

# Navigating Serbia's Economic Future: The Crucial Role of Productivity

Anh Thi Ngoc Nguyen

SIP/2025/111

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on June 17, 2025. This paper is also published separately as IMF Country Report No 25/177.

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**Navigating Serbia's Economic Future: The Crucial Role of Productivity**  
**Prepared by Anh Thi Ngoc Nguyen**

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**ABSTRACT:** Serbia has grown at a rate comparable to peers over recent decades, but the income gap with the EU, albeit narrowing, remains large. As contributions from labor and capital to potential growth are expected to decline, Serbia needs to accelerate structural reforms to boost total factor productivity (TFP). Successful implementation of structural reforms could yield substantial benefits. Key policy options include those that strengthen governance, reduce state influence in the economy, address skill mismatches, enhance access to finance among firms, and promote research and development (R&D) and innovation.

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## SELECTED ISSUES PAPERS

# Navigating Serbia's Economic Future: The Crucial Role of Productivity

Republic of Serbia

Prepared by Anh Thi Ngoc Nguyen<sup>1</sup>

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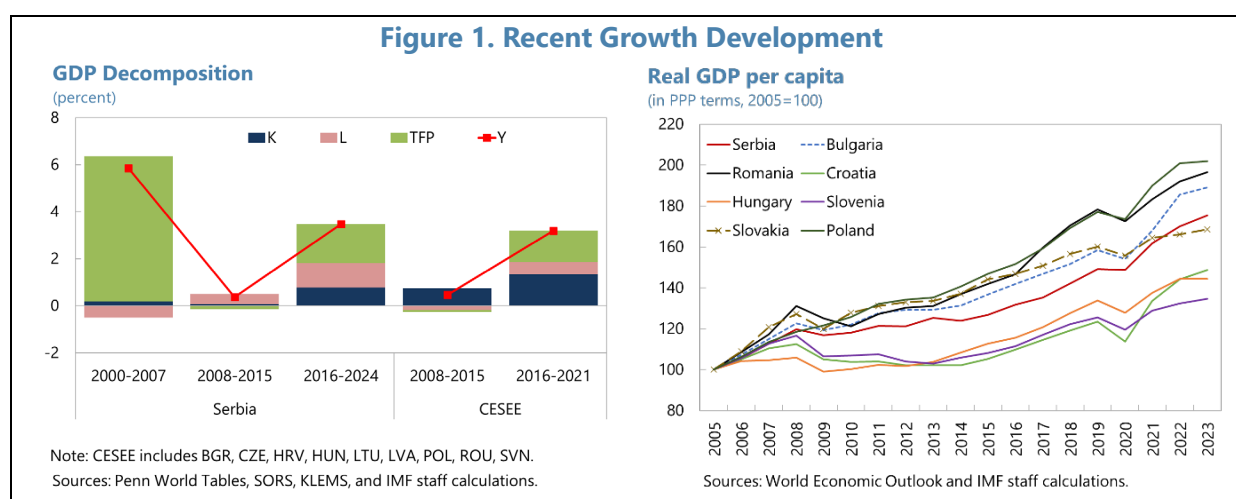
<sup>1</sup> The author would like to thank Annette Kyobe, Andre Geis, Larry Qiang Cui, Lev Ratnovski, Marko Paunovic, and Desanka Obradovic for their helpful comments and suggestions. The views expressed in the paper are those of the author and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

# NAVIGATING SERBIA'S ECONOMIC FUTURE: THE CRUCIAL ROLE OF PRODUCTIVITY

Serbia has grown at a rate comparable to peers over recent decades, but the income gap with the EU, albeit narrowing, remains large. As contributions from labor and capital to potential growth are expected to decline, Serbia needs to accelerate structural reforms to boost total factor productivity (TFP). Successful implementation of structural reforms could yield substantial benefits. Key policy options include those that strengthen governance, reduce state influence in the economy, address skill mismatches, enhance access to finance among firms, and promote research and development (R&D) and innovation.

## A. Introduction

**1. Serbia has made commendable progress with lifting growth and incomes.** After a prolonged period of political instability and economic turmoil in the 1990s, the transition to a market-based economy in 2000 helped by 'first-generation' reforms triggered an influx of foreign capital (albeit still at low level compared to other neighboring countries), facilitated macroeconomic stabilization, and led to significant productivity gains and robust growth (Figure 1, left chart). But growth stagnated over 2008–15 as the economic shock of the Global Financial Crisis (GFC) got exacerbated by the European debt crisis and large-scale macroeconomic imbalances in the Serbian economy.<sup>2</sup> To rebuild economic resilience, Serbia followed prudent macroeconomic policies and embarked on comprehensive reforms from 2014, supported by engagement with the Fund, which have yielded impressive results. Growth has been strong, GDP per capita has increased rapidly, and overall living standards rose (Figure 1, right chart).



<sup>2</sup> See IMF (2015).

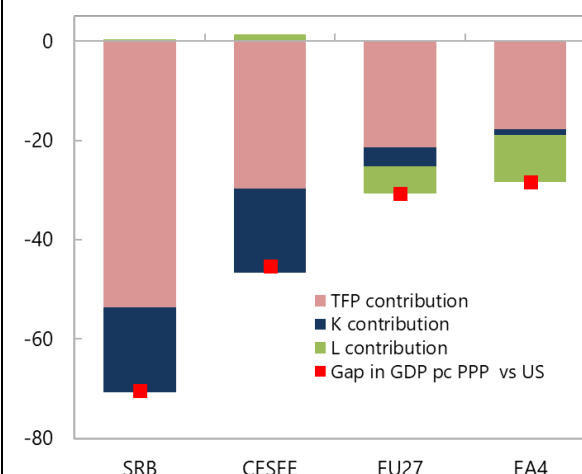
**2. Notwithstanding notable economic progress, the income gap with European peers remains large.** Albeit approaching 5 percentage point closer over the last ten years, Serbian income in 2023 remained about half of its European peers while significantly lags behind the U.S. (Figure 2), with a shortfall in total factor productivity the main contributor. As the room for labor and capital to contribute to economic convergence will become more limited going forward (see Section B), fostering higher productivity will be essential to sustainably maintain the strong growth rates of the recent past.

**3. This paper highlights past, current and future drivers of Serbia's growth and suggests reforms to enhance productivity.**

Section B documents recent economic developments and future growth prospects.

Section C offers a diagnosis on structural deficiencies in Serbia for multiple areas, while Section D provides policy recommendations to address those deficiencies, together with an analysis of possible gains from implementing structural reforms. Finally, Section E concludes.

**Figure 2. GDP Per Capita Gap with the U.S. in 2023**  
(In PPP terms, percent)



Sources: WEO, AMECO, Penn World Table, and IMF staff calculations.

Note: Note: CESEE includes BGR, CZE, HRV, HUN, LTU, LVA, POL, ROU, and SVN.

## B. Recent Growth Development and Prospects

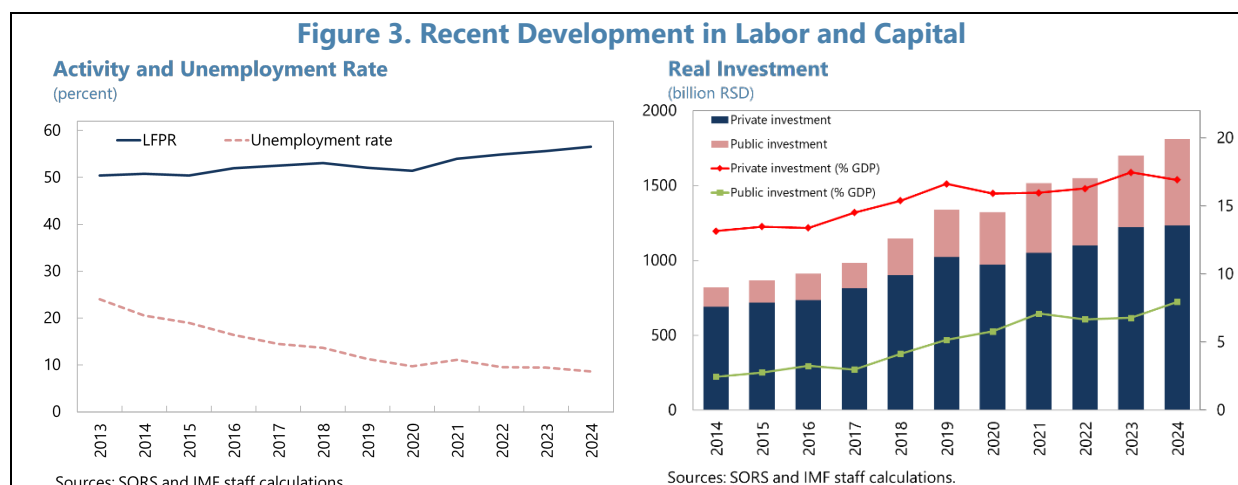
**4. Solid accumulation of labor and capital, along with higher labor productivity, has supported growth over the last decade.** The composition of growth in Serbia has changed markedly over the past two decades. In contrast to the TFP-driven growth before the GFC,<sup>3</sup> economic growth over the last ten years has been driven by rather balanced contributions from labor, capital, and total factor productivity.

- **Labor:** Serbia has made notable progress with reducing unemployment from 26 percent in 2012 to a record-low of 8.6 percent in 2024 (Figure 3, left chart). Maksimović and Zvezdanović (2022) attribute the decline to greater private sector entrepreneurial activity and gradual macroeconomic stabilization. Simultaneously, the labor force participation rate (LFPR) has increased, reaching a record high of 56.6 percent in 2024. As a result, employment has grown at

<sup>3</sup> The "golden period" prior to the GFC with high TFP growth was attributed to several factors. At that time, the country emerged from a decade of sanction and quickly restructured the economy with (i) prudent macro policies that helped improve macroeconomic stabilization; (ii) reforms in institutional and legal framework; (iii) liberalization of foreign trade, business and banking, privatization; and (iv) infrastructure reforms. However, from late 2000s, reforms effort was stagnant by limited microeconomic restructuring in the enterprise sector, business environment, market competition, and employment policy (Uvalic, 2011; Sabic et al., 2012).

