



A GLASS HALF FULL
SEARCHING FOR NEW SOURCES
OF ECONOMIC GROWTH
IN CENTRAL EUROPE

Konrad Popławski, Sandra Baniak

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Contents

MAIN POINTS | 5

- I. CHASING WESTERN EUROPE:
ARE THE FOUNDATIONS STRONG ENOUGH? | 9**
 - II. UNPREPARED FOR HIGHER PRODUCTION COSTS | 16**
 - III. EUROPEAN INDUSTRIAL POLICY FAVOURS THE STRONGEST | 21**
 - IV. EXHAUSTION OF HUMAN CAPITAL | 26**
 - V. PROBLEM OF INSUFFICIENT INNOVATION FUNDING | 31**
- SUMMARY: TIME TO SHIFT THE EU'S EASTERN ENGINE
INTO HIGH GEAR | 43**

MAIN POINTS

- The twenty years of Central European countries' membership in the EU have been a great economic success.¹ The pace of economic growth has been relatively high, convergence has progressed, foreign trade has developed, direct investment inflows have continued, and unemployment has fallen to very low levels. Moreover, the countries of the region have managed to maintain their fiscal stability. However, this positive picture is marred by the fact that in recent years the convergence process has clearly slowed in many of the region's countries, while the EU itself has lost momentum in its growth.
- Central Europe faces the challenge of avoiding the mistakes made by the EU's southern states, which at a certain point in their development fell into a trap of structural problems which led to prolonged economic stagnation. While Central Europe strives to catch up with the EU average in per-capita GDP, over the past decade the EU has already ceased to be a global growth engine. Missteps in resolving the issues highlighted by the eurozone crisis, along with a lack of strategic policy for supporting technological development, have cost the EU a largely lost decade.
- Amid deteriorating external conditions, it is becoming increasingly clear that the Central European region has a problem developing its own long-term growth model. In light of serious threats on the horizon, such as supply chain disruptions, the demographic crisis, and Russia's aggressive policy towards the West, Central Europe cannot rely solely on its position as a subcontractor to foreign corporations. This model will not only fail to guarantee higher value-added, sufficiently innovative impulses, or increased industrial competitiveness and high wages; it may also not sustain the region's rising costs of defence spending or energy transition. To meet this challenge, it is essential to establish better institutional, financial and business conditions to create, maintain, commercialise, and expand innovations in the region, leading to economic specialisation.
- Shrinking human capital resources will pose a significant challenge to Central Europe in the coming years. Almost all the countries in the region are

¹ For the purposes of this report, the authors define Central Europe as those countries in the region that joined the EU since 2004. Thus, it includes Lithuania, Latvia, Estonia, Poland, the Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bulgaria and Romania.

grappling with the problem of rapidly aging societies, a process accelerated by a wave of emigration by the working-age population to Western Europe over the past two decades. Fertility rates are also a serious warning signal. Unfavourable demographic trends are not only accelerating the exhaustion of the current economic model based on the role of acting as a subcontractor to foreign corporations, but they also raise tough questions about family & migration policies.

- Progress in convergence has been hindered for Central Europe due to the EU's recent focus on ambitious climate policy while neglecting industrial policy. Overhauling the Central European economic model is a task that goes beyond the capacity of individual states, as decisions made at the EU level are significant determinants. Given the similarity of the development challenges, regional cooperation is crucial to establishing a common EU position. Central Europe's aligned interests are evident in at least four areas: industrial policy, strengthening the single market, negotiating future multiannual EU financial frameworks, and developing transportation infrastructure. Regional collaboration should thus not be limited to forming exclusive clubs but should serve as a base for coalition-building and finding new partners to effectively advance individual states' interests within the EU.
- In industrial policy, it is in Central Europe's interest to ensure that decarbonisation does not lead to deindustrialisation, but in fact strengthens industrial competitiveness. The region should develop a vision identifying in which aspects of green technology production it has the competencies to achieve high global competitiveness. The EU must remain open to creating new mechanisms that support the expansion of clean-tech production capacity without favouring Europe's largest corporations alone. Major global competitors are benefiting from lower energy costs and the increasingly bold subsidisation of industrial investment and R&D; the production of the cutting-edge green technologies used in Europe is shifting to Asia and the United States, which poses another increasingly serious problem. This negatively affects the entire EU and not just Central Europe, and the member states are losing significant opportunities for economic development, as EU innovation funds often end up fuelling growth outside the EU.
- The issue is worsened by the EU's increasing internal relaxation of state aid rules; this undermines competition in the single market and strikes at the competitiveness of the less affluent states. In 2022 alone, the European Commission approved €329 billion in state aid, most of which went

to Germany and France; this sum is equivalent to the EU's entire seven-year cohesion policy budget.² The excessive bureaucracy with which EU innovation funds are disbursed often favours large corporations, leaving Central European SMEs at a disadvantage. The success of the US's Inflation Reduction Act demonstrates that a creation of a friendly and transparent clean-tech investment support system is possible. There is also an urgent need to address the EU market's excessive openness towards protectionist countries. Therefore, the region should be more engaged in EU trade policy, enforcing restrictions on trading partners that do not adhere to the principles of fair competition (the so-called level playing field).

- Shaping the next Multiannual Financial Framework (MFF) for 2028–34 will be a critical challenge for Central Europe, as this will set the groundwork for economic development, innovation growth, and strengthening the region's resilience against negative external shocks. Therefore, it will be crucial to prepare a regional position early, and to participate actively in the forums that will shape the debate on the EU's next seven-year financial plan.
- The current and previous multiannual financial frameworks have been generous to Central Europe due to substantial cohesion policy funding and the post-pandemic economic recovery fund (Next Generation EU). In the near term, however, a significantly smaller inflow of Cohesion Fund resources is expected as more and more Central European regions will no longer qualify for such support due to their rising affluence. Additionally, the EU will need to repay the recovery fund, which was largely financed through loans taken by the European Commission. An important question in negotiating the MFF is the flexibility of the disbursed funds. The model used in NextGen (known in Poland as the National Recovery Plan) ensures greater spending flexibility, while the cohesion policy model allows better preparation of investment.
- As these funds decline, the region's share of funding received from the Horizon Europe programme should rise; however, this is not yet the case. For 2014–2020, Central European countries secured €3.2 billion, which is 4.7% of the Horizon 2020 budget and about 17% of all grants (c. 5900 out of c. 35,400 grants). The gap between the number of grants and their total value shows that research teams from the region are not playing a leading role in the consortia applying for these funds. Central Europe has the opportunity to

² M. Sapała, *Cohesion, resilience and values: Heading 2 of the 2021–2027 MFF*, European Parliament, April 2021, europarl.europa.eu.

secure more innovation funding from the Horizon Europe programme in the multiannual financial framework for the innovativeness, which can help offset the potentially reduced cohesion policy and Common Agricultural Policy funds that may go to Ukraine as part of pre-accession aid. Improving effectiveness in securing these funds requires not only more favourable criteria but also further reforms to tighten the ties between scientific institutions and businesses through national innovation systems. Due to the similarity of these challenges, regional cooperation can offer opportunities to exchange experiences and achieve many synergies in this area.

- From the infrastructure perspective, three priorities are key for the region. First, with the increasing burden of the EU's climate policy, enhancing rail freight transport while reducing long-distance road transport should be a significant goal. Second, Central Europe must complete critical cross-border investments (including highway sections, railway lines, and new road & rail border crossings), which would boost trade among the region's countries. Third, in this context, it is crucial for Central Europe to propose a transportation integration concept between Ukraine and the EU, strengthening the region's competitiveness.
- In transport infrastructure, Central Europe still needs to expand and modernise its existing rail networks to meet Western European standards, consistent with the EU's Green Deal. Close cooperation with other EU countries is important here to ensure that access to EU funding is conducive to this type of investment, rather than hindered by excessive bureaucracy. The region must also develop infrastructure for intermodal transport³ particularly intermodal terminal networks, along with improving regulations and incentives to encourage companies to choose this mode of transport and reduce traction energy costs. This would help integrate the region economically in an environmentally friendly and efficient manner. With a well-developed network of intermodal terminals and rail infrastructure, road carriers could more often focus on short-haul ('last mile') transport. This shift would allow the smaller road carriers prevalent in the region to address the EU-wide truck driver shortage by focusing on short-haul connections. The expansion of high-speed rail (HSR) will also be essential, increasing freight train capacity and promoting intermodal transport development.

³ The transportation of goods using various means of transport (such as train, ship, truck) and a single cargo unit (such as a container, trailer, or interchangeable body). Rail transport is key to intermodal transportation.

I. CHASING WESTERN EUROPE: ARE THE FOUNDATIONS STRONG ENOUGH?

In various analyses summarising the economic progress made by Central European countries over two decades of EU membership, particular emphasis has been placed on the rise in GDP per capita adjusted for purchasing power parity. In this respect the region has made substantial progress, with several countries approaching the EU average. For instance, in 2023 Slovenia and the Czech Republic (both at 91% of the EU's average GDP per capita) surpassed 'old' EU member states like Spain (89%), while Lithuania (87%) had a higher GDP per capita than Portugal (83%).⁴

To fully appreciate the scale of this success, it is important to consider precisely what this indicator measures. Its methodology is based on assessing price levels in a given country, which are significantly lower in most Central European nations compared to other EU countries, largely due to the availability of much cheaper services. This index thus provides a good reflection of a country's consumption level, but is less effective in representing its economic strength.

Table. Real GDP per capita in selected countries as a percentage of the EU average in 2003, 2013, and 2023

Country	Share of EU's GDP per capita average			Change in the period 2003-23 (in p.p.)
	2003	2013	2023	
Bulgaria	16%	22%	27%	+11
Czech Republic	53%	60%	64%	+11
Estonia	40%	50%	56%	+16
Croatia	41%	42%	51%	+10
Latvia	29%	40%	46%	+17

⁴ *GDP per capita, consumption per capita and price level indices*, Eurostat, ec.europa.eu/eurostat.

Country	Share of EU's GDP per capita average			Change in the period 2003-23 (in p.p.)
	2003	2013	2023	
Lithuania	29%	43%	52%	+23
Hungary	39%	41%	50%	+11
Poland	30%	40%	51%	+21
Romania	19%	27%	35%	+16
Slovenia	66%	68%	76%	+10
Slovakia	38%	53%	56%	+18
Greece	85%	66%	65%	-20
Spain	98%	87%	86%	-12
Italy	120%	102%	97%	-23
Germany	125%	133%	124%	-1
France	127%	124%	115%	-12

Source: Eurostat.

However, this potential diminishes significantly when it comes to purchasing goods in foreign markets, such as raw materials, weapons or technologies. A more accurate measure in evaluating these capabilities is real GDP per capita (see table). Viewing the progress of Central European countries from this perspective, their achievements from 2003 to 2023 are evident. No country recorded an increase less than 10 p.p., with Poland making notable progress at 21 p.p and Lithuania at 23 p.p. On the other hand, this more realistic assessment reveals a significant gap that remains to be bridged. The wealthiest, Slovenia, has reached 76% of the EU average, with the Czech Republic at 64%, while most countries have just surpassed the 50% mark. In this classification, the Czech Republic and Slovenia have indeed outpaced Greece (65%), but they still lag

behind Spain (86%), and are far from catching up with France (115%) or Germany (124%).

