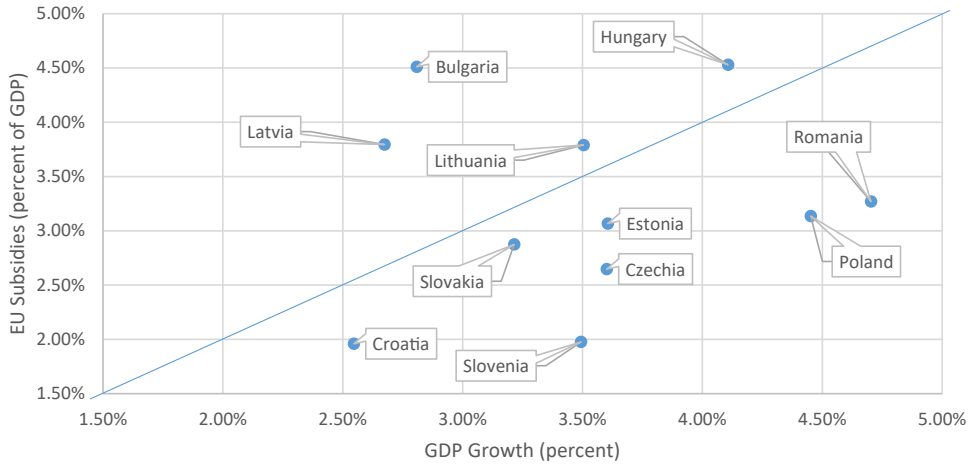

Fig. 9. EU subsidies and growth success (annual average, 2014-2019)
Source: own calculation, EU Commission (2025), Eurostat (2025a)

it may be that the law of diminishing returns prevails, i.e., that more EU funding no longer leads to higher GDP growth. The more successful group includes the Czech Republic, Slovenia, Poland and Romania. Romania and Slovenia were the most successful countries in the region, achieving the highest GDP growth with the least EU funds. The third group comprises Hungary, Lithuania, Estonia, Slovakia and Croatia.

Of course, EU subsidies do not necessarily translate into GDP growth. It has a time lag, so some investments have longer-term benefits. It is also worth considering the base effect when assessing the success of GDP growth, i.e., it is easier to achieve a higher growth rate from a lower base. Nevertheless, this grouping can be an important starting point for deeper research into what might explain these differences.

7. POST-COVID CHANGES IN EXTERNAL FINANCE

Following a detailed analysis of the catch-up period after the 2008 crisis, it is worthwhile to analyse the post-COVID period as well. However, conclusions should be drawn with caution due to the relatively short timeframe and limited availability of data.

The results show that, compared to the 2014–2019 catch-up period, the external financing structure is undergoing further changes and the trends that emerged before the 2008 crisis are re-emerging. In other words, the role of FDI and external indebtedness is strengthening, while the role of remittances and EU funds is declining (Figure 10). FDI inflows increased from 2.8% between 2014 and 2019 to a regional average of 3.4%, while the nominal change of gross external debt stock more than doubled.

Net data also confirms this trend, with FDI inflows increasing from 1.9% to 2.3% on average in the region. Net external debt data slightly nuance the picture, showing that net indebtedness is slowly starting to increase again by 0.6% on average in the region, but this is due to a few

