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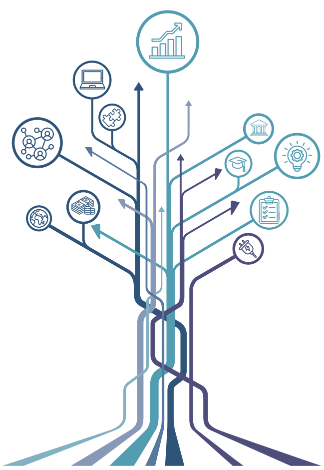
Enterprises and Productivity

Country Case in Brief: Estonia

Kristo Käärmann and Taavet Hinrikus wanted to transfer money between the United Kingdom and Estonia, but the two Estonians were frustrated with expensive bank fees. So, in 2011, they came up with a solution. They would put money into each other's bank accounts. Kristo, based in the United Kingdom, put money into Taavet's UK account, and Taavet, based in Estonia, put money into Kristo's account in Estonia. Because the money transfers did not cross borders, no high fees had to be paid, and the money was exchanged readily. This is how TransferWise, now known as Wise, was born. Fast forward a decade. Wise's revenues were $1.2 billion in 2023. During these 12 years, the innovative start-up traveled from ingenious idea to global fintech leader, mirroring Estonia's bolder, broader economic policies and innovation-driven growth.

The company's expansion was rapid. It scaled up to serve millions of customers worldwide. The growth was supported by Estonia's policy environment, which encouraged entrepreneurial ventures and innovation. The country's digital-first approach, with initiatives such as e-governance and e-residency, created a seamless business environment. The government cultivated innovation and research and development (R&D) by offering incentives, funding R&D activities, and promoting collaboration between universities and businesses. These steps were coupled with world-class information technology infrastructure, one of the highest rates of internet penetration worldwide, and widespread access to high-speed broadband. Estonia's regulatory framework—transparent and efficient—allowed Wise to operate easily with little bureaucratic hindrance. This supportive foundation was instrumental in enabling Wise to focus on innovation and global expansion.



The success of Wise reflects Estonia's broader economic strategy. The government—focused on creating a competitive market with low barriers to entry and a strong push for digital innovation—set the stage for start-ups such as Wise to flourish. Estonia's integration with the global economy, particularly its accession to the European Union (EU), provided Wise with access to a vastly larger market and a more diverse customer base. Non-Estonians were free to set up and run businesses in Estonia remotely, in an open economy with a trade-to-gross domestic product (GDP) ratio close to 160 percent, alongside limited state presence in the economy and healthy levels of competition.[1]

A skilled workforce, fostered by the government's emphasis on education and digital literacy, provided Wise with the talent it needed to innovate and grow. Estonia has one of the best education systems in the world, producing a skilled workforce that meets the country's needs in modern technology and generates a steady supply of tech-savvy professionals to support its growing tech sector.

These policies have made Estonia one of Europe's most thriving start-up hubs with more than 1,000 start-ups among a population of only 1.3 million. Estonia stands out for the number of start-ups, but also for the capacity of the start-ups to grow to scale, given that the country has produced several unicorns—start-ups that reach a valuation of more than $1 billion—besides Wise, including Bolt, Pipedrive, Playtech, and Skype.

Estonian companies have a global outlook and rely on global markets for growth. A digital-first strategy has vastly reduced administrative barriers and costs among both start-ups and established businesses. The Estonian Development Fund complements EU-funded programs and offers financial support and mentorship to early-stage companies (the stage at which uncertainty is greater) and has attracted venture capital and a vibrant financial ecosystem that supports start-ups. The government has promoted four strategic areas that have been crucial to the emergence of such a vibrant entrepreneurial ecosystem: concentrating on innovation and technology, targeting the value added created by businesses (rather than a focus on size), focusing on top-tier and frontier businesses, and supporting market contestability and global market integration.

Introduction

The example of Estonia shows how middle-income countries (MICs) in the Europe and Central Asia (ECA) region could spur economic development through a similar four-strategy approach. Each government needs to identify the appropriate development path. The principles embodied in these strategic areas represent a model for other MICs, particularly the emphasis on an innovation-driven growth model and the capacity to generate a thriving entrepreneurial ecosystem with significant dynamism at the top of the entrepreneurial distribution. The most successful companies should be able to compete in global markets and drive growth.

This chapter focuses on three main questions, as follows:

First, have ECA MICs followed Estonia's example and supported the forces of creative destruction to spur economic dynamism and growth? In short—no. Productivity growth has stemmed primarily from structural shifts out of agriculture into manufacturing and services and from shifts in resource reallocation from less efficient firms to more efficient ones. Among ECA high-income countries (HICs), by contrast, innovation is more important in driving productivity growth. As ECA MICs aspire to high-income status, these middle-income economies—previously dependent on resource reallocation—now need to prioritize innovation and technological upgrading strategically to facilitate this critical transition.

Second, is targeting small and medium enterprises (SMEs) for business support producing the desired results? This chapter finds that governments need to focus on start-ups and young businesses and not, as often happens now, on SMEs in general, because mature SMEs often contribute little to job creation, which is driven primarily by start-ups and young firms. Productive development policies therefore need to deemphasize size as a criterion for policy support and targeting, because a size-dependent policy approach has not been productive and may be counterproductive in that policies targeting SMEs focus more on preservation (Garicano, Lelarge, and Van Reenen 2016). Policies supporting firms should promote business dynamism and creative destruction.

Third, which factors produce economic vibrancy and dynamism? Restricted competition invariably stifles entrepreneurial dynamism, job creation, and productivity. State-owned enterprises (SOEs), especially in key sectors, such as energy generation and distribution and even in transmission, are critical to future growth and to the transition to a lower-emission future. In many cases, however, the prices SOEs charge are below cost recovery, limiting profitability and making innovation and support for the energy transition difficult for the SOEs. Moreover, SOEs tend to dampen entrepreneurial dynamism and act as a force of preservation, limiting the creative destruction shifts associated with entrepreneurial dynamism. The negative impacts of SOEs differ across countries, depending on governance structures and the effective separation of ownership and management control. Less international competition and suboptimal public procurement practices hinder the forces of creative destruction and entrepreneurial dynamism.

Supporting Creation: The Drivers of Productivity Growth in the Region

Productivity growth is driven by various forces in the ECA MICs and HICs (Syverson 2011). In the MICs, productivity performance depends mostly on the between-firm reallocation of resources within sectors and the change in the composition of the economy (structural transformation), while, in the HICs, it is largely driven by within-firm productivity growth because of innovation and technological upgrading. As countries become richer, the importance of innovation and technology adoption becomes more important, especially in the transition from MICs to HICs.

Structural Transformation Shows Limits in Boosting Productivity Growth

The pace of labor productivity growth varies across the ECA region. The increase in the pace has been considerable in most HICs, but only in a few MICs. Productivity growth measured as firm revenue per worker grew in most countries by 1 percent to 5 percent a year over the last 15 years.[2] Labor productivity growth in the ECA MICs underperformed relative to the ECA HICs. For example, sales per worker rose by more than 3 percent a year in firms in Poland and Romania. ECA MICs—Georgia, Kazakhstan, Kosovo, North Macedonia, and Serbia—grew less than 2 percent a year, while sales per worker contracted in Bulgaria and Montenegro.

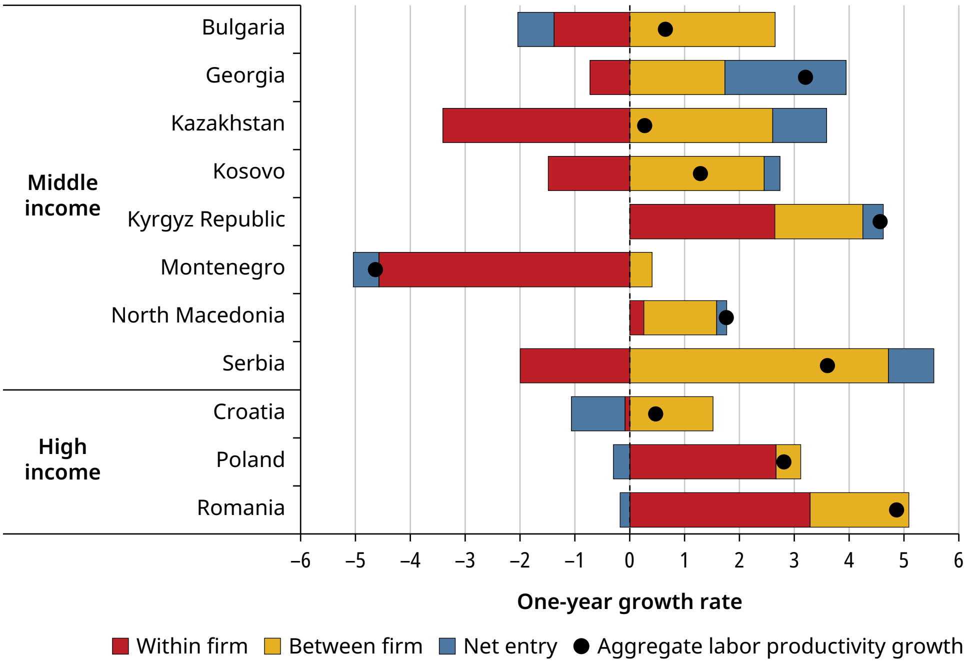
At an aggregate level, the role of structural transformation appears less important among the HICs. This is because the increase in average sectoral productivity growth matters much more as countries become richer. Over the last few decades, many ECA countries have undergone profound transformations in economic structure and made significant productivity gains in certain sectors. Structural transformation—that is, changes in overall productivity because of sector structural shifts—has been the primary source of productivity growth in most ECA MICs, but, in the ECA HICs, the effect of structural transformation has been negligible or even negative. As income grows, countries rely more on their capacity to lift within-sector productivity rather than on structural change.

Besides structural transformation, sector-level productivity growth may be driven by market efficiency, within-firm growth, and market selection. Aggregate productivity changes may be decomposed into three components. The first, the reallocation component (or between-firm growth), measures the productivity growth derived from improving market efficiency, that is, how resources flow between firms at varying levels of productivity within sectors (from low- to high-productivity firms). The second, the within-firm component, captures the contribution of growing productivity among surviving firms. The third component refers to market selection, which gauges the contribution of firm entry and exit. If entering firms exhibit greater productivity relative to incumbents and exiting firms are less productive than the firms that survive, business selection will lead to a rise in the overall productivity of the economy.

Within-Firm Productivity Growth Is Inadequate in Many ECA MICs

The ECA MICs are struggling to boost within-firm productivity, unlike the ECA HICs. Figure 2.1 illustrates the decomposition of productivity growth—measured

FIGURE 2.1 Within-firm productivity growth does not drive overall ECA MIC productivity growth



Sources: World Bank elaboration based on data of national statistical institutes; Melitz and Polanec 2015; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: The data reported are one-year arithmetic averages. A dynamic Olley-Pakes decomposition was performed at the three-industry level of NACE Rev. 2 and used a two-year rolling window (changes between *t* and *t* −2) (EC 2008). Firms and sectors were weighted according to the employment weight in each activity and economy during the reference period. NACE = Statistical Classification of Economic Activities in the European Community.

as sales per worker—into within-firm, between-firm, and market selection (entry and exit) components. The ECA MICs and ECA HICs differ systematically in the relative importance of the within-firm productivity component, which measures the changes in the productivity of incumbents over time. This component has been systematically negative in ECA MICs except in the Kyrgyz Republic and North Macedonia. Meanwhile, within-firm productivity growth has been the main driver of aggregate productivity growth in the ECA HICs. In Poland and Romania, which experienced large productivity increases in the last 15 years, within-firm productivity gains accounted for at least two-thirds of overall productivity growth.

