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Bridging Borders: Making the Most of EU Accession

Prepared by Stephen Ayerst, Robert Beyer, Amanda Edwards, Phakawa Jeasakul, Adam Remo, Sebastian Sosa, Anke Weber, Sebastian Weber, and Jiaxiong Yao

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Executive Summary

Past European Union (EU) enlargement has been a success, and momentum for future enlargement has strengthened. The 2000s accession waves have delivered substantial income gains for new members, supported by a strong reform impetus, financial support, and favorable external conditions. Despite a challenging regional and global context, progress toward further EU enlargement has been notable, reflected in advances by existing and new candidates.

This paper identifies the key factors underpinning potential accession gains for the Western Balkan countries and Moldova and uses a structural framework to benchmark outcomes and quantify possible forward-looking gains. Drawing on past enlargement experience, synthetic control estimates, and structural model simulations, it shows that replicating past gains—raising GDP per capita by 30%–35% within a decade—is achievable. But these gains are not automatic. Securing them will require productivity gains in line with earlier enlargement rounds, supported by three mutually reinforcing forces—domestic structural reforms anchored in the EU *Acquis*, single market integration, and EU funding. Each of these contributes one-third of the overall gain broadly.

Productivity gains are the central driver of accession-driven growth and convergence of income levels to those of current EU members, accounting for about two-thirds of overall income gains. Productivity increases boost income directly through higher production but also through capital accumulation and labor market outcomes.

- Higher productivity, together with improved financing conditions and EU funding, incentivizes private investment. Model simulations—calibrated on past accession episodes—show that productivity-driven increases in expected returns are the main driver, with EU-funded public capital spending crowding in private investment. Capital inflows and improved financing conditions amplify the investment and income gains. At the same time, capital inflows can create overheating risks, underscoring the need for sound monetary and macrofinancial policies.
- Productivity gains and supportive labor market policies are also critical to determining labor market outcomes. Model simulations suggest that lower migration costs associated with EU accession can initially increase emigration and weaken employment. Without productivity gains, these effects dominate. With productivity improvements, however, labor market outcomes strengthen significantly: higher wages and firm profitability support job creation, labor force participation, and domestic employment, thereby reducing incentives for emigration. Targeted labor market policies—improving skills, matching, and participation—further reinforce these gains.

While single market integration expands market size, access to financing, and technology transfer, sustained productivity gains hinge on reforms that promote governance improvements. These governance gains are critical and involve stronger rule of law, improved regulatory quality, and control of corruption that reduce uncertainty, enhance competition, and support more efficient resource allocation. Stronger governance also amplifies the effects on productivity of improvements in infrastructure, connectivity, and education—as highlighted by microdata evidence—increasing their effectiveness in supporting innovation and investment.

EU accession can deliver large gains, but membership alone is not enough. Maximizing the integration payoff requires effective implementation of the *Acquis* and strong institutions that support productivity growth and resilience. Countries that pair these foundations with deeper single market participation—and avoid regulatory burdens beyond EU requirements that fragment markets and weaken competition—are likely to achieve the largest gains. Existing member states are also expected to benefit from EU enlargement, as in past rounds. The benefits would be even larger if the EU continues to deepen the single market by reducing remaining internal barriers to trade, services, capital, labor mobility, and energy integration.

Acronyms

ALB	Albania
ALMP	active labor market policies
BGP	balanced growth path
BIH	Bosnia and Herzegovina
CESEE	Central, Eastern, and Southeastern Europe
DSGE	dynamic stochastic general equilibrium
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
FDI	foreign direct investment
GDP	gross domestic product
GFS	Government Finance Statistics
GIMF	Global Integrated Monetary and Fiscal Model
ICA	independent component analysis
ICSD	Investment and Capital Stock Dataset
IMF	International Monetary Fund
IPA	Instrument for Pre-accession Assistance
KOS	Kosovo
MKD	North Macedonia
MNE	Montenegro
NEET	not in employment, education, or training
OECD	Organisation for Economic Co-operation and Development
OeNB	Austrian National Bank
OLS	ordinary least squares
OLG	overlapping generations
PFM	public financial management
PISA	Programme for International Student Assessment
PMR	product market regulation
PPP	purchasing power parity
R&D	research and development
RTAC	regional technical assistance center
SEETAC	Southeastern Europe Technical Assistance Center
SOE	state-owned enterprise
SRB	Serbia

STEM	science, technology, engineering, and mathematics
TA	technical assistance
TFP	total factor productivity
VET	vocational education and training
WB	Western Balkans
WEO	<i>World Economic Outlook</i>
WGI	Worldwide Governance Indicators

Glossary

<i>Acquis communautaire</i>	The accumulated body of EU law, rights, obligations, standards, and policies that candidate countries must adopt and implement as part of the accession process.
Accession process	The formal process through which a candidate country aligns with EU rules, standards, and institutions to become an EU member.
Accession gains	The income, productivity, investment, and labor market benefits associated with EU membership.
Beta convergence	The tendency of lower-income economies to grow faster than higher-income economies, narrowing income gaps over time.
Previous enlargement rounds	EU enlargement rounds used in this paper as benchmarks for current candidates: 2004–Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia; 2007–Bulgaria and Romania; and 2013–Croatia.
Candidate country	A country that has been granted candidate status by the EU and is formally on the path toward possible EU membership, subject to meeting accession criteria.
Cohesion funds	EU funds aimed at reducing regional disparities, often through infrastructure, connectivity, and other public investment.
EU <i>Acquis</i> chapters	Policy areas that make up the body of EU law, which candidate countries must adopt to become EU members.
EU funding	EU financial support provided before or after accession, including pre-accession assistance and cohesion-related transfers.
Gold plating	Adding domestic regulatory requirements beyond what EU rules require, potentially reducing the benefits of single market integration.
Fundamentals Cluster	The group of EU accession negotiation areas covering core issues such as the rule of law, public administration, democratic institutions, economic criteria, and public procurement.
Old member states	EU member states that joined before the 2004 enlargement round; in this paper, the term refers to the EU-14, used as the benchmark group of older EU member states.
Potential candidate	A country recognized by the EU as having a possible membership perspective but not yet granted candidate status.
Pre-accession assistance	EU support provided before membership to help candidate and potential candidate countries prepare for accession.
Reform and Growth Facility	The EU financing instrument supporting the Western Balkans Growth Plan through grants and concessional loans linked to agreed reforms.
Risk premium	The additional return investors require to compensate for perceived country, policy, currency, or credit risk.
Single market	The EU's integrated market that allows the free movement of goods, services, capital, and people among member states.

Chapter 1. Introduction

After a prolonged pause, momentum for European Union (EU) enlargement is building. Croatia is the most recent entrant, having joined the EU in 2013—marking the longest hiatus in enlargement since 1973. However, the pause is expected to end soon: enlargement is a central EU priority, and new accessions are increasingly within reach.

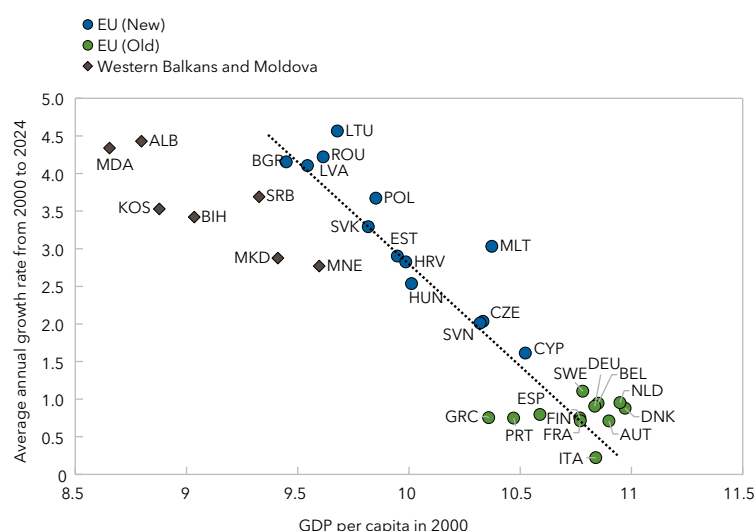
Six Western Balkan countries and Moldova have deepened ties with the EU and are advancing along the accession path, albeit at different speeds.¹ As of June 2026, Montenegro has opened all 33 *Acquis* negotiating chapters and provisionally closed 16, with the authorities expecting to close all chapters by the end of 2026. Albania has also opened all 33 chapters and aims to conclude accession negotiations by the end of 2027. Serbia has opened 22 chapters and provisionally closed two, although no new chapters have been opened since 2021. Moldova has opened 7 chapters. North Macedonia has completed pre-negotiation screening and is yet to formally open negotiations. The European Commission has agreed to open accession negotiations with Bosnia and Herzegovina, although the screening process has not yet begun. Kosovo has not been granted formal candidate status but is considered by the EU as a potential candidate.²

Candidate countries exhibit sizable income gaps relative to EU members, pointing to substantial unrealized growth and convergence potential. Over the past 25 years, income convergence in the EU has been fast, driven largely by countries that joined the EU from 2004 onward (IMF 2024). By contrast, Western Balkan countries and Moldova have underperformed. Had they grown at the (income-adjusted) speed of the previous cohort of accession countries, their income could have increased on an average about 16 percent more over the past decade (Figure 1).

To strengthen institutional readiness and support convergence, the EU has introduced Growth Plans for the Western Balkans and Moldova. Adopted in 2023 and 2024, respectively, the plans set out

Figure 1. Western Balkans and Moldova: Unrealized Convergence Gains

(Y-axis: Percent; X-axis: Log GDP per capita PPP)



Sources: IMF *World Economic Outlook*; and IMF staff calculations.

Note: EU (New) = EU 2004, 2007, 2013 accession countries; EU (Old) = 14 older European Union member countries; AEs = advanced economies; ALB = Albania; AUT = Austria; BEL = Belgium; BGR = Bulgaria; BIH = Bosnia and Herzegovina; CYP = Cyprus; CZE = Czech Republic; DEU = Germany; DNK = Denmark; ESP = Spain; EST = Estonia; EU = European Union; FRA = France; GRC = Greece; HRV = Croatia; HUN = Hungary; ITA = Italy; KOS = Kosovo; LTU = Lithuania; LVA = Latvia; MKD = North Macedonia; MLT = Malta; MNE = Montenegro; NLD = Netherlands; POL = Poland; PPP = purchasing power parity; PRT = Portugal; ROU = Romania; SRB = Serbia; SVN = Slovenia; SWE = Sweden.

¹ The six Western Balkan countries are Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. There are other potential accession countries including the two largest, Ukraine and Türkiye, and Georgia, which are not covered by this paper due to much larger size and on-going military conflict (Ukraine) and the current status of the accession process (Georgia, Türkiye).

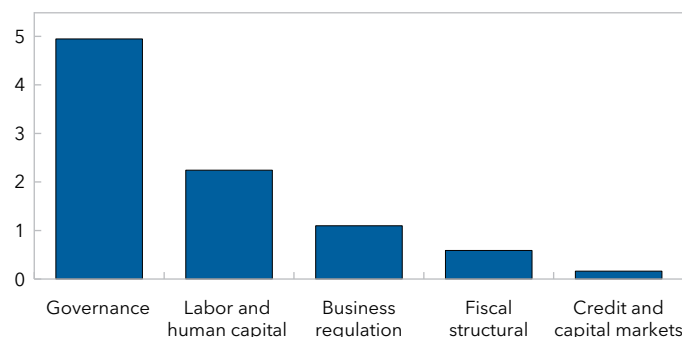
² Kosovo's status reflects nonrecognition by five EU member states, as enlargement decisions require unanimous support.

comprehensive, mutually agreed reform agendas and provide significant financial support, conditional on implementation of the agreed reforms. The Western Balkans Reform and Growth Facility provides €6 billion—3.3 percent of the region’s 2025 GDP—in grants and concessional loans for 2024–27. For Moldova, the envelope is €1.9 billion (10.5 percent of 2025 GDP) for 2025–27. Additional EU resources are also available.³

Accession can accelerate convergence through several mutually reinforcing channels. Integration into the single market—through free movement of goods, services, capital, and labor—expands product and factor market size, strengthens competition, and facilitates technology transfer. Adoption of the EU *Acquis* improves governance, regulatory quality, and policy credibility, reducing uncertainty and lowering risk premiums which in turn can support capital inflows. Access to EU funding for infrastructure and institutional development raises public capital and crowds in private investment. Stronger investment and technology adoption boost labor productivity and wage growth, improving labor market outcomes and helping mitigate outward migration by making domestic opportunities more attractive.

Still, accession is neither the sole source nor guarantor of gains. Outcomes depend critically on national policies that shape both the magnitude of gains and transition dynamics. Past successful accession cases combined strong domestic reforms with sound macroeconomic, fiscal, and financial sector policies to manage transition risks and sustain convergence. Even in the absence of accession, structural reforms that close half of policy gaps with top European performers could raise GDP in Western Balkan countries by 10 percent over the medium term (Figure 2; Budina and others 2025). Notably, these reforms are anchored in the EU *Acquis* and accession framework—the largest estimated gains stem from better governance. Moreover, accession gains may be lower in the current enlargement round if external conditions are less favorable than in previous rounds (for example, demographic trends, regional and global value chain trends, geopolitical fragmentation, renewed external shocks) and given potential administrative-capacity constraints to absorb EU funds, and potentially lower EU financial support in the context of evolving enlargement priorities.

Figure 2. Western Balkans and Moldova: Income Gains from Domestic Reforms
(Percent Change in GDP)



Sources: Budina and others (2025), *Europe’s National-Level Structural Reform Priorities*; and IMF staff calculations.

Note: The bars show GDP-weighted averages and assign impact of zero to countries whose reform impacts could not be quantified.

This paper assesses the expected impact of EU accession on productivity, capital accumulation, and labor markets. Chapter 2 benchmarks current candidates against past enlargement cohorts, quantifies income gains in past accession countries, and examines cross-country differences and transition dynamics. Chapter 3 takes a forward-looking perspective, analyzing the channels through which accession shapes economic outcomes, including through a structural model of capital and labor. It identifies productivity growth as the key driver of accession-related gains and examines how factors beyond single market access—notably governance, institutional quality, and policy credibility—influence these outcomes. The chapter also assesses the contribution of single market integration, EU funding, and reforms to overall gains. Chapter 4 explores the determinants of total factor productivity (TFP) in greater depth and draws out policy implications to maximize long-term benefits while managing transition risks. Chapter 5 concludes.

³ The Western Balkan countries (and Türkiye) benefit from the Instrument for Pre-accession Assistance (IPA) III, which allocates €14.2 billion for enlargement-related support over 2021–27. Unlike earlier cycles, funds are not preallocated by country but tied to priorities and disbursed based on performance. Assuming past patterns, about €8 billion may go to the Western Balkans. Current pre-accession support exceeds that of prior enlargements (which averaged 0.3 percent of GDP annually): about 3.5 percent of GDP for Moldova and an estimated 1.5 percent of GDP for the Western Balkans.

Chapter 2. Lessons from Past Accession Rounds

This chapter establishes past accession rounds as a relevant benchmark for current candidates and identifies the main drivers of accession gains. It then examines why outcomes differed across countries, showing that stronger institutions and faster reform progress were associated with larger and more sustained gains. Finally, it assesses past transition dynamics, including capital inflows and overheating risks that help inform expectations for current candidates.

A. Benchmarking Current Candidates against Past Accessions

Current accession candidates lag EU member states across several dimensions. GDP per capita in current candidate countries is, on average, only about one-third of the level in older EU member states—the EU-14 countries that joined before 2004. Gaps are large in capital stock per capita—a quarter of the EU-14 level—and in employment, with employment-rate gaps of 20 percentage points on average. These outcome gaps are closely associated with policy and institutional gaps: in areas such as government effectiveness, control of corruption, and rule of law, current candidates score more than a third below EU-14 countries (Annex Table 1.1).

Although sizable, these gaps are broadly in line with those observed in past enlargement rounds, making them relevant benchmarks for gauging potential gains from accession today. Given the timeline, the appropriate comparison with earlier accession rounds is with gaps observed five years before accession.⁴ On this basis (Figure 3):

- Income, capital, and employment gaps are not markedly different from those observed in previous enlargement rounds. Current gaps in GDP per capita, capital stock, and employment in the Western Balkans and Moldova vis-à-vis the EU-14 are broadly similar to those of past EU candidate countries vis-à-vis the EU-14 five years before their respective accession dates.⁵
- Pre-accession policy and governance gaps are similar. Current candidates' gaps broadly match those of the accession rounds of 2007 and 2013. However, 2004 accession countries had stronger governance scores, especially for control of corruption and rule of law, and went on to achieve some of the strongest productivity and convergence outcomes after accession.
- Current monetary policy and exchange rate (ER) frameworks—particularly relevant for managing transition dynamics—broadly mirror those in previous accession rounds. Among current candidates, Albania, Moldova, North Macedonia, and Serbia maintain ER regimes ranging from floating to de facto stabilized, whereas Bosnia and Herzegovina, Kosovo, and Montenegro do not have independent monetary policy.⁶ A similar division characterized earlier accession rounds: some countries retained monetary independence even after EU accession (for example, the Czech Republic, Hungary, Poland, and Romania), whereas others had relinquished it before accession (for example, the Baltic countries and Bulgaria).