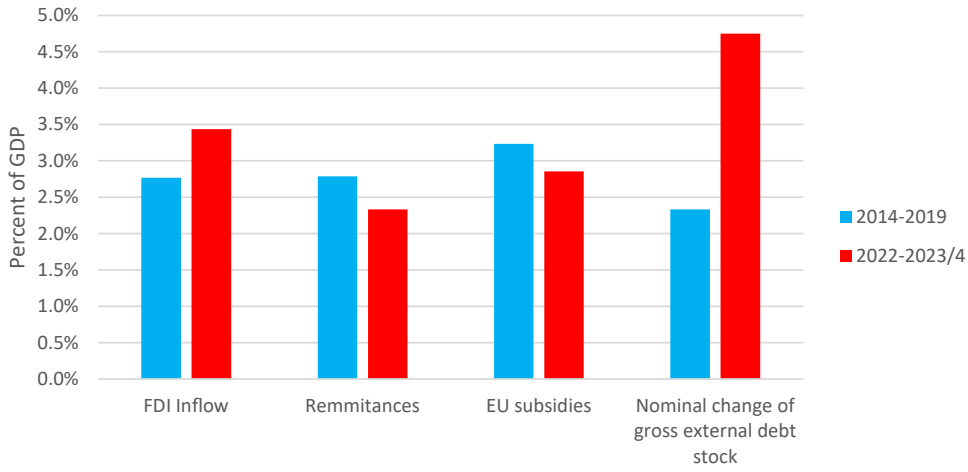

Fig. 10. Post-COVID changes of gross external financing in Central and Eastern Europe (annual average)
Source: own calculation, wiiw FDI Database (Wiiw 2025b), UNCTAD (2025), EU Commission (2025).[10]

[10]Due to the availability of data, we only calculated averages for the period 2022–2023 for remittances and EU funds. For FDI and external debt, however, we used data for the period 2022–2024. Moreover, it should be noted that we did not take the Next Generation EU funds into account.

outliers, most notably Hungary, which had previously achieved a very significant reduction in external debt but has now increased its net external debt by 11%, pushing up the average. At the same time, Bulgaria, Croatia, Latvia, Lithuania, Poland, and Slovenia are still on track to reduce their net external debt.

The decline in remittances is also confirmed by the net data. Net remittances fell from 2.1% of GDP to 1.4%, and in some countries, such as the Czech Republic and Hungary, they turned negative.

In contrast, the decline in EU funds is only apparent if we do not include the European Commission's recovery program, the Next Generation EU funds, in the data. Including these, the role of EU funds will increase further to 3.6% of GDP on average in the region by 2022–2023. EU funds have therefore increased even further due to the Next Generation EU.

8. CONCLUSIONS

The aim of our research was to analyse the changing external finance of growth models in Central and Eastern Europe. The paper was structured around two main questions. First, it examined the changes in external financing over time before and after the 2008 crisis. The analysis confirmed that the importance of foreign capital inflows as a share of GDP, which had dominated before the crisis, declined. This was offset by an increase in both EU subsidies and remittances, so that external finance remained important while its internal structure changed. In terms of external debt, the pre-crisis period of external indebtedness was followed by a period of debt reduction, in line with the challenges of the neoliberal financial deregulation process. Our research also showed that, following the COVID pandemic, the importance of foreign direct investment (FDI) and external debt began to increase again, while remittances tended to decline.

The second question was to identify regional varieties of external financing. Based on our results, we were able to distinguish three forms of dependence: an FDI, an EU-subsidies, and a remittance-oriented form. Each form has its own specific problems. In the FDI-oriented form, the disadvantages are the dependence on foreign companies, the repatriation of profits and the dual economic structure. In the remittance-oriented form, the negative labour market and social effects of emigration can cause problems. In the EU-subsidies-oriented form, the problem of inefficient resource allocation may arise, leading to a "resource curse". The analysis also pointed out that the use of EU funds has not been equally successful everywhere, with some countries in the region receiving more EU funds than they were able to generate in economic growth on average.

These drawbacks make it unlikely that further reliance on external finance will lead to catching up in the long run. Our study argues that external finance is necessary, but by no means sufficient, to overcome the lack of knowledge, technology and capital associated with a semi-peripheral position. A conscious economic strategy is needed to counteract the disadvantages of each form of external finance. It is also clear that over-reliance on a single source of external finance is not the answer, i.e., diversification is also needed as it can mitigate the negative effects. In our view, an excessive focus on remittances is likely to cause the greatest social damage and should therefore be avoided. At the same time, it is important to be aware of the risks of excessive dependence on FDI and EU funds. Relying on foreign capital and EU funds will only be successful if they are used for industrial upgrading, which requires an industrial policy focused on innovation and human capital (Győrffy, 2024).