The average productivity among incumbent businesses declined and suggests there were gaps in innovation, new products, the skilled labor force, management capacities, and technology adoption (OECD 2018b). These factors are associated with efficiency upgrading and improved within-firm performance.[3] The lack of improvements within firms may also be explained by an enabling business environment that is not conducive to firm investments in innovation and technology adoption because of the quality or enforcement of regulations, the lack of competition, and underdeveloped credit markets. These drawbacks generate constraints to growth among high-potential entrepreneurs.

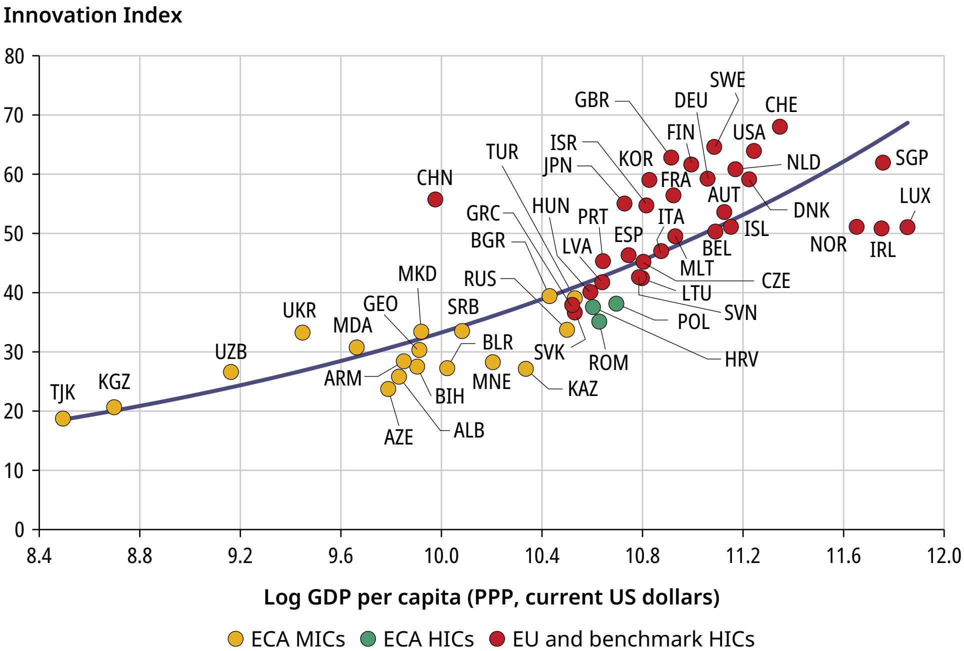
Creative destruction requires market selection through the exit of less efficient businesses and their replacement by new, more productive firms. Firm selection, the exit of lower-productivity businesses, and the entry of higher-productivity start-ups that introduce new products or new processes are the last channel through which productivity can grow. If the productivity of new businesses outperforms that of incumbents, or exiting businesses are less efficient than those that manage to survive, aggregate productivity grows through this market selection process. With few exceptions, this channel has played a minor role in the ECA region, indicating that current entrepreneurial ecosystems should become more dynamic to generate a robust stream of higher-productivity start-ups and that market selection mechanisms should be strengthened to lead to the exit of less efficient firms.[4] On average, surviving firms display higher productivity than exiting firms, but there is still a large overlap between both distributions, suggesting that unproductive incumbents often survive, while similarly productive or more productive businesses tend to close operations.

Business innovation and experimentation lead to higher levels of productivity. As Cusolito and Maloney (2018) point out, firms that introduce new products or production methods or that adopt new technologies face great uncertainty over risks and returns. They need to learn to assess these risks and make decisions through a process of entrepreneurial discovery. If successful, their productivity would rise, and innovation would be reflected in an increase in the within-firm term of the dynamic Olley-Pakes decomposition. Most ECA countries lag high-income EU countries in innovation and experimentation. As suggested by the Schumpeterian framework, economic growth is driven by innovation in the long run (Schumpeter 1942). This is ultimately grounded in investment in R&D, training, digitalization, and improvements in management and organization (Griffith, Redding, and Van Reenen 2024). Among firms and entrepreneurs operating in competitive sectors, innovation offers the opportunity to escape competition (the escape competition effect).

ECA countries, especially the MICs, lag Europe HICs and the United States on global innovation and the number of patents per capita (refer to figure 2.2).[5] The share of firms introducing products new to the market rises with income, as does the number of patents per capita. In the latter case, European peers, such as Hungary, Latvia, Lithuania, Slovakia, and Slovenia, display a higher degree of patent innovation even compared with ECA HICs.

Less innovation in most countries in the region reflects the fact that the ECA MICs are still focusing on the 2*i* strategy of infusion and have not yet shifted to a 3*i* strategy, which includes innovation and is associated with within-firm productivity gains. The current number of patents per capita in the region differs greatly between

FIGURE 2.2 ECA MICs lag Europe HICs on innovation

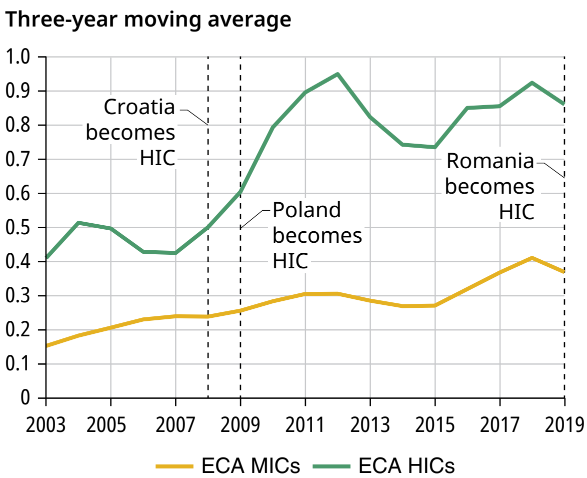


Sources: World Bank data and elaboration based on Dutta et al. 2023; GII (Global Innovation Index) (dashboard), World Intellectual Property Organization, Geneva, https://www.wipo.int/global_innovation_index/en/.

Note: GDP per capita (in log, current US dollars adjusted by purchasing power parity) as of 2022. For country abbreviations, refer to International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search. PPP = purchasing power parity.

the MICs and HICs, and the innovation gap is substantial. In 2003, the ECA MICs produced 0.15 patents per million inhabitants, while the share in the ECA HICs was 0.4 patents per million inhabitants. The innovation gap between the ECA HICs and MICs widened considerably until 2013 (refer to figure 2.3). Although the patent gap between the ECA MICs and HICs narrowed subsequently, the ECA HICs still had more than twice the patent innovations per million population in the ECA MICs: 0.88 versus 0.38. A similar pattern may be observed

FIGURE 2.3 The innovation gap between ECA MICs and ECA HICs has not narrowed



Sources: World Bank calculations; data of PATSTAT (Patent Statistical Database), European Patent Office, Munich, https://www.epo.org/en/searching-for-patents/business/patstat#:~:text=PATSTAT%20contains%20bibliographical%20and%20legal,or%20can%20be%20consulted%20online.

across other areas of innovation (patents related to the environment, renewable energy, and sustainable technologies).[6]

Innovation is a prerequisite, not a result in achieving and maintaining high-income status. Within-firm innovation and experimentation require talented managers and workers, the availability of funds, access to technology and knowledge, incentives to invest, and integration with global markets that offer growth opportunities. The HICs do not outperform the MICs on innovation solely because these complementary factors are more abundant in high-income economies. Examining the three ECA countries that have transitioned to high-income status, one may see that the number of patents per capita was already rising before these countries reached the HIC threshold and continued to increase thereafter.[7]

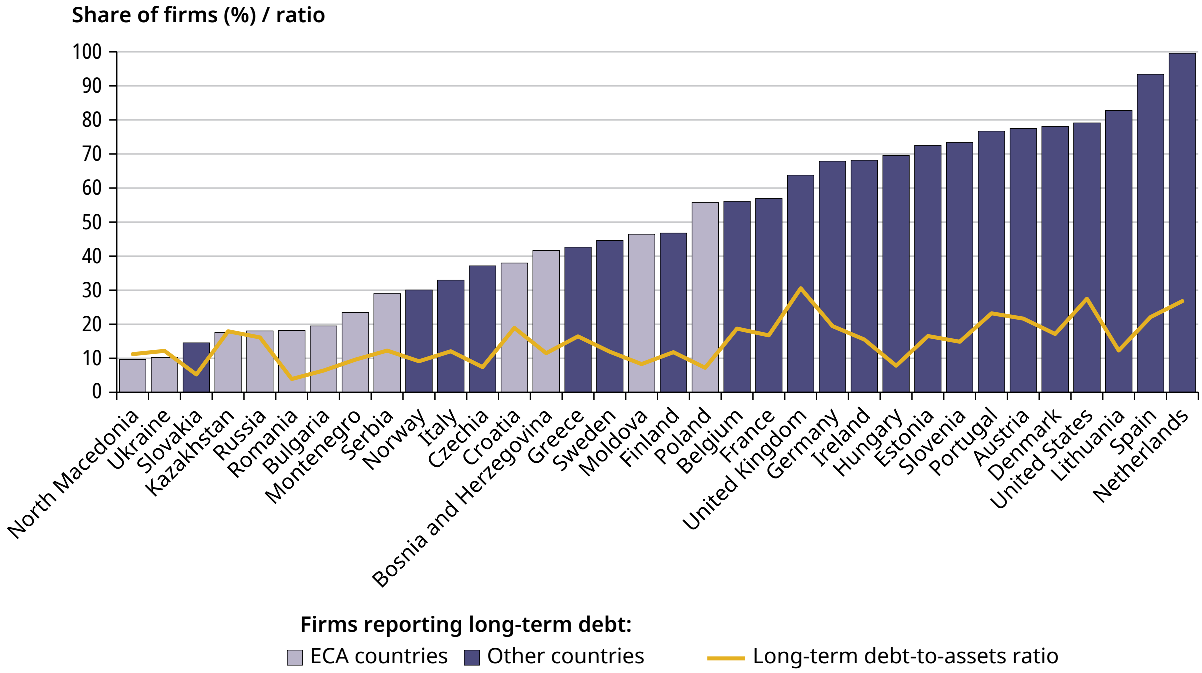
Economies and firms require key complementary factors to boost innovation. Improving the quality of management, deepening capital markets, investing in human capital, and creating a more dynamic, enabling business environment are crucial in spurring innovation, and these areas allow substantial room for improvement among ECA countries, especially MICs. Moreover, a broad spectrum of public interventions has been shown to crowd in private R&D investments and enhance innovation outcomes among firms, but these require that beneficiary firms have the required capabilities to perform innovative activities.[8]

Financial Market Development and Access to Finance

The ECA countries underperform on investment relative to the MICs globally. Gross fixed capital formation as a share of GDP in the ECA is consistently below that of countries at similar incomes, and the gap has widened since the global financial crisis in 2007–09. Among firms, lower investment leads to lower capital intensity. Modern capital and machinery are important because they represent embedded knowledge, and paltry investment means that firms must rely on older technologies that are not at the industry frontier (Keller 2000).

ECA credit markets are less well developed relative to European peers, and this hinders investment in innovation and technology adoption. The ECA countries rank below the median in credit access distribution, and most are at the bottom of the scale (refer to figure 2.4). Among the small number of firms that do have access to long-term debt financing, the share of debt financing capital (the long-term debt-to-assets ratio) is small, indicating the need to develop long-term credit markets. Absent any long-term financing, firms must rely on their own funds and short-term commercial bank credit for investment. This usually finances working capital rather than the acquisition of tangible and nontangible assets. Additionally, efficient capital markets that allocate resources to high-potential entrepreneurs and businesses require an institutional context that provides appropriate incentives, such as profits, long-term stability, and access to markets (Nanda and Rhodes-Kropf 2016).