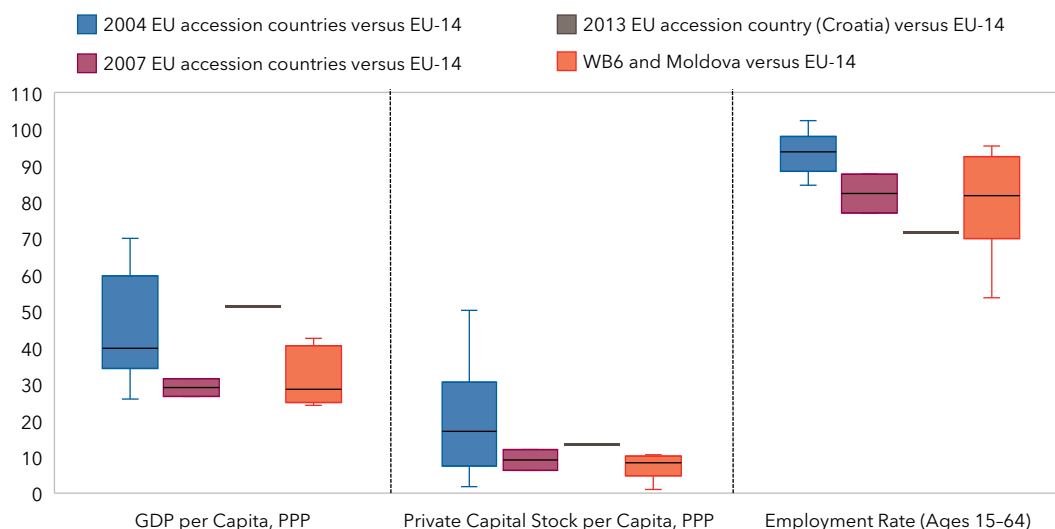
⁴ Although there is no specific accession date for the Western Balkans and Moldova, 2028–30 is increasingly being discussed as a realistic accession time frame for front-runners, with others potentially joining in the 2030s.

⁵ Gaps are particularly similar to those observed in the 2007 enlargement round and are somewhat larger than those of the 2004 cohort.

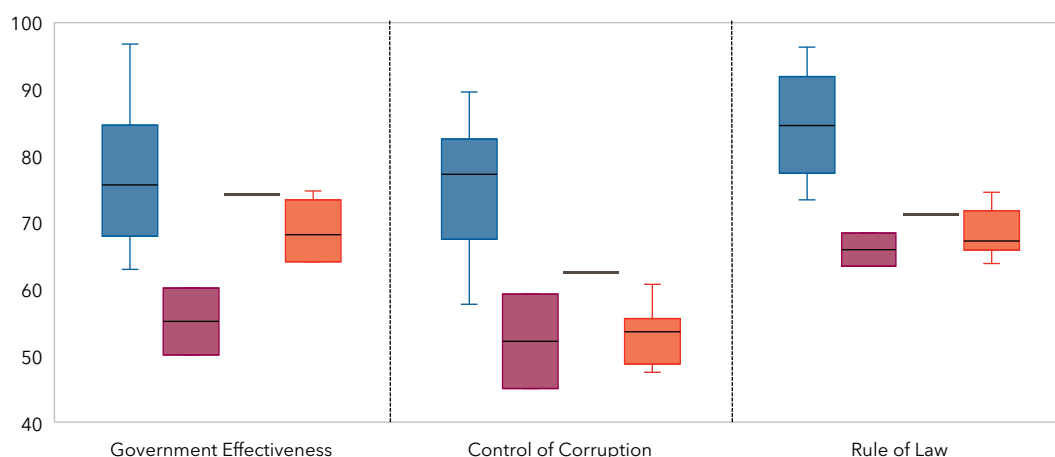
⁶ While Bosnia and Herzegovina has a currency board arrangement, Kosovo and Montenegro are unilaterally euroized.

Figure 3. Pre-accession Gaps of Candidate Countries vis-à-vis Older EU Members
(5 Years Prior to Accession)

1. Outcome Gaps
(Percent of EU-14)



2. Policy or Governance Gaps
(Governance Score; Percent of EU-14)



Sources: IMF *World Economic Outlook*; IMF ICSD; Eurostat; national statistics offices; World Bank Worldwide Governance Indicators (WGI); and IMF staff calculations.

Note: The central line denotes the median; the box covers the interquartile range (25th–75th percentiles); whiskers represent the range of observations excluding outliers. For the Western Balkans and Moldova, figures refer to the latest available data, which may not be five years before accession. EU = European Union; EU-14 = 14 older European Union member countries; ICSD = Investment and Capital Stock Dataset; PPP = purchasing power parity; WB6 = Western Balkans Six.

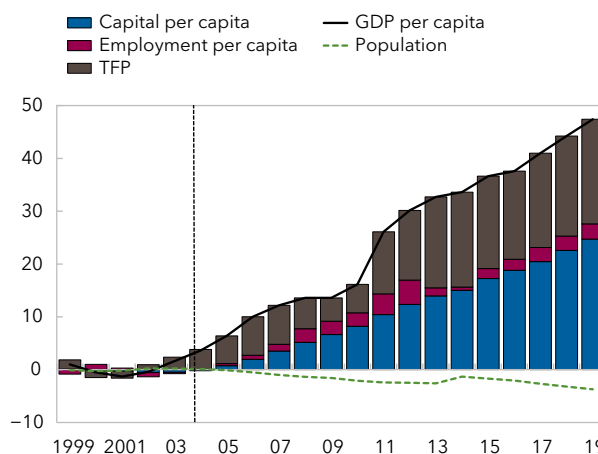
B. Sizable but Heterogeneous Gains from EU Accession

Similar pre-accession gaps, along with significant post-accession gains—GDP per capita increased by more than 30 percent within a decade in past enlargement rounds—suggest sizable convergence potential for candidate countries. Estimates of past income gains are obtained using a synthetic control approach that

compares 2004 accession regions with a counterfactual non-accession synthetic control group (Figure 4). From the year of accession onward, GDP per capita grew markedly faster in accession regions, with cumulative gains exceeding 30 percent after 10 years.⁷ The results are robust to alternative specifications that include a weighted average of accession regions from both the 2004 and 2007 rounds (Annex Figure 2.1).⁸ The estimated gains are in line with those reported by Beyer, Li, and Weber (2026), who focus on pre-accession trends rather than levels, and by Grassi (2024), using country-level data, but exceed the estimated forgone gains of the Western Balkans and Moldova from not joining the EU at the same time, using a similar methodology (Box 1). This may point to anticipation effects for future accession of the group and positive spillovers from the 2004 cohort accession countries to the Western Balkans, including through trade linkages, FDI, and tourism. Previous studies find that existing member states also benefited from 2004 enlargement, with GDP per capita gains of about 10 percent after 15 years (Beyer, Li, and Weber 2026). Gains for existing member states stemmed primarily not only from a larger single market but also from efficiency gains associated with the integration of lower-cost economies into European value chains.

These sizable income gains were driven primarily by productivity improvements and capital accumulation. A decomposition shows that trends in capital, labor, and productivity diverged sharply from those of the synthetic control after accession. TFP rose first, whereas capital accumulation strengthened steadily over time. Both contributed roughly equally to GDP per capita gains after 10 years. Labor played a more limited role: a modest increase in the employment rate was largely offset by a slight decline in population relative to the synthetic control group. This population decline occurred despite transitional restrictions on labor mobility, with free movement of workers phased in unevenly across old member states. While some EU-14 countries opened their labor markets immediately, most imposed restrictions of 2-7 years (the maximum permitted under EU law). By the time restrictions were lifted, smaller gaps in productivity and real wages reduced incentives for outward migration.

Figure 4. GDP per Capita Effect of 2004 EU Accession
(Percent Deviation from Control)



Sources: ARDECO database of the European Commission; and IMF staff calculations.

Note: These gains are estimated using a synthetic control approach based on 45 regions in the 2004 accession countries and 179 regions in pre-2004 EU member states at the NUTS-2 level. The weights are selected such that, before accession, the synthetic control closely matches accession regions in both the levels and trajectories of GDP per capita and its key components. The estimation follows Sun, Ben-Michael, and Feller (2025), which targets multiple variables simultaneously and yields a single, common set of weights for the control group across all variables of interest. EU = European Union; TFP = total factor productivity.

⁷ The method is designed to match accession and control group regions prior to 2004. Beyer, Li, and Weber (2026) show that shifting the matching four years backward (when the EU passed its Agenda 2000 aimed at facilitating future enlargements) to allow for additional gains during the transition period identifies some gains already during the transition. However, long-term gains are almost identical.

⁸ Additional robustness checks were conducted regarding anticipation effects of EU accession by moving the treatment date three years ahead of actual accession, and to check for outliers by (1) removing individual regions and (2) specifying the analysis at the individual country level with a correspondingly adjusted synthetic control.

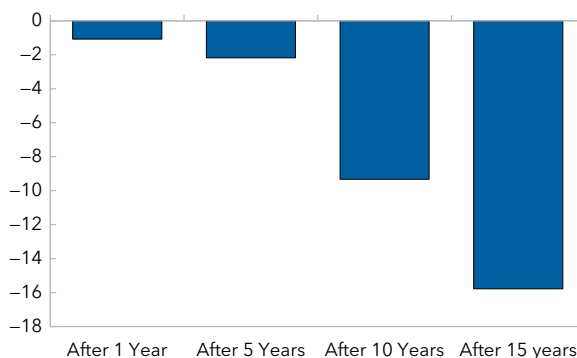
Other studies corroborate these patterns and underscore the central role of productivity in driving convergence. They also show that productivity accounted for a substantial share of post-accession income gains (Grassi 2024; Beyer, Li, and Weber 2026). These gains have been linked to deeper integration into European value chains, which fostered learning by doing as firms upgraded to meet EU standards (Marin 2010; Halpern, Koren, and Szeidl 2015), as well as to technology transfer through FDI inflows and imported intermediate goods (Bijsterbosch and Kolasa 2010; Damijan, Kostevc, and Rojec 2013). Improvements in governance quality and human capital have been identified as important contributors in the convergence literature (Keller 1996; Madsen 2007; Salinas-Jiménez and Salinas-Jiménez 2007; Fleisher, Li, and Zhao 2011; Baltabaev 2013; Capasso and Santoro 2025).

Box 1. Forgone Gains from Staying Outside the EU

Analysis of European Union (EU) accession gains for new members (Figure 4) can be complemented by examining forgone gains of Western Balkan countries and Moldova. Although synthetic control methods are often used to assess policy interventions (treatments), they can also capture the impact of nonintervention. In this setting, the “treatment” is defined as not joining the EU: regions in current accession candidates are compared with a synthetic control group constructed from regions that joined the EU in earlier enlargement rounds.

Using this approach, forgone income gains are estimated at approximately 10 percent after 10 years on average (Box Figure 1.1). This loss is similar to the income gain they would have achieved under the EU beta convergence rate illustrated in Figure 1. However, the estimated losses for the Western Balkans and Moldova are smaller than the gains estimated when comparing regions in new member states with those in old member states (Figure 4). Two factors may account for this difference. First, anticipation effects for the Western Balkans and Moldova to join at a future date may have brought forward gains, particularly through foreign direct investment and investment. Second, positive spillovers from new member states to the Western Balkans through trade linkages and tourism may have partially offset the forgone accession gains.

Box Figure 1.1. GDP per Capita Impact of Not Joining the EU



Sources: ARDECO database of the European Commission; national authorities; and IMF staff calculations.

Note: The sample comprises NUTS 2 regions of the 2004 EU accession countries, the Western Balkans, and Moldova. A PPP-adjusted analysis yields comparable results. EU = European Union.

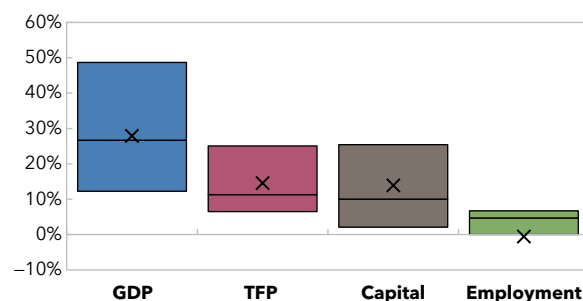
Although average accession gains were substantial, outcomes varied across countries (Figure 5).⁹ The literature shows that countries with stronger institutions and faster governance improvements achieved larger and more sustained gains, supported by higher investment and more efficient resource allocation. Countries with

⁹ The outcomes also vary across different accession rounds, driven by the global macroeconomic environment, EU support, and candidate countries' domestic conditions and policies. However, Annex Figure 2.1 shows that including the 2007 and 2013 accession countries does not substantially change the estimated GDP per capita gains.

weaker institutions or slower reform momentum had slower productivity convergence (Izvorski and Madjoska 2025). Differences in sectoral structure and exposure to EU markets also mattered, with more open and diversified economies benefiting more from trade integration and FDI inflows (Pasimeni 2024; Chupilkin, Koczan, and Plekhanov 2025). High-performing cases—including Poland—underscore the importance of strong domestic policies and institutions and the translation of EU funds into productivity-enhancing investment (Box 2).

Past accession rounds also point to important transition dynamics that shape gains and risks. The literature documents that strong capital inflows in the run up to accession supported investment but also contributed to rapid credit growth and, in some cases, overheating, with procyclical fiscal policy and sharply increasing current account deficits exacerbating imbalances (Corker and others 2000; Backé and Wójcik 2006; Coricelli and Frigerio 2021).¹⁰ ER regimes and appreciation pressures played a central role, with real ER appreciation—driven by both nominal appreciation and inflation differentials—amplifying cyclical fluctuations and affecting competitiveness (Buiter and Grafe 2004; Égert, Halpern, and MacDonald 2006). The strength of supervisory and macroprudential frameworks and the resilience of financial sectors were critical in managing inflow surges, particularly in the context of foreign bank-driven credit expansion and rising foreign currency lending in new member states (Hilbers and others 2005; Bakker and Gulde 2010).

Figure 5. GDP per Capita Gains and Contributions from Components across Countries
(10 Years after 2004 EU Accession, Percent)



Source: IMF staff calculations.

Note: The figure shows the average (x-marker), median (line), and interquartile range (upper and lower ends of the box) of the distribution of gains estimated for 10 countries individually in the 2004 accession round using NUTS-2-level data and aggregating the results to the country level. Countries include: CY, CZ, EE, HU, LT, LV, MT, PL, SI, and SK. Capital, employment, and TFP are calculated as contributions to GDP per capita gains. TFP = total factor productivity.

Box 2. A Case Study: EU Accession of Poland

Poland's accession illustrates how strong institutions and policies can translate European Union (EU) membership into sustained growth. By 2004, Poland had largely completed its economic transition and established credible macroeconomic frameworks, independent institutions, and a vibrant private sector. EU membership reinforced these foundations through institutional anchoring, the single market, and EU funds. Income per capita rose from 34 percent of the EU-14 average in the mid-1990s to 78 percent by 2025 (Box Figure 2.1).

Strong institutions and integration into the EU framework. Most core institutional reforms preceded accession and reflected reform momentum that went beyond formal compliance with the *Acquis*. Late-1990s reforms strengthened education, health care, pension systems, and local governments, while improving transparency and accountability. Measures such as restrictions on business financing of political parties and the creation of a comprehensive anti-corruption framework enhanced governance.

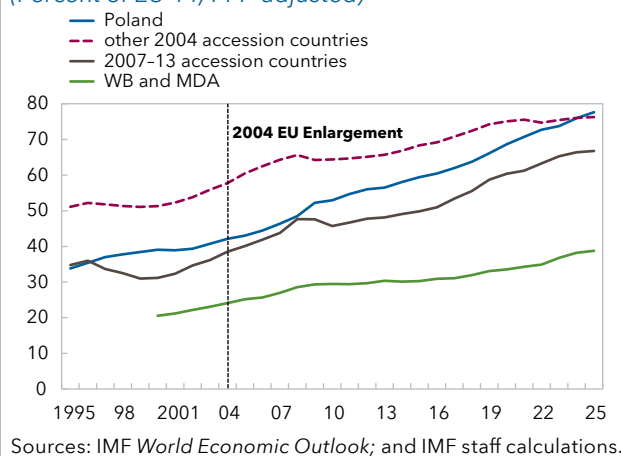
¹⁰ Rapid credit growth partly reflected a catch-up process of financial deepening. But in some countries, credit growth was too rapid and jeopardized macrofinancial stability.

EU membership helped entrench these gains through common rules on the rule of law, fiscal policy, and competition policy.

FDI and competitiveness. Single market access supported FDI, technology transfer, deeper value-chain integration, and export growth. A skilled, relatively low-cost workforce and diversified production base sustained competitiveness and productivity gains. EU labor market integration initially increased emigration, but strong growth and demographic shifts later reduced unemployment to among the lowest in the EU, whereas higher participation and immigration helped ease labor shortages (Box Figure 2.2).

Box Figure 2.1. GDP per Capita

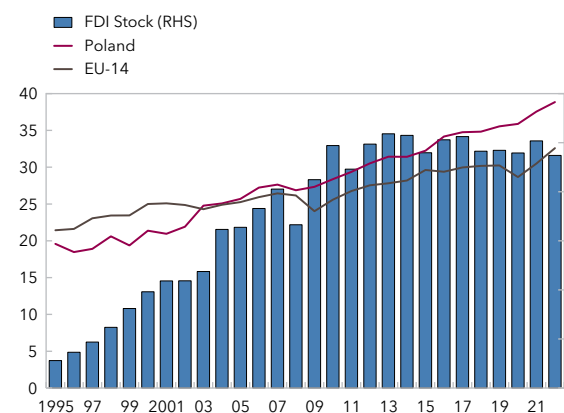
(Percent of EU-14; PPP-adjusted)



Box Figure 2.2. Poland: FDI, exports and labor markets.

1. Exported Value Added and FDI Stock

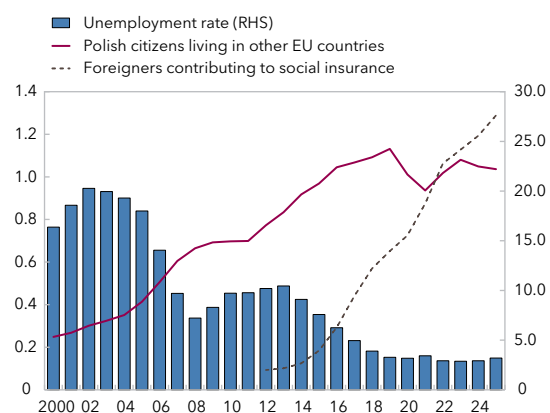
(Percent of Domestic Value Added LHS; Percent of GDP RHS)



Note: EU-14 = 14 older European Union member countries; FDI = foreign direct investment; OECD = Organisation for Economic Co-operation and Development.