The results refine previous findings in several ways. Firstly, they demonstrate that the approach of describing the region as an FDI-driven, export-led growth model should be reconsidered. To accurately determine a semi-peripheral growth model, it is essential to analyse external finance structures. However, the current approach is solely focused on the role of FDI. It is important to emphasise that FDI is a significant component of this growth model. However, it is crucial to acknowledge the role that external debt played in financing the economies before the 2008 crisis. Furthermore, the current approach disregards the fact that in the aftermath of the crisis, the role of EU subsidies increased, and they became a more significant component of external financing than FDI for the majority of countries. The results suggest that the FDI-oriented model description applies only to the Czech Republic, Slovenia and Estonia in both periods. Therefore, it is recommended that we develop a more nuanced categorisation of growth models, in line with the three forms of dependency in the region: FDI-oriented, EU subsidy-oriented and remittance-oriented.

The second important lesson is that the only significant reduction in dependence after the 2008 crisis has been in external debt. Although FDI inflows have fallen, FDI stocks and value-added production by foreign firms do not show a significant reduction in dependence. In the case of remittances and EU funds, external dependence has increased. This finding contrasts with approaches that see a clear reduction in dependence and a strengthening of the domestic economy after the crisis (see Bluhm & Varga, 2020). The results confirm those approaches that interpret the post-crisis period as a path correction. In terms of external financing, the data confirm a diversification of dependencies rather than a reduction of external finance, in line with the conclusions of Bohle (2018).

The findings indicate that external financial resources play a pivotal role in semi-peripheral growth models, emphasising the necessity to extend beyond the analysis of foreign capital. It is imperative that the current literature on growth models incorporates the role of external finance in a broad sense when determining semi-peripheral growth models. The analysis also offers many opportunities for further research. For example, it may be worthwhile to look more closely at the relationship between growth performance and the level of EU funding.

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Appendices

Table A1. Gross external financing in Central and Eastern Europe

2014–2019 annual average					
	FDI Inflow	**Remittances**	**EU subsidies**	**Nominal change of gross external debt stock**	**GDP Growth**
Bulgaria	2.4%	3%	4.5%	0%	2.8%
Croatia	3.2%	6%	2.0%	−3%	2.5%
Czechia	3.4%	2%	2.6%	7%	3.6%
Estonia	4.3%	2%	3.0%	3%	3.6%
Hungary	3.3%	3%	4.5%	−2%	4.1%
Latvia	2.5%	4%	3.9%	4%	2.7%
Lithuania	2.1%	3%	3.8%	4%	3.5%
Poland	2.9%	1%	3.1%	2%	4.5%
Romania	2.3%	3%	3.3%	1%	4.7%
Slovakia	1.4%	2%	2.9%	9%	3.2%
Slovenia	2.7%	1%	2.0%	1%	3.5%
Regional average	2.8%	2.8%	3.23%	2.3%	3.5%

Source: own calculation, wiiw FDI Database (2025), UNCTAD (2025), EU Commission (2025), Eurostat (2025)

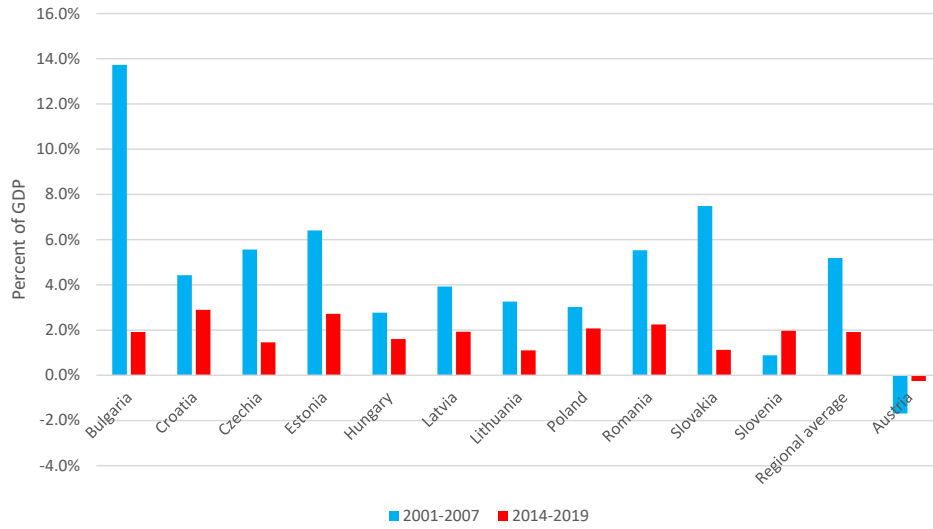

Fig. A1. Net FDI inflow (per cent of GDP, annual average)
Source: Wiiw (2025b).