FIGURE 2.4 **Relatively few ECA firms access long-term financing**



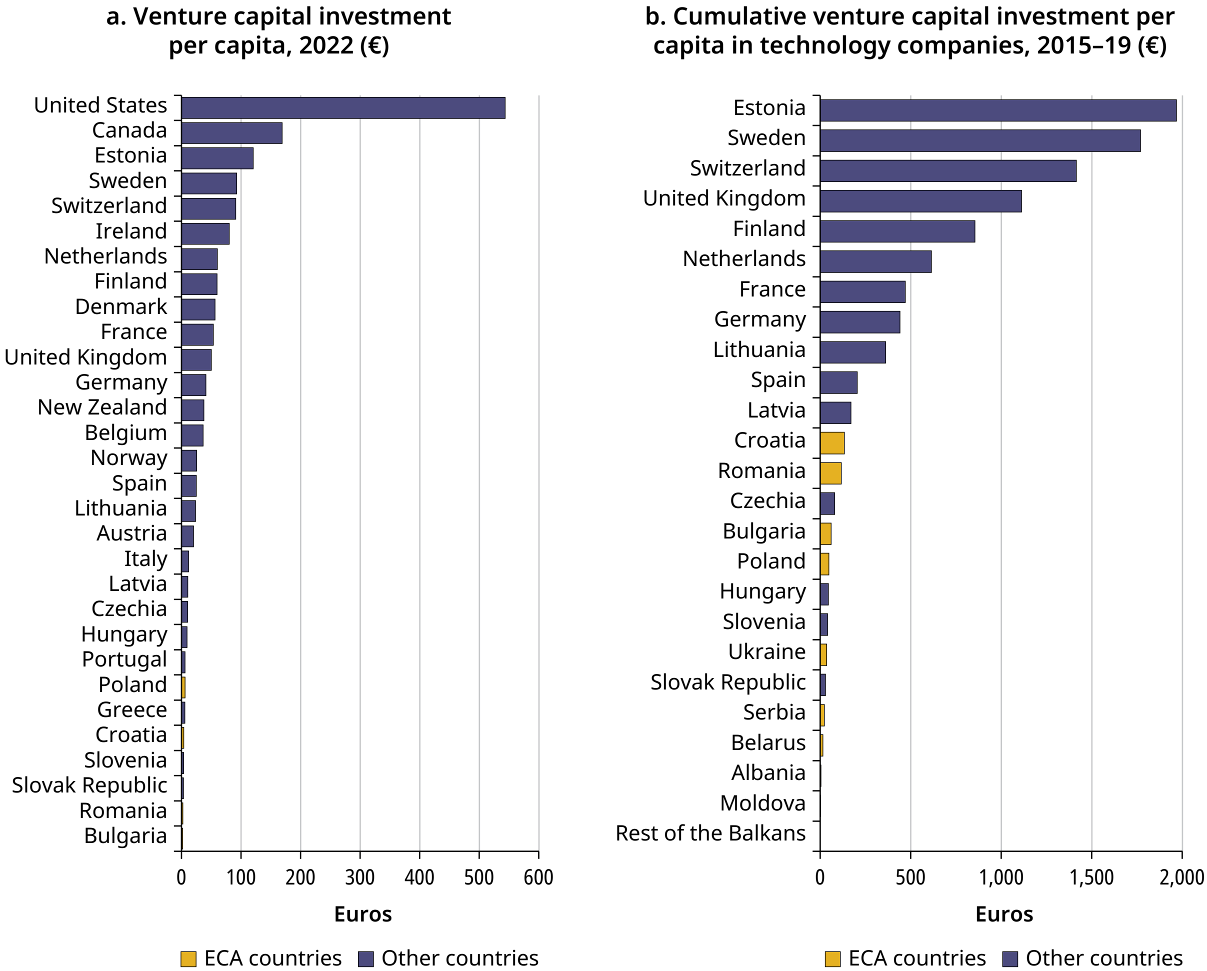
Source: World Bank elaboration based on data of Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Average 2010–19. Countries with at least 1,000 firms per year are considered.

The ECA countries need to boost the role of venture capital to foster the emergence of innovative entrepreneurs (Didier and Cusolito 2024). Venture capitalists typically focus on investments in start-ups, innovative businesses, and early-stage growth firms that they believe have long-term growth potential in that they are developing cutting-edge technology and creating innovative business models. Because these entrepreneurs and firms usually struggle to gain access to commercial bank loans, venture capital is crucial if they are to expand quickly. Per capita venture capital funding rates in the ECA region, especially among the MICs, are extremely low in absolute and relative terms, demonstrating that venture capital funding is underdeveloped (refer to figure 2.5).

Besides the depth of the financial sector, the efficiency of credit allocation is critical in realizing productivity gains. Productivity and innovation require credit to be channeled to firms with better growth prospects and higher productivity. Yet, more productive firms do not always have access to credit. Evidence from World Bank Enterprise Surveys shows that, even though companies that accessed credit were, on average, more productive than those that applied for it but were rejected, a considerable share of credit-constrained firms, that is, those unable to access

FIGURE 2.5 Venture capital is underdeveloped in the ECA region



Sources: World Bank elaboration based on 2021 data of Dealroom, https://dealroom.net/; 2022 data of Organisation for Economic Co-operation and Development.

credit, exhibit similar or even higher productivity relative to those with access.[9] This conclusion was formally assessed through an econometric analysis, which found that, while, on average, more productive firms are more likely to obtain credit in ECA countries, this is driven by efficient credit allocation among relatively inefficient firms, defined as those below the median. Meanwhile, firms with productivity above the median are associated with lower access to credit.

Banks seem good at screening out bad projects, but often fail to identify good ones. This task becomes more challenging as economic complexity increases and projects come to involve more risk, but also potentially more innovation and reward. Reversing misallocation may be crucial in boosting the transition from middle- to high-income status in the region. Cusolito et al. (2024) find that hypothetical productivity gains from the efficient allocation of finance is 20 percent to 80 percent in most European countries, with the highest gains in ECA MICs and HICs.[10]

Management Capacities

Management capacity and business organization account for a large share of the productivity differences between firms and countries. Enhancing these elements should lead to more productive and innovative firms (Cirera and Maloney 2017). The role of management within firms has been extensively investigated. The results suggest that management practices account for nearly 30 percent of the productivity differences across countries and 20 percent of the productivity differences within countries (Bloom, Sadun, and Van Reenen 2016; Bloom and Van Reenen 2010). In Croatia, an increase among firms in management quality from the 10th to the 90th percentile is associated with a 36 percent rise in labor productivity and a 32 percent gain in profit margins (Grover, Iacovone, and Chakraborty 2019).

Management practices are a technology whereby the quality of management is an element of intangible capital that increases output (Bloom, Sadun, and Van Reenen 2016). Improved management capacity and business capabilities help firms undertake more investment in modern technology and become more innovative. The capacity of firms to adopt and exploit technologies depends greatly on management and organization (Cirera, Comin, and Cruz 2022; Cirera and Maloney 2017). Management decisions, such as adopting performance-based rewards systems, influence the motivation and behavior of employees, which translates into firm-level innovation outcomes (de Jong and den Hartog 2007; Ederer and Manso 2013; Leiblein and Madsen 2009). Similarly, firms with better management and organization are more likely to adopt more sophisticated technology and to innovate (Grover, Iacovone, and Chakraborty 2019).

In the ECA, too, well-managed firms are more likely to innovate and to experiment with and adopt technology from foreign firms, and management quality is positively associated with the innovative behavior of the firms. Evidence from the World Bank Enterprise Surveys on selected ECA countries shows that the share of firms investing in R&D and of firms using technologies licensed by a foreign-owned company increases with management quality, even after accounting for industry and country effects and for the size and age of the firms.[11] Firms at the bottom of the management quality distribution are half as likely to invest in R&D as firms at the top of the distribution, even if they operate in the same country and industry and are similar in size and age.

Market Competition

Market competition is crucial for business dynamism, boosting firm and sector performance. When firms compete neck and neck, they escape competition through innovation and upgrading (Iacovone, Pereira López, and Schiffbauer 2023). By developing new products or increasing the quality of existing ones, enterprises can charge higher prices or reduce costs relative to noninnovating firms. In this Schumpeterian framework, in which innovation stems from entrepreneurial investment and replaces old technologies, entrants (1) put additional pressure on incumbent firms to lower prices and innovate and (2) benefit consumers with lower product prices and higher quality, and the business environment with higher productivity and innovation (Aghion 2017). Incumbents, however, respond by delaying the entry of potential competitors. This is the reason why new firms and talented entrepreneurs are vital for innovation and economic growth and why economic policy and institutions should bolster business dynamism (Akcifit, Pearce, and Prato 2020; Murphy, Shleifer, and Vishny 1991). The rest of this subsection assesses the influence of various measures of competition on employment and productivity dynamics in ECA countries.

Pro-competition policy is positively correlated with income per capita. The market organization criterion score in the Transformation Atlas measures the fundamentals of market-based competition and the stability of competition rules (refer to figure 2.6, panel a). The Organisation for Economic Co-operation and Development's product market regulation indicators measure the regulatory obstacles that discourage the entry of firms and competition (refer to figure 2.6, panel b). Product market regulation scores are lower among the HICs, indicating that firms in these countries face lower barriers to entry and expansion. In the ECA region, the HICs outperform the MICs both on the market organization criterion score and the product market regulation indicators. Thus, the ECA HICs have improved the competition environment, which is consistent with their greater firm dynamism and better innovation intensity outcomes.

FIGURE 2.6 MICs tend to have worse product market regulation and therefore less competition