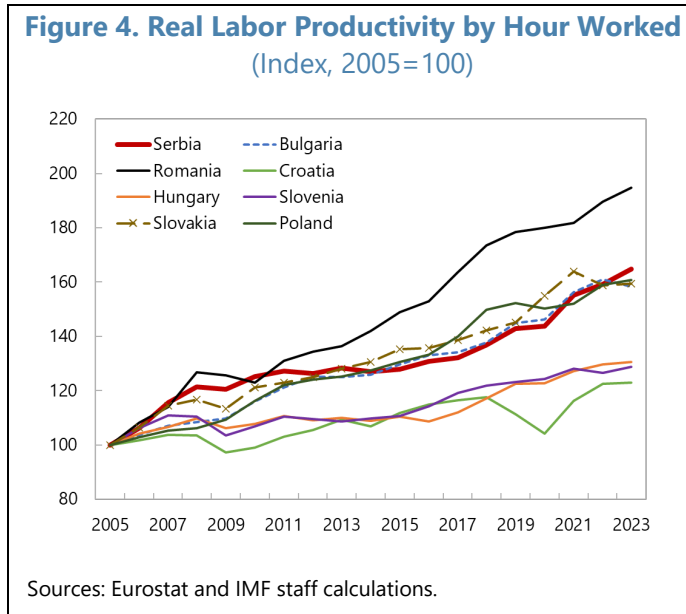
an average pace of 2 percent annually, enabling labor to contribute 1 percentage point to growth over 2016–24, despite a shrinking population and net emigration (see Figure 6 for more detail).

- **Capital:** Both public and private investment have increased in recent years, contributing 0.8 percentage points to growth over 2016–24 (Figure 3, right chart). Specifically, private investment almost doubled in 2023 compared to its level in 2014, also helped by strong foreign direct investment (FDI) inflows, while public investment more than tripled.



- **Productivity.** TFP growth improved after the economic stagnant period, contributing 1.6 percentage points to growth over 2016–24, considerably above its contribution over the previous 2008–15 period. Similarly, labor productivity has increased at a significantly faster pace since 2021 compared to previous periods (Figure 4), helped by spillovers from FDI and the rise of the information and communication (ICT) sector.<sup>4</sup>

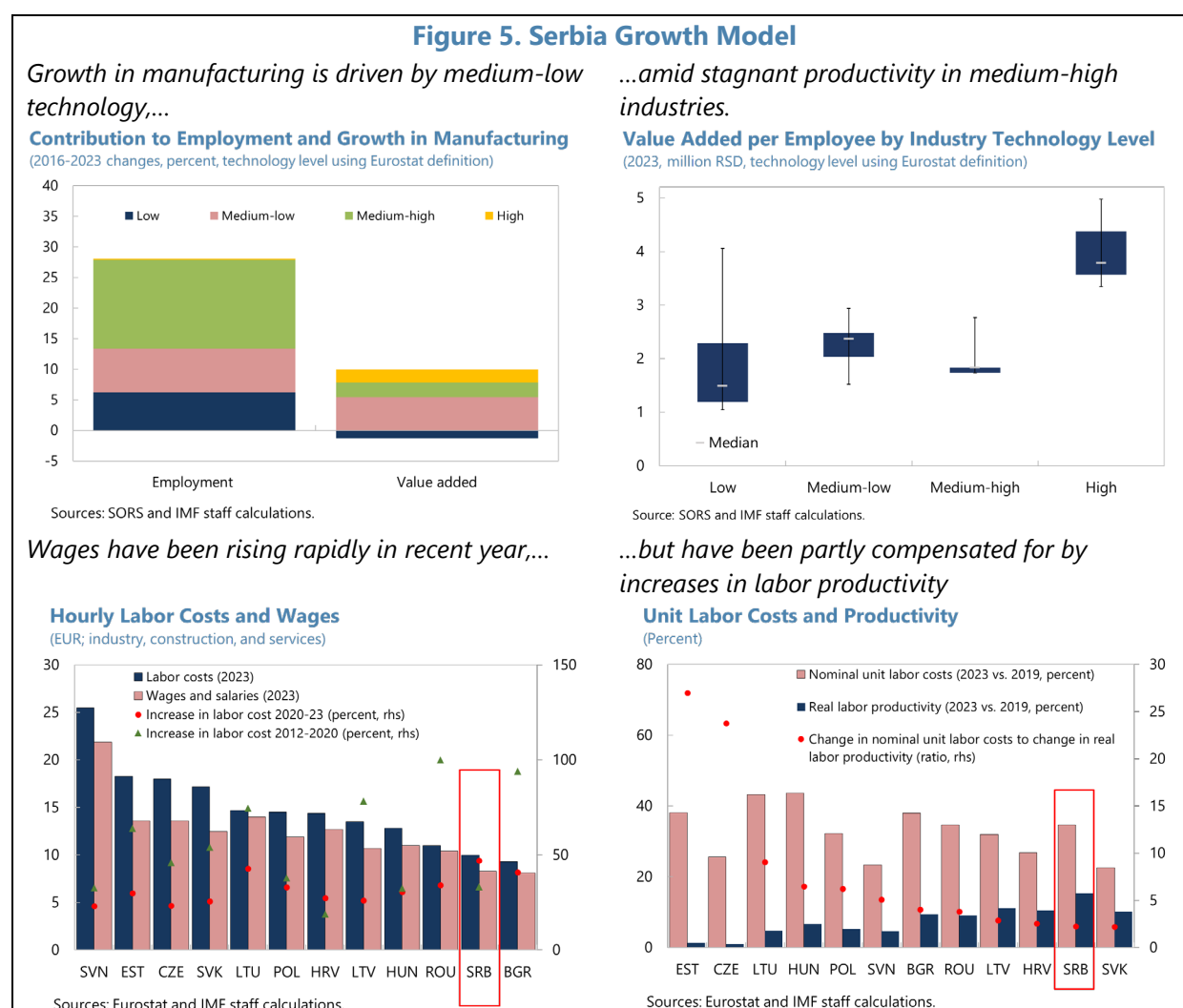
**5. However, securing continued income convergence with the EU is hampered by limited progress in shifting to higher share of high value-added manufacturing.** “Medium-high technology” industries, such as electrical equipment and machinery, have contributed significantly to employment growth since 2016 but seem to have



<sup>4</sup> FDI inflows more than doubled between 2012 and 2019, while the ICT sector accounted for almost 15 percent (20 percent) of additional employment (value-added) created in 2023 compared to 2016.

created little additional value added, indicating low productivity in these sectors (Figure 5, upper panels). Encouragingly, however, the high value-added ICT sector has growth substantially in recent years, also contributing to employment.

**6. The sharp increase in wages in recent years has resulted in higher unit labor costs, raising concerns about external competitiveness.** Partly as a response to high inflation during the 2022 energy crisis, wages have risen rapidly (Figure 5, bottom panels) and surpassed increases in other countries in the region. Still, wage levels remain below most regional peers and have been partly compensated for by increases in labor productivity. But continued elevated wage growth in the absence of corresponding gains in productivity could weaken external competitiveness and FDI where around half of inflows have been concentrated in labor-intensive industries, including construction and rubber and food manufacturing, in recent years.



**7. Scopes for additional factor accumulation to boost potential growth is likely to become more limited going forward.**



- **Absent reforms, labor is projected to contribute only 0.5 percent to growth in the medium term given unfavorable demographics.** With a tight labor market and historically low unemployment, labor accumulation is expected to primarily be driven by a higher LFPR. Under the assumption of a continuing employment growth at 0.8 percent over 2025–30, milder than the average during the 2020–24 period, the LFPR is expected to reach 61 percent by 2030 (Figure 6). While plausible, given Serbia’s strong performance in boosting LFPR over the past 5 years, this could be slightly an optimistic assumption as the rate will exceed the EU average. Additionally, we explore alternative scenarios under which reforms to increase the female LFPR, further reduce overall unemployment, and tackle high youth unemployment, could contribute an additional 0.3 percentage points to potential growth.<sup>5</sup>
- **Capital accumulation could contribute another 1.6 percent to potential growth, even if supported by only a marginal increase in investment.** Due to the ramp up of investment in recent years, the level of public investment in Serbia is now high (Figure 7). In our baseline simulation, public investment is expected to stay more or less at the same current level (as percent of GDP). Further increases in public investment would make it difficult to ensure value for money, especially given the country’s capacity constraints in absorbing the stimulus. Similarly, private investment is expected to increase marginally to 18 percent of GDP by 2030, supported by a continuing albeit lower FDI inflows and some improvements in domestic private investment. In the medium run, a more significant increase in domestic private investment will depend on reforms aimed at boosting expected firm profits to enhance investment resources, given the thin margin between investment ratio and profitability in non-financial firms in Serbia.<sup>6</sup>
- **Achieving faster and more sustainable growth to accelerate income convergence would require more focus on boosting productivity.** Under the baseline assumption of a 1.8 percentage-points contribution from TFP, in line with the historical average but subject to high uncertainty, potential output growth would be 4 percent, making Serbia among the fastest-growing economies in Europe. If Serbia could maintain this growth rate, full income convergence with the EU could be achieved by 2050 (Gori and Pontara, 2023; World Bank, 2025). Should the country manage to enhance productivity to increase annual growth to 5 percent, it could reach this goal eight years earlier, by 2042. This underscores the importance of enhancing productivity and implementing structural reforms to support higher and more sustainable medium-term growth. The next section focuses on recent developments of structural areas in Serbia and highlights remaining challenges arising from structural policy gaps.

<sup>5</sup> The estimate is based on the raising the ratio of female to male LFPR to 80.5 percent by 2030, thereby closing half of the gap with the current EU level, a fall in structural unemployment to 7 percent by 2030, and a decrease in youth unemployment will decrease to 16 percent by 2030, in line with the current EU average.

<sup>6</sup> If private investment could reach 20 percent of GDP by 2030, this will contribute marginally additional 0.08 percent to growth.