It is also worth noting that over the past decade the rate of convergence with the EU average has varied significantly across Central Europe. Romania (+8 p.p.), Poland (+11 p.p.), Croatia (+9 p.p.), Slovenia (+8 p.p.), Lithuania (+9 p.p.), and Hungary (+9 p.p.) have maintained a high pace, while the rate was much lower in Estonia (+6 p.p.), Latvia (+6 p.p.), Bulgaria (+5 p.p.), the Czech Republic (+4 p.p.), and Slovakia (+3 p.p.). The latter two countries are particularly illustrative. Their economies are heavily reliant on the automotive sector and closely tied to Germany. Both the Czech Republic and Slovakia experienced marked slowdowns in growth post-pandemic, as supply chain disruptions particularly impacted the automotive industry. Additionally, the shift towards electromobility weakened the competitiveness of German companies, which also affected the Czech and Slovak economies. Given the increasing pressure on the European automotive sector from American and Asian manufacturers, there are doubts about whether the current harmonious collaboration between German automakers and their Central European suppliers can continue.⁵

Recent shifts in the economic standing of EU nations over the past decade offer an important lesson: EU membership does not automatically guarantee perpetual growth. Policy missteps exposed by the global financial crisis (2008) and subsequent eurozone turbulence (2010–14) resulted in prolonged stagnation for many countries. The economic positions of France (-12 p.p.), Spain (-12 p.p.), Greece (-20 p.p.), and Italy (-23 p.p.) weakened significantly relative to the EU average.

Relying on debt-fuelled growth without reforms, while facing increasing global and intra-EU competition, has led to deep economic and social challenges. Uncontrolled production costs – such as rising wages in southern eurozone countries, coupled with dependence on foreign capital, particularly under monetary-union constraints and the inability to devalue their own currency – can severely undermine competitiveness. This in turn leads to rapid spikes in unemployment and prolonged stagnation.

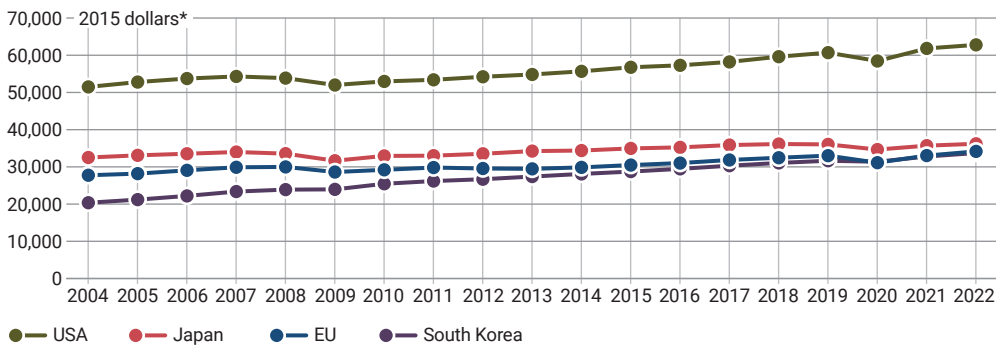
It is also important to remember that the EU's progress has not occurred in a vacuum. While Central Europe strives to reach the EU average in terms

⁵ K. Popławski, 'Can the global battle for electromobility pose a threat to Central Europe?', *OSW Commentary*, no. 504, 30 March 2023, osw.waw.pl.

of GDP per capita, the EU itself has ceased to be a global growth engine over the past decade. Missteps in addressing problems highlighted by the eurozone crisis, coupled with a lack of a coherent economic policy to foster technological development, have largely cost the EU a lost decade.

In 2004, the EU's GDP per capita was equivalent to 54% of that of the United States (see chart 1). Until the eurozone crisis, the EU was narrowing the gap with the US, increasing its GDP per capita to 56% of the US level in 2011. However, over the next few years it fell back to around 53–54%. During this period, Japan also slipped from 63% of the US GDP per capita in 2004 to 59% in 2022, faring worse than the EU. In contrast South Korea saw rapid growth, raising its index from 40% to 54%, thus catching up with the EU.

Chart 1. GDP per capita in the EU, USA, Japan and South Korea (2004–22)



* Measuring GDP in this way allows for the neutralisation of the effect of currency fluctuations, which often significantly distort measurements.

Source: Eurostat.

Some of the productivity differences between the US and the EU are natural, stemming from their distinct socio-economic models: for example, in Europe workers enjoy more substantial social benefits, such as longer vacations. However, this does not change the fact that the EU is falling ever further behind the US in economic development. While significantly expanding employment due to a more favourable demographic situation and substantial immigration growth, the US has managed to sustain higher productivity growth.

This is especially evident in technology. The US maintains technological dominance in IT/ICT and is advancing in electromobility and green technologies, while European manufacturers are losing their foothold, particularly in the automotive sector. At the same time, Europe has struggled to establish competitive advantages in green technologies. The opportunity in photovoltaics

has been lost to China, and a similar fate might await European producers of components for wind farms and electric vehicles. Meanwhile, new dynamic players like South Korea and China are emerging, seeking rapid expansion in new technologies. From Central Europe's perspective, this means that EU standards cannot be the only benchmark, and inspiration to accelerate economic growth should also be sought beyond Europe.

The aforementioned examples illustrate that continuing to base Central European economies on low value-added foreign investments may not bring them into the ranks of the most developed EU countries. Foreign investors primarily seek to reduce production costs, and often have little interest in locating innovative activities in the region. Furthermore, foreign capital has historically been favoured through various tax incentives. For a long time this model had its advantages: it attracted factories offering thousands of jobs, taught local companies modern production and management techniques, and integrated them into global supply chains.

This in turn contributed to the development of the transport, logistics and forwarding in the region, resulting in the construction of warehouses, logistics & distribution centres and transshipment terminals, as well as the growth of road and rail transport companies. These developments led to increased employment and tax revenues.

However, given the current conditions of very low unemployment across most Central European countries and the growing need to improve innovation, it is worth questioning whether attracting factories through generous tax breaks remains a viable strategy. The model that brought these nations up to the level of moderately developed EU countries may not be sufficient to bring them to the top tier. There are ample doubts about its continued effectiveness.

The competitive economic strategies adopted in Central Europe have led to unintended consequences, particularly in limiting incentives for innovation. While local companies did improve efficiency and organisation through investments, they also became embedded in a rigid supply-chain hierarchy. These businesses often received precise component specifications from their clients and faced pressure from domestic and regional competitors, leading to low margins and leaving little room for innovative activities. Their narrow understanding of the production process prevented them from climbing higher up the supply chain ladder.

Moreover, the intense competitive environment hindered collaboration among local firms to combine their expertise in developing more advanced components. Foreign investors, largely unconnected to local markets, rarely established research & development centres locally, preferring to keep such activities in their home countries.

As a result, it has become clear that the current economic model in Central Europe does not encourage innovation improvements, and thus fails to foster the growth of higher value-added, innovative sectors.

The question surrounding Central Europe's economic model has acquired heightened importance in the light of the emerging foreign policy challenges. Observing international trends, it is unlikely that the next two decades will be easier for Central Europe. Risks arising from Russia's increasingly aggressive policies will likely impose significant fiscal burdens over a prolonged period. However, these challenges could also present certain opportunities. With Western Europe's growing labour shortages and global businesses becoming more risk-averse, higher-value activities could be relocated to Central Europe.

For this to happen, the EU should strengthen nearshoring and friendshoring trends by imposing requirements on businesses to diversify risks and reduce their dependence on supplies from states that threaten EU security interests. Such shifts may increase the production costs of certain goods, but the return of significant value-added production to the EU could be advantageous. Central Europe could benefit from these trends, developing expertise in areas previously dominated by Asian manufacturers.

Currently, the region is also witnessing a significant increase in defence spending which will heavily burden national budgets. In 2023, six of the ten NATO countries with the highest defence expenditures relative to GDP were in Central Europe. Only four nations in the region (Bulgaria, Croatia, the Czech Republic and Slovenia) failed to meet NATO's 2% of GDP defence spending criteria, while only Finland and Greece among other EU countries met this standard.

There is also uncertainty regarding the international situation beyond Europe. Numerous global hotspots are testing the current model of globalisation and increasingly threatening global supply chains. These geopolitical challenges are coinciding with accelerating technological changes driven by digitalisation

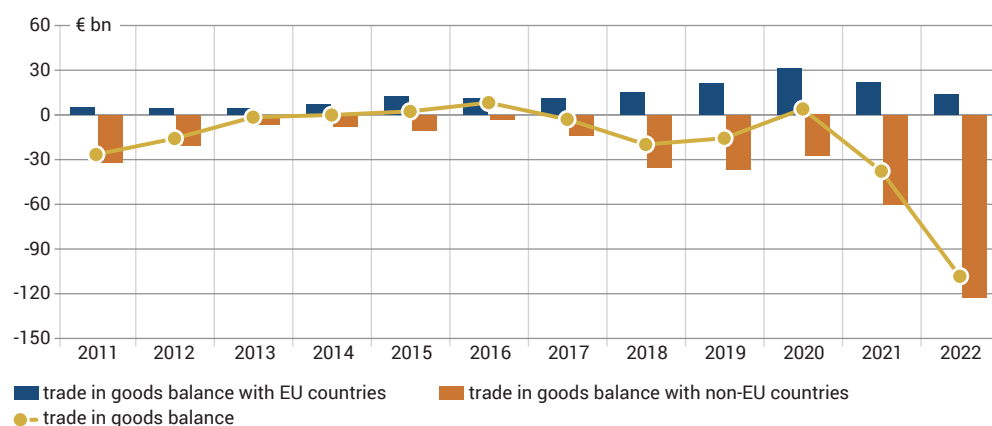
and ecological trends, which are reshaping the list of global market leaders. In recent years the automotive industry, which has been deeply rooted in the Central European region, has been one of the greatest casualties of these shifts.

II. UNPREPARED FOR HIGHER PRODUCTION COSTS

Joining the EU enabled Central European countries to integrate into the EU's single market. In practical terms, this allowed them to become more embedded in the supply chains of global corporations. This integration facilitated an influx of capital, technology, and modern production management methods. However, the cost of this form of collaboration was adherence to the rigid supply chain hierarchy and the requirement to maintain low labour costs, especially given the intense regional competition for foreign investments.

It will be increasingly challenging to sustain this model over the coming years. Firstly, a weakening EU economy may reduce demand for deliveries from Central European suppliers. Initial signs of this are evident in the electromobility sector, where many Central European countries, previously strong in internal combustion vehicle production, are struggling to attract investments in electric vehicle manufacturing. Secondly, the gradual rise in wages in the region to levels comparable to Western Europe is reducing Central Europe's attractiveness as a component supplier.

Chart 2. Balance of trade in goods of Central Europe with the EU & other countries, and overall trade balance



Source: Eurostat.