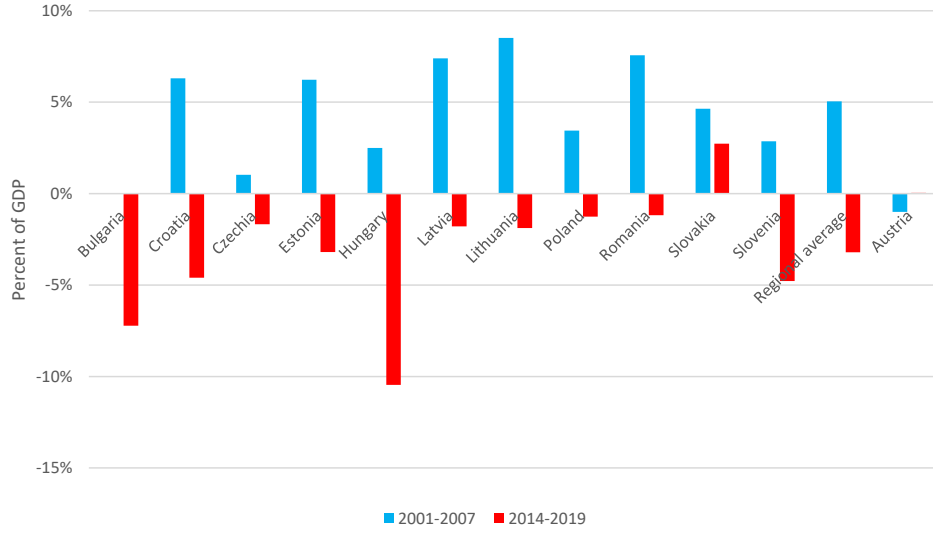

Fig. A2. Nominal change of net external debt (percent of GDP, annual average)[11]
Source: Eurostat (2025c).

[11]Due to data availability, data for 2001–2007 refer to 2005–2007 in Czechia, Lithuania, Poland, and Slovakia, and to 2006–2007 in Romania. Data for Bulgaria prior to 2007 were not available.

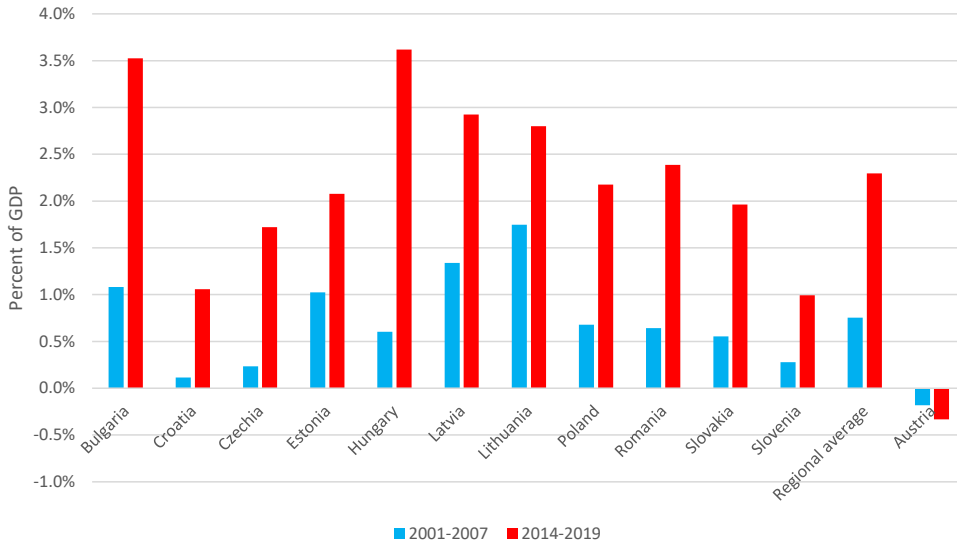

Fig. A3. Net EU subsidies (percent of GDP, annual average)
Source: European Commission (2025).