a. Market organization score

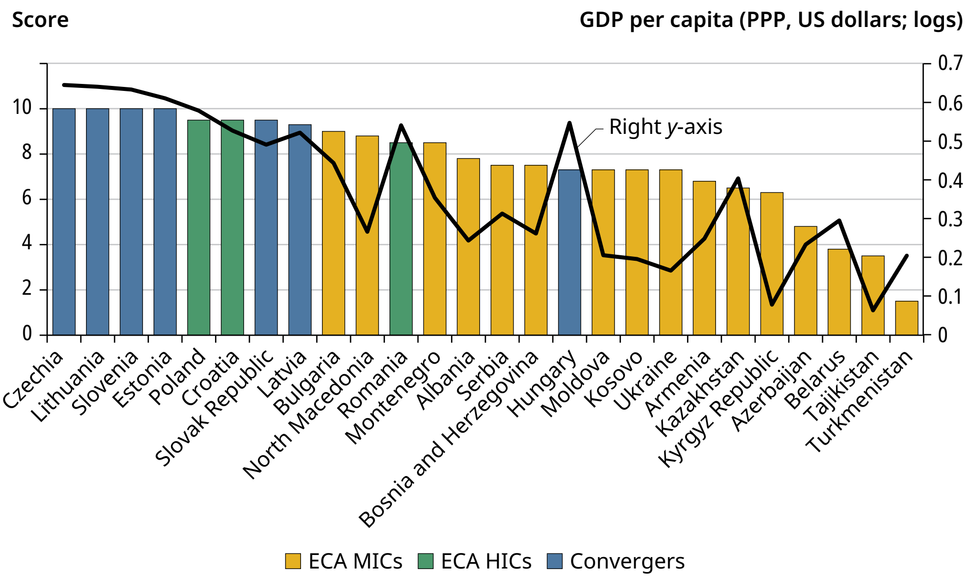


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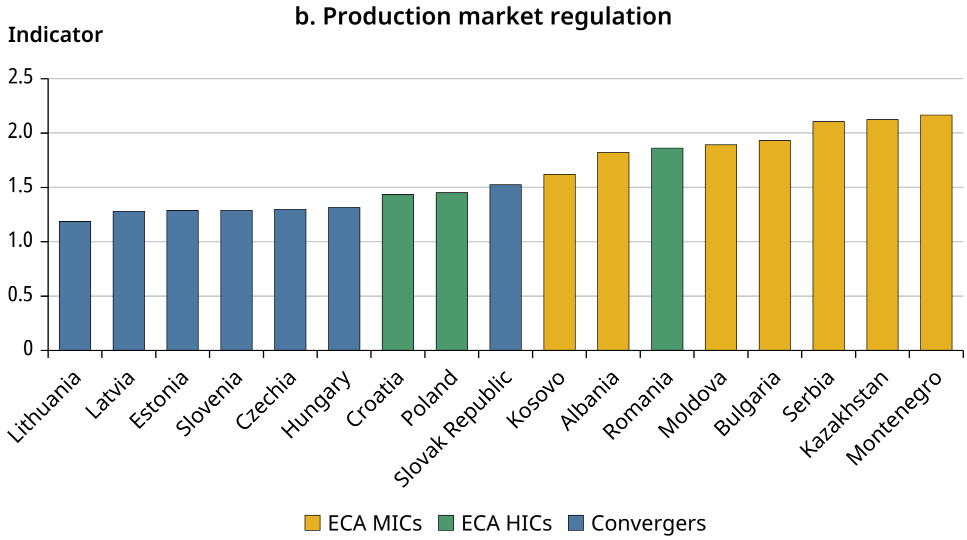
FIGURE 2.6 MICs tend to have worse product market regulation and therefore less competition *(Continued)*



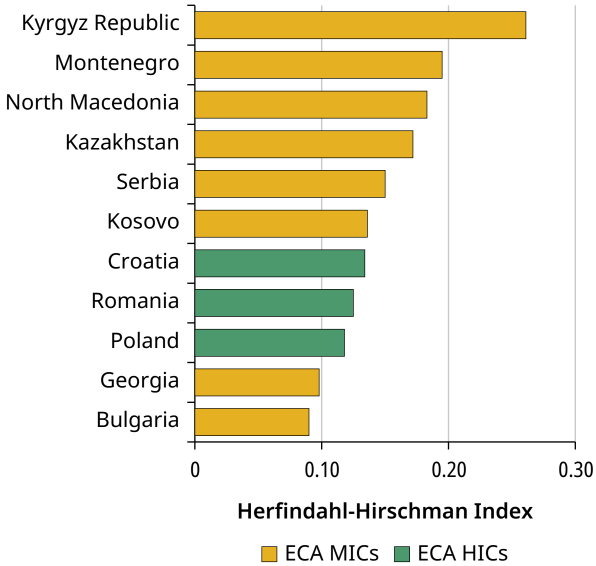
Sources: World Bank elaboration based on data of BTI (Bertelsmann Stiftung) Transformation Atlas (dashboard, Bertelsmann Stiftung, Gütersloh, Germany, https://bti-project.org/en/atlas; PMR (Product Market Regulation) (dashboard), Organisation for Economic Co-operation and Development, Paris, https://www.oecd.org/en/topics/product-market-regulation.html.

Note: PPP = purchasing power parity.

Market concentration is lower in the ECA HICs than in the ECA MICs, which is consistent with the presence of more efficient markets among the former. The Herfindahl-Hirschman index gauges the competition environment by measuring the distribution of market shares across firms (Herfindahl 1950; Hirschman 1964).[12] ECA HICs, Bulgaria, and Georgia rank at the bottom of the index score relative to the MICs, suggesting that enterprises in these countries operate in less concentrated markets, which typically allow for a higher degree of contestability and greater incentives to compete and innovate (refer to figure 2.7).

Trade openness is a vital element in enhancing competition among firms, especially firms producing tradable goods (Autor, Dorn, and Hanson 2013, 2016; Iacovone, Rauch, and Winters 2013). The logistics performance index measures the quality of trade- and transport-related infrastructure, the efficiency of customs and border management clearance, and the overall quality of logistics services.[13] ECA countries, both MICs and HICs, underperform on logistics relative to EU countries. Even within the region, there are notable differences between MICs and HICs. The HICs show better performance. In the last 15 years, the region has made progress on logistics competitiveness, but the gap between MICs and HICs persists, even slightly widening. Tariffs are notably higher in the MICs than in the HICs. The tariffs

FIGURE 2.7 ECA MICs tend to exhibit greater market concentration



Sources: World Bank elaboration based on data of national statistical institutes; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

in the HICs are in line with the average in EU countries, the United Kingdom, and the United States even though the ECA MICs have lowered tariffs substantially in the last 15 years.[14]

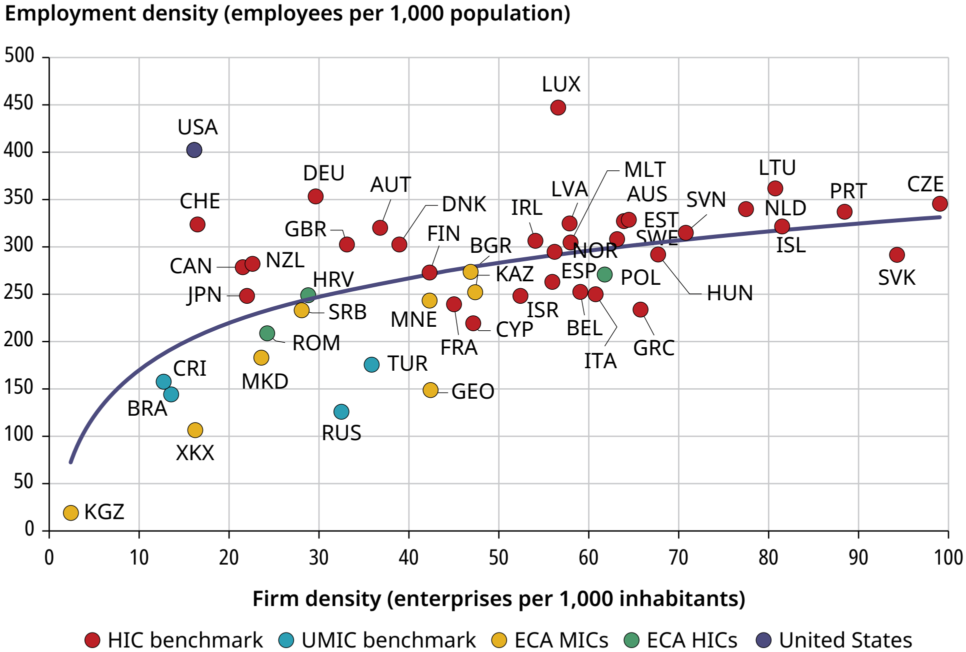
The Forces of Preservation: Small Firms and Incumbent SOEs

ECA countries do not lack businesses, but have too many small, low-productivity firms, often a result of regulatory policies, governance issues, or limited capabilities. Most ECA countries also lack very large companies. There are legacy SOEs, some of them large, and large, newly established enterprises, such as retailers, banks, and others. There are typically no very large firms, however. This is the reason for the emphasis here on the need for comprehensive policies that also focus on top companies and help them realize productivity growth and innovation.

The Business Ecosystem in ECA: Too Many Small, Low-Productivity Firms

In ECA countries, there is a substantial number of businesses per capita, but active enterprises generate less employment than might be expected based on their income and even less compared with HICs. The ECA countries have an average of nearly 30 enterprises per 1,000 inhabitants, more than comparable upper-middle-income countries, such as Brazil and Costa Rica (14 and 13 firms per 1,000 inhabitants, respectively), more than Germany (29 per 1,000 inhabitants), and much more than the United States (16 per 1,000 inhabitants). Despite the similar or greater firm density relative to Germany and the United States, ECA firms generate far less employment, a pattern especially marked across the ECA MICs. Employment density in the MICs is lower than in countries with similar business density (refer to figure 2.8). This is because MICs businesses do not expand sufficiently.

FIGURE 2.8 ECA MICs: employment density is low because firms do not expand sufficiently



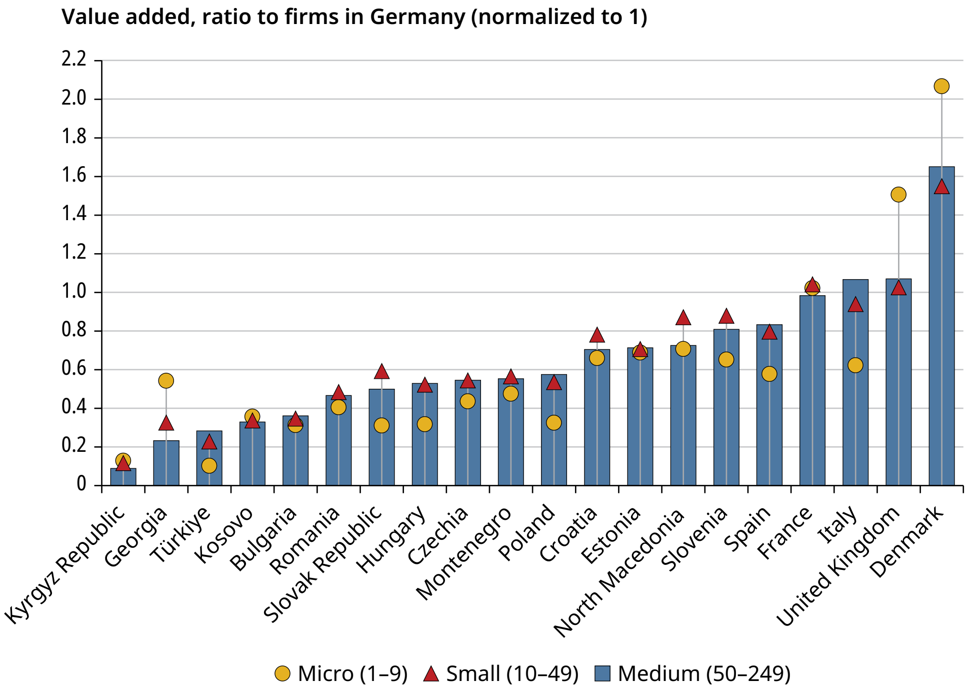
Sources: World Bank elaboration based on data of national statistical institutes; OECD; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: The HIC benchmark involves selected high-income OECD and EU member countries. UMICs = selected upper-middle-income countries based on data availability. Firm counts and employment are cross-checked with published data on the web portals of national statistical institutes. For country abbreviations, refer to International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search. NACE = Statistical Classification of Economic Activities in the European Community.

Firms generate more employment in the ECA HICs. Adjusted by firm density, employment density is higher in ECA HICs Croatia and Poland, though it is as high as expected in ECA HIC Romania. This contrasts with the ECA MICs, such as Georgia, Kosovo, Kyrgyz Republic, Montenegro, and North Macedonia, where the number of jobs per capita generated by firms is significantly below the expected employment density. This finding suggests that firms in the ECA HICs face lower barriers to growth. According to a neo-Schumpeterian framework, as firms realize their productivity potential through innovation and technology adoption, their growth leads to the displacement of low-productivity firms that eventually exit the market. In the presence of market distortions and barriers to firm growth, however, firms enter the market and do not grow (Acemoglu and Restrepo 2018; Aghion, 2017; Baumol 1990).