**Figure 6. Contribution to Growth from Labor, Projection**

*Absent reform, employment growth needs to be mainly driven by an increase in the labor force, ...*

#### Contribution to Employment Growth

(percent, annual average for 2013-19 and 2020-24 periods)

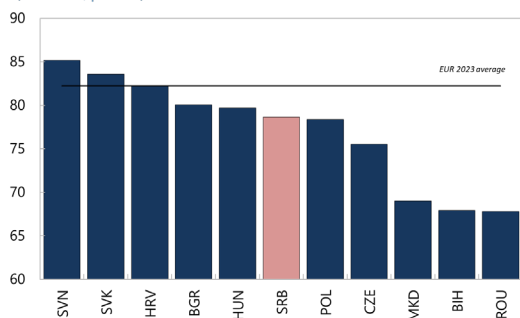


Sources: SORS and IMF staff calculations.

*Reforms could raise the contribution of labor from higher female LFPR, ...*

#### Ratio of Female to Male LFPR (aged 15+)

(2023 data, percent)

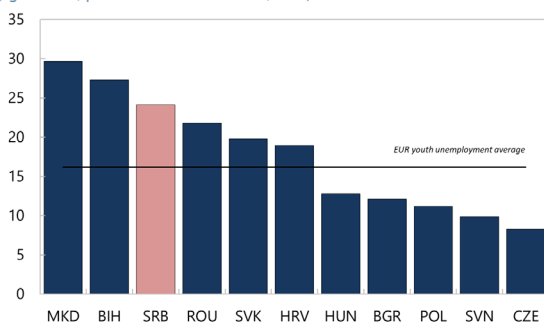


Sources: World Development Indicators.

*...and lower youth unemployment ...*

#### Youth Unemployment Rate

(aged 15-24, percent of total labor force, 2023)

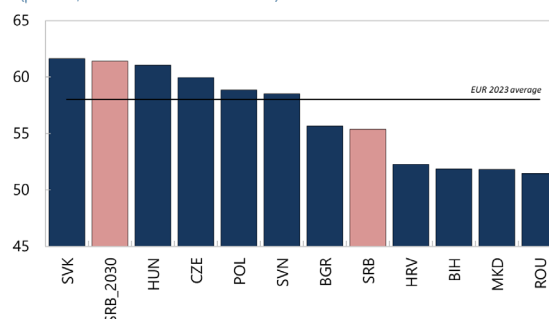


Sources: World Development Indicators.

*... that would align LFPR by 2030 with current levels in Eastern European EU Member States.*

#### Labor Force Participation Rates

(percent, 2023 or latest available data)



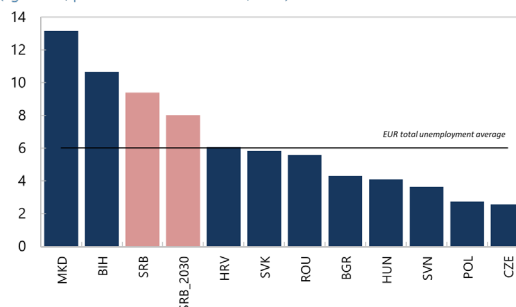
Note: SRB\_2030 indicate the level in 2030 under the baseline scenarios.

Sources: World Development Indicator, SORS, and IMF staff calculations.

*...lower overall unemployment, ...*

#### Total Unemployment Rate

(aged 15+, percent of total labor force, 2023)



Note: SRB\_2030 indicate the level in 2030 under the baseline scenarios.

Sources: World Development Indicators.

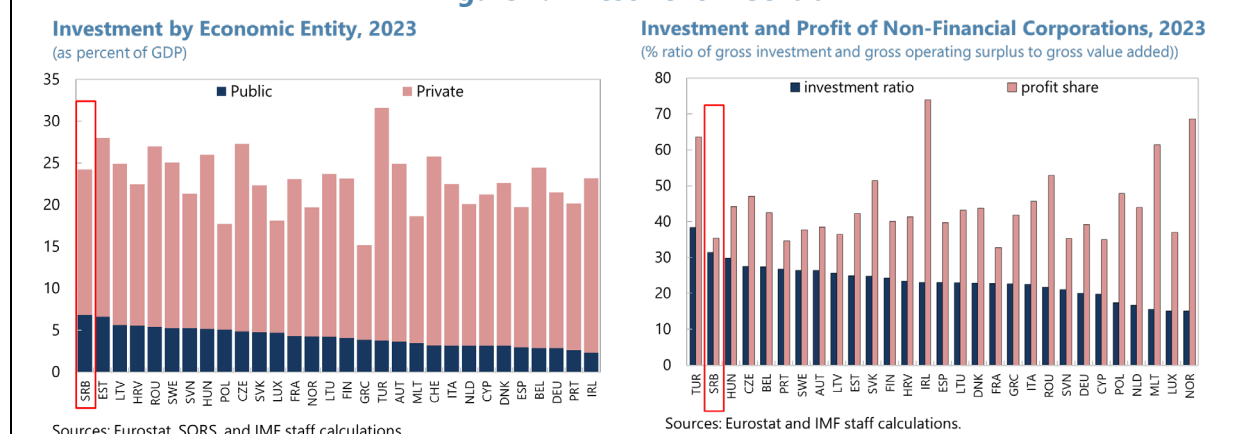
*... which could add 0.3 ppts to the 0.5 ppts contribution of labor under the baseline.*

#### Contribution to Growth from Capital and Labor

(percent, average over 2025-2030 period)



Sources: SORS, Total Economy Database, and IMF staff calculations.

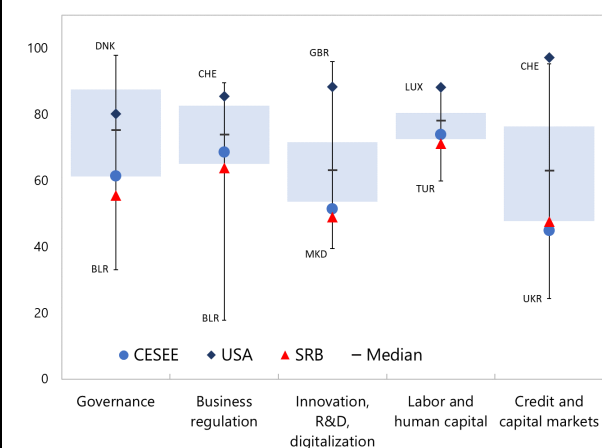
**Figure 7. Investment in Serbia**

## C. Productivity: A Snapshot of Structural Gaps

### 8. Serbia shows sizeable structural policy gaps relative to the global frontier

(Figure 8). Following Budina et al. (2025), a comprehensive database of structural policy indicators was assembled and classified into five broad areas of governance; business regulation; innovation, R&D, and digitalization; labor and human capital; and credit and capital market. For each indicator, two countries from either Europe or U.S. with the best performance in terms of indicator values are selected as the frontiers. Indicators are then normalized on a 0-100 scale where 100 denotes the average value of the frontiers.<sup>7</sup> The results shown in Figure 8 suggest that, like many countries in Central, Eastern and Southeastern Europe (CESEE), Serbia suffers sizeable structural policy gaps in many areas, with the largest gaps in governance, innovation, and credit and capital market. Business regulations and labor and human capital perform better, but still lag in the sub-areas of distortion of the business environment and labor tax wedge and skill mismatches, respectively.

**Figure 8. Distance to Frontier in Selected Structural Policy Areas**  
(Percent, relative to Europe and USA frontier, 2022)

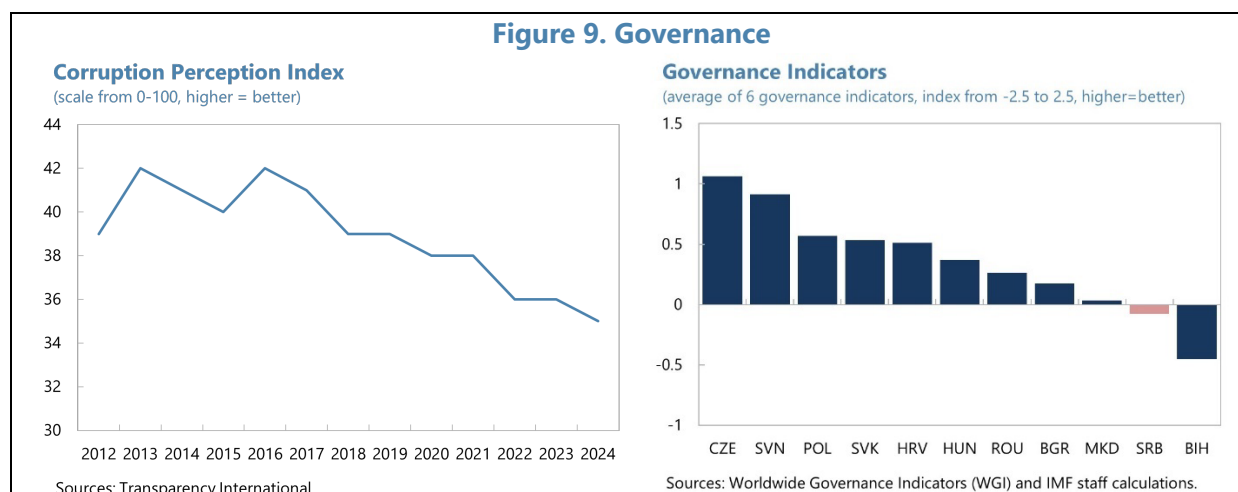


Sources: Fraser Institute; OECD; GTA; Eurostat, Berkeley; IMF, World Bank; and IMF staff calculations.

Note: Most indicators are from 2022. Frontier is defined as the average of top 2 countries from Europe and USA. Frontier = 100; all other values are normalized to this reference. The whiskers represent the range between the minimum and maximum values, while the bars indicate the interquartile range, spanning from the 25th to the 75th quartile. Regional numbers are simple average. Minimum and maximum countries in Europe are labeled in each whisker end. CESEE comprises 11 new member states (BGR, BIH, CZE, EST, HRV, HUN, LTU, LVA, POL, ROU, SVK, and SVN), 6 Western Balkans countries (ALB, BIH, MKD, MNE, KOS, and SRB), and 4 other countries (MDA, BLR, RUS, and TUR).