2. Poland: Unemployment Rate and Migration

(Millions LHS; Percent RHS)



EU funding for infrastructure. EU funding helped close infrastructure gaps and support growth. Poland entered accession with significant infrastructure gaps, notably in transport and utilities. EU funding flows—3 percent of GDP annually—financed transport, innovation, social cohesion, and the energy transition. After initial challenges, Poland strengthened its capacity to manage funds through more centralized coordination, better project pipelines, and stronger implementation systems. This supported high utilization and effective investment. EU requirements also helped raise the quality of public spending.

Chapter 3. Accession Effects and Channels

This chapter takes a forward-looking perspective and examines the drivers through which EU accession shapes economic outcomes. Building on the experience of past enlargement rounds and a set of structural models calibrated to the Western Balkans and Moldova, it demonstrates that replicating the income gains achieved by previous accession countries—around 30%–35% within a decade—is feasible. Raising productivity is central to this process. This requires determined domestic reforms alongside single market integration and EU funding, each of which contributes about one-third to overall accession gains. The chapter also examines the transition dynamics associated with accession, including capital inflows, overheating risks, labor mobility, and migration.

A. Potential Accession Gains Are Sizable

Replicating the income gains of previous accession countries—around 30%–35% within a decade—is possible. With proper governance in place and needed reforms, the Western Balkans and Moldova stand to benefit similarly to earlier EU accession countries. In what follows, the chapter decomposes the drivers behind the income gains from EU accession and demonstrates that their aggregate impact is of the expected magnitude.

EU accession raises income through a sequence of mutually reinforcing effects, with productivity at its core. By anchoring reforms and providing access to the EU single market, accession boosts TFP and raises returns to capital, triggering higher private investment and capital accumulation. Lower financing costs and EU funding reinforce this process by supporting investment and infrastructure. Higher productivity and capital intensity then translate into stronger wages, employment, and incomes. These effects operate through three closely linked transmission channels within a production function framework:

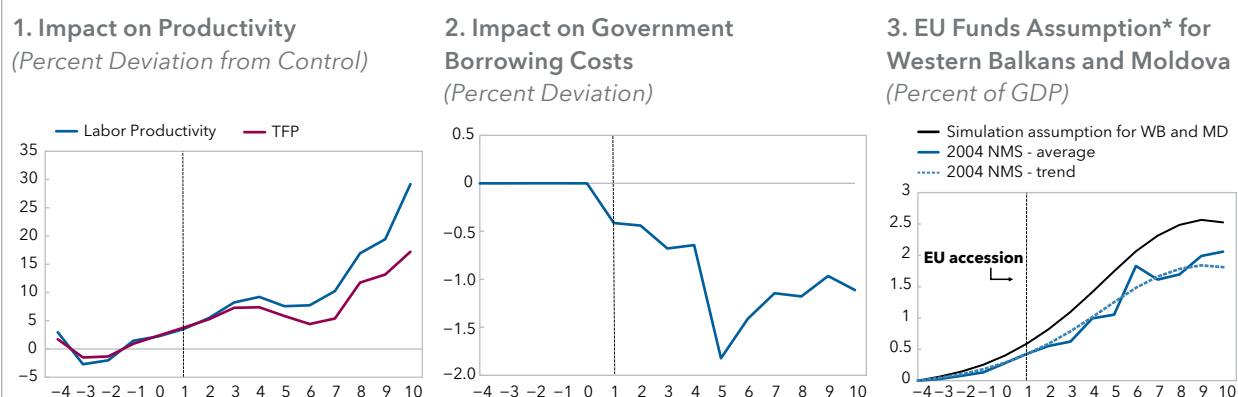
- **TFP:** Deeper integration into the EU single market increases productivity and output through scale effects, stronger competition, improved allocation of factors of production, technology transfer, and learning. Productivity gains will also arise through governance and institutional reforms undertaken as part of the accession process and implementation of the EU *Acquis*.
- **Capital:** Higher TFP lifts the return to private capital and makes private investment more attractive. As the capital stock increases, output and incomes improve further. The provision of EU funds raises the public capital stock, which in turn crowds in additional private capital by raising returns. Legal harmonization and improved policy credibility also reduce risk premiums, which support capital inflows and lower the cost of capital.
- **Labor:** Greater investment and TFP growth raise labor productivity, wages, and incomes, support higher-quality job creation, and strengthen incentives for workers to remain in the domestic economy. Because EU accession also reduces migration barriers, increasing the (transition) risk of human capital loss, the labor productivity increase needs to be strong enough for the labor channel to add to income.¹¹ Labor market reforms that narrow the policy gap with best peers provide complementary income gains.

¹¹ The Western Balkans and Moldova have experienced sizable population losses through brain drain and the loss of skilled workers. One-quarter of these countries' population is estimated to live abroad (World Bank 2024).

To quantify these effects and overall income gains from EU accession, capital and labor market models are calibrated using stylized facts from previous enlargement. Specifically, using 2004 enlargement averages, the simulations are based on three key assumptions (Figure 6):

- TFP and labor productivity increase by 19 percent and 30 percent after 10 years, with labor productivity supported by both the TFP effect and the additional push from increased private and public investment and the associated improvement of the capital-labor ratio.
- The sovereign risk premium declines permanently by 120 basis points.
- EU financial transfers average 1.8 percent of GDP for the first 10 years after accession, somewhat higher than in previous accession rounds, reflecting current candidates' lower relative income per capita (40 percent of the EU-27), which is expected to remain a determinant of accession funding (Box 3).

Figure 6. EU Accession Effects: Key Drivers

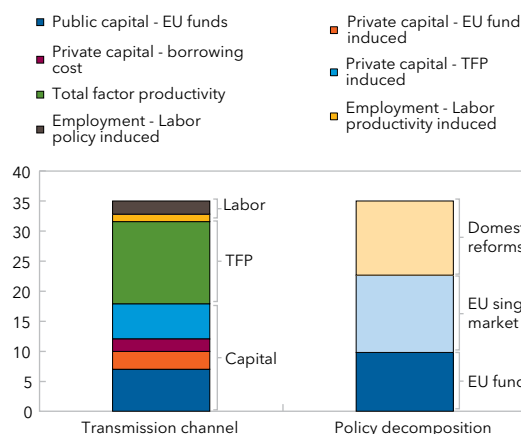


Sources: European Commission; Eurostat; Haver; and IMF staff calculations.

Note: The analysis only includes EU funds that are mostly for public investment, that is, the Cohesion Fund and European Regional Development Fund, based on the "modeled annual expenditure on the ground" published by the European Commission in collaboration with BERGEN. T0 = 2003. Horizontal axis: years after accession. EU = European Union; MD = Moldova; NMS = new member states; TFP = total factor productivity; WB = Western Balkans.

The model simulations support possible overall income gains for the Western Balkans and Moldova of around 30%–35% after a decade. Economically, about two-thirds of the income gain is driven by productivity (Figure 7). The magnitude of these gains reflects the benchmark assumptions summarized in Figure 6 and should therefore be interpreted as a conditional scenario rather than a forecast.¹² The estimates show the direct contribution of higher TFP to output (green shaded area), with the indirect effects through capital accumulation (light blue shaded area) and labor market outcomes (yellow area), which together account for roughly two-thirds of the overall gain. The remaining one-third reflects capital accumulation associated with EU funds

Figure 7. Policy Decomposition and Transmission Channels of EU Accession Gains
(Percentage Points of GDP after 10 Years)



Source: IMF staff calculations.

Note: EU = European Union; TFP = total factor productivity.

¹² The estimates combine the quantification of the capital model (Annex 3, Annex Figure 3.1) with non-TFP-related labor supply effects derived from labor market policies simulated using the labor migration model (Annex 5, Figure 9).

(public and private induced) and lower borrowing costs, together with more limited gains from labor supply reforms. These results closely match the income gains observed in past accession episodes discussed in Chapter 2.¹³

The overall accession gains can be attributed broadly equally to three mutually reinforcing policy dimensions: structural reforms anchored in the EU *Acquis*, EU single market access, and EU funds. Figure 7 provides an illustrative breakdown of the expected income effects of EU accession in policy terms.¹⁴ Structural reforms, which operate through labor supply, TFP, and TFP-induced capital and labor increases, contribute about one-third of income gains (or 10 percent of GDP; see gray area in Figure 7) over the medium term, as quantified in Budina and others (2025) by halving the sizable governance and institutional gaps documented in Chapter 2.¹⁵ The contribution of EU funds accounts for about another one-third of the overall gains (11 percent of GDP) through direct public capital accumulation and crowding in of private investment, as shown in the model simulations presented later in the chapter (matched by the two blue areas in the left part of Figure 7). The remaining gains—of a similar magnitude—reflect the “membership premium,” capturing the additional effects of deeper trade and factor market integration and strengthened policy credibility.¹⁶

Box 3. Assumptions on EU Funding Access for the Western Balkans and Moldova

Relative income per capita is expected to remain a central anchor of cohesion funding, although discussions on the post-2027 EU multiannual financial framework suggest a shift in the allocation approach, with the role of relative income likely to be complemented by additional criteria and a stronger performance-based, policy-driven allocation framework.

The simulation assumptions are based on the current candidates’ relative income per capita. The Western Balkans and Moldova have an average income level of about 40 percent of the EU-27 average. Based on the estimated relationship from the 2004 accession round, this relative income level maps to capital transfers of 1.8 percent of GDP per year over the 10 years after accession. The assumed EU funding path also follows a smoothed version of the profile of the 2004 cohort, removing country-specific and budget cycle-related volatility (Figure 6.3). If we assume EU funds at the 2004 cohort average (that is, 1.3 percent of GDP over the first 10 years after accession), then the GDP gain would be 2.7 percentage points lower after accession compared with the results reported in the text.

¹³ It is worth emphasizing that the expected income gains are a result of the simulations and not imposed. Although the simulations are calibrated to match the assumed productivity gains, decline in sovereign risk premiums, and EU funding profile, the contribution of capital accumulation, labor market outcomes, and the implied overall income gains emerge endogenously from the model.

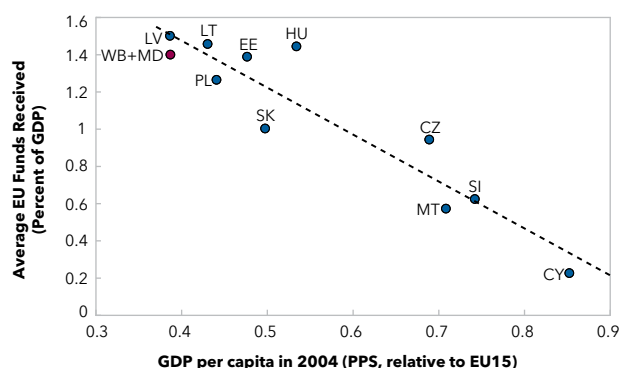
¹⁴ There is no one-for-one link for the individual policy dimensions in isolation, because EU single market access or EU funds alone are likely to have a lower return absent any domestic reform effort. For instance, reforms can enhance the efficiency of public investment and increase the returns to EU funds. EU membership, in turn, strengthens reform credibility and catalyzes private investment responses. As a result, the combined gains from activating all three levers are larger than the sum of their individual contributions.

¹⁵ Although domestic reforms and EU single market access account for the direct impact of TFP and the TFP-induced labor and capital market contributions, these cannot be dissected further through the model simulations without complementary estimates and assumptions.

¹⁶ This finding is consistent with the literature: estimates of the growth impact of the EU single market point to gains of 12%–22% of GDP per capita (Lehtimäki and Sondermann 2020) placing the membership premium near the lower bound of this range (see also Box 4).

This approach provides a parsimonious benchmark anchored in the income-dependent fund size observed over the entire lifetime of the 2004 accession experience. The simulations focus on funding from the Cohesion Fund and European Regional Development Fund, which are mostly used for public investment purposes. EU transfers from these funds to the 2004 accession countries averaged 1 percent of GDP per year over 2000–22 (including pre-accession transfers). Allocations were anchored in the EU’s cohesion policy framework and driven by relative income levels; lower-income regions/countries received larger transfers relative to GDP (Box Figure 3.1). For the Western Balkans and Moldova, the relatively lower average income would imply average funding of about 1.4 percent of GDP over 22 years.

Box Figure 3.1. Funds Received by the 2004 Cohort during 2000–22



Sources: European Commission; Eurostat; Haver; and IMF staff calculations.

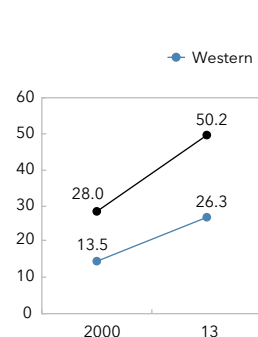
Note: The analysis only includes EU funds that are mostly for public investment, that is, the Cohesion Fund and European Regional Development Fund, based on the “modeled annual expenditure on the ground” published by the European Commission in collaboration with BERGEN. WB+MDA GDP computed against the EU-27. CY = Cyprus; CZ = Czech Republic; EE = Estonia; EU = European Union; HU = Hungary; IT = Italy; LT = Lithuania; LV = Latvia; MT = Malta; PL = Poland; PPS = purchasing power standard; SI = Slovenia; SK = Slovak Republic; WB+MD = Western Balkans and Moldova.

Box 4. A Bottom-Up Assessment of the Economic Gains from Deeper Single Market Integration¹

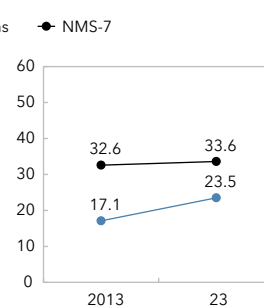
More seamless participation in EU-based value chains will be one of the key gains for the Western Balkan countries and Moldova from deeper single market integration. As for the new member states in Central and Eastern Europe (CEE) before, the bulk of the region’s trade in intermediate industrial goods is with the EU. This makes the CEE experience a relevant benchmark. During their first post-accession decade, new EU CEE member states rapidly deepened their GVC integration, whereas the Western Balkans remained around 15–25 percentage points behind (Box Figure 4.1). Although about one-third of this gap was closed between 2013 and 2023, the region remains substantially less integrated into GVCs, constraining exports, productivity growth, and, ultimately, income convergence.

Box Figure 4.1. GVC Participation Index: Historical Benchmark and Recent Convergence
(Percent of GDP)

1. IMF (2000–13)



2. EUROSTAT FIGARO (2013–23)



Sources: IMF (2019) based on EORA MRIO data; Eurostat FIGARO; and IMF staff estimates.

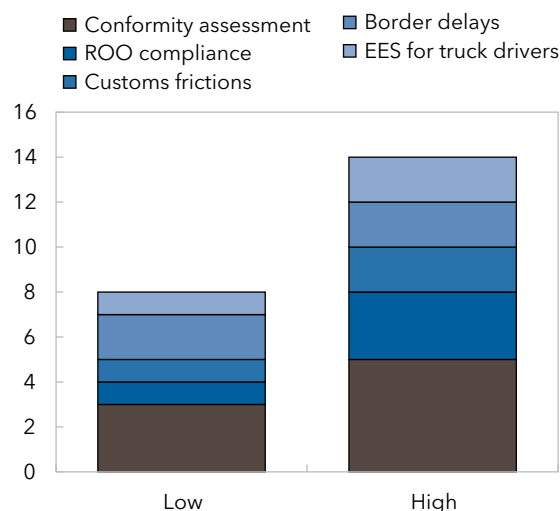
Note: The underlying GVC data sets cover nonoverlapping time periods and are not comparable in levels because of methodological differences. NMS-7 includes seven new member states: CZE, EST, HUN, LTU, LVA, POL, and SVK. FIGARO = Full International and Global Accounts for Research in Input-Output Analysis; GVC = global value chain.

Bottom-up estimates of selected friction and barriers in the Western Balkans point to substantial costs in industry, agriculture, and services. Barriers to trade in industrial goods with the EU are estimated to form an ad valorem tariff equivalent of 8%-14% (Box Figure 4.2); additional barriers affect agri-food and services. Actual trade costs are likely higher, as multiple friction can amplify the risk of failure to deliver in just-in-time supply chains, and a bottom-up approach focused on identifiable barriers cannot capture all trade friction. For comparison, the IMF (2025a) estimates that nontariff barriers between the EU and the rest of the world amount to around 50 percentage points above those prevailing within the EU's single market.

Reducing these trade costs would yield sizable economic gains. Evidence from the literature suggests that lower trade costs would increase trade and deepen participation in European value chains, fostering greater specialization, scale economies, and technology diffusion. Through these channels, eliminating the selected trade barriers identified earlier alone could raise Western Balkans GDP by around 10%-15% in the long term. Deeper integration with the EU's single market would promise even larger gains.

¹ Based on Ratnovski (2026).

Box Figure 4.2. Selected Nontariff Barriers in Western Balkan-EU Trade in Industrial Goods
(Percentage Points; Ad Valorem Equivalent; Low and High Estimates)



Source: Ratnovski (2026).

Note: Conformity assessment, rules of origin (ROO) compliance, and customs friction are based on the literature; border delays on European Commission estimates; and EES costs on staff estimates. EES estimates reflect steady-state costs and are likely to be higher during the initial rollout. EES = entry/exit system; ROO = rules of origin.