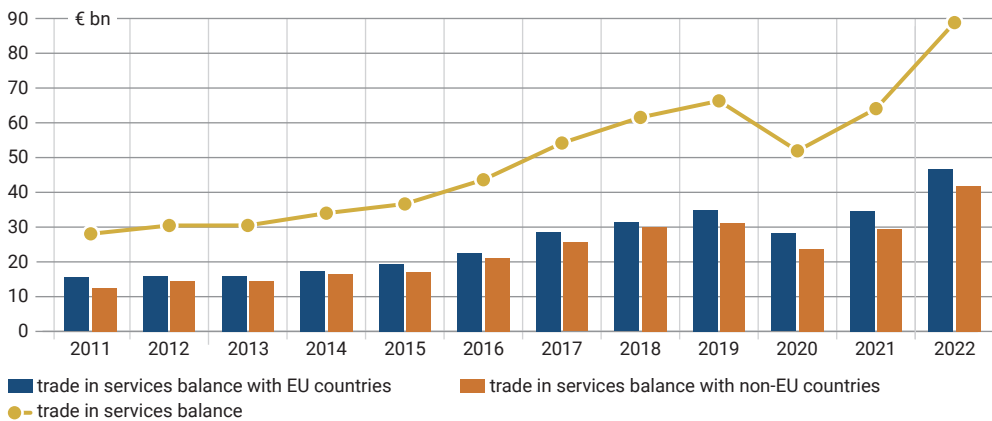
An additional burden may come from the rapid implementation of energy transition and climate commitments, which could raise production costs. The importance of this factor for competitiveness is well-illustrated by the situation of the German economy. Due to errors in energy transition implementation and over-reliance on energy imports from Russia, Germany has had to accelerate its diversification efforts, which placed a significant financial

burden on the economy in recent years. Since the pandemic, Germany has lost its economic momentum, and its current situation is increasingly being compared to the ‘lost decade’ of the 1990s.

To better comprehend the economic model underlying Central Europe, it is helpful to analyse trade balance data. These figures reveal that most Central European countries have trade surpluses with the EU but deficits with non-EU countries (see chart 2). From 2011 to 2016, the trends of rising surpluses with the EU and increasing deficits with non-EU nations were roughly balanced. However, in recent years the latter have grown much more rapidly.

At the same time, the situation within Central Europe varies. The Czech Republic and Slovenia report significant surpluses with the EU; Poland and Hungary have more modest surpluses, while Croatia and the Baltic states run deficits. In trade with non-EU countries, Estonia and Latvia stand out, being the only nations with surpluses, while the others have deficits, due in part to the rising cost of raw material imports and weapons procurement.

Chart 3. Balance of trade in services of Central Europe with the EU and other countries, and overall trade balance in services



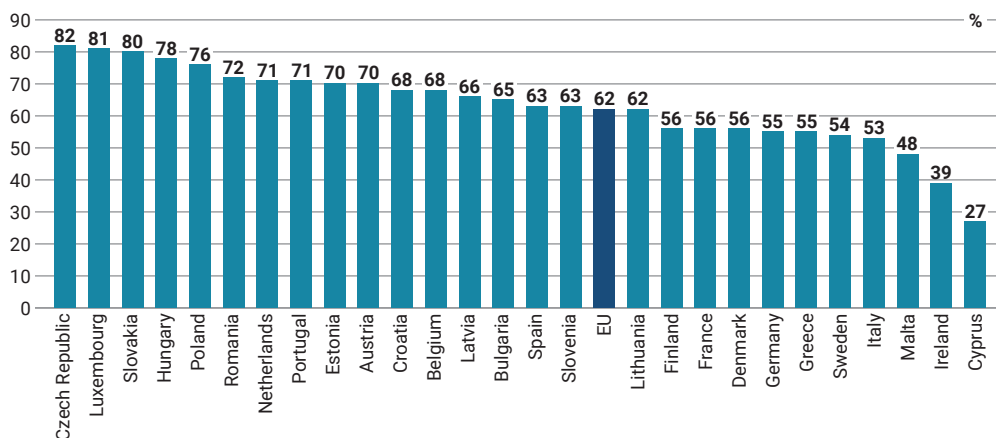
Source: Eurostat.

A country’s competitiveness in international trade is not solely determined by its exchange of goods, but increasingly by the balance of services (see chart 3). In this area, almost all the Central European countries are showing rising surpluses, with only a brief decline during the pandemic. Interestingly, this positive balance has been achieved almost equally in trade with both the EU and the rest of the world. Poland leads in this regard, while the Baltic states, Croatia, Romania, and Hungary are also performing well. Bulgaria and the Czech

Republic have maintained modest positive balances, while Slovakia is registering a deficit.

Based on the data, a theoretical model of functioning of Central European countries in the global economy can be presented. The region imports a significant portion of raw materials and components from outside the EU, which leads to a considerable deficit with non-EU nations. This imported material is either processed in local assembly plants into medium-value finished products for local and Western European markets, or is processed into components sent to factories in more developed nations. Additionally, some countries host outsourcing centres for services. These activities – component manufacturing, the production of less advanced product models, and providing lower-cost services – generate the trade surplus with the EU. They all share one feature: in both business models, relatively low labour costs are a crucial factor in attracting investments to the region.

Chart 4. Dependence on the EU market for exports in 2022



Source: Eurostat.

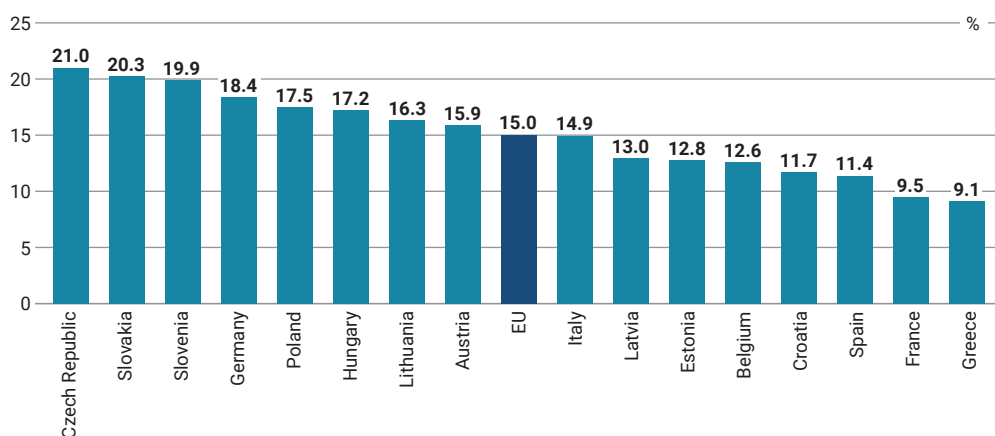
If Central European countries mainly act as suppliers of cheaper components for finished products, the profits from the sales, marketing, and distribution of those finished products will flow to the countries that integrate and market them. These ‘integrators’ will secure much higher margins and retain control over the entire production process, particularly over product data and its further development. It is therefore reasonable to ask how much this approach enables the region to build its strengths over the long term, allowing it to sustain high competitiveness, wage growth, and increasing budgetary spending on energy transformation and defence. Furthermore, there are doubts about

whether low-margin production can generate enough capital resources to fund the development of more advanced manufacturing.

Another problem stemming from the previously outlined economic model is Central Europe's dependence on the EU market for exports. This is particularly evident in the V4 countries, although it is characteristic of almost the entire region. Setting aside the small state of Luxembourg, four of the five EU countries most reliant on the EU for exports are in Central Europe (see chart 4). These include the Czech Republic (82% of whose exports go to the EU), Slovakia (80%), Hungary (78%), and Poland (76%).

This trade pattern largely reflects the region's economic model. Over the past two decades, when the EU maintained significant income, technological, and capital advantages over the world, trade diversification was not necessary as the European market provided a sufficiently attractive outlet. It also offered relatively lower transport costs and lacked tariff & non-tariff barriers or other technical regulations compared to non-EU markets, which is especially crucial for smaller exporters.

Chart 5. Value-added of industry to GDP in 2022



Source: World Bank.⁶

However, maintaining this trend might not be possible given the EU's declining technological competitiveness, its high level of bureaucracy, and the challenge of rising energy costs. While statistics capturing EU bureaucracy are scarce, the issue has been long recognised by many stakeholders. For instance, in 2019,

⁶ There is no access to data concerning Bulgaria and Romania.

rectors of 11 universities from new EU countries criticised the Horizon Europe programme for its excessive red tape, which hinders the processing of applications for funding.⁷ The EU acknowledged the issue by developing the REFIT Europe programme to improve regulatory efficiency. However, the results have been modest due to an increase in regulations related to the implementation of the Green Deal. Protests by farmers across the EU, who have primarily criticised excessive bureaucracy, and similar concerns voiced by businesses in surveys conducted by industry associations confirm this.⁸

Central Europe remains a vital manufacturing hub for the EU market, particularly its western part, as the statistics clearly reflect. Among the regional countries with available data, six – namely the Czech Republic (21%), Slovakia (20.3%), Slovenia (19.9%), Poland (17.5%), Hungary (17.2%) and Lithuania (16.3%) – showed an industrial value-added share to GDP which was higher than the EU average (see chart 5). These percentages were significantly lower for Latvia (13%), Estonia (12.8%) and Croatia (11.7%).

Interestingly, the EU countries with slower economic growth over the past decade were often those where industry played a lesser role, such as Spain (11.4%), France (9.5%) and Greece (9.1%). These nations often have lower export rates and higher trade deficits, which frequently correlate with higher debt levels.

⁷ 'Horizon 2020's excessive bureaucracy for making it harder to win grants', NCP Brussels, 28 February 2019, ncp.brussels.

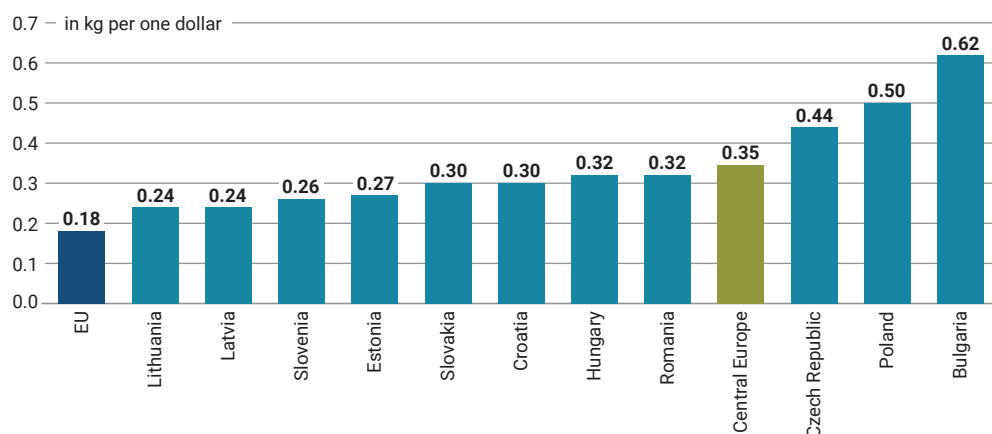
⁸ 2024 Eurochambres Single Market Survey: overcoming obstacle, developing solutions, Eurochambres, January 2024, eurochambres.eu.

III. EUROPEAN INDUSTRIAL POLICY FAVOURS THE STRONGEST

A significant challenge for the economic model established in Central Europe is managing the costs of the energy transition. The region's situation is varied. Most countries possess significant non-emitting energy capacities from nuclear power plants. In contrast, countries like Poland still largely rely on coal for their energy systems and face the task of rapidly expanding their low-emission capacity (through nuclear plants and/or renewables) to replace outdated conventional units.

However, all the region's countries share one characteristic: they have high CO₂ intensity in relation to their GDP (see chart 6). Bulgaria (0.62 kg per dollar of GDP), Poland (0.50 kg) and the Czech Republic (0.44 kg) have the highest emissions, but even regional low-emission leaders like Latvia (0.24 kg), Lithuania (0.24 kg), Slovenia (0.26 kg) and Estonia (0.27 kg) exceed the EU average (0.18 kg) by over 30%.