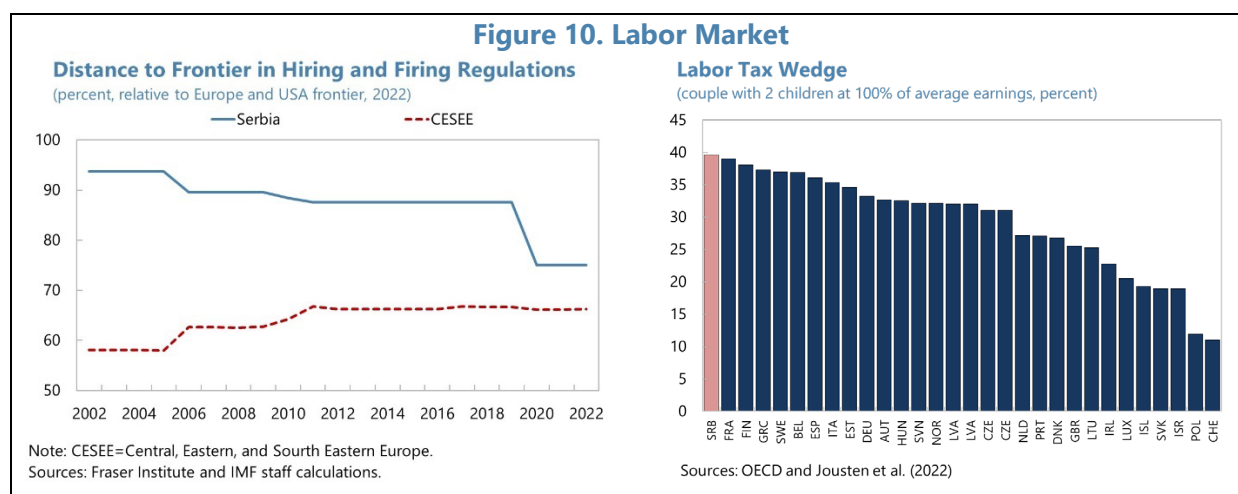
<sup>7</sup> Detailed information of the set of indicators is presented in Appendix Table 1.

**9. Progress in improving institutional quality has been slow.** Serbia ranks below most of its peers in all six World Bank governance categories, particularly in control of corruption and rule of law (Figure 9 and Appendix Table 1).<sup>8</sup> Despite efforts by the authorities, corruption perception has deteriorated significantly over the last ten years. Weak governance—including a lack of transparency, accountability, and corruption control—can hamper policy credibility and undermine investor confidence, reducing investment and stifling economic growth (IMF, 2019). At the same time, deficiencies in the judiciary continue as the time required to resolve cases in court is often protracted, exacerbating the problem.



**10. The labor market in Serbia has relatively high flexibility but suffers from a heavy tax burden.** The revision of the 2014 Labor Law facilitated more flexible labor regulations, generally aligning employment legislation with OECD member levels (Appendix 1). In addition, although having slightly declined since 2020, partially due to employment protection measures introduced during the COVID-19 pandemics, hiring and firing regulations is still more relaxed than other CESEE countries (Figure 10, left panel). The major issue of the labor market lies in the high labor tax wedge, which has been identified as a possible obstacle in promoting higher labor participation and informality (Uvalic, 2011). As discussed in Reyes and Nguyen (2019) and Jousten et al. (2022), labor tax in Serbia is characterized by heavy social security contributions (SSC) and lack of family allowance. Employers in Serbia consider labor tax as the second-greatest labor-related constraints on business, following the shortage of an educated and experienced workforce. The estimated tax wedge is almost 40 percent—close to the levels seen in European Union which has some of the highest labor tax wedges worldwide—while the absence of tax-free family allowances significantly increases financial burden of workers with dependents compared to other European countries (Figure 10, right panel). In addition to high SSC of (20 percent paid by employees and 15 percent paid by employers), an absolute floor for SSC at the minimum wage levels is applied. This flat social contribution requirement exacerbates the tax burden on low-wage workers, disincentivizing them from joining the formal labor market.

<sup>8</sup> The chart data used perception data that have limitations of subjectivity.



**11. Labor market outcome is hamstrung by skill mismatch.** Serbia has made consistent progress in upgrading its education, both in terms of quantity and quality. The share of population with tertiary education has expanded considerably over the last ten years, while the proportion of individuals with basic education has steadily declined (Figure 11). Combined with a high share of STEM students among tertiary graduates and relatively good education quality (as proxied by PISA score), the education system is seen as providing a solid foundation for building human capital. However, skill mismatch remains a persistent two-sided problem. On the one hand, overqualification exists, evidenced by a large share of highly educated workforce employed in medium-skilled jobs (Figure 11). Uvalić and Bartlett (2020) corroborated this finding with an estimation of 40 percent of graduates in Serbia overqualified for the job positions they hold. This issue is particularly prevalent among youth, leading to social and economic consequences such as lower pay, lower job retention, productivity loss and could result in higher emigration in the long run as they seek better job opportunity overseas. On the other hand, skill gaps hinder effective matching in labor market. Despite the increase of highly educated labor, about 25 percent of Serbian firms cite inadequately educated workforce as their biggest obstacle affecting firm operation. Employers in Serbia consider skills gaps the main reason for hiring difficulties, including workers' lack of work experience, shortage of needed professionals such as new-economy technical skills, and particularly low level of interactive skills such as problem-solving or critical-thinking (Reyes and Nguyen, 2019; Uvalić and Bartlett, 2020).

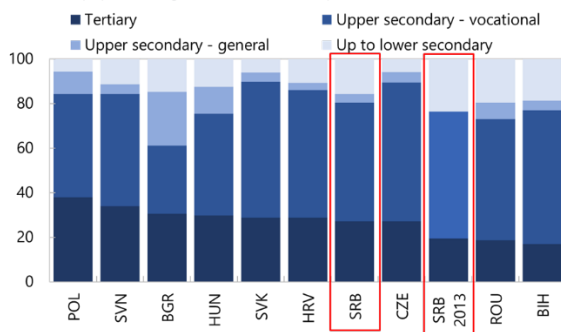
**Figure 11. Human Capital Building**

*Serbia has made constant progress in upgrading population's education level,...*

*...with relatively high share of STEM students,...*

#### Education Attainment

(share of population aged 25-64, 2023 data, percent)

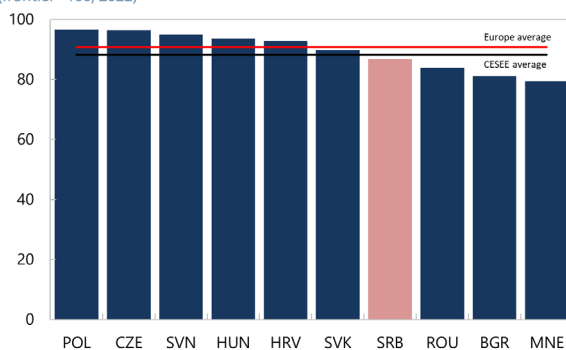


Note: 2013 data on Upper secondary is not available by vocational and general.  
Sources: Eurostat and IMF staff calculations.

*...and comparable education quality.*

#### Average PISA Score

(frontier=100, 2022)

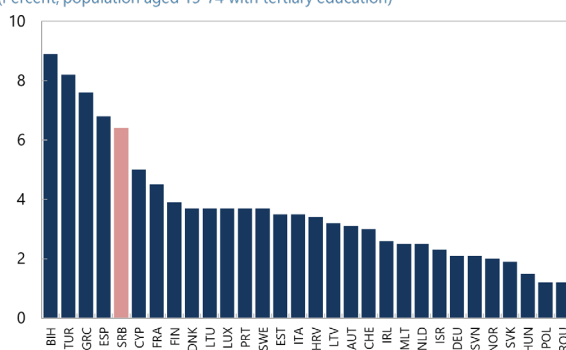


Sources: OECD and IMF staff calculations.

*...despite sufficient highly-educated labor supply,...*

#### Unemployment with Tertiary Education

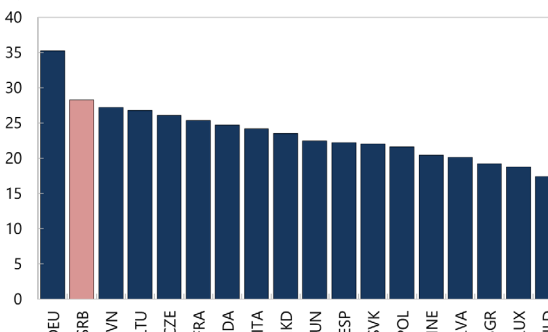
(Percent; population aged 15-74 with tertiary education)



Source: Eurostat.

#### Share of STEM Students in Tertiary Graduates

(percent, 2019 or latest available data)

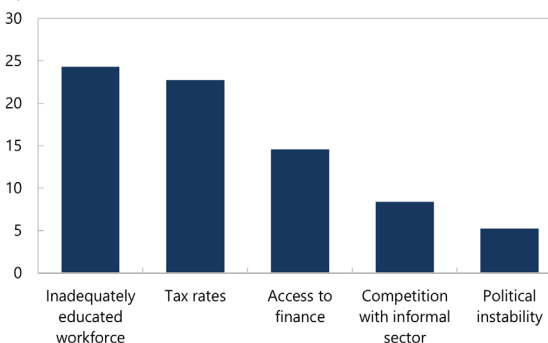


Sources: World Bank.

*However, big skill gaps create difficulties in hiring...*

#### Biggest Obstacle Affecting Firm's Operation

(percent of firms)

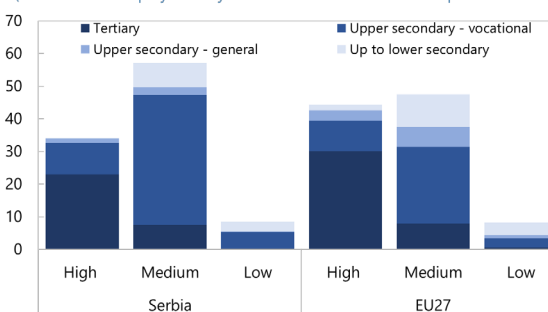


Sources: 2024 Serbia BEEPS survey and IMF staff calculations.

*...resulting in overqualification mismatch.*

#### Skill Matching

(share of total employment by education attainment and occupation skill-level)



Note: High skills comprise occupation skill level 3 and 4, while medium (low) skills comprise occupation skill level 2 (level 1).

Source: Eurostat and IMF staff calculations.