B. A Closer Look at Capital and Labor Dynamics

Capital Flows, Investment, and Transition Risks

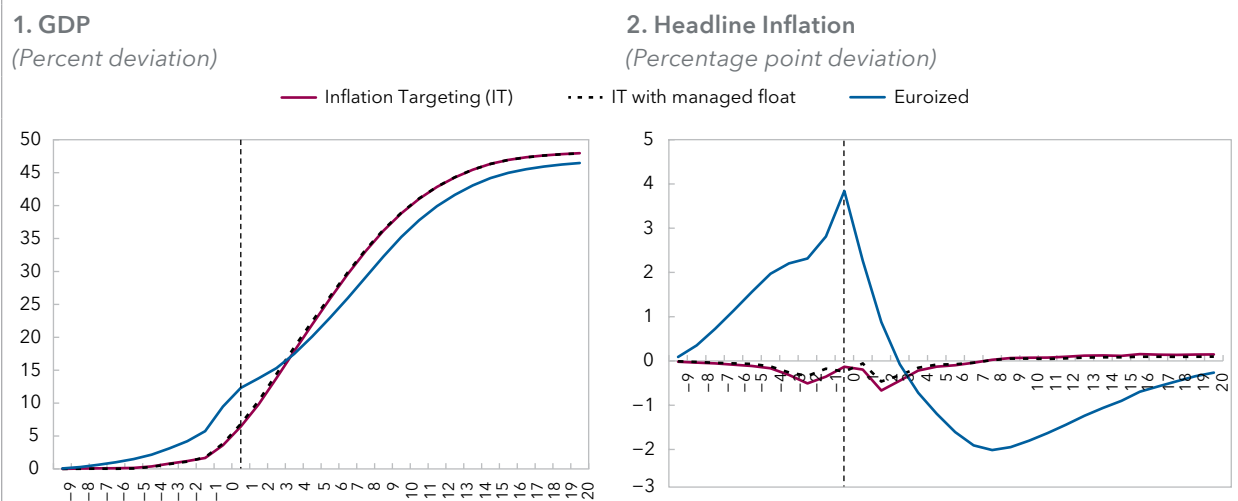
A closer look at the capital channel using a small open-economy DSGE model allows discussion of the role of the ER regime in adjustment dynamics. The model traces the impact of higher TFP growth on capital productivity and investment and the role of EU funding and public investment as discussed earlier (Figure 7; Annex 3). It also captures linkages relevant for transition dynamics, including the risk of overheating, and allows for different ER regimes, from flexible regimes to euroization and managed floats, helping assess policy trade-offs.¹⁷

¹⁷ Under each ER arrangement, policies are optimally chosen to minimize a common loss function that penalizes deviations of inflation from its target and real GDP growth volatility (Annex 3).

The short-to-medium-term transition after accession can be associated with overheating pressures, especially when the ER cannot act as a shock absorber. Increased productivity, EU-funded public capital buildup, and narrowing risk premiums spur strong investment growth accompanied by a consumption surge because of households' expectations of higher future incomes. These pressures emerge ahead of the full expansion of productive capacity, leading to temporary output and inflation volatility. The nature and magnitude of these short-term fluctuations vary significantly across ER regimes (Figure 8). Under fixed ERs or euroized regimes, domestic demand booms and inflationary pressures are amplified, as the ER cannot act as a shock absorber, putting a premium on fiscal policy management. Under flexible ER regimes, currency appreciation can mitigate overheating pressures by adjusting relative prices and dampening macroeconomic volatility. This buffer role of the ER helped 2004 accession countries with floating regimes (Bakker and Gulde 2010).¹⁸ Foreign exchange interventions do not alter the fundamental adjustment path.

Although not embedded in the model, macrofinancial policies play a crucial role in managing the transition risks. EU accession can support capital accumulation through deeper financial integration, stronger FDI, and access to EU funds. But it can also foster a surge in bank and portfolio inflows, which tend to be more volatile and prone to sudden reversals, and can also fuel excess credit growth, boost asset prices, stimulate domestic demand, and create ER appreciation pressures, raising concerns about overheating and financial imbalances. For countries with flexible ER regimes, monetary policy should remain focused on meeting inflation targets while allowing ERs to act as shock absorbers. Fiscal consolidation can help contain demand pressures around accession, particularly in euroized economies (Kosovo and Montenegro) and those with fixed ERs (Bosnia and Herzegovina). Maintaining strong international reserves is essential to preserve stability and anchor confidence. Financial sector regulation and the use of macroprudential policies can help prepare for and guard against potential overheating, especially when the ER is fixed, as well as manage financial stability risks induced by a surge in capital flows, such as currency and maturity mismatches.

Figure 8. Western Balkans and Moldova: Transition Paths for Different Exchange Rate Regimes



Sources: European Commission; Eurostat; European Bank for Reconstruction and Development; Haver; national central banks; and IMF staff calculations.

Note: The simulation results are presented relative to the steady-state balanced growth path (BGP). This means that if a variable is shown to be zero, it is equal to its initial steady-state value along the BGP. Dynamics under (credible) fixed exchange rate arrangements are identical in the model to those under euroized regimes. Horizontal axis: years after accession. IT = inflation targeting.

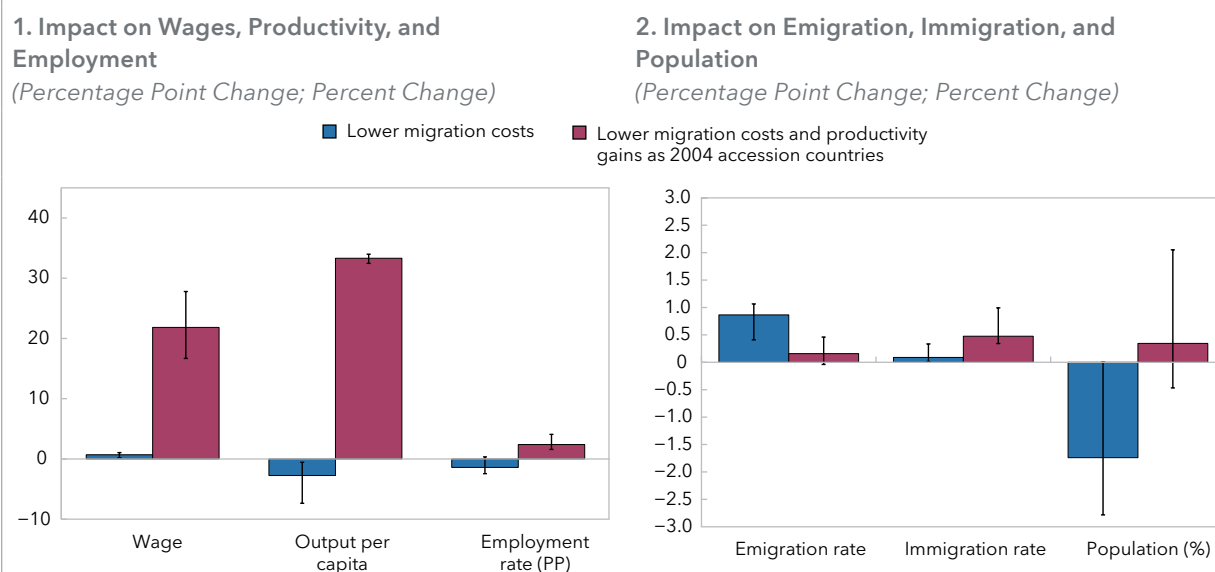
¹⁸ Bakker and Gulde (2010) provide an overview of credit and capital flows and the rise of imbalances and broader macroeconomic developments for the 2004 EU accession cohort, pointing to a combination of external factors and policies in explaining divergent growth dynamics.

Labor Mobility and Labor Market Adjustment

Productivity gains from accession may also reinforce recent labor market improvements in the Western Balkans and Moldova even as lower mobility barriers increase emigration pressures. The Western Balkans and Moldova have made notable progress in closing gaps with the EU in labor participation and unemployment; accession could further support these gains by expanding job opportunities, strengthening skill accumulation, and fostering a more dynamic formal sector. At the same time, already high rates of emigration could accelerate. Micro-level evidence (Annex 4) suggests that strong labor market attachment, higher incomes, confidence in domestic economic prospects, and trust in institutions tend to reduce emigration intentions, whereas unemployment, income shocks, and family networks abroad increase them. This section quantifies the balance between these forces and examines how productivity gains and labor market policies can help offset emigration pressures and support sustained convergence.

To quantify these mechanisms and the labor channel, we use a multicountry labor market model with endogenous migration decisions. Households weigh domestic and foreign economic conditions when deciding whether to participate in the domestic labor market or migrate abroad (Annex 5; further details in Ayerst and others (2025)). The model is calibrated to the 27 EU member states, the six Western Balkan countries, Türkiye, and Switzerland, with country-specific parameters matching observed labor market outcomes and migration flows.¹⁹ Higher-income countries are characterized by estimates of higher productivity, more efficient job matching, and more generous unemployment benefits. EU accession is modeled as a reduction in migration costs between the Western Balkans and EU countries, calibrated to imply a doubling of emigration, all else equal.²⁰

Figure 9. Western Balkans: Simulated Impact of EU Accession over a 10-Year Horizon



Sources: Eurostat; International Labour Organization; state statistical offices; and IMF staff calculations.

Note: The columns summarize the average changes in the indicated outcomes across six economies calibrated to data for the Western Balkan countries relative to the baseline. The black bars indicate the range of outcomes for individual countries. EU = European Union; PP = percentage point.

¹⁹ Moldova is excluded, reflecting insufficient data, although qualitatively the results should match those for the Western Balkan countries. The model also does not include a rest-of-the-world economy to capture migration to and from the 35 economies that are modeled because of a lack of data. However, this is unlikely to substantially affect the results given that emigration from candidate countries is mostly directed to European economies.

²⁰ Previous enlargement rounds involved transition periods in which full labor mobility was restricted. This is not accounted for in the model, but similar restrictions on labor mobility would be equivalent to a relatively smaller change in migration costs.

A key finding is that productivity gains may more than offset the adverse effects of EU labor market integration on outward migration, employment, and output. However, in the absence of productivity gains, lower migration costs lead to a sharp increase in emigration as workers move abroad in search of better opportunities (Figure 9). Wages rise initially as domestic firms compete with foreign employers for labor. But higher wages depress firm profits, resulting in less entry and moderately lower employment and output per capita. This lowers demand for nontraded goods, which dampens the wage increase.

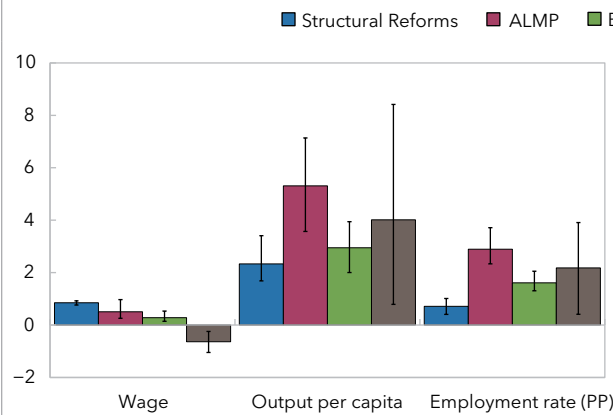
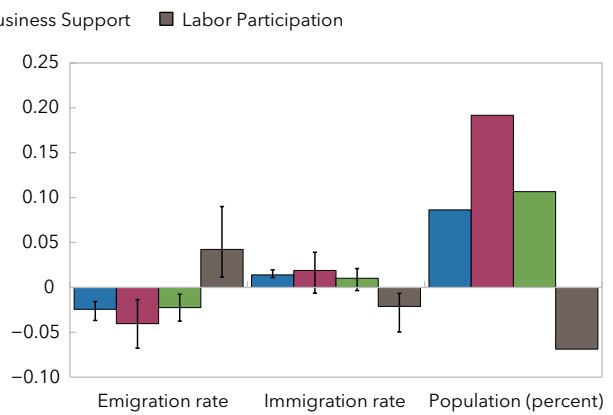
By contrast, labor productivity gains generate stronger wage growth and higher firm profitability. These gains may amount to 30 percent after 10 years, supporting labor participation and firm entry, raising employment and output.²¹ At the same time, improved domestic conditions associated with accession will make Western Balkan economies more attractive, reducing emigration and increasing immigration, with a small increase in overall population levels.

Labor market reforms and policies may have additional positive impacts on employment, output, and net migration. The model simulates policies that target labor market efficiency. These include structural policies that improve the productivity of employed workers (for example, strengthening property rights, improving public infrastructure), active labor market policies that help match unemployed workers with vacancies (for example, online job portals, on-the-job learning, apprenticeship programs), business support that eases the costs of new firm entry (for example, digitalization of public services, reducing unfair business practices of state-owned enterprises (SOEs) and informal firms), and labor participation support that lowers households' costs of joining the labor market (for example, reducing gender gaps through affordable childcare). These policy instruments all lead to similarly positive labor market outcomes (Figure 10), providing policymakers with multiple policy options to support the domestic labor market.²² Budina and others (2025) find that a set of measures calibrated to close the labor market policy gap with best performers by 50 percent can have a labor supply effect on income gains for the Western Balkans and Moldova accession countries of about 2½ percent.

Improving local labor market conditions is critical for ensuring that EU accession supports growth and employment. Policies should focus on expanding domestic opportunities rather than restricting labor mobility, as economic factors are the main driver of migration decisions. Productivity gains, targeted labor market reforms, and a supportive institutional environment may help attract and retain talent and encourage return migration (Annex 4).

²¹ The positive effect on employment, together with the labor share in the CD function, provides the simulated TFP-induced labor effect in the decomposition in Figure 7.

²² An exception is support for labor participation, although this is in part because of its implementation in the model. The model implements the policy by increasing the differential income from working (that is, wages) and not working (that is, home production), leading to more households participating in the labor market. However, this also decreases the value of living in the domestic country. The simulated policies focus on a single dimension of the labor market, whereas, in practice, policies would likely target multiple stages of the labor market.

Figure 10. Impact of Simulated Policies on Western Balkan Countries over a 10-Year Horizon**1. Impact on Wages, Productivity, and Employment***(Percentage Point Change; Percent Change)***2. Impact on Emigration, Immigration, and Population***(Percentage Point Change; Percent Change)*

Sources: Eurostat, International Labour Organization; state statistical offices; and IMF staff calculations.

Note: The columns summarize the average changes in the indicated outcomes across six economies calibrated to data for the Western Balkan countries relative to the baseline. The black bars indicate the range of outcomes for individual countries. The Structural Reform simulation implements a 1 percent increase in the productivity of matched workers and firms, the ALMP simulation increases matching efficiency by 10 percent, the business support simulation lowers firms' entry costs by 10 percent, and the Labor Participation simulation lowers home production by 10 percent. See Ayerst and others (2025) for additional details. ALMP = active labor market policies.

Chapter 4. Policies to Make the Most of EU Accession

Although deeper integration into the EU single market and access to EU funding can provide powerful drivers of convergence, the magnitude of eventual gains depends critically on productivity growth and the domestic reforms that support it. This is encouraging from a policy perspective: many of the factors shaping accession outcomes lie within countries' own control. The key question is therefore not whether reforms matter but which reforms are likely to generate the largest gains and best position countries to benefit from EU membership. To answer that question, the chapter first identifies the main drivers of productivity growth and convergence before drawing out the policy implications. It highlights governance and institutional quality as top reform priorities. Stronger governance supports productivity growth directly and amplifies the gains from reforms in infrastructure, human capital, innovation, and market efficiency, while also helping countries unlock the full payoff from single market integration.

A. Governance as a Cross-Cutting Priority

Governance emerges as the most important cross-cutting determinant of productivity growth and convergence. Although infrastructure, human capital, innovation, and market integration all support productivity, the empirical analysis suggests that institutional quality shapes both their direct effectiveness and the returns they generate. Stronger governance improves resource allocation, reduces uncertainty, supports investment and innovation, and increases the effectiveness of reforms in other areas. As a result, progress in governance can deliver productivity gains directly while also amplifying the impact of complementary reforms.

To identify drivers of TFP growth, we employ causal discovery methods—a class of machine-learning algorithms that infer the direction of causality from observational data.²³ The approach proceeds in two stages. First, an ordinary least squares (OLS) regression framework screens a broad set of potential determinants and identifies variables significantly associated with TFP growth.²⁴ Second, conditional independence tests are used to determine the likely direction of causality.²⁵ This methodology offers advantages over standard regressions by mapping the broader causal structure, uncovering indirect transmission mechanisms, and distinguishing common drivers from spurious correlations. At the same time, it relies on identifying assumptions, so the results should be interpreted as informative about the likely causal relationships rather than definitive proof.

At the country level, governance emerges as a key driver of productivity. The estimated causal graph identifies political stability and rule of law as root determinants, operating through multiple mutually reinforcing channels (Figure 11). Both have a direct effect on labor, as stronger institutions and the rule of law support a larger and more productive workforce, boosting TFP. The rule of law also shapes economic complexity, which in turn influences trade. Lagged TFP affects both capital accumulation and labor, underscoring its central role in driving overall growth; capital and labor feed back into TFP, highlighting amplification mechanisms.²⁶

²³ See Huber (2024) for an introduction and Heckman and Pinto (2024) for a critical review.

²⁴ Annex 6 lists the variables considered at the country and regional levels in the first stage.

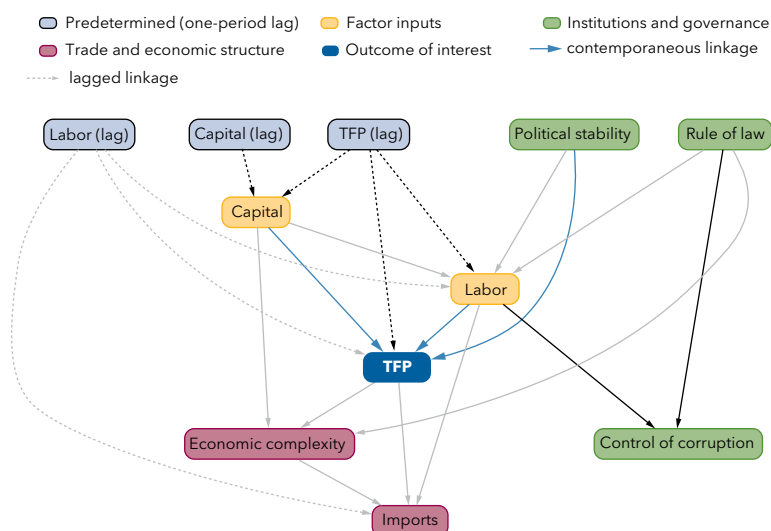
²⁵ The methodology draws on several complementary algorithms from the causal discovery literature, in particular the Linear Non-Gaussian Acyclic Model (LiNGAM), which relies on a functional causal modeling approach that exploits the non-Gaussianity of the data to identify the unique causal ordering among variables.