Chart 6. CO₂ emissions in relation to GDP in 2020



Source: World Bank.⁹

This situation is not coincidental, but comes as a direct consequence of the region's economic model. Central Europe not only inherited significant industrial capacity from the socialist era, but also attracted substantial investments in manufacturing over the past three decades, becoming a crucial hub for components and parts for the European economy. The region's lower production costs made it an attractive destination for labour-intensive industrial activities

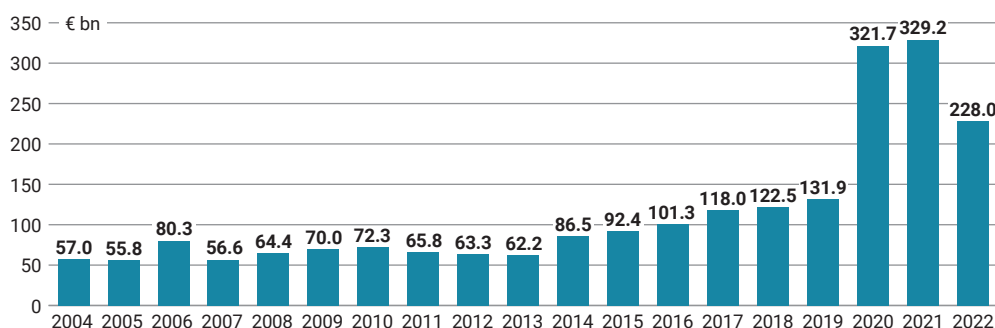
⁹ There is no access to data concerning Bulgaria and Romania.

with higher emissions. Additionally, addressing the infrastructure deficiencies also fostered the growth of heavy industry.

Today, this model presents significant challenges. Central European countries will bear some of the highest energy transition costs among EU members. Failure to consider the region's interests in planning this transition could result in decarbonisation through deindustrialisation, a process which could have severe consequences.

The problem of diminishing value-added production in manufacturing is being increasingly recognised in Western countries. Locating supply chains solely based on business criteria, without considering geographical or security factors, has resulted in the EU and the US losing skills (especially vital human capital) in producing various components. This has allowed Asian manufacturers to dominate certain markets. A clear example is weapons production. Western nations, having disposed of factories that produced gunpowder, now face significant challenges in resuming large-scale production. This gives Russia a considerable advantage in this area, despite its generally weaker economic potential. Europe is struggling to catch up because rebuilding the production base is difficult after it has been lost. The lesson is that the EU should strive to avoid similar mistakes, ensuring that industrial production is not relocated out of the region.

Chart 7. Public aid levels in the EU from 2004 to 2022



Source: authors' own analysis based on *Scoreboard State Aid data – New dissemination tool for statistics (2000–2022)*, ec.europa.eu.

Two alternative models are emerging in the West to address the problem of deindustrialisation. In the EU, since the COVID-19 pandemic, there has been a growing liberalisation of the state aid rules which for decades have been a cornerstone of the single market. Although a noticeable upward trend in

public aid approved by the European Commission started as early as 2014, the last three years have seen an unprecedented rise (see chart 7). While subsidies rose at an average rate of 14% annually between 2013 and 2019, in 2020 they increased by 144%, and remained at a higher level the following year to help EU businesses cope with the pandemic's negative effects.

Before 2020, EU countries' total subsidy expenditures were below 1% of GDP, but in the past three years they have ranged between 1.43% and 2.39% of GDP. In 2022, the amount of aid approved fell significantly, from €329 billion to €228 billion; nevertheless, it is unlikely to fall back down to the pre-pandemic levels of below €150 billion.

The EU's economic weakness is pushing governments to offer subsidies, while the European Commission shows less determination to resist pressure from the EU's largest economies. Over the past three years, Germany and France received more than half (55%) of state aid, even though these two countries currently account for about 39% of the EU's GDP. In contrast, Central Europe received only 12.2% despite generating 11.5% of the EU's GDP. The region could probably have afforded expenditures almost proportional to its share of GDP due to its relatively good fiscal conditions. However, it still lacks the financial capacity of France and Germany, which can significantly skew the rules of the single market with their spending. For example, in March 2024 the German economy minister Robert Habeck announced a new €23 billion subsidy programme implementing Contracts for Difference to offset higher energy prices for those energy-intensive businesses which invest in environmentally friendly production.¹⁰

Furthermore, the emerging model of state aid in the EU is leading to a subsidy race for foreign direct investments from outside the EU, increasingly leveraging competition between EU countries. Many EU nations have recognised the scale of the disparity. In February 2023, 11 countries, including Central European states like the Czech Republic, Latvia, Poland, Slovakia and Hungary, expressed concerns about the European Commission's relaxation of state aid rules.¹¹ To illustrate the scale of the issue: in 2022 alone the Commission approved €329 billion in state aid, an amount equivalent to the EU's

¹⁰ J. Löhr, J. Krembrow, 'Milliarden vom Staat für die grüne Produktion', Frankfurter Allgemeine, 12 March 2024, faz.net.

¹¹ 'Eleven EU countries urge 'great caution' in loosening state aid rules', Euractiv, 15 February 2023, euractiv.com.

seven-year budget for cohesion policy.¹² Similar patterns had emerged earlier, with technology-intensive programmes such as Important Projects of Common European Interest (IPCEI) primarily benefiting mostly French and German companies.

The US took a completely different path, implementing subsidy programmes for investments in clean technology production capacity (the Inflation Reduction Act, IRA) and semiconductor manufacturing (the CHIPS and Science Act, CHIPS).¹³ Launched in 2024, these initiatives successfully attracted investment projects, with their value increasing by 40% in 2023, while those of the EU remained stagnant.¹⁴ However, the EU still maintains an edge in clean technology investment: \$360 billion, compared to \$240 billion in the US. Interestingly, the top 10 US states that benefited most from the IRA have a lower GDP than the national average, receiving 80.5% of the programme-backed investments.¹⁵ Of these projects, 71% focused on battery production, 12% on electric vehicles, and 12% on photovoltaic panels. Similarly, with the CHIPS programme, 70% of funding went to less affluent US states.¹⁶

The Inflation Reduction Act (IRA) is so appealing that it has attracted European investors who have invested \$13 billion in the US since 2022. The programme's strength lies in its uniform, straightforward and transparent support rules with low bureaucratic barriers, making it accessible to businesses. In contrast, the EU's Green Deal has increased companies' environmental reporting obligations.¹⁷ Additionally, the IRA doubled the tax deduction cap for R&D expenses for SMEs to \$500,000.¹⁸ Industry analyses suggest that the US designed the IRA to equalise the cost of electric vehicle battery production between the US and China, making it significantly cheaper than in the EU.¹⁹ Unlike the EU, the US government not only subsidises factory construction but also co-finances their operation costs.

¹² *Cohesion, resilience and values: Heading 2 of the 2021-2027 MFF*, op. cit.

¹³ 'Can the global battle for electromobility pose...', op. cit.

¹⁴ B. Fröndhoff, F. Holtermann, K. Kort, I. Wermke, K. Witsch, 'USA hängen Europa bei Greentech-Wachstum ab', Handelsblatt, 4 April 2024, handelsblatt.com.

¹⁵ Authors' own calculations based on data from jackconnex.com/ira-chips-investments.

¹⁶ *Ibidem*.

¹⁷ A. Hancock, G. Chazan, S. White, 'Germany pushes to exempt SMEs from green reporting rules', Financial Times, 18 September 2023, ft.com.

¹⁸ R. Buttle, 'The Inflation Reduction Act: Three Facts On Taxes And Small Businesses', Forbes, 2 April 2024, forbes.com.

¹⁹ J. Olk, 'Studie zum Subventionsprogramm der USA - Wen der IRA wirklich schmerzt', Handelsblatt, 5 May 2023, handelsblatt.com.

A significant challenge in advocating for Central Europe's interests in industrial policy is the region's severe underrepresentation in EU institutions. According to various sources,²⁰ since 2004 52% of key positions in EU institutions,²¹ agencies, and advisory bodies have gone to Western Europeans, 31% to Southern Europeans, 8% to Northern Europeans, and only 9% to Central Europeans, despite the region accounting for 22% of the EU's population. This situation has been slow to change; in the current European Parliament term, only 14% of key EU positions have gone to candidates from the region. The situation is even worse in EU institutions alone, where only 6% of key roles have gone to Central Europeans, the same percentage as the much less populous Northern Europe, but far less than Southern Europe (35%) and Western Europe (53%).

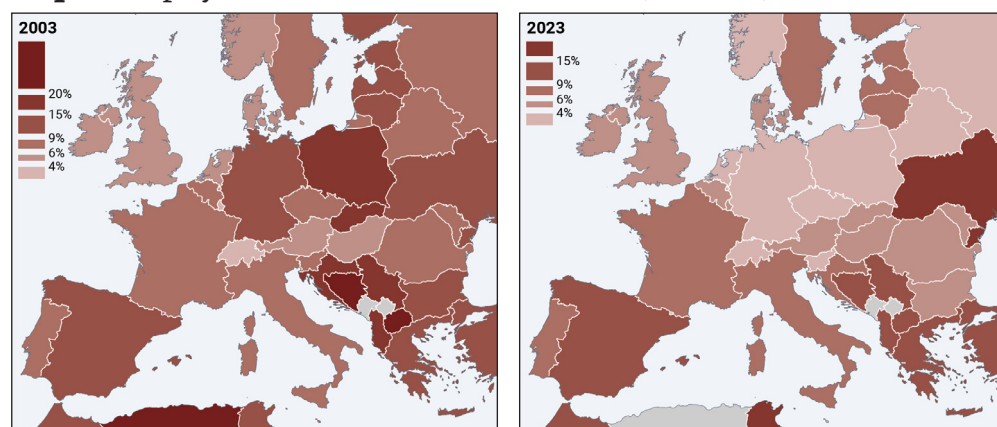
²⁰ L. Jakobsen, *Geographical Representation in EU Leadership Observatory 2024*, European Democracy Consulting, 8 April 2024, eudemocracy.eu.

²¹ The analysis only considered the highest positions in the institutions, while omitting those at the middle level, such as commissioners or directors-general in various directorates-general of the European Commission.

IV. EXHAUSTION OF HUMAN CAPITAL

Upon joining the EU, Central European countries had one significant advantage – a seemingly endless supply of affordable and well-qualified workers. In 2003, many nations in the region had unemployment rates exceeding 10%, with Poland, Slovakia and Croatia nearing 20% (see map). After 20 years of EU membership, Central European countries are in a completely different situation. Poland (2.8%), the Czech Republic (2.8%), Hungary (3.9%) and Bulgaria (4.6%) now have some of the lowest unemployment rates in the EU. In stark contrast, the southern European countries have been in a much worse position since the eurozone crisis significantly impacted their economies. For over a decade unemployment in these nations has been high compared to the EU average, reaching 9.3% in Greece, 11.3% in Spain, 6.5% in Portugal, and 8% in Italy in 2023.

Map. Unemployment rates in EU countries in 2003 and 2023



Source: IMF.