**12. The business environment has notably improved thanks to substantial reform efforts, but excessive state influence continues hindering fair market competition.** A series of reforms implemented between 2014 and 2016, including e-government, e-tax filing, and investment

incentives,<sup>9</sup> has significantly reduced business red tape and improved the regulatory environment (Figure 12). However, challenges to market dynamics remain. Serbia is among the countries with the most restrictions in market competition in Europe, primarily due to distortions induced by active state participation in markets (Drozd and Sipka, 2019). This includes weak governance of state-owned enterprises (SOEs) amid their high presence in the economy, inadequate state aid control, and gaps in the systems and policies in place to design and assess regulations. Despite having lower productivity than domestic private firms and FDI firms (Davies, 2019), SOEs remain prominent in Serbia—roughly 800 SOEs operated and employed nearly 200,000 people or 9 percent of the registered workforce in 2023 (Pontara, 2023). State support largely flows into this segment, especially in the form of subsidies to support investment and cover financial loss, which suggests potentially severe resource misallocation. The widespread use of tax breaks and tax credits, while helping attract foreign investment, inadvertently creates disparities that disadvantage domestic enterprises, which are the least likely to receive state support despite their large share in employment and output (Vasiljevic et al., 2019).<sup>10</sup> This is particularly true for small and medium enterprises (SMEs) and innovative firms, which are likely to experience market failure and are in the greatest need of support.

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<sup>9</sup> Key reforms included the 2014 business registration reforms that allowed for online applications and reduced the time required to register a new business, the 2014 tax administration reforms that introduced electronic tax filing and payment systems, and the establishment of a one-stop shop for business services along with e-government initiatives in 2015. Additionally, investment incentives such as tax breaks, the establishment of special economic zones, and targeted incentives for ICT and renewable energy were introduced in 2016 to attract investment and create jobs.

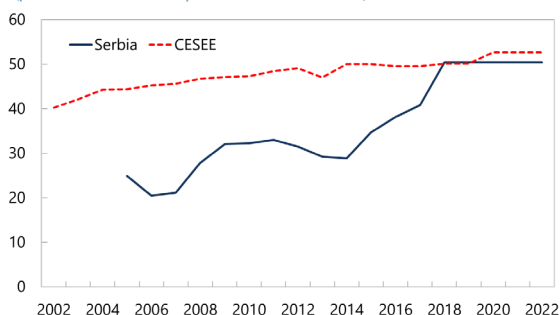
<sup>10</sup> For example, the special tax relief for large investments grants 10-year corporate income tax exemption for large investors who invest over RSD 1 billion in fixed assets and hire an additional 100 employees for an indefinite period of time (Deloitte, 2022), ultimately benefiting only large firms and FDI firms.

**Figure 12. Uneven Playing Fields in Business Environment**

*While the business environment has improved,...*

#### Distance to Frontier in Regulatory Burden

(percent, relative to Europe and USA frontier, 2022)

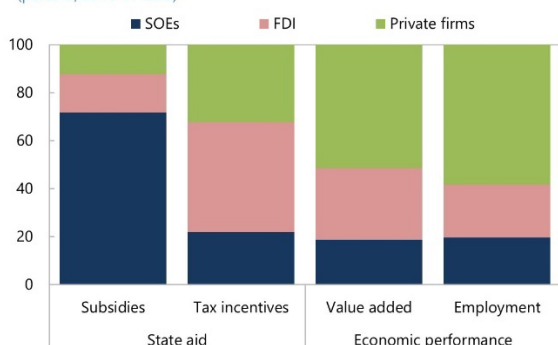


Note: CESEE=Central, Eastern, and South Eastern Europe.  
Sources: Fraser Institute and IMF staff calculations.

*State subsidies mainly support unproductive SOEs, while tax incentives disproportionately benefit FDI...*

#### State Aid by Firm Ownership

(percent, 2014-17 data)

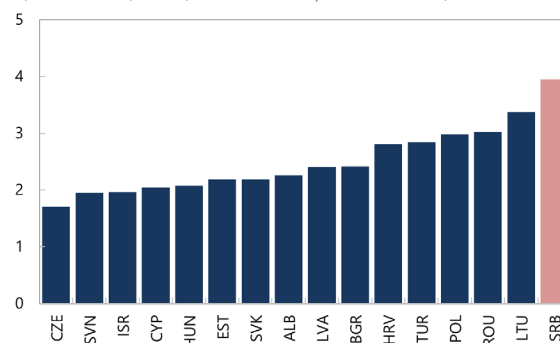


Sources: Vasiljevic et. al (2019)

*...anti-competitive barriers remain high due to state involvement in markets.*

#### Product Market Regulation: Public Ownership

(index, 0=least (6=most) restrictive of competition, 2018 data)

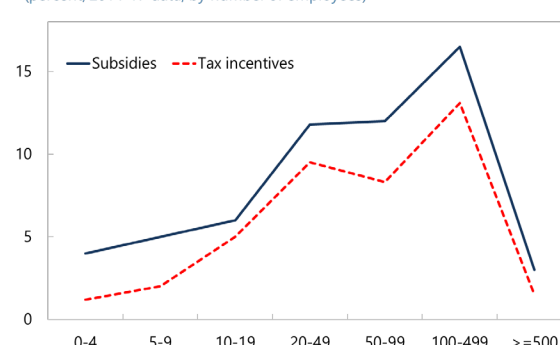


Sources: OECD PMR database.

*...and large firms, creating an uneven playing field for private, micro and small firms, to compete.*

#### State Aid by Firm Size

(percent, 2014-17 data, by number of employees)



Sources: Vasiljevic et. al (2019)

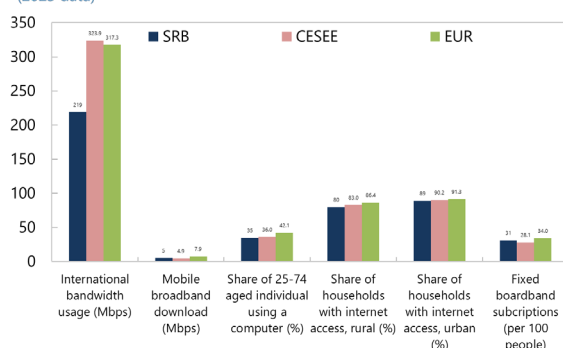
**13. Even with a well-developed digital infrastructure, the outcomes of digitalization have shown inconsistent results.** Serbia has comparable digital infrastructure to other European countries (Figure 13) and has invested intensively in digitalization in recent years. In addition to the aforementioned public services digitalization and the implementation of e-invoicing in the business sector, key efforts in this area also include the adoption of the Digital Serbia Initiative and the amendment of several laws aimed at improving cybersecurity. However, the gains from digitalization have been mixed. While most firms are online, with about half being relatively highly digitalized—including those using high technology such as Artificial Intelligence (AI), cloud computing, data analytics, 3D printing, and robotics—the use of e-commerce among firms has been relatively limited, especially among SMEs. At the individual level, although half of the citizens made purchases or order online in the past three months, individual digital skills are assessed as less developed than those in other countries in the region by Eurostat.



**Figure 13. Digitalization**

*Serbia has competitive digital infrastructure,...*

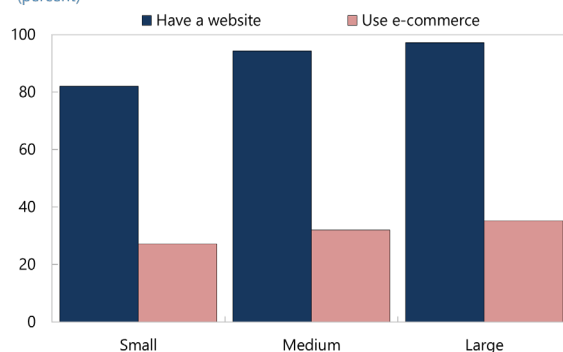
#### Selected Digital Infrastructure Indicators (2023 data)



Sources: International Telecommunications Union (ITU), and IMF staff calculations.

*However, e-commerce is not advanced,...*

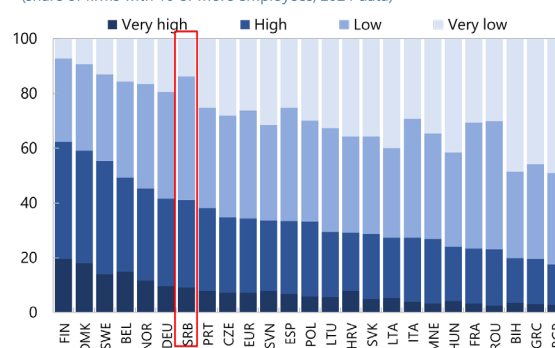
#### Digitalization by Firm Size (percent)



Sources: SORS and IMF staff calculations.

*...that allows firms to engage in digitalization.*

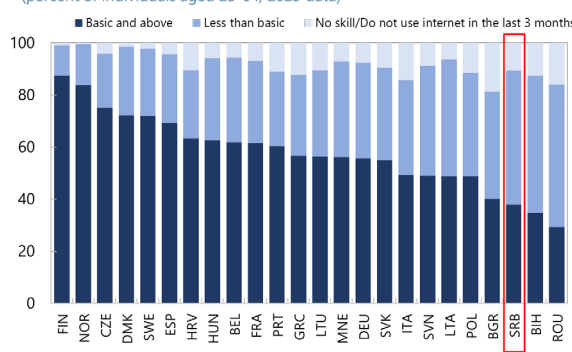
#### Enterprise Digital Intensity Index (share of firms with 10 or more employees, 2024 data)



Sources: Eurostat and IMF staff calculations.