²⁶ The acyclicity assumption implies that feedback loops to earlier nodes are excluded, which explains why imports do not drive other variables in the graph. This does not diminish their importance in practice, as trade integration—through imported intermediate goods and capital goods—boosts capital accumulation and productivity growth.

At the regional level, factors that alleviate infrastructure bottlenecks and foster innovation are found to be causal drivers of productivity growth. Exploiting richer subnational variation across EU regions, the analysis identifies infrastructure and education as key upstream determinants of TFP (Figure 12). Physical and digital infrastructure—including railways, roads, and internet access—are found to support R&D, which in turn drives TFP growth, whereas education plays a key intermediate role, running from labor and infrastructure to TFP. In line with the country-level results, TFP affects capital accumulation and labor both directly and with lags. TFP affects economic complexity and imports. TFP affects capital accumulation and labor both directly and with lags.

Although governance does not appear explicitly in the regional causal graph, it plays an important amplifying role. Because the causal discovery model does not parsimoniously incorporate interaction effects, to assess the extent to which governance indicators affect the strength of each causal channel, we complement it with OLS regressions using the variables in Figure 12 with interaction terms between key intermediate variables (transport infrastructure, R&D, and education) and governance indicators. The results (Figure 13), presenting the interaction term coefficients normalized by the interquartile change in quality of government, show that stronger government quality significantly enhances the impact of these drivers on TFP, consistent with country-level findings of governance as a deep determinant.

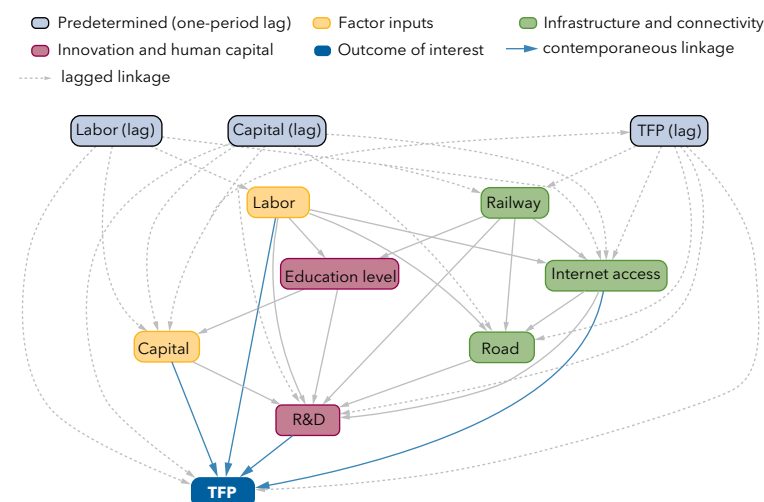
Figure 11. Causal Linkages of Productivity at the Macro Level



Sources: World Bank Governance Indicators; The Growth Lab at Harvard University; Beyer, Li, and Weber (2026); and IMF staff calculations.

Note: The figure describes causal linkages identified using machine-learning-based causal discovery methods (DirectLiNGAM) applied to annual country-level data for EU member states. Arrows point from cause to effect, and the absence of an arrow means no direct causal link was detected between two variables once all other variables in the graph are accounted for. Variables marked (lag) enter with a one-period lag and, together with the governance indicators, are treated as predetermined, so they can act only as causes; the direction of each remaining arrow is inferred from the non-Gaussian structure of the data rather than imposed a priori. TFP = total factor productivity.

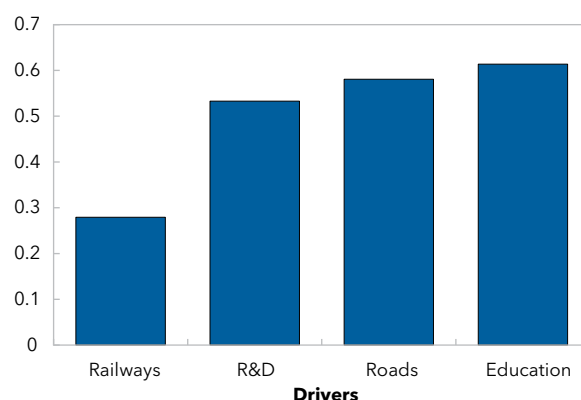
Figure 12. Causal Linkages of Productivity at the Regional Level



Sources: The Quality of Government Institute; Eurostat; Beyer, Li, and Weber (2026); and IMF staff calculations.

Note: This figure describes causal linkages identified using machine-learning-based causal discovery methods (DirectLiNGAM) applied to NUTS2 regional data for EU member states. Arrows point from cause to effect, and the absence of an arrow means no direct causal link was detected between two variables once all other variables in the graph are accounted for. Variables marked (lag) enter with a one-period lag and are treated as predetermined, so they can act only as causes; the direction of each remaining arrow is inferred from the non-Gaussian structure of the data rather than imposed a priori. R&D = research and development; TFP = total factor productivity.

Figure 13. Governance as a Cross-Cutting Priority
(Quality Improvement on TFP Growth, Percentage Points)



Sources: The Quality of Government Institute; Eurostat; Beyer, Li, and Weber (2026); and IMF staff calculations.

Note: This graph plots the effects of improving quality of government from the 25th to the 75th percentile at mean levels of drivers. R&D = research and development; TFP = total factor productivity.

These findings are particularly relevant for the Western Balkans and Moldova. Governance gaps remain sizable relative to older EU member states, especially in the rule of law and control of corruption. Although broadly comparable to those observed ahead of the 2007 and 2013 enlargements, they remain larger than those of the 2004 accession cohort (Figure 3). This raises the risk that governance could become a bottleneck for convergence if institutional strengthening fails to keep pace with progress in other reform areas. Priorities include strengthening judicial efficiency and contract enforcement, improving public administration and public investment management, enhancing governance and transparency frameworks, safeguarding the independence of key public institutions—including central banks—and reinforcing financial sector supervision. Although the precise mix of reforms differs across countries, institutional capacity remains a common constraint. Across all of these areas, IMF capacity development (CD)—particularly through the new regional Southeastern Europe Technical Assistance Center (SEETAC)—plays an important role (Box 5).

Governance determines how effectively other reforms translate into productivity growth. The empirical results reinforce the central message of Chapter 3: productivity gains are the key driver of convergence, and governance is critical in determining how effectively reforms translate into productivity, investment, and income growth. Better institutions increase the returns to investment, strengthen the effectiveness of human capital policies, and enhance the productivity payoff from innovation and market reforms. The remainder of the chapter therefore focuses on the key policy areas through which countries can raise productivity and maximize accession gains: mobilizing capital and investment, strengthening labor markets and human capital, promoting innovation and efficient resource allocation, and deepening integration into the EU single market.

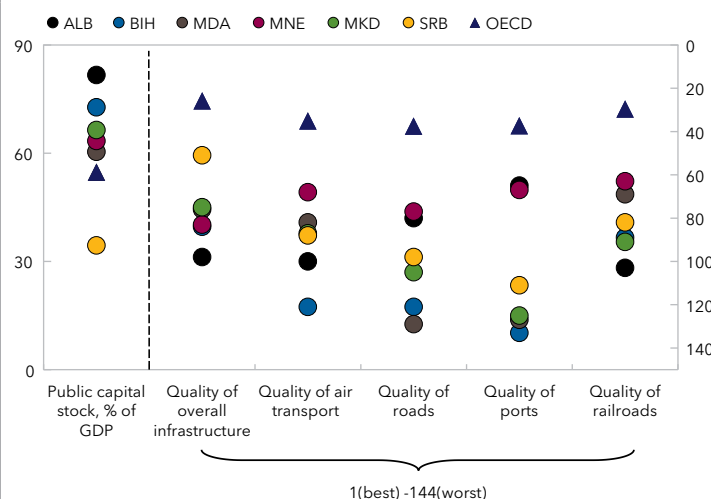
B. Mobilizing Capital and Supporting Investment

Mobilizing capital and investment is essential for translating productivity gains into faster convergence. As discussed in Chapter 3, productivity gains associated with domestic reforms and deeper integration create strong incentives for private investment, whereas lower financing costs and EU funding provide additional support. Realizing these gains requires strong public investment management, sound fiscal and financial frameworks, and a predictable legal and regulatory environment to ensure that both domestic and EU-funded investment translate into high-quality infrastructure and stronger productivity growth. Together with deeper access to the EU single market, reforms in these areas can strengthen competition

and increase the returns to private investment. These priorities overlap closely with implementation of the EU *Acquis* in areas such as the rule of law, public procurement, financial sector regulation, state aid, and the business environment.

- Strengthening fiscal institutions and the quality of public investment. Prudent fiscal policy and fiscal credibility are likely to help broaden access to international capital markets and attract portfolio investment inflows to finance private investment. Key priorities are strengthening medium-term fiscal frameworks, adopting transparent fiscal rules, improving revenue administration, public procurement, and public investment management, and enhancing public debt management. Although the public capital stock-to-GDP ratio in the Western Balkans and Moldova (except Serbia) exceeds the average in OECD countries, its quality is lower (Bosnia and Herzegovina, Moldova, North Macedonia; Figure 14). Enhancing capacity for project preparation, selection, and execution is particularly important to ensure that domestic and EU-funded infrastructure investment is translated into high-quality public capital and stronger productivity growth. These areas are covered under *Acquis* chapters related to economic and fiscal governance and feature prominently in Growth Plan reform agendas, reflecting their role in ensuring effective use of EU funds.

Figure 14. Western Balkans and Moldova: Public Capital Stock and Infrastructure Quality
(Percent of GDP LHS; Rank RHS)



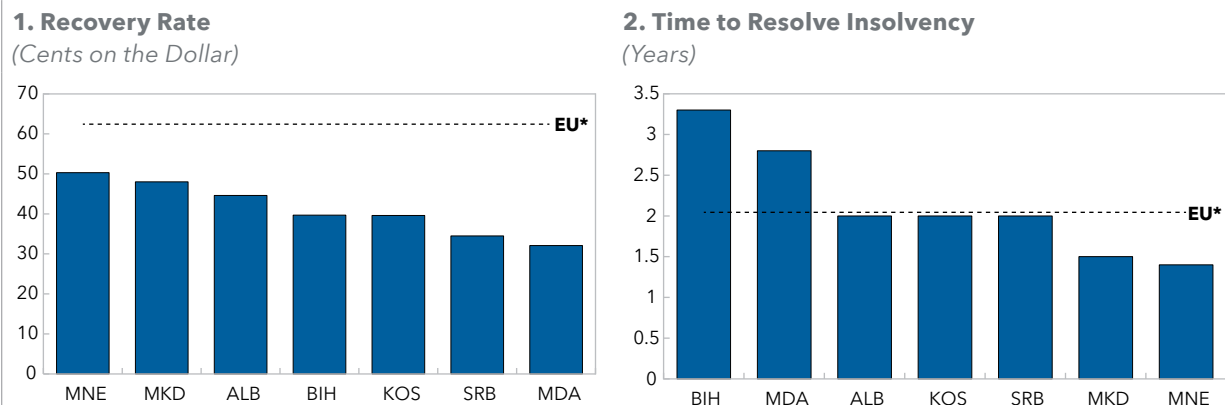
Sources: IMF Investment and Capital Stock Dataset and World Economic Forum.

Note: Using the latest available data, net of depreciation. ALB = Albania; BIH = Bosnia and Herzegovina; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; OECD = Organisation for Economic Co-operation and Development; SRB = Serbia.

- Safeguarding financial stability and strengthening financial sector oversight. A stable and well-supervised financial system is essential for mobilizing savings and channeling capital toward productive investment. Strengthening banking supervision, crisis-management frameworks, and oversight of nonbank financial institutions can support confidence in the financial system, improve access to finance, and reduce vulnerabilities associated with stronger capital inflows. Macroprudential frameworks should be strengthened by enhancing capital and borrower-based measures. Enhancing systemic risk monitoring and stress-testing capacity is also critical. Finally, effective systemic risk oversight would benefit from a clear legal mandate (Kosovo) and strong interagency coordination. Preserving the independence and credibility of supervisory authorities and central banks is particularly important as countries deepen integration with EU financial markets. These priorities are closely aligned with the EU *Acquis* in financial services and financial sector oversight.
- Improving property rights and contract enforcement. Regulatory uncertainty and weak contractual enforcement deter investment across the region. Improvements in judicial independence and efficiency, as well as regulatory clarity, will go a long way toward safeguarding the financial returns to private capital. Enhancing insolvency frameworks is key to facilitating the orderly exit of nonviable businesses and improving creditors' willingness to finance investment. Although legal frameworks have converged toward international best practices, efficiency gaps remain significant across the region (Figure 15),

including limited expertise resulting in low recovery rates (Kosovo, Moldova, Montenegro, and Serbia). The regulatory and tax environment should reward tradable-sector FDI over real estate investment to avoid risks of property boom-bust cycles (for example, Kosovo, Montenegro, and Moldova). These priorities are closely aligned with the EU *Acquis* (Fundamentals Cluster), including reforms to strengthen the rule of law, enhance judicial independence and efficiency, and reinforce anti-corruption frameworks (EC 2025). As with other accession-related reforms, their impact depends critically on consistent and credible implementation.

Figure 15. Western Balkans and Moldova: Resolving Insolvency Indices



Sources: World Bank Doing Business Database and IMF staff calculations.

Note: EU index based on the arithmetic average. ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; SRB = Serbia.

- Expanding access to finance and mobilizing private capital. Deepening local government bond markets is critical for advancing the development of financial markets, which in turn can help create market-based financing for productive investment. Most countries in the region have development banks, credit guarantees, or similar instruments to support private investment. The priority should therefore be to strengthen their effectiveness by improving governance, accountability, and targeting, ensuring that support is directed toward productive, high-value, growth-enhancing projects while minimizing fiscal risks. Particular attention should be given to expanding access to finance for innovative firms and SMEs facing collateral constraints. Such instruments are most effectively operated through dedicated fiscal and development institutions rather than central banks, helping preserve central bank independence and maintain a clear separation between monetary policy and quasi-fiscal activities. In parallel, strengthening credit infrastructure—including centralized information systems that improve lenders' ability to assess borrower risk—can help unlock financing for underserved firms and support productive private investment.

C. Strengthening Human Capital and Labor Markets

Human capital plays a critical role in sustaining productivity growth and ensuring that productivity gains translate into stronger employment, wages, and income. Many candidate countries continue to face significant challenges related to labor force participation, skill mismatches, demographic pressures, and emigration. As deeper integration increases labor mobility, stronger domestic labor market outcomes will be essential to retain and attract workers, support productivity growth, and ensure that accession translates into higher employment, wages, and income. Key policy priorities include raising retirement ages,

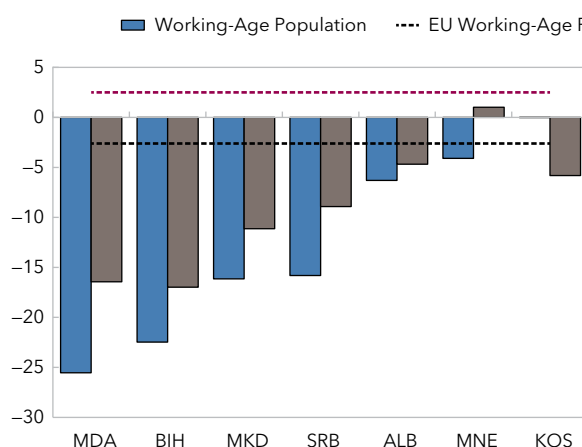
supporting youth labor market transitions, addressing skill gaps and mismatches, and increasing labor force participation, especially among women. These measures are consistent with EU accession requirements in social and employment policies and feature prominently in Growth Plan reform agendas aimed at strengthening human capital and labor market performance.

- Supporting youth labor market transitions. Enabling effective school-to-work transitions will help reduce the share of youth not in employment, education, or training (NEET), high in Kosovo, Albania, and North Macedonia (Figure 16). High youth NEET contributes to losses in human capital and weakens productivity. Policies should focus on expanding apprenticeship programs, strengthening collaboration between education systems and employers, and providing targeted activation measures to facilitate timely and sustained entry into the labor market. Improved career guidance would also help.
- Addressing skill mismatches. Better aligning labor supply and demand is critical to support employment and labor productivity. Strengthening vocational education and training (VET), modernizing curricula with a strong focus on STEM, and expanding reskilling and lifelong learning programs are needed to ensure that workers' skills match evolving labor markets. More effective employment services and targeted re- and upskilling initiatives would further support job matching and labor reallocation, including for workers in mid- and late-career stages.
- Increasing labor force participation, especially among women. Higher female labor force participation will significantly expand the available workforce. Gender participation gaps are substantial in Kosovo, Bosnia and Herzegovina, Moldova, and North Macedonia. Increasing the participation of older workers could also help in Kosovo, North Macedonia, and Bosnia and Herzegovina. Policies should expand access to affordable child and elder care services and flexible work arrangements (teleworking, part-time employment, and flexible working).

Figure 16. Western Balkans and Moldova: Labor Market Developments

1. Change in Total and Working-Age Populations

(Percent Change between 2010 and 2024)

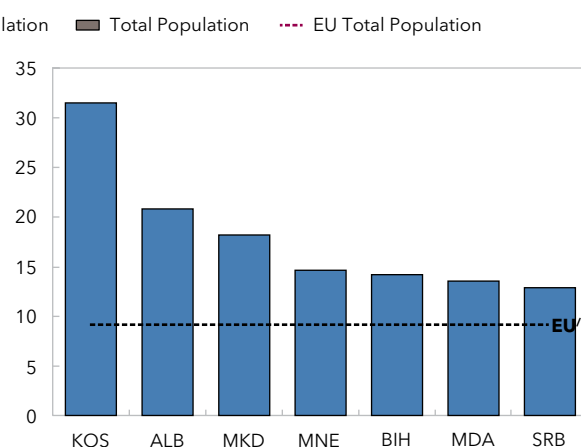


Sources: United Nations Department of Economic and Social Affairs (UNDESA); and IMF staff calculations.