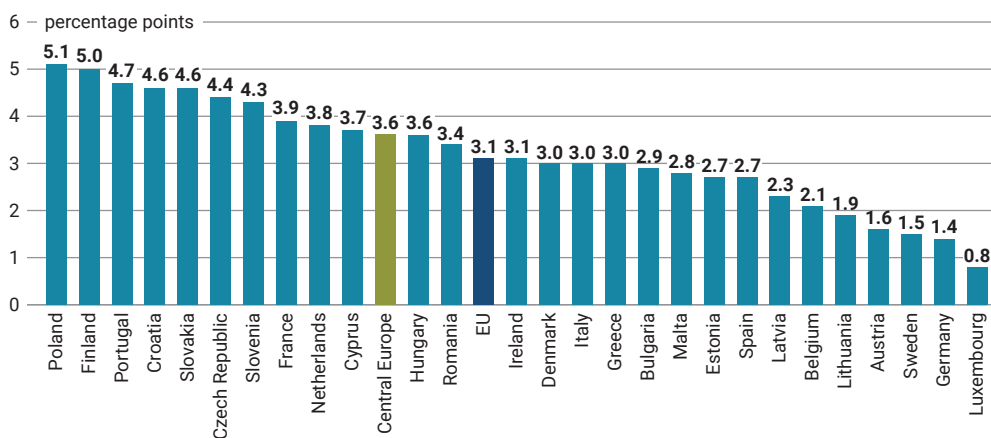
However, there is a downside to the favourable labour market conditions in Central Europe. The combination of low unemployment with declining demographic potential limits the region's ability to attract new major investments. As a result, it will no longer be feasible in the coming years to rely on an abundant supply of skilled workers for economic growth. Therefore, it is crucial to seek ways to develop existing human capital resources so that workers can increase their productivity by participating in more innovative ventures.

Low unemployment in Central Europe is not solely a result of dynamic economic growth. The past two decades have also been marked by significant population decline. The efforts at transformation, which led to prolonged periods of high unemployment and low wages in many countries, came at the

cost of intense emigration. From 2003 to 2022, while the overall EU population increased by 3.5%, Central Europe’s population declined by 6.1%. Latvia (-17.9%), Lithuania (-17.1%), Bulgaria (-16.9%), Romania (-11.7%) and Croatia (-10.4%) experienced the greatest losses. Notable exceptions were Slovenia (+5.8%), the Czech Republic (+4.7%), and Slovakia (+1.1%), which recorded net population increases.

Labour market data alone, however, do not fully capture the scale of the challenge that awaits Central Europe in the coming years. While the region has been losing population since its EU accession, this process has occurred under favourable demographic conditions due to a relatively young population structure. In 2003, the median age in Central Europe was 38, while across the EU (taking the 2004 enlargement into account), it was 39. Today, the situation is much worse. By 2023, the median age in Central Europe had reached 44 years, while across the EU, it was similar at 44.5 years. The situation varies within the region. Slovakia (42.2), Estonia (42.3), and Poland (42.6) are faring slightly better, but Bulgaria (46.8) and Croatia (45.4) are well above the EU average. In comparison, the median age in the United States, despite its high development level and less extensive social safety nets, is significantly lower at 38.1 years. This indicates that the US will have a substantial supply of human capital for at least the next two decades, while labour shortages are becoming the ‘new normal’ in the EU.

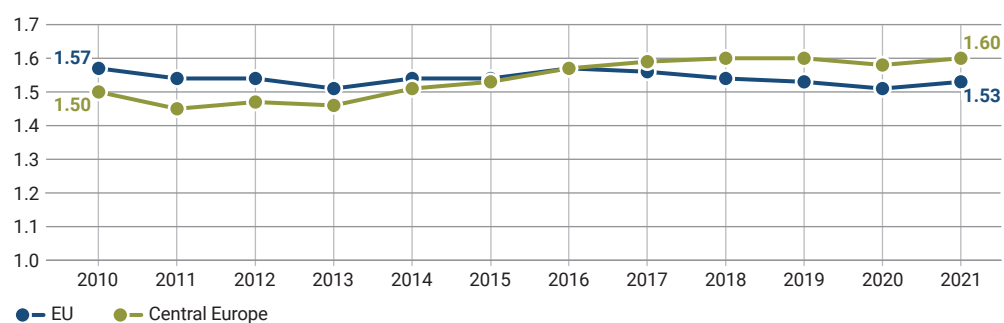
Chart 8. Increase in the share of people aged 65 and more in population between 2012 and 2022



Source: Eurostat.

The shortage of workers is likely to intensify rapidly. According to Eurostat data (see chart 8), Central Europe is aging at the fastest rate in Europe, even compared to the already rapid aging process across EU countries. Between 2012 and 2022, the percentage of people aged 65 and older rose by 3.6 p.p. in the region, compared to 3 p.p. across the EU. Five Central European countries are among the ten fastest-aging nations, with Poland leading the way. It is worth noting that while the population decline in Central Europe during the first decade of EU membership was primarily due to high emigration rates, the subsequent decline will be driven by a rapid acceleration in the aging process.

Chart 9. Comparison of female fertility rates in Central Europe and the entire EU as a whole



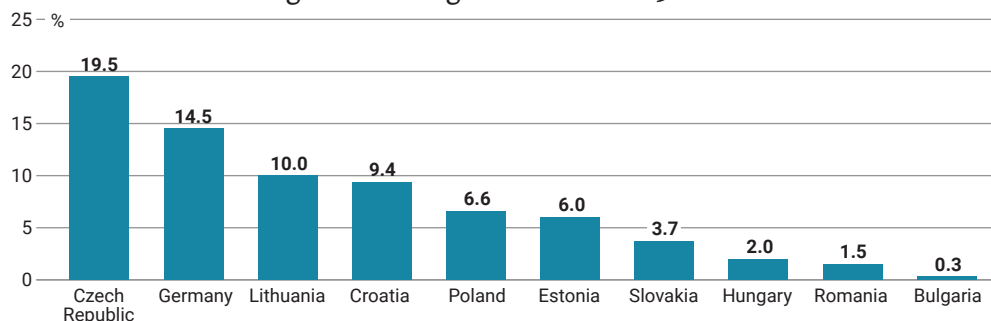
Source: Eurostat.

The only essentially positive demographic news is the upward trend in women’s fertility rates in recent years (see chart 9). After a noticeable decline during the 2011-12 European economic downturn to about 1.45, the rate has since been on the rise. For several years it has remained around 1.6. Moreover, Central Europe’s fertility rate has now come to surpass the EU average since 2017. However, this should not lead to excessive optimism. The rate remains far from the minimum level of 2.1 required to ensure generational replacement, especially considering the significant disparities between countries in the region. The situation in Lithuania (1.36) and Poland (1.33) is particularly problematic, placing them among the EU countries with the lowest fertility rates.

Two trends are helping to mitigate the labour shortage. First is the influx of migrants, a trend that has significantly intensified across the region in recent years (see chart 10). In the Czech Republic, nearly one in five workers is foreign-born, surpassing even Germany, which has been an immigration destination for at least half a century. Notably, the Czech Republic has strong cultural ties with Slovakia, resulting in a large number of Slovak immigrants;

these made up 23% of all foreign workers in 2023. Additionally, 35% of foreign workers in the Czech Republic are Ukrainians.

Chart 10. Share of migrants among workers in 2023



Source: authors' own calculations based on employment office & social security statistics from various countries.

Lithuania (10%) and Croatia (9.4%) are following the Czech Republic in terms of foreign worker employment. In Lithuania, the number of foreign workers jumped by 65% in 2023, primarily due to the influx of Belarusians and Ukrainians. In Croatia almost half of foreign workers come from the Western Balkans, while 35% hail from Asia, mainly the Philippines, India, and Nepal. Poland (6.6%) and Estonia (6%) have average shares of foreign workers relative to the region. Meanwhile, Slovakia (3.7%), Hungary (2%), Romania (1.5%) and Bulgaria (0.3%) have notably lower levels. However, migration to Central Europe has accelerated significantly due to the war in Ukraine, with a remarkable increase in Asian immigration as well. The number of immigrants from Belarus is also gradually increasing, which may drive immigration growth in the near future.

The second visible trend is the increasing use of automation, although this process is slowing in some countries. In 2021, the density of industrial robots was particularly high in Slovenia (249 robots per 10,000 workers) and reasonably high in the Czech Republic (168), Slovakia (143) and Hungary (115). The indicator was much lower in Poland (63), Estonia (34), Romania (33), Lithuania (30) and Bulgaria (23), and negligible in less industrialised Croatia (11) and Latvia (11).²²

Between 2019 and 2021, only Slovenia maintained a very high growth rate, with robot density rising by 55% to 284, moving up from 17th to 11th globally. In contrast, the Czech Republic saw only a 17% increase, and Slovakia grew by

²² See the data base therobotreport.com.

just 9%, compared to the global average of 28%.²³ Other countries experienced increases between 30% and 40%, but due to their relatively low starting points, they are unlikely to join the global leaders in the near future. In 2021, the world leaders in industrial robot density were South Korea (1000), Singapore (670), Japan (399), Germany (397), China (322), and Sweden (321).

These results indicate that the influx of migrants, particularly from Ukraine, has eased the pressure to invest in purchases of industrial robots. However, another factor weakening the pace of automation was the economic downturn of recent years, especially in the Czech Republic and Slovakia. Additionally, the fading of the model of attracting modern large factories, particularly in the automotive sector, has slowed the process of expanding automation. As European car manufacturers weaken and competition (even with Western Europe) for investments in the electromobility sector rises, some of the region's countries are at risk of losing their strong position as automotive suppliers.²⁴

On the other hand, investments in automation are characteristic of highly developed countries that have resisted deindustrialisation despite high wages, such as Germany and Sweden. Countries that are not yet fully developed but have high industrial production aspirations, such as China, are also heavily investing in automation.

²³ *Ibidem.*

²⁴ 'Can the global battle for electromobility pose...', *op. cit.*

V. PROBLEM OF INSUFFICIENT INNOVATION FUNDING

The EU's cohesion policy, which is aimed at reducing economic and social disparities between regions, has been seen as an opportunity for Central Europe to catch up with Western European nations. However, experience with the 2014–2020 Multiannual Financial Framework suggests that while these funds have helped bridge infrastructural divides between Central and Western Europe, they have been less effective in the overall reduction of economic disparities between wealthier and less affluent nations in the EU. Despite decades of political and economic transformation across most of the region, delays stemming from the previous centralised economic system and inherited infrastructure challenges continue to pose significant barriers.

For years, Central European countries have allocated relatively small percentages of their GDP to research and development (R&D). According to Eurostat data from 2022, all the countries in the region are falling below the EU average of 2.24%.²⁵ Slovenia (2.18%) is the regional leader, ranking eighth in the EU, followed by the Czech Republic (1.96%) in tenth place. Poland, with R&D spending at 1.46% of GDP, ranks fourteenth. Romania (0.46%), Latvia (0.75%), Bulgaria (0.77%), and Slovakia (0.98%) all spend less than 1%, with Romania investing the least across the whole EU. In contrast, South Korea and the US allocate nearly 5% and 3.5% of their GDPs to R&D respectively. Among EU countries, Belgium and Sweden (3.4%), Austria (3.2%), and Germany (3.1%) also spend relatively large amounts.