*while more could to be done to enhance individual digital literacy.*

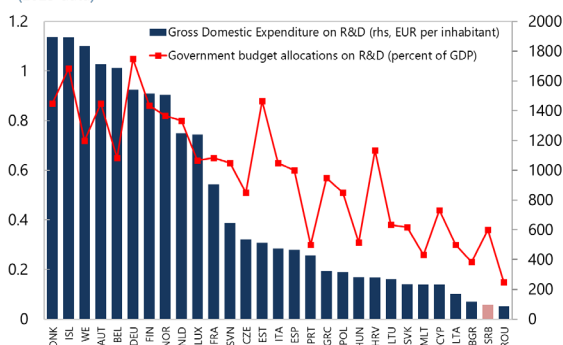
#### Individual Level of Digital Skill (percent of individuals aged 25-64, 2023 data)



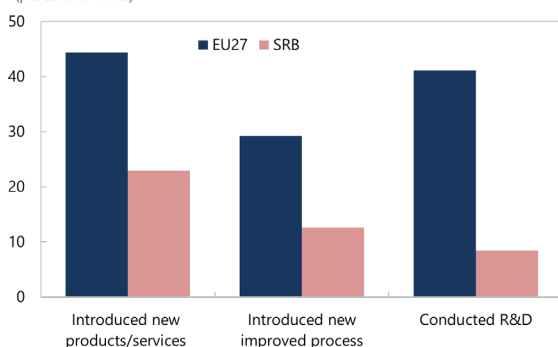
Sources: Eurostat and IMF staff calculations.

## 14. Despite great government effort, R&D and innovation activities stagnant in Serbia.

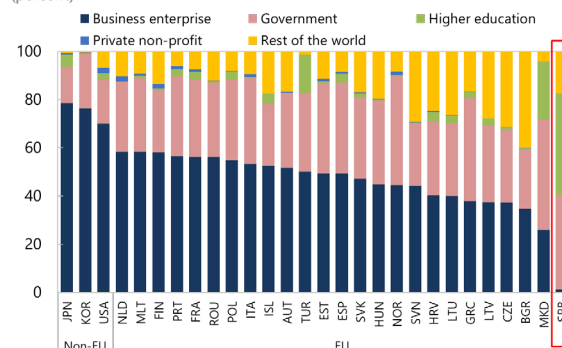
Over the past few years, Serbia has made great effort in boosting innovation. Among them, the Innovation Fund, the Serbia Ventures Program, and the Scale Up Factory initiative, led by Chamber of Commerce and Industry, provide support for innovative projects and promising domestic start-ups through financial assistance, mentorship, and networking opportunities for potential market entry. This partially helped Serbia improved 7 percent in the European Innovation Scoreboard over 2017–24, even though by level, its innovation performance was still only around 60 percent of the EU average in 2024 (EIS, 2024). The share of innovative firms that introduce new products or new improved processes and conduct R&D is significantly lower than the EU average, especially among private and smaller firms (Figure 14). R&D activities also substantially underperform, as evidenced by modest R&D expenditure, both from the government and the private sector. Private businesses in Serbia invest very little in R&D projects, and the share of firms conducting R&D is less than 10 percent compared to the EU27 average of 40 percent.

**Figure 14. R&D, and Innovation***Low R&D expenditure in both public...***R&D Expenditure**  
(2023 data)

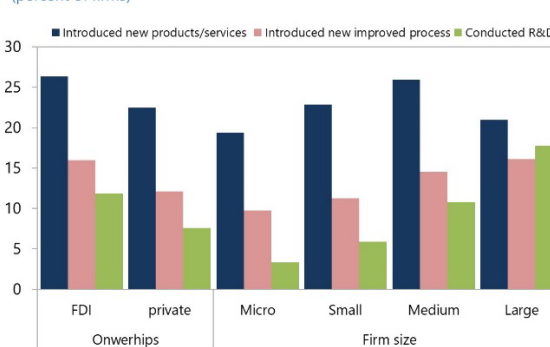
Sources: Eurostat and IMF calculations.

*...resulted in limited innovation efforts among business...***Innovation Effort in Private Sector**  
(percent of firms)

Sources: BEEPS (Serbia 2024 survey, EU 2018-2022 survey) and IMF staff calculations.

*...and particularly low share from private sector contributions...***Gross Domestic Expenditure on R&D by Source of Funding**  
(percent)

Sources: Eurostat and IMF staff calculations.

*...especially in private and micro firms.***Firm R&D and Innovation by Ownership and Size**  
(percent of firms)

Sources: 2024 Serbia BEEPS survey and IMF staff calculations.

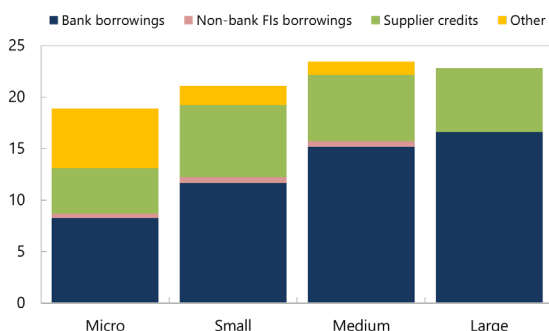
**15. Shallow and undiversified financial markets hamper access to finance for micro firms and start-ups.** While Serbian firms largely rely on internal funding for working capital and investment, bank borrowing is the most important source of external fundings. However, micro enterprises often face difficulties in accessing bank loans. This is evidenced by a significantly smaller portion of bank borrowing allocated to micro firms that they have to rely on alternative funding sources such as borrowing from family and relatives (Figure 15). In addition, around 35 percent of micro firms reported obstacles when applying for a loan application. Beside unfavorable interest rates—identified as the major constraint across all firm sizes—micro and small firms face distinct challenges that are not faced by large firms, including complex application procedures, high collateral, and insufficient size of loan. Although more than 10 percent of new business loans are issued to micro enterprises, interviews with banks conducted by Berg (2019) suggest that this segment is not strategically important to banks due to issues such as challenging firm formalization, unreliable financial statements, and limited potential growth; and is exclusively serviced as retail lending. Similarly, access to finance among entrepreneurs appears to be limited. This highlights the need for both a better support in bank lending and a more diversified financial markets that can

provide risky capital to potential micro and start-ups firms, a segment that the traditional banking sector has little appetite for.

**Figure 15. Credit and Capital Market**

*Access to bank borrowings are more restricted in micro firms than in large firms...*

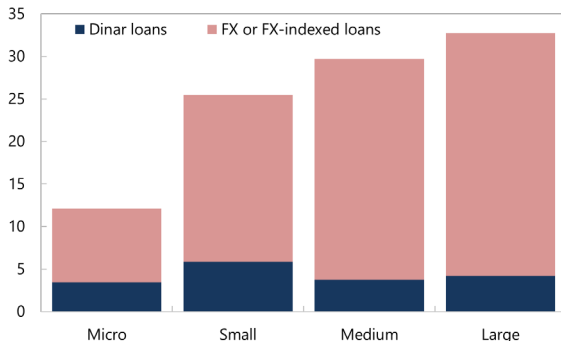
**Sources of External Funding for Working Capital**  
(as percent of total funding)



Sources: BEEPs and IMF staff calculations.

*...resulted in a small share of formal lending for micro firms in the banking system.*

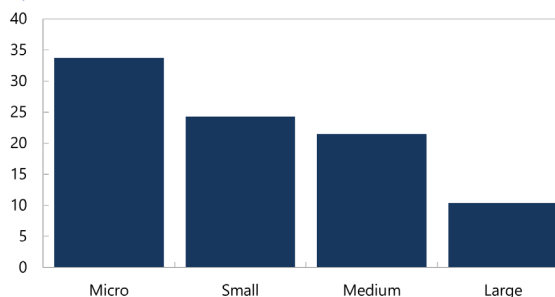
**New Business Loans by Firm Size**  
(as share in total loans, 2024 data, percent)



Sources: NBS and IMF staff calculations.

*...due to higher obstacles faced by micro firms when applying for a new loan...*

**Financial Constraint by Firm Size**  
(percent)

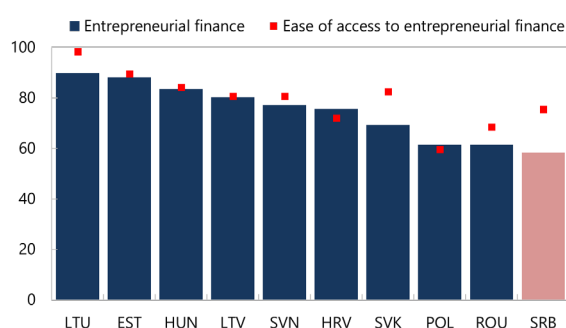


Note: Firms are defined to be financial constrained if their loan applications were rejected or they reported not applying for a loan because of either complex application procedures, interest rate, collateral, insufficient loan size, or because they thought it would not be approved.

Source: BEEPs and IMF staff calculations.

*Funding for start-ups is also limited compared to peers.*

**Distance to Frontier in Financing for Start-Ups**  
(percent, relative to Europe and USA frontier, 2023)



Sources: Global Entrepreneurship Monitor 2022/23 Global Report.

## D. Medium-Term GDP Impact of Structural Reforms

**16. In this section, we propose recommended policies for aforementioned structural areas with an illustration of the potential output gains from implementing those reforms.** Following Budina et al. (2025), we estimate the medium-term impact on potential output if Serbia can close 50 percent of the gaps with the frontier, using the following formula:

$$\text{Output gains} = \text{Policy gaps} * \text{Output elasticities}$$

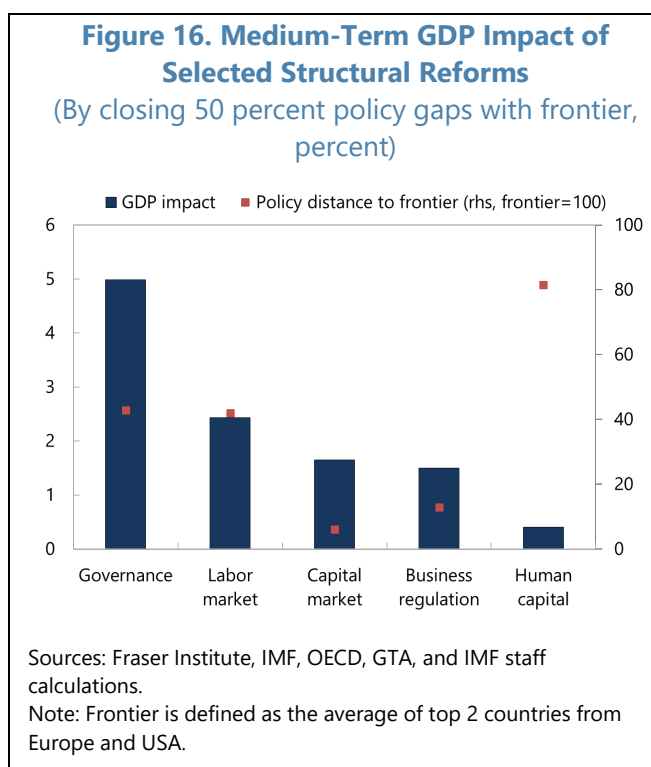
Output elasticities of individual reforms are selected from available IMF and OECD studies.<sup>11</sup> It should be noted that while we will elaborate multiple potential and important structural reforms

<sup>11</sup> Besides elasticities of labor market, human capital, and business regulations estimated using the same framework as in Egert and Gal (2017) and Egert (2017), output elasticities used in this paper are also from Budina et al. (2023) for governance, and IMF (2019) for capital market. See details in Budina et al. (2025).

that help address structural deficiencies in Serbia in this section, the potential output gains from implementing reforms are only calculated for a subset of those reforms. The availability of such estimations depends on both the availability of existing structural indicators for Serbia and the corresponding elasticities from the literature. Furthermore, as pointed out by Budina et al. (2025), the estimates are subject to several sources of under- and over-estimation. For example, the model account for neither economic interactions between reforms nor general equilibrium effects that could enhance the impact of a set of reforms. Our benchmark of closing 50 percent structural policy gaps could be also very ambitious in some areas for Serbia. Nevertheless, the exercise provides a helpful illustration to gauge the importance of those reforms on potential GDP.