Note: Working-age population is 14–65 years old. ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; SRB = Serbia.

2. Youth NEET Rates

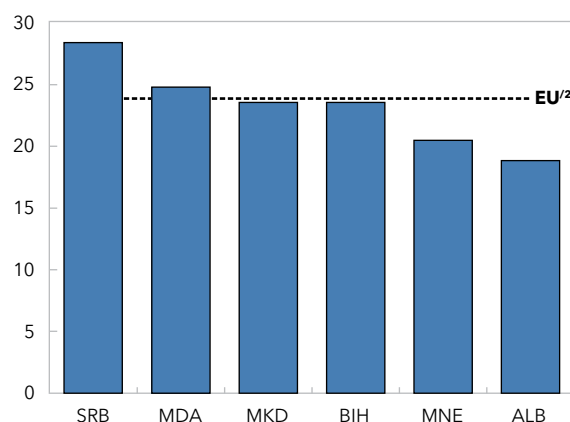
(Percent)



Sources: Eurostat; national statistics offices; and IMF staff calculations.

Note: Using the latest available and complete data (2024). ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; NEET = not in employment, education, or training; SRB = Serbia.

¹ EU population-weighted average.

Figure 16. Western Balkans and Moldova: Labor Market Developments (continued)**3. STEM Students, 2018-19¹***(Percent of Tertiary Graduates)*

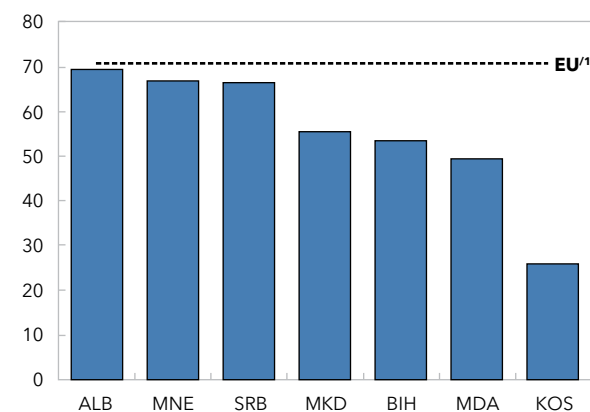
Sources: UNESCO; World Bank; and IMF staff calculations.

Note: ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; SRB = Serbia; STEM = science, technology, engineering, and mathematics.

¹ Latest available and complete data.² EU weighted average based on the computed number of tertiary students.**4. PISA Scores, 2022***(PISA Mean Score Points in Mathematics)*

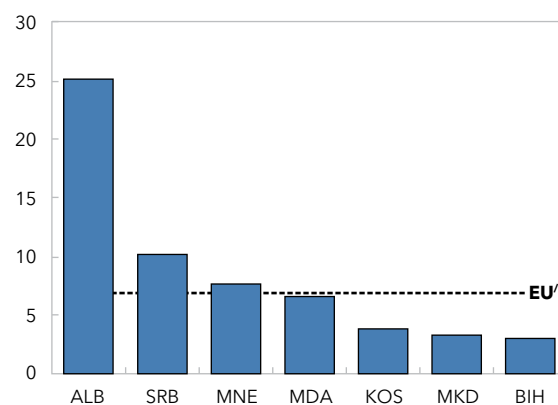
Source: OECD.

Note: ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; PISA = Programme for International Student Assessment; SRB = Serbia.

¹ EU average score computed by OECD.**5. Labor Force Participation Rate among Women***(Percent; 15-64 Years Old)*

Sources: Eurostat; national statistics offices; and IMF staff calculations.

Note: Using the latest available and complete data (2024). ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; SRB = Serbia.

¹ EU population-weighted average.**6. Labor Force Participation Rate among Older Adults***(Percent; 65+ Years Old)*

Sources: ILO; Eurostat; national statistics offices; and IMF staff calculations.

Note: Using the latest available and complete data (2024). ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; SRB = Serbia.

¹ EU population-weighted average.

D. Innovation, Competition, and Efficient Resource Allocation

As countries move closer to EU income levels, sustaining convergence increasingly depends on innovation, competition, and the efficient allocation of resources. Although infrastructure and investment help expand productive capacity, long-run productivity growth depends on firms' ability to innovate, adopt new

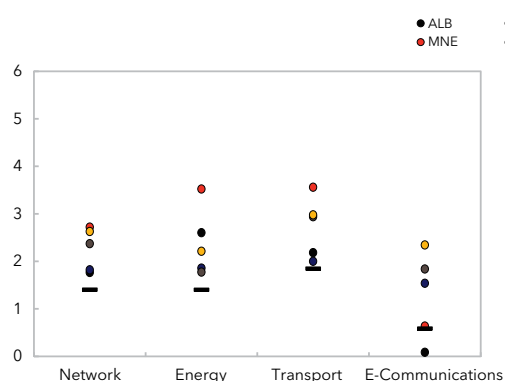
technologies, and reallocate labor and capital toward the most productive uses. Policy priorities therefore center on strengthening the quality of network infrastructure, expanding R&D capacity, and improving the allocation of resources across firms and sectors. Reforms in these areas would support productivity growth and advance implementation of the EU *Acquis* in areas such as product markets, competition policy, and network sectors.

- **Strengthening network infrastructure.** Well-functioning network infrastructure—in energy, transport, and digital networks—is foundational for firm productivity and private investment. In Bosnia and Herzegovina, Kosovo, and Serbia, weaknesses in energy and transport networks raise costs for firms and constrain scale-up; stronger digital connectivity in Montenegro and North Macedonia has supported faster growth in ICT-enabled services (Figure 17). However, the largest gains from infrastructure investment are likely to materialize in conjunction with deeper integration into the EU single market. Greater access to regional and European markets increases the returns to investments in connectivity, logistics, and network industries by expanding market reach, supporting participation in European value chains, and strengthening competitive pressures. Strengthening regulation and governance in network industries and prioritizing high-quality investment would help crowd in private capital and maximize these integration benefits (OECD 2024, 2025).

Figure 17. Western Balkans and Moldova: Network and Connectivity Infrastructure: Regulatory Impact and Outcomes

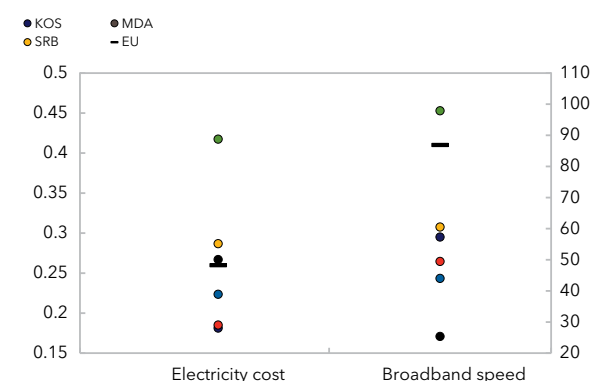
1. PMR Scores by Network Sector

(PMR Score; 0 = Most Competition-Friendly, 6 = Least Competition-Friendly)



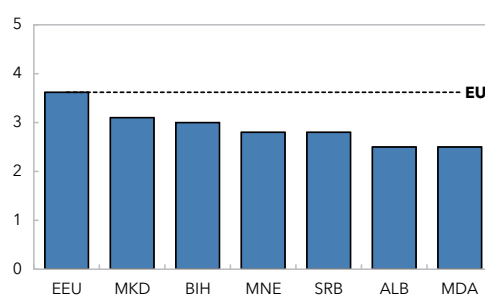
2. Connectivity Infrastructure

(2021 USD per kWh, PPP LHS; Megabytes per Second RHS)



3. Logistics Performance Index, 2023

(Score; 0 = Worst, 5 = Best)

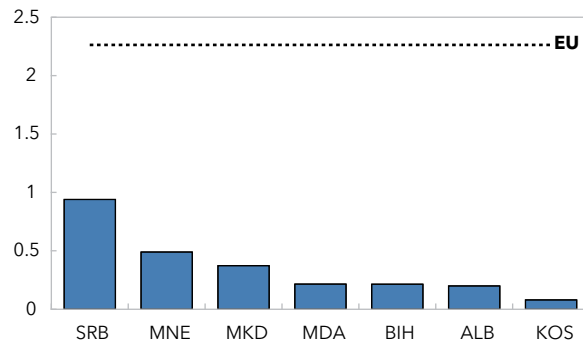


Sources: OECD; World Bank; and IMF staff calculations.

Note: ALB = Albania; BIH = Bosnia and Herzegovina; EEU = Eastern European Union; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; PMR = product market regulation; SRB = Serbia.

- Enhancing innovation and R&D.** Innovation plays a central role in the productivity framework set out in Chapter 3. Although innovation typically becomes a more important source of growth as countries move closer to the technological frontier, strengthening innovation capacity early can help accelerate technology adoption, support participation in European value chains, and sustain convergence over the longer term. Performance on key innovation metrics in candidate countries is weak relative to the EU (Figure 18). In Albania and Kosovo, R&D activity is limited and concentrated in the public sector. In Serbia—despite a more developed startup ecosystem—weak firm-research links have constrained spillovers. Improving innovation governance, access to finance for startups, and skills formation would help translate innovation efforts into sustained TFP gains (OECD 2024).
- Improving market efficiency and resource allocation.** Restrictive product market regulation, limited competitive pressures, and the large continuing footprint of SOEs impede firm dynamism and slow the allocation of resources toward the most productive uses (Figure 19). In Bosnia and Herzegovina and Serbia, the dominant role of SOEs in network sectors has impeded competition; in North Macedonia and Montenegro, complex licensing and administrative procedures hamper firm dynamism. Deeper integration into the EU single market can strengthen competition and accelerate resource reallocation by expanding market access and lowering barriers to entry. Realizing these gains, however, requires supportive domestic reforms, including strengthening competition policy and improving SOE governance. Together, these measures will support more efficient resource allocation and higher productivity (OECD 2024).

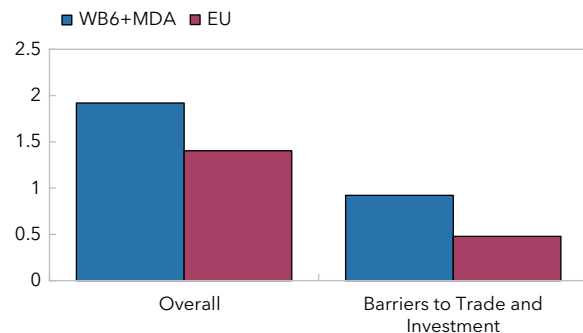
Figure 18. Western Balkans and Moldova: R&D Expenditure
(Percent of GDP)



Sources: OECD; and World Bank Databank.

Note: Using the latest available data across 2020–24. ALB = Albania; BIH = Bosnia and Herzegovina; EU = European Union; KOS = Kosovo; MDA = Moldova; MKD = North Macedonia; MNE = Montenegro; R&D = research and development; SRB = Serbia.

Figure 19. Western Balkans and Moldova: Product Market Regulations
(PMR Score; 0 = Most Competition-Friendly, 6 = Least Competition-Friendly)



Sources: OECD; and World Bank.

Note: Using the 2018 methodology (based on available data for the Western Balkans and MDA). Western Balkan countries include: ALB, KOS, MNE, and SRB. EU countries include: AUT, BEL, BGR, CYP, CZE, DEU, DNK, ESP, EST, FIN, FRA, GRC, HRV, HUN, IRL, ITA, LTU, LUX, LVA, MLT, NLD, POL, PRT, ROU, SVK, SVN, and SWE. EU = European Union; MDA = Moldova; PMR = product market regulation; WB6 = Western Balkans Six.

E. Maximizing the Integration Payoff

Making the most of single market access requires full harmonization of EU directives by prospective members. Promptly advancing reforms in the areas discussed earlier—regional connectivity, network infrastructure, innovation, and market efficiency—is crucial to ensure that candidate countries reap the benefits of the single market. A strong domestic reform effort now will benefit candidate countries and pay additional dividends upon accession. It is also important that candidate countries lower or remove domestic

barriers that may prevent them from gaining the fullest benefits from integration.²⁷ Specifically, candidate countries should avoid “gold plating” EU directives—adding specific domestic regulation beyond what is required—to limit fragmentation, strengthen competition, and boost productivity, except in cases where such time-bound gold plating beyond what is required is intended to address macrofinancial stability risks.

Reforms across the EU to deepen the single market are crucial to maximizing the integration benefits, both for existing and prospective members. The single market potential remains underutilized, given still sizable intra-EU trade barriers (IMF 2026). These barriers relate to high administrative burdens (for example, multiple licensing requirements, duplicative approvals, and complex labeling rules), fragmented financial markets, limited labor mobility, and partially disconnected energy sectors. A comprehensive reform package of EU-level and national reforms—reducing intra-EU barriers and creating a fully integrated single market—could raise productivity by around 20 percent (IMF 2025a).

²⁷ This includes getting firms ready to reap the benefits of integration into the single market, for instance, through awareness of EU certifications, standardization rules and procedures, as well as product quality controls (such as in the agri-food sector).

Chapter 5. Conclusion

EU accession offers the Western Balkans and Moldova a unique opportunity to accelerate income convergence. Replicating the income gains achieved by new member states in past enlargement rounds—about 30%–35% within a decade—is feasible. These gains stem from three mutually reinforcing forces—domestic reforms anchored in the EU *Acquis*, single market integration, and EU funding—each contributing one-third of the overall gain broadly.

Productivity growth is the central driver of accession gains. Accession-driven productivity gains account for about two-thirds of overall income gains. Productivity improvements raise output directly but also increase the return to capital and labor, strengthening incentives to invest and improving labor market outcomes.

Governance is the critical enabler of sustained productivity growth. Single market access can expand market size, improve financing conditions, and facilitate technology transfer. But lasting productivity gains require reforms that strengthen governance. Stronger rule of law, better regulatory quality, and effective control of corruption reduce uncertainty, foster competition, and support more efficient resource allocation. Governance improvements also magnify the productivity impact of investments in infrastructure, connectivity, and education by making them more effective in supporting innovation and private investment.

Realizing the full benefits of accession requires sustained reform momentum. Many of the policies needed to raise productivity and resilience are embedded in the EU *Acquis*, but outcomes ultimately depend on effective implementation and institutional capacity to absorb EU funds. In this sense, EU accession should be viewed less as a one-off event than as a reform anchor that can help sustain domestic policy efforts and amplify their impact.

Maximizing the integration payoff requires action by both candidate countries and the EU. Candidate countries should avoid adding domestic regulatory requirements beyond those mandated by the EU *Acquis*, as such “gold plating” can fragment markets, weaken competition, and dilute the benefits of single market participation. At the same time, accession gains—for both new and existing EU members—would be larger if the EU continues to deepen the single market by reducing remaining barriers to trade, services, capital, labor mobility, and energy integration. Looking ahead, external factors—including geoeconomic fragmentation, shifts in global value chains, and the future scale of EU financing—will also influence outcomes. But with strong implementation, deeper integration, and continued progress toward a more integrated European market, accession can remain a powerful catalyst for convergence, resilience, and rising living standards.

Box 5. The IMF’s New Technical Assistance (TA) Center for Southeast Europe

Southeastern Europe Technical Assistance Center (SEETAC) will scale up IMF capacity development (CD) for the Western Balkans and Moldova. Employing the IMF’s tested and successful regional technical assistance center (RTAC) model, SEETAC will provide flexible, high-quality, and tailored advice to implement best practices, foster peer-to-peer engagement, address common challenges, and boost economic resilience.

SEETAC support will focus on the IMF’s core areas of CD expertise. TA priorities for each country reflect the need to align domestic policy frameworks with best practices and EU standards.

- *Fiscal policies*: fiscal policy and public financial management; public investment management; tax policy and revenue administration; and expenditure policy.
- *Monetary and financial sector policies*: central bank operations; macroprudential frameworks, regulation, and supervision; crisis preparedness.
- *Forecasting and policy analysis*: macro-modeling, forecasting, and analytical frameworks.
- *Macroeconomic statistics*: national accounts, prices, and fiscal statistics; institutional strengthening.
- *Legal frameworks and institutions*: addressing legal and governance gaps.
- *Cross-cutting issues*: reforms spanning workstreams and new macro-critical issues (for example, digital assets and cyber risks).

Annex 1. Macroeconomic and Policy Gaps

Annex Table 1.1. Macroeconomic and Policy Indicators of the Western Balkans and Moldova

(Percent of EU-14 and EU-27 Averages; Latest Available Annual Data)¹

	GDP (per capita, PPP)		Capital stock (per capita, PPP)		Employment rate (ages 15-64)		Government effectiveness (WGI)		Control of corruption (WGI)		Rule of law (WGI)	
	EU-14	EU-27	EU-14	EU-27	EU-14	EU-27	EU-14	EU-27	EU-14	EU-27	EU-14	EU-27
Albania	29.3	34.6	27.0	31.4	95.3	94.6	73.3	79.2	51.2	57.9	68.1	72.6
Bosnia and Herzegovina	28.7	33.9	20.7	24.0	76.5	76.0	49.8	53.8	48.7	55.1	63.8	68.0
Kosovo	25.6	30.3	-	-	53.6	53.2	64.1	69.2	55.5	62.8	71.7	76.4
Montenegro	43.3	51.1	27.8	32.4	90.4	89.8	74.7	80.6	60.7	68.6	74.5	79.4
North Macedonia	37.1	43.8	26.0	30.3	81.7	81.1	64.8	69.9	53.6	60.6	65.8	70.1
Serbia	41.2	48.6	23.3	27.1	92.4	91.7	68.1	73.5	47.5	53.7	66.3	70.7
Moldova	24.6	29.1	14.4	16.8	69.9	69.4	72.0	77.7	54.6	61.7	67.2	71.6
Average of WB and MDA	32.8	38.7	23.2	27.0	80.0	79.4	66.7	72.0	53.1	60.0	68.2	72.7

Sources: IMF *World Economic Outlook*; IMF ICSD; Eurostat; national statistics offices; World Bank Worldwide Governance Indicators (WGI); and IMF staff calculations.