SMEs exhibit lower labor productivity in the ECA region than in the EU, underscoring the importance of enhancing the capabilities of the ECA SMEs for income transition. Across all size classes of enterprises, ECA businesses show significantly lower labor productivity relative to businesses in selected HICs, such as Denmark, France, Italy, and the United Kingdom (refer to figure 2.9). For instance, a worker in an ECA microfirm generates half the value added of a worker in an enterprise of similar size in Germany and even less than counterparts among microfirms in France or the United Kingdom. Workers in small ECA companies (10–49 employees) produce 30 percent to 80 percent of the value added of equivalent workers in small German firms. This productivity gap persists at similar magnitude across midsize firms, indicating pervasive productivity disparities between ECA and EU businesses. Inefficient firms are less competitive in international markets, impeding their integration in global value chains, and are less likely to access financial resources to upgrade technology and equipment. To become more productive, ECA firms need to invest in their productive capacities.[15] A healthy business environment is crucial for rewarding such investments.

FIGURE 2.9 MIC micro-, small, and medium enterprises are less productive



Sources: World Bank elaboration based on data of national statistical institutes; EC 2008; NAICS (North American Industry Classification System) (database), US Census Bureau, Suitland, MD, https://www.census.gov/naics/.

Note: ECA country data are cross-checked with official data published by national statistical agencies. The original values are expressed in euros using the latest information for comparability.

The ECA Lacks Very Large Companies

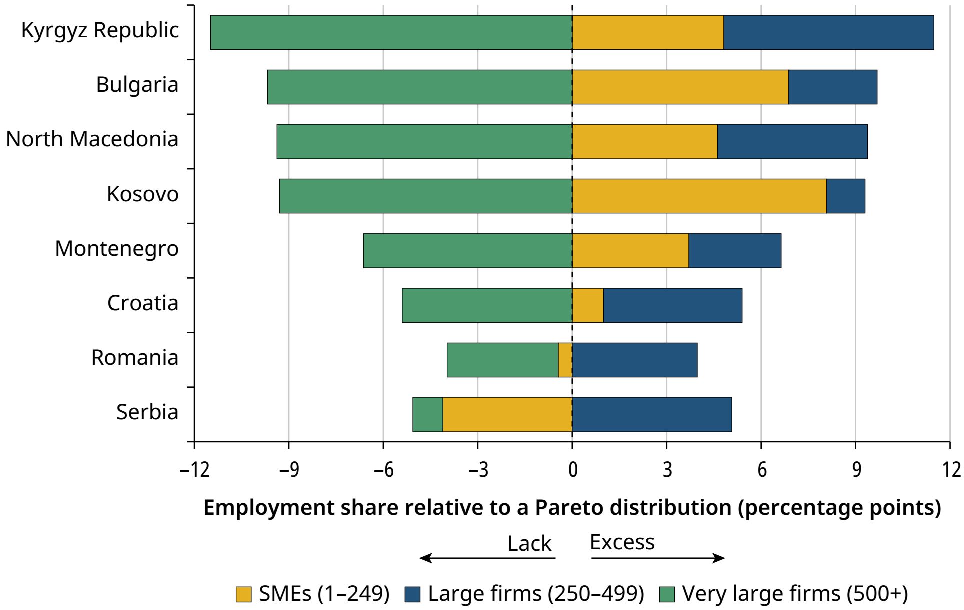
Medium and large firms—that is, firms with at least 50 employees—are less relevant in employment in the ECA region than among the HICs. Although such firms usually represent a small share of enterprises, they account for a large segment of employment. In the region, their more limited relevance derives either because they are fewer in number or because they are smaller, with lower average employment among firms with at least 50 employees.

In most ECA countries, the labor share of medium and large firms is in the range of 40 percent to 50 percent. This is smaller than the share in EU countries, such as Denmark, France, Germany, and the Netherlands, and the share in the United Kingdom and the United States, where three jobs in four are in such firms. Compared with the United States especially, the labor share of large companies is low (this is also the case relative to what might be expected in a typical Pareto distribution). Firms with fewer than five employees account for 20 percent of employment in the ECA MICs and 15 percent in the ECA HICs, but around 5 percent in the United States. These variations are not evident only in microfirms, but also in larger companies. For instance, firms with fewer than 500 employees account for 80 percent of employment in the ECA MICs and 73 percent in the ECA HICs, but only 47 percent in the United States.[16]

The ECA problem arises because of the lack of large firms and of medium firms that grow into large ones rather than to a putative missing middle, that is, a lack of midsize firms (Abreha et al. 2023). The missing middle hypothesis is often associated with evidence of distortions introduced by business regulations, tax thresholds (higher taxes that kick in if a specified size threshold is reached), and policy support programs that create incentives for small firms to remain small, while favoring large incumbent businesses. The analysis reported here formally explored this hypothesis following a methodology proposed by Teal (2023) and Tybout (2014) that compares the observed employment shares across firms of varying size and the shares predicted by a Pareto distribution.[17] The analysis found that, in most ECA countries, there is an excess labor share accounted for by SMEs and a shortage of very large firms (here defined, respectively, as firms with 1–249 employees and at least 500 employees; refer to figure 2.10). These observed differences become more visible at lower country income levels, suggesting that the problem of missing large firms is more accentuated among the ECA MICs.[18]

These findings should not be interpreted as a call to promote national champions and subsidize large businesses. On the contrary, the evidence suggests that it is crucial for governments to focus on addressing the constraints to growth faced by companies with high-growth potential through the set of policies recommended in this report, such as expanding access to global markets, attracting foreign direct investment, deepening financial markets, and developing robust equity markets.

FIGURE 2.10 ECA countries have too little employment in large firms—the missing large problem



Sources: World Bank calculations based on national statistical institutes; EC 2008; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Shown is the share of employment in each size bin relative to the employment share predicted by a Pareto distribution. Positive bars suggest an excess of employment in the size bin, while negative bars indicate a lack of employment in the size bin compared with a Pareto distribution prediction.

It is likewise essential to take account of the need for better market functioning and for eliminating the preferential treatment provided to SOEs or connected businesses.

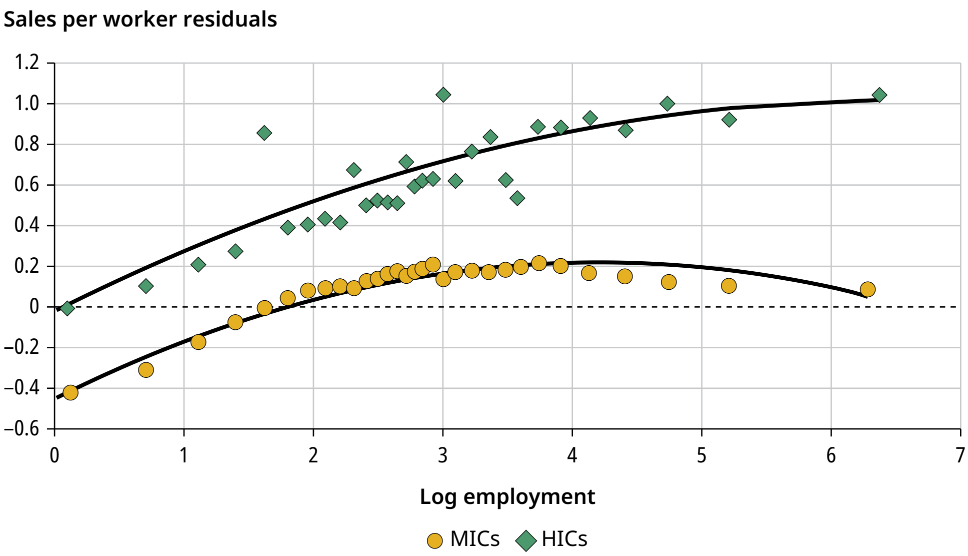
Trouble at the Top: Zooming in on Large ECA Companies

The presence of highly productive large firms in an economy indicates a dynamic environment in which innovation is occurring and small and large firms coexist symbiotically (World Bank 2024). Large firms typically invest more in management capacities and innovation, hire highly skilled workers in greater numbers, and learn continuously about new production technologies and goods by participating in global markets. However, in economies characterized by limited growth opportunities and by distortions in market functioning, such as limited competition, large firms may seek to exploit their market power and buttress the privileged position they enjoy thanks to access to finance or to procurement contracts rather than promoting innovation and productivity growth (De Loecker, Eeckhout, and Unger 2020). In such contexts, large firms do not show exceptional performance and do not drive growth. Instead, they may display productivity on a par with SMEs. In contrast, in competitive, dynamic business environments, larger firms innovate, become more productive, and grow to escape competition and raise profitability.

In the ECA region, however, larger size is not necessarily associated with greater productivity. This is especially true in the ECA MICs. Although sales per worker tend to rise with firm size in the region, the relation between labor productivity and employment is negative among the ECA MICs beyond a certain size threshold (refer to figure 2.11). Sales per worker increase with employment up to a certain point in firms with fewer than 50 employees, but remain flat or even decline in firms with more than 50 employees. For example, a worker in a firm with around 350–400 employees in the ECA MICs produces as much in sales as a worker in a firm with 20–30 employees. By contrast, across the ECA HICs, the association between productivity and size is always positive.

In the MICs, the labor productivity premium among larger firms is driven by capital intensity rather than by superior overall efficiency. This suggests that these firms have easier access to credit, but do not use resources more efficiently than smaller firms. In both MICs and HICs, capital intensity (assets per worker) is positively correlated with firm size in line with previous results on labor productivity.[19]

FIGURE 2.11 Larger firms are not always more productive in the ECA MICs



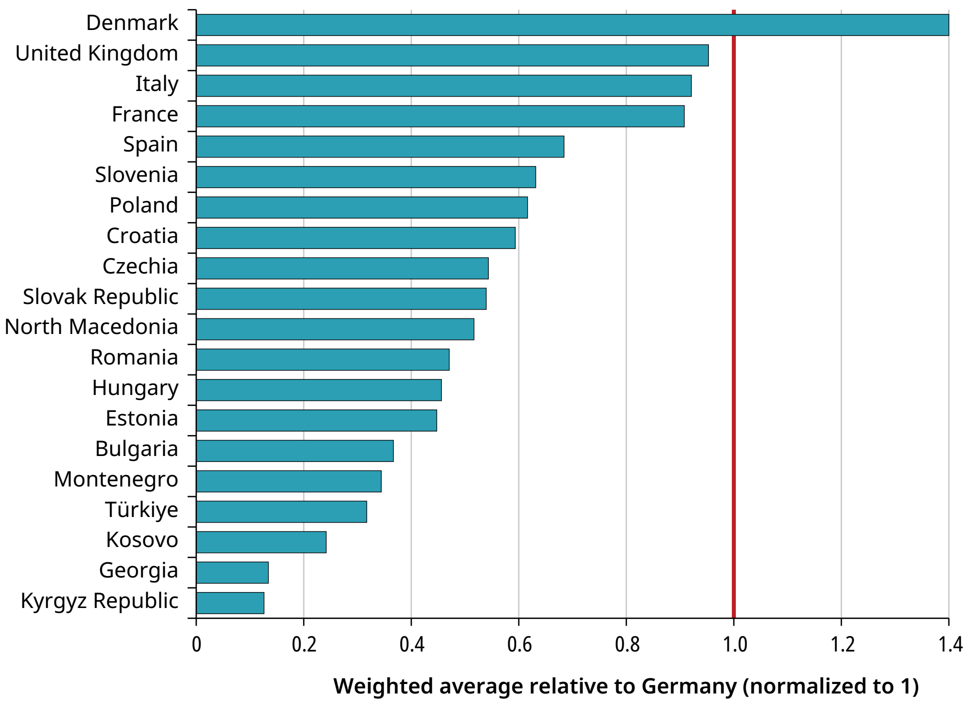
Sources: World Bank elaboration based on data of national statistical institutes; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Binscatter of sales per worker and firm employment level (both in logs). The number of bins is set to 100. The data show sales per worker residuals from regressing the log of sales per worker on capital per worker (in logs) and 3-digit sector fixed effects, year effects, and ownership controls.