The issue of insufficient funding is not solely due to lower levels of national wealth. Companies in the region are often small to medium-sized, typically operating on low margins. As a result, they have limited capacity to take risks on innovation investments. Similarly, applying for innovation grants can be challenging. Even though many firms in the region have innovative products, services or business models, they often lack the staff and therefore the capacity needed to apply successfully for national or EU grants. Another problem is a lack of knowledge about the possibilities for applying for EU grants.

Central European countries have an opportunity to secure funding for research and development through framework financing programmes such as Horizon Europe (2021–27). However, a significant geographic disparity was already visible in the distribution of the Horizon 2020 budget for R&D in the EU, with

²⁵ *R&D expenditure*, Eurostat, ec.europa.eu/eurostat.

over 95% of research teams being composed of scientists from Germany, the UK (before Brexit) and France.

The EU recognises this issue, which is why it introduced a new component called ‘Widening Participation and Strengthening the European Research Area’ within Horizon Europe,²⁶ specifically targeting so-called ‘widening countries’ whose research performances fall below the EU average. These include many Central European nations, which have historically participated in far fewer projects funded by EU framework programmes.²⁷ Despite the introduction of this component, however, the funding allocated remains minimal.

In 2019, EU ministers responsible for R&D agreed to allocate 3.3% of the €95.5 billion in the Horizon Europe budget to the ‘widening countries’.²⁸ As of December 2022, only about €800 million had been allocated for projects within this pool, amounting to just 4% of all €20.5 billion of the overall EU-wide budget.²⁹ The European Innovation Council aims to increase this participation to at least 15% of the total programme funds.³⁰ Achieving this could promote balanced growth in the R&D sector within the EU, particularly given Brussels’ ambitious goals of achieving strategic autonomy bolstering European industrial policy to compete technologically with China and the US, and of reaching full climate neutrality by 2050.

Central European countries received nearly 45% (€243 billion, out of a total of €547 billion)³¹ of the EU structural and investment funds (ESIF)³² allocated to all 28 member states³³ under the 2014–2020 Multiannual Financial

²⁶ According to the regulation of the European Parliament and of the Council regarding the Horizon Europe programme, the ‘widening’ member states are: Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia and Slovenia.

²⁷ They include Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, as well as countries associated with the Horizon Europe programme: Albania, Armenia, Bosnia and Herzegovina, the Faroe Islands, Georgia, Kosovo, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Tunisia, Turkey and Ukraine. Additionally, this group includes overseas territories of EU states: Guadeloupe, French Guiana, Martinique, Reunion, Mayotte, Saint-Martin, Azores, Madeira and the Canary Islands.

²⁸ ‘What’s the deal with Horizon Europe Widening’, Science Business, 7 September 2022, science-business.net.

²⁹ *Horizon Europe strategic plan 2025–2027 analysis*, Directorate-General for Research and Innovation (European Commission), May 2023, p. 112, op.europa.eu.

³⁰ *EIC Board Statement. Recommendations for increasing participation of high potential innovators from widening countries to EIC programmes*, European Innovation Council, 31 July 2023, eic.ec.europa.eu.

³¹ This means EU financing, not including national co-financing.

³² The European Structural and Investment Funds (ESIF) consist of five funds: the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD), the European Maritime and Fisheries Fund (EMFF), and the European Social Fund (ESF).

³³ This includes the United Kingdom, which left the EU on 31 January 2020.

Framework.³⁴ Overall, across the EU the largest portions of ESIF were allocated to the European Regional Development Fund (ERDF) at about 42% (€230 billion); the European Agricultural Fund for Rural Development (EAFRD) at 25% (€136 billion); and the European Social Fund (ESF) at 19% (€104.4 billion). Only 11% of the ESIF pool went to the Cohesion Fund (CF),³⁵ which primarily benefits Central European countries. Of the total CF budget of €61.5 billion, €55 billion (almost 90%) went to 11 nations in the region.

The ERDF is the most important source of support for Central European countries, which received €105 billion, or over 45% of the fund's total. Another crucial fund for the region is the EAFRD, with nearly 37% of the 2014–2020 budget allocated to these countries (c. €50 billion out of €136 billion). Based on population and economic criteria, four Central European countries were ranked among the top 10 recipients of structural and investment funds for 2014–2020: Poland (1st, €91.2 billion), Romania (5th, €35.2 billion), Hungary (8th, €27.2 billion) and the Czech Republic (9th, €25.8 billion).

One-third of the EU budget is allocated to cohesion policy, which includes four structural funds: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), and the Youth Employment Initiative (YEI). The first two are accessible to all EU countries. In the 2014–2020 Multiannual Financial Framework, the cohesion policy budget was €533 billion, including around €405 billion provided by the EU and €128 billion from national contributions. Despite this significant allocation, opinions on how effective this policy has been are mixed.

Researchers from the Universities of Mannheim and Aarhus, along with the Jacques Delors Centre in Berlin, published a study in late March 2023 indicating that cohesion policy is effective from a broader regional perspective, and does indeed achieve its goal of reducing interregional inequalities; it contributes notably to the average economic growth in the regions it supports. However, the funds allocated often end up with the wealthiest entities, deepening intra-regional disparities. This could increase social dissatisfaction among those

³⁴ The budget of the European Structural and Investment Funds (ESIF) for the period 2014–2020 was c. €740 billion, with around €547 billion coming from the EU allocation and €193 billion from member states' contributions.

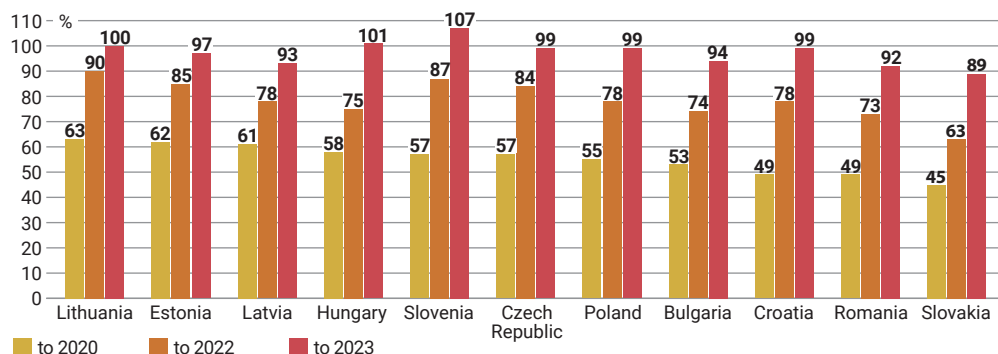
³⁵ The Cohesion Fund is designated for member states whose Gross National Income (GNI) per capita is lower than 90% of the EU average. In the programming period of 2021–27, 15 member states will benefit from the Cohesion Fund: Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

who feel ‘left behind’, potentially influencing social attitudes and political preferences.³⁶ The authors also noted that the EU’s enlargement in 2004, 2007 (with Romania and Bulgaria), and 2013 (with Croatia) reduced the average EU GDP per capita, limiting the eligibility of many regions in the EU-15 to receive more funding, as it is primarily targeted at areas with GDP below 75% of the EU average.

By the end of 2023, all EU countries utilised 93% of the European funds allocated to them under the 2014–2020 Multiannual Financial Framework. The average for the Central European countries was higher, at nearly 110%; this means they utilised more than their originally allocated funds, which were gradually increased over subsequent years. The COVID-19 pandemic made it difficult to complete many projects on time, and so the deadline for spending these funds was extended. By 2020, member states had used just over half (52%) of the total allocation, which meant that the rest would expire.

According to European Commission data, Slovenia (107%), Hungary (101%), and Lithuania (100%) managed their funds most effectively among the Central European countries. Slovakia (89%), Romania (92%), and Latvia (93%) were the least successful (see chart 11).

Chart 11. Structural and investment funds 2014–2020: implementation levels in Central European countries



Source: authors’ own analysis based on European Commission data, ec.europa.eu.

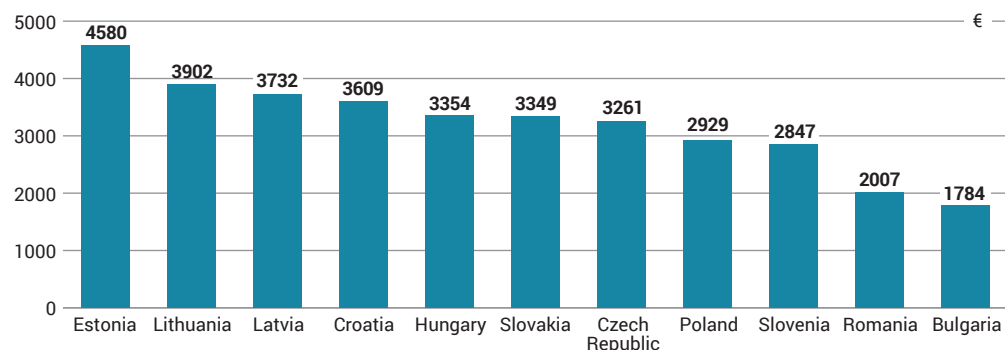
The main issues hindering the usage of the funds remain administrative and bureaucratic constraints in most countries (mainly shortages of staff and experts to prepare and account for projects and conduct procurement

³⁶ V. Lang, N. Redeker, D. Bischof, *Place-Based Policies and Inequality Within Regions*, 30 March 2023, from OSF Preprints, osf.io.

processes). By the end of 2022, Slovakia and Romania had utilised only 63% and 73% of their allocated funds respectively. Bulgaria was also lagging, having utilised just 74% of its funds. However, significant improvements were made in the past year due to the extension of the absorption deadline to 2023, following the ‘n+3’ rule.³⁷ Slovenia (+50 p.p.) and Croatia (+50 p.p.) have made the most significant progress in fund usage over the past three years, having previously struggled with low absorption rates.

On a per capita basis (see chart 12), the Baltic states utilised the most funds under the European Structural and Investment Funds (ESIF): Estonia (€4580), Lithuania (€3900), and Latvia (over €3700). Romania and Bulgaria utilised the least, at just over €2000 and €1780 respectively. For the Baltic states, this high funding was mainly due to the substantial investments made in transport infrastructure projects (especially the individual national segments of the Rail Baltica, the European gauge railway planned to link Warsaw, Kaunas, Riga, Tallinn, and Helsinki), energy infrastructure, education, and research & development.

Chart 12. Central European countries’ implementation of structural and investment funds 2014–2020 (per capita)



Source: authors’ own analysis based on European Commission data, ec.europa.eu.

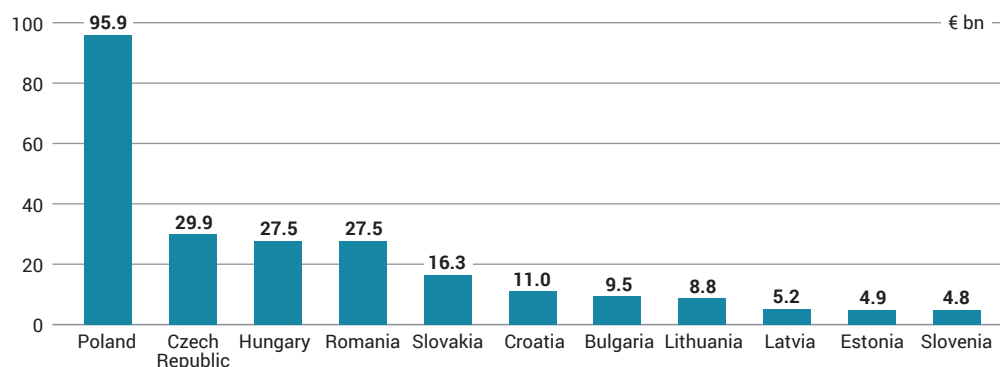
Poland has long been the largest nominal beneficiary of cohesion policy funds,³⁸ utilising nearly €96 billion from the 2014–2020 budget (see chart 13). Italy (€51 billion) and Spain (€39 billion) follow, while within the region

³⁷ The ‘n+3’ rule indicates additional time for the settlement and implementation of projects co-financed by EU funds. In practice, this means that funds allocated for the period 2014–2020 could be utilised until 2023.