**17. Even partially closing key structural policy gaps to the global frontier can significantly increase Serbia's productivity and medium-term growth.** As shown in Figure 16, strengthening governance is key reforms to lift growth, followed by reforms in labor market, and business regulation.

- Improving governance** through enhanced corruption control could add around 5 percent to GDP over the medium term. This is a result of both a relatively large policy gap compared to the frontier and a sizable impact of governance on growth. Stronger institutional quality helps enhance policy credibility, investor confidence, and public sector efficiency, catalyzing higher investment and better resource allocation. It also increases the effectiveness of other structural reforms, e.g. product market deregulation may incentivize more new firms to enter and compete with incumbents where the rule of law and broader governance is strong (IMF, 2019). In this regard, reducing corruption and strengthening judicial performance for commercial disputes—such as an introduction of e-court system, e-title, and electronic registration—could improve the efficiency and transparency of governance in general.
- Continuing **labor market reforms** to maintain a stable workforce through higher participation, lower structural unemployment, and limiting emigration would be crucial as the population ages. The first can be achieved by revisiting the labor tax wedge. Closing half of the gaps in labor tax (proxied by labor tax wedge for couples with two children) could add 2½ percent to



potential output as it fosters higher labor force participation and labor formalization.<sup>12</sup> This is particularly true for women, who face stronger incentives to stay home or work part-time to care for family members if financial remuneration is not compensatory. Other gender-based labor policies could be also in help to boost female LFPR, such as facilitating more flexible part-time work, providing childcare support—especially in rural areas—and addressing the gender pay gap (EC, 2020). To reduce structural unemployment, active labor market policies should play a central role in re-skilling and up-skilling the labor force to enhance their employability. In addition, policies that promote geographic mobility or support regional economic development would help reduce regional-variant structural unemployment, which seems to exist in Serbia.<sup>13</sup> Retaining and attracting talents will also help Serbia to limit the current emigration trend. On the one hand, emigration pressures would reduce when local job opportunities and living conditions are improved, especially for those who have high likelihood to emigrate such as students and highly skilled workers. On the other hand, policies such as easing hiring procedures of foreign labor, including a relaxation in working visa issuance and electronic labor documentation, will help attract foreign workers and resist the demographic headwinds.

- **Human capital build-up** is crucial for enhancing productivity and growth and reducing youth unemployment. In our analysis, bringing the PISA score closer to the frontier could help increase potential output by ½ percent. However, this impact is likely an underestimation of the benefits that human capital reforms could bring to Serbia, as it does not take into account the critical double-edged skill mismatches. A closer collaboration between higher education institutions (HEIs) and employers is key in resolving this issue. Ucevic (2020) finds out that students in Serbia who have some work experience (e.g. internship) and who get assistance in finding jobs (e.g. from family, professors, or career guidance centers within universities) are more likely to secure jobs that match their educational levels. Thus, a better use of these career centers and a closer university-firm linkages through internships would likely help address the overqualification mismatch. To address the skill gaps, education of new-economy skills and interactive skills needs to be enhanced through (i) higher investment in mathematical and information technology (IT) education; and (ii) an emphasis on teaching method enabling discussions, teamwork, decision making and critical thinking. Furthermore, closer dialogue and cooperation between HEIs and employers to ensure that curricula are aligned with current job market requirements would be helpful. Tackling overqualification and skill gaps will particularly help young people to find better jobs, bringing down youth unemployment and even emigration pressure.<sup>14</sup>

<sup>12</sup> Specifically, SSCs contribution and its minima could be lower, especially for low-income workers, to support formalization. Higher family tax exemptions would increase financial incentives to work. To this end, revenue mobilization is essential when revising the tax system. Well-designing tax policies that relying on indirect taxes on consumption or property rather than direct and more distortive ones on labor would help mobilize revenue while minimizing growth-reducing distortions (see Acosta-Ormaechea and Yoo, 2012).

<sup>13</sup> For example, North Serbia, including Vajvodina and Belgrade, has relatively lower unemployment rate (7.3 percent in 2024) than South Serbia, including Sumadija and Western Serbia and Southern and Eastern Serbia (10 percent in 2024).

<sup>14</sup> Students, unemployed, and skilled workers have the highest desire to seek employment in EU (Rašević, 2016).

- Further **improving business environment** through streamlining business regulation and administrative burden and reducing state influence could deliver strong impact, adding roughly 2 percent to GDP over the medium term. Together with cutting red tape and barriers to entry,<sup>15</sup> cross-country experiences show that reducing the distortions created by public ownership to facilitate product market deregulation can boost growth in the economy (Anderton et al., 2020; Égert, 2017). This could be achieved not only through (i) SOE privatization; but also by (ii) introducing a centralized ownership model to reduce government controls in SOEs;<sup>16</sup> (iii) improving SOE governance; (iv) reducing state control in product markets such as price regulation; and (v) increasing transparency in the legislative process by ensuring that relevant legislation undergoes comprehensive public consultations. These reforms will help even the level playing field between private sector and SOEs. Simultaneously, state aid needs to be redesigned for greater efficiency, accompanied by a better monitoring and evaluation system. This could be done by first, reallocating state support from unproductive SOEs to private firms. When doing so, state aid should focus on providing incentives on investment, especially intangible assets and innovative R&D, to help both boost domestic private investment in near term and enhance productivity in medium term. Second, the model of rewarding FDI firms with tax breaks for employment creation needs to be reconsidered amid aging population and shrinking labor force. Instead, tax incentives provided to FDIs should work towards enforcing FDI-local firm linkages, integrating local firms to the global supply chains, and facilitating technology transfer. In this regard, it is essential to build technical capacity among domestic enterprises that can absorb technology infusion and global supply chain integration. Last, state aid can provide support for domestic firms to penetrate new international market as they will generate higher income sources, higher productivity, and build more sustainable business when coping with small domestic market.
- Improving bank lending and deepening the capital market** could add another 2 percent to potential GDP, possibly due to a large policy gap with the frontier. While large firms are well-served by the banking sector, micro enterprises and start-ups are not considered banks' strategic customers due to their distinct characteristics. Reforms could focus on facilitating access to finance for these firms in both bank and non-bank institutions. For example, banks could review and simplify their loan application procedures as well as collateral system to assist formal borrowings in micro firms. In this regard, legalization process should be simplified and automatized to ease bottleneck in collateral asset for formal lending. In parallel, developing the non-bank lending, for example by enhancing the availability of risk-capital financing, will help reduce banks' burden in lending to non-traditional segment.

<sup>15</sup> For example, barriers in service and network sectors (energy, e-communication, transport, professional services) remain in excessive price setting that prevents private firms from fair market competition (Drozd and Sipka, 2019). Digitalization in public services and tax filing will also help reduce bureaucracy requirements on firms.

<sup>16</sup> OECD (2024) states that centralized ownership, in which one central decision-making body acts as shareholder in the majority of SOEs, is an effective way to separate the exercise of the ownership function from other potentially conflicting activities performed by the state, particularly market regulation and industrial policy.

**18. While not quantified in this paper due to unavailable elasticity estimates, digitalization, R&D and innovation is crucial in catapulting labor productivity to a new level.**

Current government effort could be enhanced by higher direct government funding to R&D activities or targeted incentives for firms' innovative endeavors, under the forms of grants to innovative projects or tax exemptions to intangible investment. Digitalization needs to be enhanced through revamping public e-services (e.g. enabling fiscal receipts issuance and electronic payment of non-tax charges) and investing in individual literacy. Meanwhile, accelerating the development of the innovation ecosystem would require a comprehensive policy framework overarching a broad range of structural areas. This includes human capital reforms to provide adequate skills, availability of risk capital financing for innovative firms, low barriers to entry and exit that put pressure on incumbent firms, labor regulations that facilitate swift labor reallocation and a growth-friendly tax system (Budina et. al, 2025). It is therefore essential to accelerate reforms in these areas to support innovation.

## **E. Conclusion**

**19. Serbia has made commendable progress in lifting growth and income.** Significant efforts have been made over the last decade to increase labor force participation rates, reduce unemployment rates, and boost domestic private and public investment as well as attract FDIs, resulting in solid accumulation of labor and capital. Increased labor productivity, including from positive spillover effects of FDI and ICT investment, also supported growth, making Serbia among fastest-growing economy in Europe in recent years.

**20. However, securing continued income convergence with the EU levels is facing challenges.** Despite narrowing, the income gap with the EU remains large with substantial deficiencies in total factor productivity. The manufacturing sector also faces difficulties in shifting to higher value-added industries. While wage levels are still low by regional standards, recent increases in wages need to be monitored as they may weaken external competitiveness, particularly in labor-intensive construction and manufacturing industries that received half of FDI inflows during 2021–23. Above all, scope for additional factor accumulation to boost growth will likely become more limited going forward, with capital and labor likely contribute 2.1 percent to growth in medium term, pointing to the need of a higher productivity growth to facilitate sustainable growth and accelerate the income catch-up.