In the MICs, however, total factor productivity (TFP) declines with size among firms with more than 20 employees. This contrasts with the HICs, which show a positive association. Thus, while in the HICs, larger companies are more capital intensive and use production factors more efficiently, higher sales per worker among larger firms in the MICs are explained by the stock of assets per worker rather than overall efficiency. Examining country-specific patterns confirms that large firms in the region exhibit higher labor productivity, scale (intermediate consumption per worker), and capital intensity than SMEs, but that they are not necessarily more efficient in using factors of production.

Large firms in the region are far from the global frontier, indicating that policy should also focus on helping these firms catch up through innovation and upgraded capabilities (Brown et al. 2016). The labor productivity gap between ECA and European HIC businesses is considerable. It is even wider among the ECA MICs (refer to figure 2.12). For example, one worker in Bulgaria, Georgia, Kosovo, the Kyrgyz Republic, Montenegro, or Türkiye produces roughly only 10 percent to 40 percent of the value added produced by a worker in the average large

FIGURE 2.12 The labor productivity gap with Germany is considerable



Sources: World Bank elaboration based on data of national statistical institutes; EC 2008; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Firms with at least 250 employees are considered. For comparability purposes, labor productivity is defined as value added per worker (sales net of intermediate consumption). Countries are selected according to information availability.

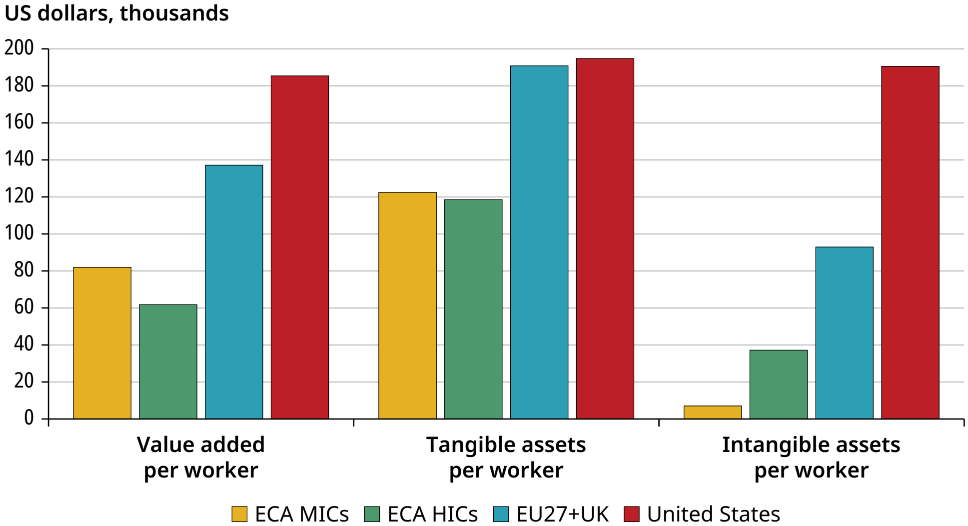
firm in Germany. Among the ECA HICs, these differences are still relevant, albeit much smaller. The average worker in a large Croatian or Polish firm produces nearly 60 percent of the value added produced by the average worker in a British, German, French, or Italian firm. The labor productivity gap between the ECA and high-income European countries is likely to be driven by both more limited access to capital and lower firm efficiency, explained by factors correlated with productivity, such as innovation, management capacities, and technology-absorption capabilities. Policy should therefore not focus only on smaller firms, but should also consider interventions that help larger businesses become more innovative and compete in global markets.

The top and the largest ECA firms underperform. Policy therefore needs to focus not only on the left tail of the firm distribution (the presence of many unproductive SMEs), but also on the right tail (the lack of dynamism and innovation). Relying on Orbis data, this subsection examines the performance of the top 100 companies by sales in ECA, several other European countries, and the United States.[20] The analysis reveals that the top 100 firms in the ECA MICs and HICs are not global innovators and perform less well than the top 100 firms in Europe and the United States.

The top 100 companies in each ECA country are far less productive and exhibit lower capital intensity relative to the top EU and US firms. For instance, one worker in the average top ECA firm produces half the value added generated by the same worker in the average top EU firm and two-fifths of the value added produced in a top US firm (refer to figure 2.13). Part of these differences are likely to be driven by tangible and intangible capital intensity, even though the labor productivity disparities are greater than the disparities in tangible assets per worker. Indeed, the value of tangible assets per worker in the average top firm in the ECA MICs and HICs is around two-thirds the corresponding value in the EU and the United States.

The top ECA firms in the MICs and HICs are not global innovators. Businesses move the technological frontier as they experiment, invest in R&D, and innovate. With improved capabilities, better access to finance, and stronger market positions, top firms can invest more resources in R&D and typically drive private innovation. Yet, the innovation behavior of top ECA MIC and HIC firms contrasts with that observed in the EU and the United States. Differences in the amount of intangible assets per worker are striking. Specifically, the endowment of intangible assets per employee among the average top 100 firms in the ECA MICs is only 4 percent of the corresponding value in top US firms and 7 percent of the value in top EU firms.[21] Although slightly smaller, the gap is still considerable between the top ECA HIC firms and the top firms in the EU or the United States. Intangible assets per worker in the top ECA HIC firm are one-fifth the level in the top US firm and two-fifths the level in the top EU firm.

FIGURE 2.13 Performance of the top 100 firms in the ECA, the EU, and the United States, 2019



Source: World Bank elaboration based on data of Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

SOEs Dampen Firm, Job, and Productivity Dynamism

SOEs often possess policy mandates that do not correspond to efficiency needs or the profit motive. SOE operations may reflect specific mandates, such as providing the population with essential goods at below-market prices, controlling prices in highly concentrated markets, or providing certain goods or services that would not otherwise be provided under current market conditions. To achieve these mandates, SOEs require special support from governments through subsidies, regulatory benefits, or preferential market conditions, which may discourage incentives favoring efficiency and productivity improvements and create market distortions in the competition between SOEs and private firms. SOEs may therefore affect the functioning of markets and influence private employment and productivity (Cirera, Brolhato, and Martins-Neto 2023; Dall'Olio et al. 2022; Ferro and Patiño Peña 2023; World Bank 2023).

To gauge the presence of SOEs, the analysis involved the computation of the share of firms and the share of SOEs in a market (3-digit sector and Nomenclature of Territorial Units for Statistics, level 3 combinations).[22] It is regressed on indicators of firm, job, and productivity dynamics on the presence of SOEs.[23] It determined that a greater presence of SOEs dampens firm entry, especially in more competitive sectors, which ultimately means lower experimentation and fewer entrepreneurs.[24]

SOEs may affect entrepreneurial behavior and start-up rates because firms may base entry decisions on future expected profits, and a greater presence of SOEs may reduce profits. The analysis results show that firm dynamism is negatively associated with SOE presence.[25] A greater presence of SOEs is associated with significantly lower entry rates in competitive sectors and in sectors characterized by a lower degree of competition (natural monopolies or partly contestable markets). A 10 percentage point increase in the share of SOEs is associated with a nearly 1.5 percentage point lower entry rate in competitive and noncompetitive markets. If the labor share of SOEs is used, the magnitude of the results is slightly smaller; entry rates are lower by 0.4 percentage points. Competitive markets seem to be affected by SOEs regardless of how SOE presence is measured, by the share of firms, labor, or market share. A higher share of SOEs in the market also reduces exit, affecting overall business dynamism and market selection. Exit rates in the ECA region tend to decline if markets include a larger proportion of SOEs.

Because of lower entry and exit rates, the presence of SOEs is negatively associated with lower net entry (entry rates, minus exit rates) in competitive sectors, meaning that, in naturally competitive industries, SOEs prevent entry and distort market-selection mechanisms. In the same vein, the presence of SOEs is negatively associated with firm churning, which is usually a proxy for entrepreneurial dynamism and is correlated with lower business turnover rates.[26] The estimated effects of SOEs across the region are similar between ECA MICs and HICs, suggesting that SOEs affect firm dynamism in a similar manner across these economies, irrespective of country income.

SOE presence in the region also dampens job dynamism, especially in competitive industries. Job-rich growth is crucial to reducing poverty and increasing welfare in the region. Empirical analysis suggests that greater exposure to SOEs is associated with lower gross and net job creation, as well as lower job churning (job creation, plus job destruction) in competitive sectors. For instance, a 10 percentage point greater presence of SOEs in competitive sectors is correlated with a 0.4 percentage point lower gross job creation rate and 1.2–2.2 percentage points lower job churning rates, while, in natural monopoly industries or partly contestable sectors, these effects tend to be negative, but not statistically significant.

SOEs are also associated with slower productivity growth in competitive sectors. To assess this aspect, the analysis examined the impact of SOE presence on various measures of productivity at the market level, that is, sales per worker, value added per worker, and TFP. Each specification controls for market fixed effects. The result should therefore be interpreted in terms of changes in the productivity growth rate. SOE presence systematically slows productivity growth in competitive industries, but does not affect natural monopoly or partly contestable sectors. Negative effects on competitive sectors become larger in absolute terms if exposure is measured using the labor or market share of SOEs instead of the firm share, which suggests that the market influence of SOEs rather than the relative number of SOEs sways productivity growth.

SOE presence in ECA markets significantly affects firm, job, and productivity dynamism, especially in competitive industries. A top priority of ECA governments should therefore be to assess carefully the rationale for promoting SOEs, especially in contestable sectors, and consider that the presence of SOEs may be accompanied by significant costs in economic dynamism and business growth.

Understanding Firm Dynamism and Job Creation

Business dynamism is critical to growth. Transitioning to high-income status requires creative destruction, a shift from a 1*i* strategy to a 2*i* strategy and then to a 3*i* strategy of innovation-led growth supported by entrepreneurial dynamism and productivity catch-up. Creative destruction occurs as unproductive and unprofitable firms exit, while more productive and higher potential businesses enter and grow (Aghion 2017; Akcigit and Ates 2021; Akcigit and Kerr 2018; Caballero and Hammour 1994; Schumpeter 1942).

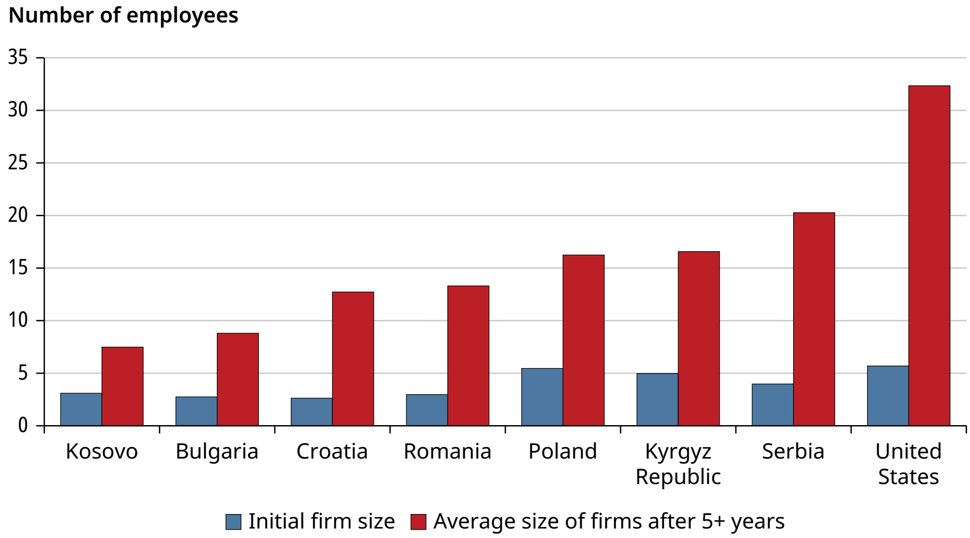
This section analyzes how business size and age drive employment dynamics. The main findings are as follows: (1) ECA firms show stunted job growth and rarely upscale; (2) start-ups and young SMEs are the main contributors to net job creation in the region; (3) mature SMEs destroy more jobs than they create; and (4) SOEs dampen dynamism. These findings suggest that, instead of focusing on increasing the number of businesses, policy should focus on alleviating business growth constraints, particularly among start-ups and young firms, if their growth potential is higher and they face specific constraints, such as access to finance. Policy should also support an environment that promotes selection, in addition to experimentation, through efficient bankruptcy procedures.