³⁸ The budget allocated to cohesion policy in the MFF (Multiannual Financial Framework) for the period 2014–2020 amounted to €533 billion. Of this, c. €405 billion were provided by the EU, and €128 billion were contributed by the member states.

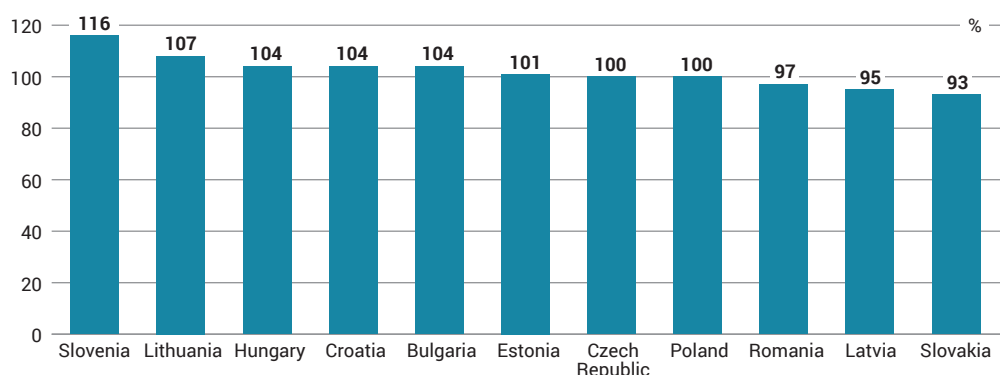
the Czech Republic (€30 billion), Hungary (€27.5 billion), and Romania (€27.5 billion) have also received significant funding. The extension of the deadline to utilise funds through the end of 2023 ensured that the Central European countries could implement their projects effectively (see chart 14). Slovenia (116%) and Lithuania (107%) performed best, while Slovakia (93%), Latvia (95%) and Romania (97%) were least effective.

Chart 13. Cohesion Policy Fund 2014–2020 implementation by Central European countries until 2023



Source: authors' own analysis based on Eurostat, ec.europa.eu.

Chart 14. Implementation of the Cohesion Policy Fund 2014–2020 by Central European countries



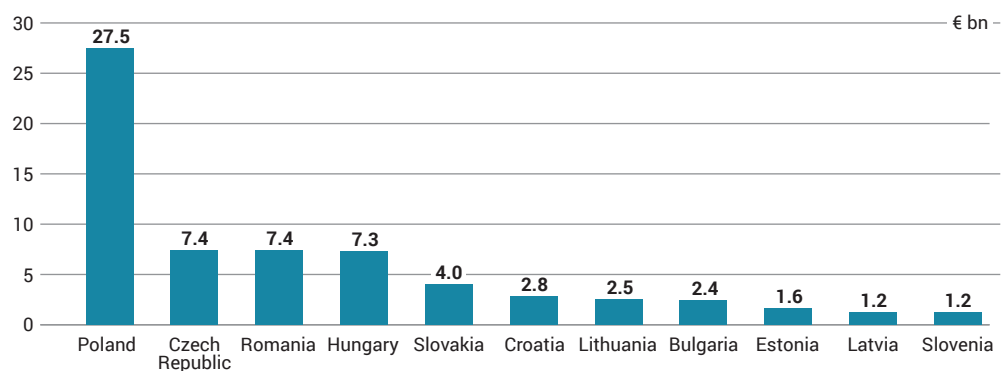
Source: authors' own analysis based on Eurostat, ec.europa.eu.

Poland is also the largest beneficiary of the Cohesion Fund (see chart 15), which is primarily dedicated to the less affluent EU countries. Poland utilises 40% of the total funds (€27.5 billion), followed by Romania (€7.4 billion), the Czech Republic (€7.4 billion) and Hungary (€7.3 billion). The Cohesion Fund utilisation is consistent with the overall cohesion policy: Slovenia (116%) and

Lithuania (107%) are leading, with Bulgaria, Croatia and Hungary significantly improving their allocation of European funds in recent years.

Latvia (86%, or €1.2 billion) and Slovakia (88%, €4 billion) continue to face the most significant challenges in utilising these funds. The relatively high rate of Cohesion Fund expenditure is influenced by the fact that over half of the budget (c. €38 billion) is allocated to developing transport infrastructure, including the construction and modernisation of roads, highways, and railways within the TEN-T (Trans-European Transport Network), an area in which regional countries have considerable expertise.

Chart 15. Implementation by Central European countries of the Cohesion Fund 2014–2020 to the end of 2023



Source: authors' own analysis based on Eurostat, ec.europa.eu.

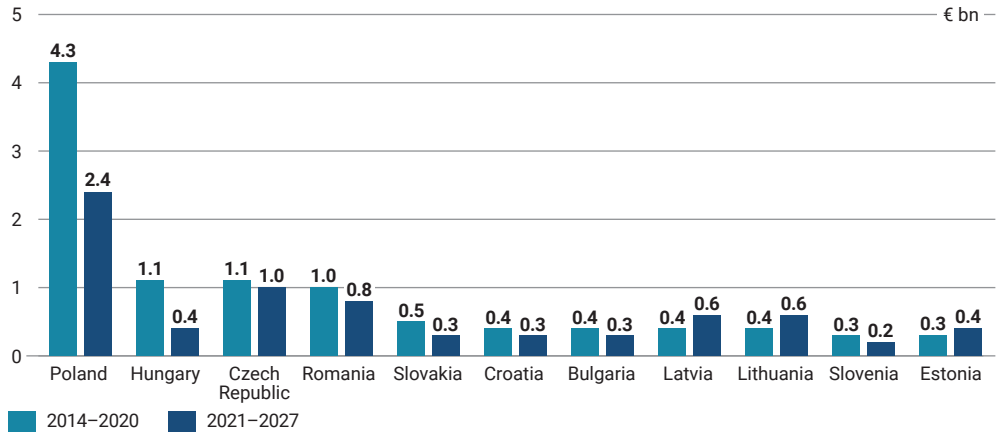
The Baltic states (Estonia, c. €3700 per capita; Lithuania, €3100; Latvia, €2900) and Slovakia (€3000) received the most Cohesion Fund funds per capita. This is due to their relatively high investments in infrastructure projects, research & development, environmental protection, education, and labour market support.

Transport infrastructure in Central Europe still requires substantial investment, such as the construction and modernisation of road and rail links in the TEN-T (Trans-European Transport Network),³⁹ particularly along the north-south axis. This infrastructure must also accommodate high-speed rail

³⁹ TEN-T is an instrument aimed at coordinating and ensuring the coherence and complementarity of infrastructure investments across the EU. Within the framework of TEN-T, there are core networks (forming the basis for the development of the transport network which the member states are to implement by 2030), comprehensive networks (extended until 2045), and comprehensive networks (extended until 2050). As part of recent efforts to revise the TEN-T network, new transport corridors have been designated: there are currently nine of them, four of which have been expanded to include Ukraine and Moldova.

connections (both passenger and freight) and improve connectivity within the region and with Ukraine. A revision of the TEN-T network to extend four transport corridors to Ukraine and Moldova is underway.

Chart 16. Central European countries’ implementation of CEF Transport Funding for 2014–20 and 2021–27*



* Funds received so far in the calls.

Source: authors’ own analysis based on Eurostat, ec.europa.eu.

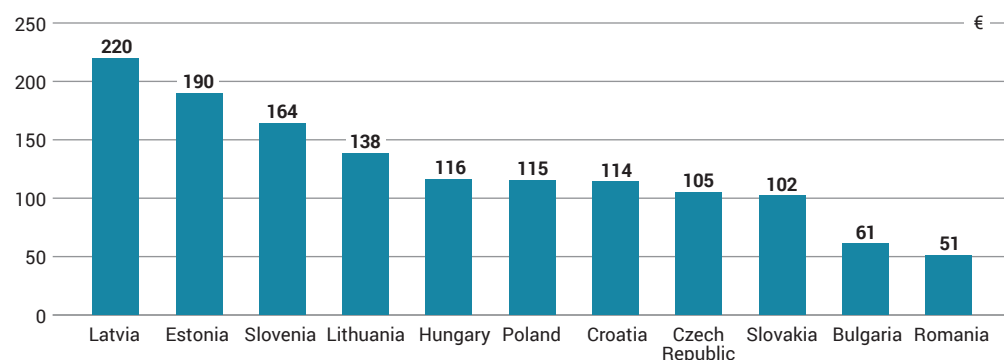
Central European countries have had significant success in securing funds under the Connecting Europe Facility (CEF) transport programme, which provides funding through competitive calls. This programme supports projects related to the construction, modernisation and improvement of transport infrastructure in the core and comprehensive TEN-T networks. Investments in railway infrastructure are prioritised, receiving around 70% of funding. The total CEF-Transport budget for 2014–2020 was €22.89 billion. However, these funds fall short of what is required to upgrade line and point infrastructure to the TEN-T core network standards by 2030. Central European countries collectively received almost €11 billion from the CEF-Transport programme during the previous seven-year cycle, nearly half of the total funds (see chart 16). Poland received the largest allocation (€4.3 billion), followed by Germany (€2.3 billion), France (€1.9 billion), Italy (€1.7 billion), Hungary (€1.1 billion), the Czech Republic (€1.1 billion) and Romania (€975 million). In per capita terms, the Baltic states and Slovenia secured the most funding, while Romania, Bulgaria, and Slovakia received the least.

Despite the EU’s goals of completing the core TEN-T network corridors by 2030, the extended core network by 2040, and the comprehensive network by 2050,

funding for the Connecting Europe Facility (CEF) transport programme increased only slightly in the 2021–2027 Multiannual Financial Framework, by just €2.7 billion, to reach €25.8 billion. In the spring of last year, the European Commission decided to allow Ukraine and Moldova to apply for project funding from the same pool that other member states use.

For all the key projects to be completed by 2030, the CEF budget must be expanded, a point emphasised by representatives of the transport sector.⁴⁰ Central European countries continue to secure funding through CEF-Transport, though the proportion of grants has shifted compared to 2014–20. So far, these countries have secured funding for 266 projects worth €7.35 billion, representing over a third of all funds. Poland once again received the largest share.

Chart 17. Central European countries’ implementation of CEF Transport Funding for 2014–20 (per capita)



Source: authors’ own analysis based on Eurostat, ec.europa.eu.