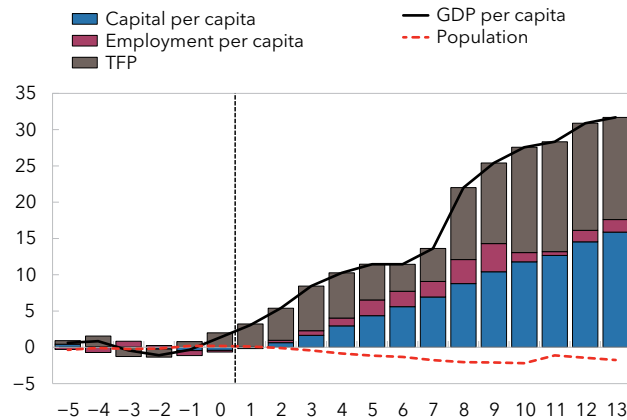
Note: ICSD = Investment and Capital Stock Dataset. ¹ The data refer to the latest available data, that is, 2025 for GDP, 2018 for capital stock, 2025 and 2024 for the employment rate, and 2024 for governance. Government effectiveness, control of corruption, and rule of law are indicators that range from 0 (lowest) to 100 (highest) across countries and time.

Annex 2. Income Gains across Different EU Accession Rounds

Annex Figure 2.1. GDP per Capita Effect of EU Accession

1. Treatment Effect of 2004 and 2007 EU Accession

(Percent)

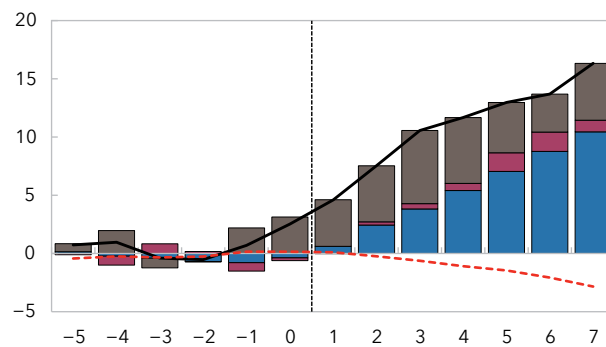


Source: IMF staff calculation.

Note: The results represent the GDP-weighted average of the multivariate synthetic control estimations for the 2004 and 2007 accession rounds. EU = European Union; TFP = total factor productivity.

2. Treatment Effect of 2004, 2007, and 2013 EU Accession

(Percent)



Source: IMF staff calculation.

Note: The results represent the GDP-weighted average of the multivariate synthetic control estimations for the 2004, 2007, and 2013 accession rounds. EU = European Union; TFP = total factor productivity.

Annex 3. Dynamic Model of Investment and Capital

This annex describes the model used to examine the impact of EU accession on capital and output in Chapter 3 and its key results for long-term income gains. Details are provided in Andrieu and others (forthcoming).

The model is a comprehensive macroeconomic framework incorporating heterogeneous agents, nominal rigidities, and financial friction. It is a non-Ricardian small open-economy New Keynesian DSGE model. The modeling framework is inspired by the Global Integrated Monetary and Fiscal Model (GIMF; Kumhof and others 2010) and Flexible System of Global Models (FSGM; Andrieu and others 2015) but offers a more tractable structure tailored for single-country analysis. In addition, it features an endogenous uncovered interest parity risk premium, imperfect capital mobility, and an explicit role for foreign exchange interventions motivated by the Quantitative Integrated Policy Framework model (QIPF; Adrian and others 2021). It incorporates key real and nominal friction that are critical for realistic policy analysis, providing a rich environment for both short-term and long-term economic analyses. The model's structure allows it to capture the complex interactions among households, firms, labor markets, monetary and fiscal authorities, and the balance of payments.

A central feature of the model is its representation of heterogeneous households divided into hand-to-mouth (HTM) and overlapping generations (OLG) agents. HTM households consume all their disposable income within each period and therefore have limited access to financial markets, whereas OLG households optimize lifetime utility, holding financial assets, bonds, and firm equity. The differing access to financial instruments introduces nonlinearities and heterogeneity in consumption and saving behavior, which are critical for capturing realistic wealth distribution effects and policy impacts. OLG households face portfolio adjustment costs, causing imperfect capital mobility.

Labor markets within the model are characterized by nominal wage rigidities and union wage-setting behavior, reflecting real-world friction in wage adjustments. Labor unions set wages under Calvo stickiness, where only a fraction of wages can be reoptimized each period. This creates wage dispersion, which introduces inefficiencies and wage rigidities in the aggregate labor supply. Wages are indexed to inflation and productivity, partly mitigating rigidities but allowing the persistence of wage stickiness. The union problem is formulated to maximize the weighted utility of both household types, reflecting their different labor supply and consumption preferences.

The production sector is modeled with a rich set of firms, including final goods producers, intermediate goods monopolists, oil and non-oil importers, and capital goods producers. Intermediate goods producers' production function is $Y_{j,t} = A_t^{1-\alpha_G} K_{j,t-1}^\alpha K_{G,t-1}^{\alpha_G} L_{j,t}^{1-\alpha}$, where output of firm j in period t depends on level of technology A_t , on level of private capital $K_{j,t-1}$ and common public capital $K_{G,t-1}$ in previous period and on employed labor $L_{j,t}$. The integration of public capital and technology enriches the model, allowing analysis of public investment and productivity-enhancing policies in a dynamic setting. Firms face nominal price rigidities modeled through Calvo pricing with indexation, which creates price dispersion and welfare costs. In the simulation exercise, the level of technology increases by a factor of $1.2^{\frac{1}{1-\alpha_G}}$ over a 15-year horizon to match the estimated contribution of TFP to GDP gains of the 2004 accession round.

Investment decisions are made by capital producers who optimize the utilization of existing capital and new investment subject to investment adjustment costs. Tobin's Q —the shadow price of capital—must satisfy the following first-order conditions

$$Q_t = \frac{1}{R_t^{\text{corp}}} E_t [(1 - \tau_{K,t+1}) (R_{t+1}^K + (1 - \delta)Q_{t+1})]$$

$$Q_t = (1 - \tau_{K,t})P_t^X \left(1 + \Omega_X(X_t, X_{t-1}) + X_t \frac{\partial \Omega_X(X_t, X_{t-1})}{\partial X_t} \right) + E_t \left[\frac{1}{R_t^{corp}} (1 - \tau_{K,t+1})P_{t+1}^X \left(X_{t+1} \frac{\partial \Omega_X(X_{t+1}, X_t)}{\partial X_t} \right) \right]$$

where R_t^{corp} is corporate interest rate, $\tau_{k,t}$ is capital income tax rate, R_t^K is rental rate of capital, δ is capital depreciation rate, X_t is investment, P_t^X is price of investment, Ω_X is quadratic investment adjustment costs, and E_t is rational expectations operator. The two first-order conditions imply that the present value of future returns on investment after tax (the first condition) must be equal to the market price of investment adjusted for the investment adjustment costs. The corporate rate R_t^{corp} is related to the foreign interest rate (through the uncovered interest parity condition) adjusted for the sovereign, currency, and corporate risk premiums. The sovereign premium depends endogenously on the level of public debt, and the currency premium on the level of private foreign debt. In the simulations, the sovereign risk premium decreases by 120 basis points after EU accession, which leads to a similar decline in the corporate interest rate (R_t^{corp}).

Monetary policy in the model is implemented through a Taylor-type rule for the short-term nominal interest rate that responds to inflation and output gaps, augmented, where appropriate, by sterilized foreign exchange interventions to manage ER volatility. The central bank's balance sheet includes net foreign assets and reserve money on the asset side and domestic liabilities on the liability side, with quasi-fiscal deficit affecting overall government fiscal accounts. Interest rates across government, corporate, sovereign, and foreign assets incorporate endogenous risk premiums that depend on evolving debt dynamics.

Fiscal policy design in the model is multifaceted, including foreign grants and distortionary taxes on consumption, labor, and capital, as well as government expenditures on consumption, investment, and transfers. The fiscal framework incorporates rules that target debt stabilization through countercyclical deficits and flexible policy instruments. Transfers are endogenously linked to fiscal sustainability concerns, and debt is decomposed into domestic, concessional, and nonconcessional external loans. Importantly, borrowing costs are affected by investor behavior and risk premiums, creating feedback between fiscal policy, debt dynamics, and market perceptions.

The external sector is modeled to capture trade dynamics, including exports that depend on foreign demand and real ER competitiveness, as well as remittances that respond to foreign income and ERs. The balance of payments is balanced through changes in foreign assets, trade balances, and income payments on external debt. This structure enables a realistic representation of open-economy features that are particularly relevant for emerging and developing economies facing external vulnerabilities.

The aggregation and equilibrium conditions ensure consistency across sectors and agents. Household aggregate consumption, labor supply, and saving are weighted sums of the heterogeneous types, whereas price and wage indices evolve subject to nominal rigidities. Labor supply meets effective labor demand, incorporating wage dispersion inefficiencies, and aggregate output consists of the sum of consumption, investment, government expenditure, and net exports adjusted for distortions resulting from price and wage rigidities. These conditions allow the model to capture both microeconomic friction and macroeconomic outcomes coherently.

The model is formulated in stationary terms by normalizing variables with respect to technology and price levels, which facilitates the analysis of deviations from balanced growth paths. The model's system of nonlinear equations integrates nominal rigidities, financial market imperfections, policy rules, and external shocks. This formalism allows for studying transition dynamics, policy counterfactuals, and the impact of structural reforms in diverse economic settings.

The model simulations consider three policy instruments: the policy interest rate, foreign exchange interventions, and fiscal policy stance adjustments through transfers to households. The availability of these instruments depends on the ER arrangement. For the inflation-targeting (IT) simulations only, the policy

interest rate and fiscal instruments are used. Simulations for IT with a managed float also include foreign exchange interventions as a policy instrument. Finally, simulations for euroized cases consider only fiscal policy instruments. To make the simulations across these alternative policy setups comparable, the policies in the scenarios are optimally chosen to minimize a common loss function that penalizes deviations of inflation from its target and real GDP growth volatility:

$$E_t \sum_{i=0}^{\infty} \beta^i \left(\left(\frac{\pi_{c,t+i}}{\bar{\pi}_c} - 1 \right)^2 + 0.5 \left(\frac{g_{t+i+1}^{GDP}}{g_{t+i}^{GDP}} - 1 \right)^2 + (\text{instrument specific term})^2 \right)$$

where β is a discount factor, $\pi_{c,t}$ is consumer price inflation and $\bar{\pi}_c$ its target, and g_t^{GDP} is GDP gross growth rate. The “instrument-specific terms” are present when foreign exchange interventions or fiscal instruments are used, and they represent a small additional loss term related to deviations of central bank foreign reserves and public debt, respectively, from their initial levels. These terms thus guarantee that the simulations are neutral in terms of foreign exchange reserves and public debt stocks in the long term. This approach ensures that the comparison of EU accession outcomes across different ER regimes is grounded in a consistent objective—avoiding implicit bias from different policy reaction functions or loss preferences—thereby allowing a clearer assessment of how ER arrangements influence transitional dynamics and long-term gains from EU accession.

The model is calibrated to capture key economic characteristics of the Western Balkans and Moldova. The calibration creates two representative economies based on median regional characteristics. Both representative economies are identical except for their ER regimes—one featuring a flexible ER, the other operating under euroization or fixed ER arrangements. This allows for a differentiated analysis of the economic impact of EU accession across ER regimes. The main calibration results are in Table 3.1.

TFP and positive externalities from EU funds are found to be key drivers of private capital-driven income gains. Simulation results indicate that should TFP gains not materialize, income gains are barely 10 percent 10 years after accession (Annex Figure 3.1.1), stemming only from increased capital resulting from EU funds and lower borrowing costs. With TFP increases, real GDP of the Western Balkans and Moldova could expand by 35 percent—half from increased capital. Among the drivers of higher capital accumulation, productivity-induced capital gains play the dominant role (Annex Figure 3.1.2). This is followed by the direct impact of EU-funded public capital and the related crowding in of higher private investment. Lower borrowing costs also support capital accumulation, but their contribution to long-term output gains is more limited, reflecting the moderate effect on the cost-benefit considerations of investment. Importantly, differences in ER regimes do not materially affect the overall magnitude of the long-term gains.

In sum, the model offers a powerful and flexible tool for policy analysis in emerging and developing economies. It uniquely combines heterogeneous-agent dynamics, financial friction, nominal wage and price rigidities, and realistic fiscal and monetary policy frameworks. This rich integration enables detailed exploration of policy trade-offs, risks, and the distributional implications of shocks and interventions.

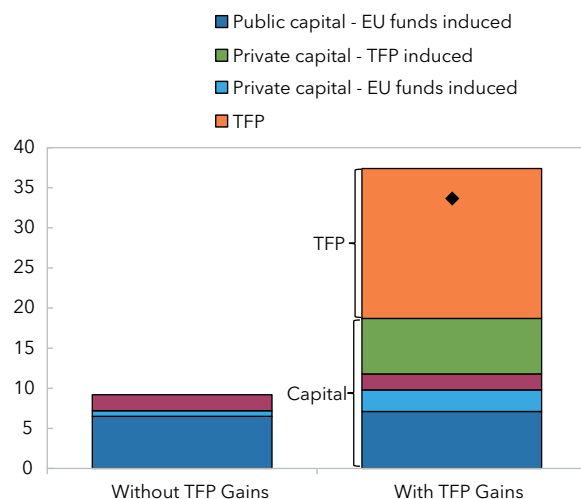
Annex Table 3.1. Model Calibration Reflecting Median Characteristics of the Western Balkans and Moldova

Parameter/Variable	Value	Comment
Household and Production Sector		
Share of financially constrained households (percent)	43	Proportion of households facing borrowing constraints
Labor income share (percent)	58	Share of labor compensation in total income
Consumption share of output (percent of GDP)	90	Indicates consumption-driven economy
Fiscal Sector		
Government debt (percent of GDP)	41	Total public debt ratio
Share of FX-denominated debt (percent of GDP)	29	About two-thirds of overall government debt
Share of concessional debt (percent of GDP)	6	About one-tenth of overall government debt
Fiscal balance (percent of GDP)	–3	Relatively large deficit reflects high nominal growth of the economies
Tax revenue (percent of GDP)	31	Relatively low revenue mobilization
Direct taxes (percent of GDP)	13	
Indirect taxes (percent of GDP)	18	
External Sector		
Current account balance (percent of GDP)	–9	Reflects high trade balance financed primarily by remittances and capital inflows
Trade balance (percent of GDP)	–14	
Remittances (percent of GDP)	7	Key source of external financing
Sources: IMF (WEO, GFS, IIP, MFS, ICSD, and BOP); national central banks; EBRD (Life in Transition Survey IV); and IMF staff calculations.		
Note: BOP = balance of payments; EBRD = European Bank for Reconstruction and Development; GFS = Government Finance Statistics; ICSD = Investment and Capital Stock Dataset; WEO = <i>World Economic Outlook</i> .		

Annex Figure 3.1. Western Balkans and Moldova: Gains 10 Years after Accession

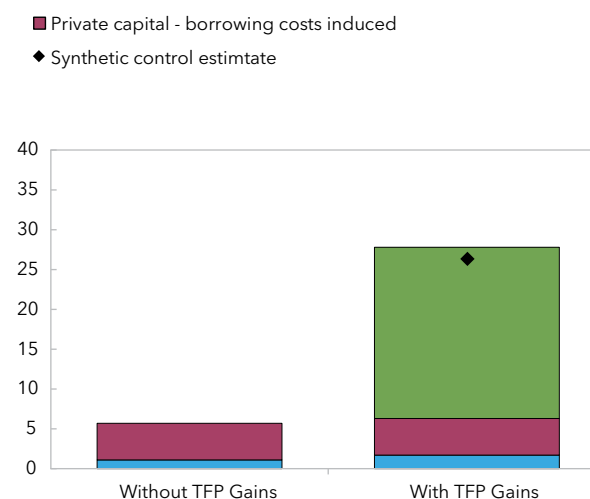
1. GDP Gains

(Percent)



2. Private Capital Gains

(Percent)



Sources: European Commission; Eurostat; European Bank for Reconstruction and Development; Haver; national central banks; and IMF staff calculations.

Note: The synthetic control estimate for Annex Figure 3.1, panel 1 is the one presented in Figure 4, and the synthetic control estimate in Annex Figure 3.1, panel 2 is for total capital (that is, private and public), also shown in Figure 4. The simulation thus points to higher total capital accumulation than in the 2004 accession round, partly because of the higher EU funding assumption (Box 3). EU = European Union; TFP = total factor productivity.

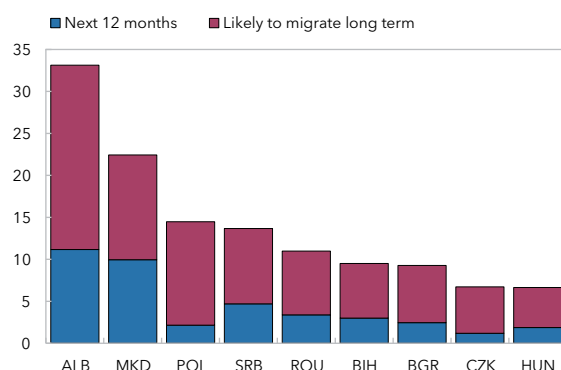
Annex 4. Push and Pull Factors Driving Migration Intentions²⁸

This annex analyzes the push and pull factors shaping migration decisions using the OeNB Euro Survey data. Understanding who is likely to migrate and why can help inform reforms to reduce emigration and support return migration. Economic factors are central drivers of migration decisions; however, other factors, such as family networks and trust in institutions, also matter. Weak governance and corruption are commonly cited as important push factors for skilled migrants in the Western Balkans (see Dimant, Krieger, and Meierrieks 2013; Ruer and Vujanovic 2025).