Business Size at Entry and Growth Postentry

New businesses entering the market are small. So, improving the business environment by reducing distortive regulations, enhancing credit access, lowering trade barriers, and upgrading firm capabilities may encourage the entry of larger, more capital-intensive, and riskier innovative projects. Start-ups in ECA countries enter the market at half the size of their peers in the United States, suggesting that ECA barriers to entry are low, but also that business openings may be driven more by necessity than by market opportunities. Indeed, new businesses average almost six employees in the United States and between three and five in ECA countries and between three and four in most ECA HICs (refer to figure 2.14).

The size gap between start-ups and companies older than four years is significantly smaller in ECA countries than in the United States, implying that ECA firms grow less than US firms over the life cycle. In the United States, the average size of firms older than four years is six times that of new firms, which indicates the growth

FIGURE 2.14 ECA firms show stunted job growth



Sources: World Bank elaboration based on data of national statistical institutes; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Although the average size of entrants is above five in Poland, filing business registries is not mandatory among microfirms, which increases the average size of the observed sample of firms. The minimum size threshold in Poland may therefore be considered as five employees.

potential of survivors. In the ECA countries, the size differences are far narrower, averaging less than four employees.[27] In short, not only do US firms enter the market at a larger size, but also grow considerably more than ECA firms. The US business environment (the quality of regulations, red tape and bureaucracy, and incentive programs), plus access to capital (even among risky projects), market access, and finding appropriate skilled workers all determine the growth potential of US firms and endogenously lead to the emergence of new businesses that are not driven by necessity, but by opportunity.

Postentry employment growth is stunted in ECA countries, indicating the existence of constraints to business expansion. Firms make entry decisions based on expected profits and market conditions, but, if they enter, they face uncertainty about market demand and their own level of efficiency (Hopenhayn 1992). Supported by efficient market-selection mechanisms, more productive start-ups may survive and expand, while unproductive start-ups shrink and exit. In the ECA region, limited job growth, coupled with the small size of firms at market entry, means that businesses rarely create jobs in volume. At the same time, growth volatility decreases only slightly among older cohorts.[28] Besides sluggish employment expansion, such volatility remains high among older cohorts, suggesting that market selection may not be operating efficiently. If markets are functioning efficiently, growth dispersion tends to be higher among younger cohorts, but, as firms mature and learn about their relative efficiency and market conditions, firms with higher growth opportunities should expand, while others should contract and exit. As firms become older, this discovery process typically slows, and growth volatility declines, but, apparently, this is not happening in ECA countries.

ECA Firms Only Rarely Transition to Larger Size Classifications

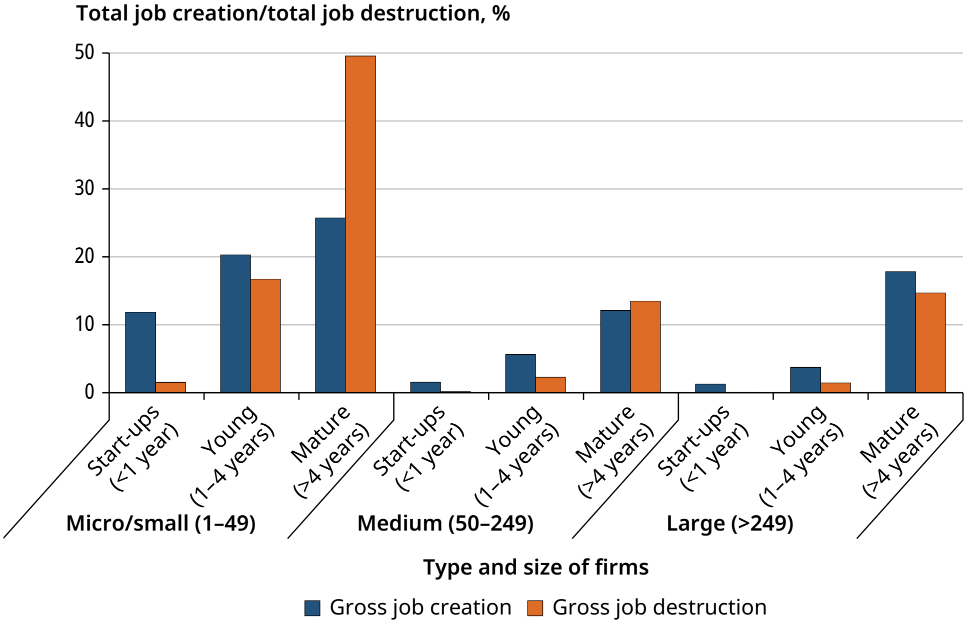
Only a few ECA firms scale up their operations substantially, confirming the presence of obstacles to expansion. In well-functioning competitive markets, incumbent firms that survive over long periods are likely to grow as they become more productive. The focus of the analysis here is on transition between different-size groups—scaling-up—among ECA firms that survive at least five years.[29] Only a small share of ECA firms transition to higher bins, especially among smaller firms.[30] Only firms with 20–29 employees tend to reach a 25 percent probability of climbing to a higher class. The probability falls by half among firms with more than 100 employees.

ECA HIC firms are more likely to scale up than ECA MIC firms, suggesting that the latter face more obstacles. After assessing the probability of such a transition and considering the sectoral composition of economies and age differences among firms, the analysis finds that the probability of transitioning in the HICs is consistently higher than in the MICs across all employment bins, although the differences are more considerable among the larger size classes. The negative relationship between firm age and employment growth is consistent with the results in transition. Older firms are significantly less likely to transition than start-ups, emphasizing once again the importance of focusing support on start-ups and young businesses to dismantle the barriers to growth.

Jobs

Start-ups and young firms are the main source of net job creation in the region. It is widely recognized that young firms contribute to job creation globally (Criscuolo, Gal, and Menon 2014; Decker et al. 2020; Haltiwanger, Jarmin, and Miranda 2013). Although most employment is in mature and large firms, young businesses disproportionally contribute to job creation (refer to figure 2.15). Start-ups and young SMEs only account for 14 percent of total employment, but they contribute to almost 40 percent of gross job creation. Large businesses also contribute substantially to net job creation. By contrast, mature small and medium businesses destroy more jobs than they create. Among mature micro- and small firms, gross job destruction is disproportionally greater than gross job creation.

FIGURE 2.15 Young firms and start-ups account for nearly half the gross job creation in the economy



Sources: World Bank elaboration based on data of national statistical institutes; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Share of gross job creation based on the reporting age of firms.

Because start-ups and young firms, rather than SMEs, generally drive ECA job dynamism, current policies and strategies for promoting SMEs should shift toward the start-ups and young firms. This is often difficult because of political economy considerations. But governments must consider ways to support the enterprises that create more jobs and generate more business dynamism. Such a policy shift requires the identification of different targeting criteria and deemphasizing the size criterion as the central parameter of policy design in supporting private firms. The value created, the infusion of foreign technology and capital, and the potential for innovation appear to be better criteria for anchoring policy support and access to finance (Artola and Genre 2011; Beck, Demirgüç-Kunt, and Maksimovic 2005; Beck, Demirgüç-Kunt, and Martínez Pería 2011; Ferrando and Griesshaber 2011; Foster, Haltiwanger, and Syverson 2016).

Conclusions and Policy Recommendations

The ECA MICs have made substantial progress in integrating in global markets and opening up to international trade. The progress in ECA EU member states is more advanced. In these countries, the continued policy emphasis needs to be on the

3*i* strategy, that is, on spurring innovation, while adopting foreign technology, expertise, and capital to bolster within-firm productivity growth. For the ECA EU candidates, notably, Türkiye and the Western Balkans, the analysis concludes that these countries must continue to stress the infusion of global technology, expertise, and capital, that is, the 2*i* strategy. Kazakhstan and some countries in the South Caucasus should also focus on the 2*i* strategy. The resource-rich countries in the region should focus on the fundamentals by promoting the creation of markets, allowing prices to send signals about the value of goods and services, and establishing the conditions for more substantial private sector investment and more private sector dynamism.

Start-ups and young firms face unique challenges. They need targeted support because of the role they play and their potential in job creation. Policy makers should therefore shift their focus away from firm size as a criterion for government support or from increasing the number of businesses to fostering an environment that welcomes the entry of more dynamic and innovative firms and facilitates the growth of such firms. A comprehensive policy package of reforms might center on four pillars: (1) providing incentives through an appropriate competition and regulatory framework; (2) supporting and incentivizing internationalization and integration with the global economy; (3) nurturing innovation and R&D investment among high-productivity firms and the adoption of technology among firms lagging behind the technological frontier; and (4) de-risking entrepreneurial experimentation and learning by easing firm exit procedures and expanding access to risk capital.

Strengthening incentives and the capacities of top-tier and frontier enterprises is crucial. Beyond the discussion on the excessive number of small businesses in the region, which this report confirms, the analysis has uncovered two notable stylized facts. First, the region lacks large, superstar firms, that is, exceptionally large and innovative companies at the global productivity frontier. Second, leading businesses exhibit significant weaknesses. Thus, they do not generate many jobs, and they are not particularly productive and innovative relative to businesses in richer countries, such as the United States. Policy makers must address the quantity, quality, and performance of these top-tier enterprises. The objective is not merely to promote large businesses or national champions. Rather, the objective is to promote innovation and value added growth, as indicated in the first three pillars outlined above.

The ECA countries have relied extensively on structural transformation and the reallocation of market shares within sectors. Now, they need to prioritize infusion (technology upgrading) through a 2*i* strategy and begin to shift to an innovation-led growth model through a 3*i* strategy. This chapter proposes two types of policy recommendations: policies to improve the business environment and policies targeting firms.

Policies to Improve the Business Environment

Competition Framework

- Provide a competition framework that ensures market contestability. The business competition environment in the region needs to incentivize the entry of productive, innovative firms, the reallocation of resources toward more productive firms, and the exit of low-productivity firms.

- Promote internationalization and integration with the global economy to expand markets and provide discipline to domestic companies. Lowering trade barriers and expanding integration with the regional and global economy are two key goals associated with the effort to encourage growth, given the knowledge that is embedded in imported goods and technologies and the incentives to innovate and upgrade that accompany the endeavor to supply larger markets.

- Attract knowledge-intensive foreign direct investment to create a more vibrant business ecosystem. Foreign direct investment is a positive input to local development through employment creation, economic growth, and higher wages. It also generates positive spillover effects among local suppliers as they transfer knowledge and technology to domestic firms and require them to upgrade to comply with foreign standards (Bloom, Schankerman, and Van Reenen 2013).