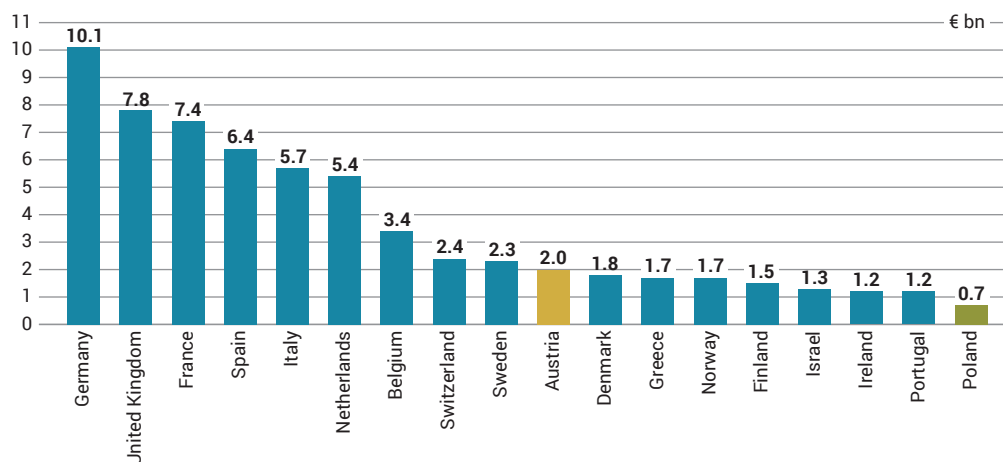
The distribution of research and development funding among EU countries remains unbalanced. Almost the entire budget for the Horizon 2020 programme (2014–20), totalling €86 billion, went to scientists from the original EU-15 countries. These nations received over 95% of the total budget, mainly benefiting Germany, the UK (before it left the EU), France, Spain and Italy. This was acknowledged in the European Commission’s ex-post assessment report to the European Parliament and the Council for Horizon 2020.

The Central European countries collectively secured €3.2 billion, or about 4.7% of the total Horizon 2020 budget, for 17% of all grants (c. 5900 out of

⁴⁰ ‘EU TRANSPORT SECTOR: Europe more than ever in need of more EU budget for transport’, The Federation of European Private Port Companies and Terminals, 2 April 2024, feport.eu.

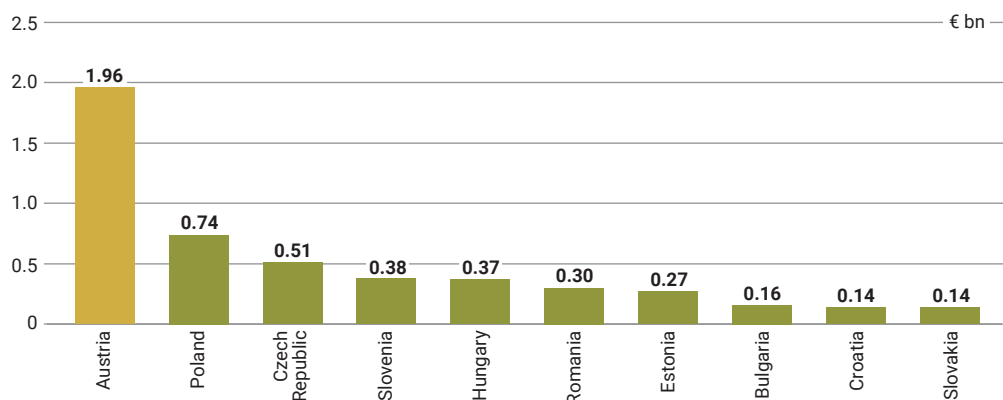
c. 35,400 grants). Among the Central European Initiative states, Poland was the highest recipient (see charts 18 and 19), ranking 18th with €742 million. Following Poland were other countries in the region: the Czech Republic (€512 million), Slovenia (€379 million), Hungary (€369 million), Romania (€301 million), Estonia (€274 million), Bulgaria (€162 million), Croatia (€138 million), Slovakia (€137 million), Latvia (€116.6 million) and Lithuania (€95 million).

Chart 18. Top 20 recipients of Horizon 2020 programme funding



Source: authors' own analysis based on Eurostat, ec.europa.eu.

Chart 19. Funds allocated to Central European countries and Austria (as a reference) in the Horizon 2020 programme



Source: authors' own analysis based on Eurostat, ec.europa.eu.

The discrepancy between the number of grants and their total value indicates that research teams from these countries often play subcontractor roles within the consortia applying for programme funding. The primary entities receiving

grants were the University of Tartu, the Jožef Stefan Institute in Ljubljana, the Polish FundingBox Accelerator, the University of Ljubljana, and Masaryk University (the University of Warsaw ranked 7th). The leading cities with institutions that received grants were Ljubljana, Warsaw, Budapest and Prague.

Recognising the inadequate distribution of research and development funding, the European Commission began consultations on the programme's functioning earlier this year. It also increased the budget share of Horizon Europe dedicated to selected projects led by 'less advanced' countries (including Central European states) from 1% to 3.3%. However, this increase remains insufficient given the existing disparities, as confirmed by various industry organisations including Science Europe.

Under the Horizon Europe programme for 2021-7, €39.9 billion out of the €95.5 billion budget has been spent so far. The largest beneficiaries are still EU-15 countries: Germany ranks first with €5.1 billion, followed by France (€3.6 billion), Spain (€3.4 billion), the Netherlands (€2.9 billion), Italy (€2.8 billion), Belgium (€2.2 billion), Greece (€1.2 billion), Sweden (€1.1 billion), Norway (which is not in the EU but participates in the programme, €1 billion), Austria (€1 billion), and Denmark (€940 million).

The first non-EU-15 country to appear is Poland in 18th place with €437 million, after Israel, which joined the programme in 2021. Other regional countries follow: the Czech Republic (€358 million), Slovenia (€262 million), Romania (€211 million), Estonia (€168 million), Hungary (€145 million), Lithuania (€108 million), Bulgaria (€106 million), Croatia (€93 million), and Latvia (€63 million).

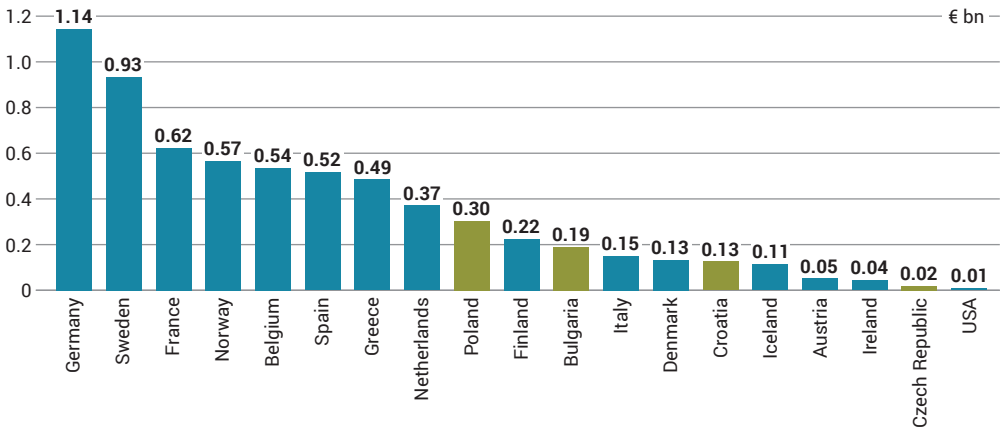
The INNOVFUND programme, which the European Commission launched in 2020, offers an opportunity to increase investments in energy transition and clean technology development across Europe. It aims to be one of the largest demonstration programmes for innovative low-emission technologies, and will be funded by proceeds from auctioning emission allowances within the European Union's Emissions Trading System (EU ETS). The programme's budget is expected to be around €38 billion for 2020-30, exceeding the current seven-year budget of the Connecting Europe Facility (CEF) at €25.8 billion for 2021-7. So far, €6.5 billion has been allocated from the INNOVFUND budget.

The largest recipients (see chart 20) are Germany (€1.1 billion), Sweden (€933 million), France (€623 million), Norway (not in the EU, €566 million),

Belgium (€535 million), and Poland, ranking ninth (€304 million, across five projects). Other Central European beneficiaries include Bulgaria (€190 million), Croatia (€126 million), Austria (€51 million), the Czech Republic (€19 million), Lithuania (€2.6 million), and Slovenia (€2.2 million).

Given the region’s lag in transitioning to a low-emission economy compared to the EU-15, the programme provides a chance to secure more funds for this purpose. However, the region still lags behind the ‘old EU’ states in pursuing these opportunities.

Chart 20. Largest beneficiaries of INNOVFUND programme



Source: authors’ own analysis based on Eurostat, ec.europa.eu.

SUMMARY: TIME TO SHIFT THE EU'S EASTERN ENGINE INTO HIGH GEAR

Over the past two decades, Central Europe has made remarkable economic progress. However, this success is not without its challenges. Mounting evidence suggests that a significant adjustment to the development model will be necessary to maintain dynamic growth. While the exact shape of this correction is uncertain, some of the guiding principles are already clear.

The region cannot afford to slow down and risk stagnation. Russia's invasion of Ukraine has fundamentally altered the security landscape, necessitating economic growth over the next decade to fund higher defence spending. At the same time, Central European economies must bolster their resilience against shocks, particularly disruptions in global supply chains. Financing and implementing the energy transformation will be no less challenging. Central European economies have high industrial output and emissions, which means that decarbonisation must be managed carefully to avoid deindustrialisation and a loss of competitive advantages.

Central Europe must enhance innovation, as demographic changes cannot be easily reversed. This implies a predictable shortage of labour in the near future. Even if the influx of workers from Ukraine continues, immigration can only mitigate the issue of an aging society - it cannot halt it. Therefore, the region needs to facilitate the creation of high-value jobs that not only generate higher tax revenues and technological advancements but also create a sustainable, family-friendly development model that improves demographics.

To achieve this, the focus should shift from intense competition for investment to specialisation in specific market niches. Improved transport connectivity through investments in north-south railway and road infrastructure, including access to seaports and airports, will be crucial. This strategic approach will improve both security and economic prospects, providing better access to global markets and enhancing supply chain diversification.

Central Europe should take a more active role in shaping EU policies to strengthen its competitiveness. In the next few years, close cooperation will be essential during the negotiations over the EU's 2028-2034 Multiannual Financial Framework, which will commence next year under Poland's presidency of the EU Council. The region must advocate for substantial funding for linear infrastructure investments (particularly in railways), energy transition

(with a strong role for nuclear power) and innovation, particularly within the Horizon Europe programme.

Another key issue is the region's stronger emphasis on shaping the EU's industrial policy to ensure a level playing field, both internally and, crucially, with trade partners. It is in Central Europe's interest for Brussels to be capable of retaliating against countries which resort to protectionist measures. Moreover, reducing the bureaucratic EU regulations that impede the development of new technologies and limit the expansion of SMEs should be prioritised. To gain greater influence over EU decision-making, Central Europe needs to better coordinate its efforts to secure top EU positions, an area where it has so far faced significant setbacks.

The final crucial aspect should be integrating Ukraine into the EU in a way that benefits Central Europe. Finding an integration model that motivates Kyiv to pursue reforms is vital for the region. At the same time, it is in Central Europe's interest to integrate Ukraine's economy without triggering intense competition with its own businesses under unfair conditions. Full access to the single market means not just the privileges but also adherence to the same requirements for all members. Ukraine's accession could be a strong driver for growth in Central Europe, enabling it to transition from a peripheral to a central role within the EU. However, maintaining Ukraine's progress in upholding the rule of law and ensuring that regional companies actively contribute to Ukraine's post-war reconstruction are crucial factors for success.

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