**21. Even partially closing key structural policy gaps to the global frontier can significantly increase Serbia's productivity and potential output growth.** Significant structural policy gaps exist in Serbia in several areas, including slow progress in governance reforms, a heavy labor tax burden hindering labor force participation and formalization, double-edged skill mismatches, a business environment hampered by distortive state influence, anemic R&D and innovation activities, and shallow financial markets that hamstringing access to finance of microenterprises and start-ups. If Serbia were to close half of its gaps with the frontier, potential output gains can be sizable. Bearing in mind wide uncertainty amid multiple sources of over- and under-estimation, analysis based on indicator-based policy gaps vis-à-vis the frontier and available estimates of the output effects of



closing those gaps suggests that medium-term growth can increase by around 5 percent if governance reforms are implemented, 2½ percent for labor market reforms, and 2 percent each for reforms in business regulations and capital market.

**22. A spectrum of holistic policies could help to address structural deficiencies.** Among them, strengthening governance should be treated as a foundational element, not only because of its high returns to medium-term growth, but also due to its catalytic role in magnifying impacts of other reforms. Reducing heavy and distortive labor tax is essential to enhance labor force participation and formalization, while investing in human capital by enhancing education curriculum, university-firm linkage, and vocational training to reduce skill mismatch will be crucial to boost labor productivity. State aid has to be re-designed and effectively monitored and evaluated to ensure fair market competition and level the playing field between domestic private firms and SOEs and FDIs. This would help foster a more conducive business environment, enhance investment and capital accumulation in all firm types, and facilitate higher productivity through resource reallocation. Increasing the availability of risk financing for high-tech in Serbia could facilitate better access to finance for start-ups. Finally, supporting digitalization, R&D, and innovation is crucial in catapulting labor productivity to a new level, for which the abovementioned adequate skills, favorable business environment, and availability of risk capital financing will help.

## Appendix I. Serbia: Macrostructural Reforms Heatmap by Country Groups

### Appendix I. Table 1. Serbia: Macrostructural Reforms Heatmap by Country Groups

Alignment with Frontier		25					50					75					100		Frontier 1		Frontier 2		Date	Source				
		EU	EA	CESEE	AE	CESEE	USA	ALB	BIH	BGR	HRV	CZE	EST	HUN	LVA	LIT	MDA	MNE	POL	ROU	SRB	SVK			SVN			
I	WGI governance index	80	81	81	85	81	80	58	47	59	69	82	88	67	77	80	59	60	70	65	56	71	78					
I.1	Political Stability	84	83	68	83	66	70	55	74	83	89	86	84	80	84	70	65	80	80	62	79	86	ISL	SMR	2022	WGI		
I.2	Corruption	72	73	52	80	75	43	38	55	66	84	50	66	67	45	49	62	52	42	56	68	DNK	FIN	2022	WGI			
I.3	Voice and Accountability	85	87	65	91	80	83	52	66	74	84	88	70	82	85	63	66	74	73	57	81	83	NOR	CHE	2022	WGI		
I.4	Government Effectiveness	77	79	59	85	83	57	32	49	68	80	85	67	71	77	54	55	61	55	57	64	79	CHE	DNK	2022	WGI		
I.5	Rule of Law	80	81	59	86	87	53	50	54	65	81	89	66	77	80	54	54	66	66	54	70	78	FIN	DNK	2022	WGI		
I.6	Regulatory Quality	82	83	66	87	90	61	54	65	69	90	94	67	85	88	68	70	74	66	61	77	74	DNK	LUX	2022	WGI		
II	Business regulations	77	77	69	79	86	73	50	73	64	79	89	64	83	82	68	80	73	62	64	74	74						
II.1	Regulatory Burden	62	63	57	72	90	88	29	71	25	45	81	52	66	59	52	78	49	52	54	36	41	FIN	CHE	2022	WEF - GCR		
II.2	Bureaucracy costs	82	83	71	82	77	75	53	69	80	75	99	77	96	88	99	80	91	64	77	88	91	ISR	EST	2022	IHS Markit		
II.3	Administrative burdens	86	85	84	81	79	86	85	81	93	86	92	89	100				100		53	83	91	POL	LTU	2023	OECD		
II.4	Impartial Public Administration	82	84	64	87	82	61	51	64	83	92	98	59	97	69	43	67	67	73	80	84		DEU	SWE	2022	V-Dem Institute		
II.5	Distortion of the business environment	76	77	62	78	107	67	67	67	61	80	93	53	80	80	80	93	67	67	53	76	61	USA	DNK	2022	Fraser Institute		
II.6	Barriers to entry in service & network sectors	74	72	74	77	78			88	63	89	78	54	69	96			67		73	82	73	CHE	SWE	2023	OECD		
III	Innovation and R&D	62	63	51	69	88	70	64	44	49	62	63	61	48	54	40	70	58	43	49	51	65						
III.1	R&D activities	40	40	27	50	79			11	22	39	32	48	12	21	10		36	9	26	23	50						
III.1a	R&D tax incentives & direct govt. funding (% of GDP)	30	31	21	41	56			1	3	24	14	56	1	13			32	5		18	41	GBR	ISL	2022	OECD		
III.1b	R&D expenditure (as percent of GDP)	50	50	33	59	102			21	40	54	50	39	23	30	10		41	13	26	28	59	USA	SWE	2022	Eurostat		
III.2	AI preparedness for adoption	85	86	76	88	98	70	64	77	76	85	94	75	85	86	69	70	79	77	72	79	80	DNK	USA	2023	IMF		
III.2a	Digital Infrastructure	86	87	75	88	93	57	56	74	85	84	100	79	80	88	58	56	82	76	74	82	81	DNK	EST	2023	IMF		
III.2b	Digital Innovation	84	85	70	89	97	67	59	72	75	85	85	74	78	79	63	59	75	78	58	73	76	ISR	SWE	2023	IMF		
III.2c	Human Capital	84	85	78	88	98	76	63	80	68	83	99	68	87	90	63	82	77	71	73	78	82	CHE	EST	2023	IMF		
III.2d	Regulation	87	88	79	89	102	81	79	81	78	89	94	79	94	86	90	84	81	81	83	84	80	USA	IRL	2023	IMF		
IV	Labor human capital	77	76	74	78	88	78	67	73	73	79	78	81	78	78	71	79	78	80	71	75	73						
IV.1	EPL	64	63	67	66	91	61	73	78	71	70	78	63	70	74	71	76	74	85	71	68	58						
IV.1a	Hiring and firing regulations	69	67	66	72	100	57	63	71	63	64	76	64	64	68	74	76	64	88	75	76	58	DNK	USA	2022	WEF - GCR		
IV.1b	Centralized collective bargaining	74	73	78	67	92	66	83	85	79	92	102	73	95	98	68	76	88	82	80	57	70	EST	LTU	2022	WEF - GCR		
IV.1c	Labor tax wedge	50	48	55	57	82					54	56	51	52	58			70		50	45	ISR	CHE	2022	OECD			
IV.1e	Active labor market policies expenditure (% of GDP)	53	52	38	66	14			33	77	47	52	9	19			65			14	27	CHE	AUT	2022	EC			
IV.2	Skill-mismatches: over-qualification	74	70	73	73				71	70	90	91	74	84	69			74	83	62	67	77	LUX	CZE	2022	Eurostat		
IV.3	Easing of hiring foreign labor	76	76	68	78	85	98	55	64	45	64	55	87	75	68	75	81	74	88	64	71	59	IRL	ALB	2022	Fraser Institute		
IV.4	Labor force	80	80	78	83	83	65	73	69	77	89	80	81	84	65	...		75	65	76	82	78						
IV.4a	Labor force participation, total, 15+	82	82	81	85	85	71	76	71	82	91	83	84	84	81	71		80	70	80	84	80	ISL	MDA	2023	World Bank		
IV.4b	Labor force participation, female, 15+	77	78	74	81	81			60	70	67	73	88	77	79	83	60	73	59	73	79	76	MDA	ISL	2023	World Bank		
IV.5	Building human capital	90	90	85	91	94	75	69	79	89	91	98	90	93	93	72	81	91	80	83	88	91						
IV.5a	Human capital index	88	89	82	91	89	82	63	76	86	86	96	88	89	90	71	73	84	75	82	81	86	ISL	FIN	2024	UNDP		
IV.5b	Years of schooling	88	88	85	88	96	72	75	81	88	92	96	87	95	96	73	90	93	81	82	92	91	DEU	CHE	2023	UNDP		
IV.5c	PISA score	93	93	88	93	96	72		81	93	96	101	94	95	94	74	79	97	84	87	90	95	EST	IRL	2022	OECD		
V	Credit and capital markets	64	67	45	75	97	48	57	42	48	52	43	56	49	39	64		44	46	48	49	40						
V.1	Percent of bank deposits held in privately owned banks	85	84	80	82	100	100	100	100	80	100	100	80	100	100	100	100	50	80	100	50	50	ALB	BIH	2022	World Bank		
V.2	Interest rate controls/negative real interest rates	84	90	76	87	90	90	70	50	70	90	60	90	90	50	90	90	70	70	90	100	90	90	AUT	CYP	2022	Fraser Institute	
V.5	VC investments (% of GDP)	14	14	9	17	153			11	7	6	47	8	2	13			3	2		3	0	USA	EST	2022	OECD		
V.3	Financial Markets Index	46	50	14	69	99	1		8	26	11	6	42	4	3			40	8	6	3	10	CHE	USA	2021	IMF		
V.4	Financial Markets Depth Index	40	44	9	63	100	2	1	10	16	7	7	13	4	4	1		17	6	5	5	8	GBR	CHE	2021	IMF		

Sources: Fraser Institute; OECD; GTA; Berkeley; IMF; Eurostat; World Bank; and IMF staff calculations.

Note: Table shows closeness to the best practices (frontier). Frontier is defined as the average of the top two country of EUR +USA. Frontier = 100; all other values are normalized to this reference. In Fraser data sample, Europe excludes KOS, and SMR. Regional numbers are simple average. Fraser Institute sample includes 165 countries; WGI sample includes 145 countries. Fraser Institute refers to multiple sources. Index is normalized first, some inversed, then we took the Frontier as 100, then normalized it again relative to the Frontier.

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