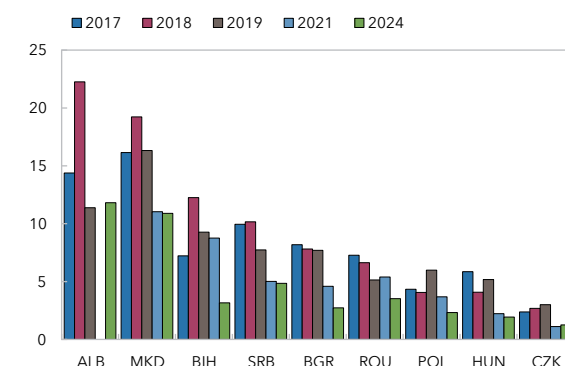
The Euro Survey covers 10 Central, Eastern, and Southeastern European countries, over 25 waves starting in 2007, with around 1,000 individuals surveyed per country in each wave.² The survey covers topics such as trust in institutions, macroeconomic expectations, and financial decisions, with additional modules added in some waves looking at other topics. One of these additional modules—included in 2017, 2018, 2019, 2021, and 2024—covers migration intentions of surveyed individuals.²⁹

Annex Figure 4.1. Migration Intentions

1. Migration Intentions by Country in 2024¹
(Percent)



2. Migration Intentions over the Next 12 Months by Wave²
(Percent)



Source: Euro Survey data.

Note: ALB = Albania; BGR = Bulgaria; BIH = Bosnia and Herzegovina; CZK = Czech Republic; HUN = Hungary; MKD = North Macedonia; POL = Poland; ROU = Romania; SRB = Serbia.

¹ Share of adult population with migration intentions over the next 12 months and longer term. The data are available only in the 2024 wave.

² Share of adult population with intentions to migrate over the next 12 months by survey wave.

In 2024, about one in five individuals reported intentions to migrate, ranging from under 10 percent in Hungary to over 30 percent in Albania (Annex Figure 4.1, panel 1). Short-term intentions (within 12 months) have declined since 2018 (right chart of Annex Figure 4.1, panel 2), falling in the Western Balkan countries from around 15 percent in 2018 to 7 percent in 2024. Employment is the main driver—cited by nearly half of respondents—followed by better living conditions, with family support and education playing smaller roles.

²⁸ The authors of this annex are Stephen Ayerst, Katharina Allinger (OeNB), and Söhnke Bergmann (OeNB).

²⁹ Croatia was removed from the sample in 2024 after adoption of the euro. Albania is missing data for 2023 because of the census and for 2020 and 2021 because of data quality issues. Data for Albania in 2016–19 and 2022 cover only Central and South Albania.

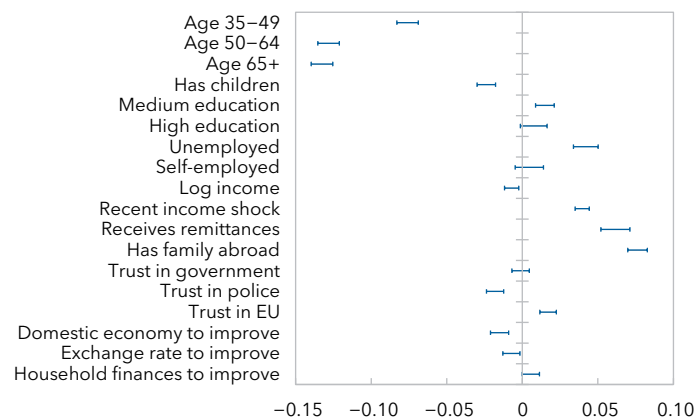
To better understand who intends to migrate, and why, a linear probability model is estimated. The outcome examined is short-term migration decisions (“Do you intend to move abroad within the next 12 months?”). Although migration intentions do not necessarily lead to migration, migration intentions data allow individual migration decisions and characteristics of potential migrants to be examined within origin countries. In contrast, similar analysis using realized migration data would require detailed panel data covering both origin and destination countries. Moreover, the Euro Survey data provide detailed information on individual expectations of the economic outlook, trust in institutions, and networks with family living abroad, in addition to socioeconomic information. The estimated model is:

$$\text{migrate}_{i,t} = \text{outlook}_{i,t} + [\text{trust}]_{i,t} + [\text{network}]_{i,t} + X_{i,t} \beta + F_c + F_t + e_{i,t}$$

where $X_{i,t}$ is a vector of individual-specific characteristics (age, having children, education, income, employment), and F_c and F_t are country and year fixed effects that would capture, for example, differences in EU membership, language, and culture, as well as country- and time-series differences in economic conditions. In addition to individual characteristics, the analysis includes individual expectations of the economic outlook, trust in local institutions, and familial network indicators (that is, receive remittances, family living abroad). The 2017 wave is not included because it lacks information on family members living abroad. The pooled regression is estimated using four waves and 10 countries for a total of around 33,000 observations.

Annex Figure 4.2. Correlation of Short-Term Migration Intentions and Factors

(Correlation of Short-term Migration Intentions and Factors)



Sources: Euro Survey data; and authors' calculations.

Note: Coefficients from regressions with 90 percent confidence intervals (clustered SEs). Country and year fixed effects included. Variables are binary indicators; income includes a zero-income dummy. About 6.5 percent report migration intentions within 12 months, down from about 9 percent in 2018 to just over 4 percent in 2024. EU = European Union.

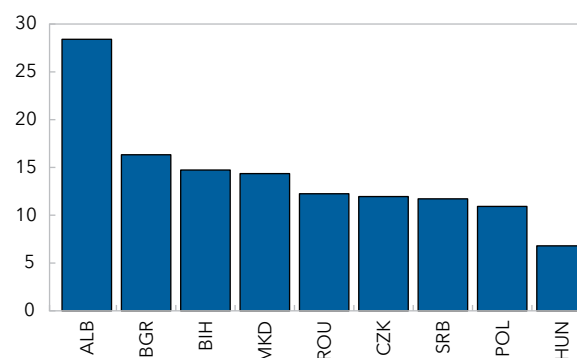
Annex Figure 4.2 shows that migration intentions are higher among younger individuals and those with children. Education is positively associated with migration intentions, though coefficients are relatively small, suggesting limited brain drain. Higher income reduces migration intentions, whereas unemployment and a significant decline in household income over the past 12 months increase them. These estimates suggest that strong labor market attachment lowers emigration incentives. Family networks significantly raise migration intentions, reflecting a better understanding of opportunities abroad or lower migration costs. Trust in domestic institutions reduces migration intentions, whereas trust in the EU raises them. Expectations that the economy will improve or the ER will appreciate are related to lower migration intentions, whereas expectations of improved household finances have a small positive effect, albeit a small one. Overall, the results are broadly similar to previous studies (for example, Raggl 2019) that highlight the importance of individual characteristics and push and pull factors.

Interaction analysis suggests that migration drivers are broadly similar across education groups. Interacting factors with age groups shows that coefficient estimates for younger individuals have larger magnitudes than those for older individuals and tend to be insignificant for the oldest categories. This is consistent with younger individuals being more likely to migrate and hence more responsive to decision factors than older individuals. Separating estimates by Western Balkan and non-Western Balkan countries reveals larger coefficient estimates for Western Balkan countries. This implies that migration intentions of Western Balkan individuals tend to be more responsive to underlying factors, although this may be a mechanical implication, as migration intentions tend to be higher in Western Balkan countries.

Return migration generates benefits through skills, financial resources, and networks. Annex Figure 4.3 shows that individuals with migration experience make up a sizable share of the population (from just under 7 percent in Hungary to over 25 percent in Albania).³⁰ The share of seasonal or temporary work is relatively small (about 1 percent). Although returnees can support domestic activity, they also exhibit higher remigration intentions—over 10 percent plan to migrate within 12 months, compared with only around 3 percent among nonmigrants.

In the pooled sample, people with migration experience differ significantly from nonmigrants. They are more likely to be in the highest income tercile and to be self-employed, consistent with return migration supporting entrepreneurship (for example, Bossavie and others 2024). At the same time, unemployment is also higher, reflecting challenges in labor market reintegration (Karolak 2020). Educational patterns are more mixed: on average, returnees are more likely to be highly educated, but in some Western Balkan countries they are less educated, consistent with lower migration intentions among the highly educated and sectoral concentration in lower-skill jobs. Returnees also exhibit higher trust in the EU and lower trust in domestic institutions. These findings may reflect that brain drain is less of an issue in these countries, consistent with evidence (for example, Ruer and Vujanovic 2025) that many migrants from this region work in less education-dependent sectors (for example, construction and manufacturing).

Annex Figure 4.3. Share of People That Lived Abroad (Percent)



Source: Euro Survey data.

Note: Share of individuals who report having lived abroad, by country. ALB = Albania; BGR = Bulgaria; BIH = Bosnia and Herzegovina; CZK = Czech Republic; HUN = Hungary; MKD = North Macedonia; POL = Poland; ROU = Romania; SRB = Serbia.

³⁰ People who have lived abroad capture both return migrants and immigrants.

Annex 5. Labor Market and Migration Model

This annex describes the model used to examine labor markets and migration in EU candidate countries.

Each economy c is populated by a mass $N_{c,t}$ of households that is determined by migration decisions. Each period $t \in 0, 1, 2, \dots$ consists of three phases, described as follows.

Search phase. Households start the period either inactive or active depending on their state in the previous period. Households draw an idiosyncratic preference for $\epsilon_t^{c,a}$, where a is either active or inactive, from a Fréchet distribution that describes their relative taste for being inactive or active in the current period. If the household chooses to switch states, the household incurs a common fixed cost $\bar{\tau}^c$ that captures the difficulty of entering the labor market. Inactive households consume b^c , which can be thought of as capturing a combination of home production and welfare. Active households enter the labor market as unemployed and are matched with a job at rate $p^c(\theta_t^c)$, where θ_t^c is the relative number of vacancies to unemployed workers (labor market tightness) in period t . The value of an unemployed worker searching for a job in country c is $V_t^{S,c} = p(\theta_t^c) V_t^{W,c} + (1 - p(\theta_t^c)) V_t^{U,c}$, where $V_t^{W,c}$ and $V_t^{U,c}$ are the values of being employed or unemployed during the production phase. On the other side of the market, firms post vacancies at a cost κ^c and are matched with an unemployed household at rate $q^c(\theta_t^c)$. The value of a new firm is given by $V_t^{J,c} = -\kappa + \beta q(\theta_t^c) V_t^{J,c}$, where $V_t^{J,c}$ is the expected value of a firm with an employee. Because firms can freely enter the market, the value of a vacant firm must be nonpositive in equilibrium, that is, $V_t^{J,c} \leq 0$. The relative job-finding rate $p^c(\theta_t^c)$ and worker-hiring rate $q^c(\theta_t^c)$ are determined by the matching function $M(U_t^c, V_t^c) = M^c (U_t^c)^\alpha (V_t^c)^{1-\alpha}$.

Production phase. An unmatched household receives consumption equal to b^c , similar to inactive households. This implies that the value of being unemployed is given by $V_t^{U,c} = b^c + \beta V_t^M$, where V_t^M is the value in the migration stage. Matched households and firms produce output y^c , such that aggregate output is equal to the number of employed households multiplied by y^c . Households and firms bargain over revenues through Nash bargaining (with weight η) to determine wages w_t^c and profits π_t^c . After production and bargaining, a match dissolves with exogenous probability δ in which case the household can choose to migrate. The value of an employed household is $V_t^{W,c} = w_t^c + \beta [\delta V_t^M + (1 - \delta) V_{t+1}^{W,c}]$ and the value of a matched firm is $V_t^{J,c} = \pi_t^c + \beta \delta V_{t+1}^{J,c}$.

Migration phase. Households draw an idiosyncratic preference $\epsilon_t^{c,c'}$ for living in each country (including their current country) at the start of the phase, drawn from a Fréchet distribution. Households that migrate to country c' incur bilateral migration cost $\tau^{c,c'}$. Households choose which country c' to live in the next period to maximize the value given by $V_t^{M,c} = \max_{c'} V_{t+1}^{a,c'} - \tau^{c,c'} + v \epsilon_t^{c,c'}$, where $V_{t+1}^{a,c'}$ is the value of starting the next period as an $a \in \{\text{active}, \text{inactive}\}$ household in country c' .

Labor market dynamics. Let I_t^c , U_t^c , and E_t^c be the number of inactive, unemployed, and employed households. The model describes the transitions between activity and inactivity $\phi_t^{a,a'}$, employment to unemployment δ^c and unemployment to employment $p^c(\theta_t^c)$, and between country pairs $\mu_t^{c,c'}$. These flows are described by:

$$\begin{aligned}
 I_{t+1}^c &= \sum_c (\mu_t^{I,c',c} \phi_t^{I,I} I_t^{c'} + \mu_t^{A,c',c} \phi_t^{A,I} (U_t^{c'} + \delta^c E_t^{c'})) \\
 U_{t+1}^c &= (1 - p(\theta_t^c)) \sum_c (\mu_t^{I,c',c} \phi_t^{I,A} I_t^{c'} + \mu_t^{A,c',c} \phi_t^{A,A} (U_t^{c'} + \delta^c E_t^{c'})) \\
 E_{t+1}^c &= (1 - \delta^c) E_t^c + p^c(\theta_t^c) \sum_c (\mu_t^{I,c',c} \phi_t^{I,A} I_t^{c'} + \mu_t^{A,c',c} \phi_t^{A,A} (U_t^{c'} + \delta^c E_t^{c'}))
 \end{aligned}$$

$$\mu_t^{a,c,c'} = \frac{\exp(V_t^{a,c} - \tau^{c,c'})^{1/\nu}}{\sum_{\tilde{c}} V_t^{a,\tilde{c}} - \tau^{c,\tilde{c}})^{1/\nu}}$$

$$\phi_t^{\tilde{a},\tilde{a}',c} = \frac{\exp(V_t^{\tilde{a},c} - \tau^c)^{1/\nu}}{\sum_{\tilde{a}} V_t^{\tilde{a},c} - \tau^c)^{1/\nu}}.$$

Along with the value functions described earlier, the system of equations is used to simulate the scenarios described in Chapter 3.

Annex 6. Causal Discovery Model of Productivity

This annex describes the causal discovery model used to examine the productivity channel of EU accession in Chapter 3.

Causal discovery methods recover the causal structure among a set of variables from observational data, without requiring randomization or instrumental variables. The goal is to identify a directed acyclic graph (DAG) in which each arrow $X \rightarrow Y$ asserts that X is a direct cause of Y . Broadly, there are three families of algorithms: (1) constraint-based methods (for example, the PC algorithm; Spirtes, Glymour, and Scheines 2000) use conditional independence tests to orient edges but typically return a Markov equivalence class with ambiguous edge directions; (2) score-based methods (for example, Greedy Equivalence Search; Chickering 2002) maximize a penalized fit criterion such as BIC over the space of DAGs, again often yielding an equivalence class; (3) functional causal models impose additional structure on the disturbance distributions to achieve full identification of edge directions; the Linear Non-Gaussian Acyclic Model (Shimizu and others 2006), or LiNGAM, is the leading example and the primary method used in this paper. A key advantage of all three over standard regression is that they recover indirect causal chains and handle joint determination without requiring a separate instrument for each endogenous variable.

LiNGAM assumes that the data are generated by a system of linear structural equations with mutually independent, non-Gaussian disturbances:

$$x_i = \sum_{ij} \beta_{ij} x_{ij} + \epsilon_i,$$

where the sum runs over all j that causally precede i , β_{ij} are causal coefficients, and ϵ_i are independent non-Gaussian disturbances. Acyclicity rules out feedback loops. The non-Gaussianity of disturbances is the key identifying condition: Shimizu and others (2006) show that it allows independent component analysis (ICA) to uniquely recover the causal ordering, because only one permutation of the ICA unmixing matrix yields an acyclic (lower-triangular) structure. Estimation proceeds in two steps: ICA recovers the causal ordering, and OLS regressions of each variable on its causal predecessors estimate the coefficients β_{ij} . The result is both a DAG and coefficient estimates for each causal link. Compared with other methods, LiNGAM's decisive advantage is that it uniquely identifies the direction of every causal arrow rather than returning an equivalence class—making it particularly well suited to the policy inference objectives of this analysis.

However, three assumptions of LiNGAM warrant acknowledgment. First, the model is linear. Nonlinear relationships between TFP and its drivers cannot be captured. Second, the model assumes non-Gaussianity. Although this is typically satisfied in macroeconomic and regional panel data given their skewness, it is nevertheless an assumption. Third, and most critically, the model assumes causal sufficiency, where all common causes of any two included variables must appear in the variable set. Although the latest developments in the causal discovery literature have considered latent variables, this is beyond the scope of this paper. As such, the results should therefore be interpreted as the most plausible causal structure under these maintained assumptions rather than as definitive experimental evidence.

Chapter 3 conducts causal analysis at the country and regional levels. Annex Table 6.1 presents the countries, regions, and variables considered at the OLS screening stage and those used for the causal discovery models.

Annex Table 6.1. Data Coverage of Country and Regional Level Causal Analysis

Country Level	
Variables	TFP, capital stock, employment, number of patents, world bank governance indicators, economic complexity, trade openness, imports, FDI stock, tertiary enrollment.
Coverage	OLS stage: 31 countries, 1995–2019 Causal discover stage: 28 countries, 1996–2019
Sources	World Bank, IMF, Eurostat, and the Atlas of Economic Complexity.
Regional Level	
Variables	TFP, capital stock, employment, quality of government index (overall quality, impartiality, and corruption), total R&D employees (% of population), frequency of internet access, transport (railway and road density), net migration.
Coverage	OLS stage: 225 NUTS 2 regions, 25 countries, 1995–2019 Causal discover stage: 107 NUTS 2 regions, 9 countries (Czechia, Spain, Finland, France, Hungary, Italy, Netherlands, Poland, and Slovakia), 2010, 2013, and 2017
Sources	World Bank, IMF, Eurostat, and the QoG Institute.
Source: IMF staff illustration.	

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