Human Capital, Management Capacities, and Workforce Skills

- Improve capacities and skills through training and business-support initiatives. Innovation in many small firms often involves incremental changes in capability upgrading, including shifts in management capacities. As firms progressively build on their accumulated capabilities, they can gradually undertake more sophisticated investment and innovation activities.

- Improve the environment to attract and retain the talent of highly skilled workers and entrepreneurs (Bernstein et al. 2022; Hunt 2011; Kerr and Pekkala Kerr 2020; Venturini, Montobbio, and Fassi 2012).

- Ensure high-quality education to develop a skilled technology-savvy workforce beginning in early childhood. Chapter 3 presents in more detail recommendations on ways to unleash the talent and abilities of people by improving education systems, from primary school to universities and beyond (Akcigit, Pearce, and Prato 2020; Bianchi and Giorcelli 2019; Toivanen and Väänänen 2016).

Finance

- Deepen capital markets to expand the access of businesses to long-term financing. Robust capital markets are essential to addressing the maturity mismatch between short-term deposits and long-term financing needs. The development of capital markets could help banks raise long-term financing, which could then be extended to firms to support investment. Specific reforms include (1) developing an efficient government securities market; (2) developing a robust regulatory framework in capital markets; (3) strengthening the institutional capacity of capital market regulators and participants; (4) bolstering the regulatory framework to promote the development of new markets and instruments (for instance, the establishment of stock exchanges focused on listing SMEs) and developing new financial instruments, such as venture capital trusts and innovation bonds; and (5) fostering a culture of savings and investment (for example, through financial literacy programs).

- Expand venture capital, which is critical to nurturing innovation, particularly among early-stage companies. Private equity funds and venture capital play a major role in supporting start-ups, young businesses, and high-growth businesses because they transfer financing in combination with expertise and market knowledge that often help commercialize innovative ideas. Specific recommendations to promote the growth of private equity and venture capital include temporary tax incentives for venture capital funds. This has been a feature of successful start-up hubs globally (for instance, in Estonia and Israel). Another area of reform is the debt-equity bias reduction allowance currently under discussion in the EU.

- Address credit misallocation, especially in the case of highly productive firms. Specific policy measures to improve credit allocation efficiency include (1) promoting the development of alternative credit scoring models, (2) enhancing the capacity of financial institutions to assess the growth potential of innovative businesses, and (3) addressing information asymmetries through more effective credit registry systems to secure higher investment in technology upgrading and firm growth.

- Provide guarantees rather than lines of credit. For innovation-related investments by firms, debt financing will be needed along with other types of financing. Especially in contexts in which banks are quite liquid (such as is often the case in ECA countries), credit guarantees can be a more impactful and more market friendly tool to enable lending for innovation-related investments.

Policies Targeting Firms

Innovation

- Provide larger, but more well-targeted R&D incentives to boost private investment in innovation and technology adoption. ECA countries should implement wide innovation policy support, including tax incentives for R&D, tax credits, grants, loans, and subsidies. Among young or smaller firms, support might target specific activities and planned outcomes, while providing additional support through technical advice and collaboration with academics to crowd in private investment (What Works Centre for Local Economic Growth 2015).

- Facilitate de-risk entrepreneurial learning and experimentation to reduce costs by enabling financing for innovative entrepreneurship and reducing downside risks. Access to finance is critical to undertaking risky investments and helping innovative entrepreneurs develop and realize their ideas.
- Shift the traditional policy focus from sustaining incumbents to improving the business environment for start-ups and high-growth businesses. Beyond enabling greater access to financing, policy makers should improve civil justice efficiency, reduce bureaucracy, simplify taxes and make them fairer, and help ensure the movement of talent between firms and countries.

Technology

- Oversee and ensure technology-oriented initiatives, R&D investment, digitalization, and internationalization. Accessing cutting-edge technology, ensuring the appropriability of innovations, and promoting collaboration between universities and firms will foster innovation. Internationalization will exert positive effects because, in competing with world-leading firms, ECA top-tier companies will have to learn how to upgrade their capacities (Cirera et al. 2020).
- Promote technology adoption and digitalization among early adopters and in the presence of uncertainty and information asymmetries. Subsidies delivered through vouchers and grants for information and communications technology could have an impact if they generate positive externalities. These technologies complement management quality and help firms plan production and management systems. If technologies require a critical mass of adopters, subsidizing early adopters could be an optimal approach to increasing public knowledge and facilitating coordination.
- Minimize restrictions on foreign technology licensing and on hiring foreign managers and specialized workers. These reforms would facilitate technology adoption and the access to external knowledge, which could be a key contributor to innovation.

The appropriate mix of policy recommendations depends on the context of a country. For this purpose, the analysis identified four groups of countries: (1) EU members states (Bulgaria, Croatia, Poland, Romania); (2) EU candidates (Georgia, Moldova, Ukraine, Western Balkans); (3) Türkiye; (4) Central Asia and South Caucasus (Armenia, Azerbaijan, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan).

- Among the EU members, the priority areas involve promoting foreign direct investment (especially in knowledge-intensive sectors) and attracting global talent, together with deepening the financial sector (particularly the venture capital industry), creating incentives to foster private R&D, and reducing the focus on SMEs, while increasing the focus on start-ups and high-growth firms.

- For the EU candidates, the key priority areas are facilitating private investments and integration with global markets, together with strengthening competition and disciplining incumbents to provide space for new entries and start-ups. Other high priorities include improving management and the governance of firms and deepening financial markets.
- For Türkiye, the key priority areas are promoting technology adoption and digitalization, together with increasing the incentives for private R&D.
- For the countries of Central Asia and the South Caucasus, the key priorities are facilitating private investment, reducing the footprint of the state, and disciplining incumbents, together with strengthening competition policy and improving management and the governance of firms. Improving access and the allocation of credits, together with promoting technology adoption and digitalization, are also priorities in supporting firm-level productivity.

Table 2.1 provides the relative priorities for each set of countries. Detailed recommendations follow.

TABLE 2.1 Enterprises and productivity: summary of recommendations

Recommendation	EU members	EU candidates	Türkiye	Central Asia and South Caucasus
Facilitate private investment	Low	High	Medium	High
Reduce regulatory burden and digitalize administrative procedures	Medium	Medium	Medium	Medium
Reduce the state footprint	Medium	Medium	Low	High
Strengthen competition policy and discipline incumbents	Medium	High	Medium	High
Support integration with global markets	Medium	High	Medium	High
Promote foreign direct investment, especially in knowledge-intensive business areas	High	Medium	High	Medium
Make it easier to attract global talent	High	Medium	High	Medium
Improve management and firm governance	Medium	High	Medium	High
Deepen capital markets and long-term finance	High	High	Medium	Medium
Facilitate venture capital investment	High	Medium	High	Medium
Improve access to credit and credit allocation	Medium	Medium	Low	High
Reduce focus on small and medium enterprises and increase focus on start-ups/high-growth potential businesses	High	Medium	Medium	Medium
Promote technology adoption and digitalization	Medium	Medium	High	High
Create incentives for private R&D investments	High	Medium	High	Low
Eliminate restrictions on foreign tech licensing and foreign managers	Low	Low	Low	Medium

Source: World Bank.

Annex 2.1: Main Dataset and Methodological Definitions

Chapter 2 relies on a novel firm-level longitudinal database with more than 20 million registries, of which more than 16 million refer to enterprises operating in the business economy. The business economy category follows the Statistical Classification of Economic Activities in the European Community (EC 2008), which groups these firms according to activities, ranging from mining and quarrying (B) to administrative and support service activities (N), and excluding the activities of holding companies (K64.2), public sector organizations, and nonmarket activities (O–U). The main data sources are national statistical institutes, tax and financial agencies, and Orbis, and they cover the period 2007–21, although the exact time span varies by country.[31] Table A2.1.1 reports key country-level statistics on firms operating in the ECA region.

TABLE A2.1.1 Firm characteristics, by country

			Firms (employee counts) (%)				Employment	
Income class	Country	Firm counts	Micro (1-9)	Small (10-49)	Medium (50-249)	Large (>249)	Median	Mean
Middle income	Bulgaria	2,513,036	86.6	8.1	1.5	0.2	2.00	7.09
	Georgia	111,366	50.6	35.2	11.9	2.2	9.00	36.33
	Kazakhstan	306,532	59.3	24.9	12.2	3.1	5.00	43.43
	Kosovo	167,913	83.9	6.8	1.0	0.2	2.00	6.11
	Kyrgyz Republic	101,266	78.8	16.7	3.8	0.7	3.00	13.16
	Montenegro	150,232	91.9	6.4	1.4	0.2	1.00	6.04
	North Macedonia	456,020	87.2	8.5	1.6	0.3	2.00	7.47
	Serbia	866,717	81.2	14.2	3.5	0.8	3.00	15.84
High income	Croatia	1,097,181	86.6	10.8	2.1	0.5	2.00	10.02
	Poland	6,529,603	87.8	7.3	1.5	0.3	5.00	11.55
	Romania	4,003,928	80.0	10.0	2.0	0.4	2.00	10.31
MICs and HICs	*Total*	*16,303,794*	*84.4*	*9.3*	*2.0*	*0.4*	*5.00*	*11.28*

Sources: World Bank elaboration based on data of national statistical institutes; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Raw data based on business activities B–N, except K, of NACE Rev. 2. NACE = Statistical Classification of Economic Activities in the European Community.

Annex 2.2: Estimating Firm-Level Labor Productivity and Defining the Frontiers

Labor productivity is the output produced per worker. Because measuring firm-level output requires detailed information on the sales and product prices of each good and service produced by the firms, this report uses the deflated sales per worker, calculated as in equation A2.2.1:

$$\gamma_{ijrct} = ln\left(\frac{Sales_{ijrct}}{employment_{ijrct}}\right) \tag{A2.2.1}$$

where subscript *i* denotes the unit of analysis (firm), *j* the sector, *r* and *c* the region and country of location, and *t* the time unit (year).

Chapter 2 also examines the existence and magnitude of spatial and sectoral spillovers from more to less productive firms. It assesses two questions. First, it examines whether the productivity frontier at the local, sector, and regional levels (the average productivity of the top 25 percent of firms) affects the productivity of lower-productivity businesses. Second, it assesses if changes in the productivity frontier (changes in the productivity level of high-productivity firms) affect productivity growth among less-productive enterprises. These factors are related to the transfer of technology and knowledge (spillovers), considering that they may vary across regions, industries, and markets (sector-by-region) because technology, capital access, expertise, and proximity to innovation hubs may greatly vary across regions and among regions across countries. Equation A2.2.2 refers to the calculation of the local frontier, defined as the average productivity of the top 25 percent of the most productive firms (in terms of sales per worker) within the sector and region where the business operates.

$$\underline{\gamma}_{jrt} = \frac{1}{\underline{n}_{jrt}} \times \sum_{i \in \underline{i}_{jrt}} \gamma_{ijrt}, \tag{A2.2.2}$$

Similarly, equations A2.2.3 and A2.2.4 define the sectoral and regional frontiers, respectively.

$$\underline{\gamma}_{jt,-r} = \frac{1}{\underline{n}_{jt,-r}} \times \sum_{i \in \underline{i}_{jt,-r}} \gamma_{ijt,-r}, \tag{A2.2.3}$$

$$\underline{\gamma}_{rt,-s} = \frac{1}{\underline{n}_{rt,-j}} \times \sum_{i \in \underline{i}_{rt,-j}} \gamma_{irt,-j}, \tag{A2.2.4}$$

where the subscripts -*r* and -*j* denote that firms within the same region (equation A.2.2.3) or sector (equation A2.2.4) of the firm are excluded from the calculation of each indicator.

Annex 2.3: Dataset Characteristics

Table A2.3.1 presents the characteristics of each dataset used in chapter 2. Most databases are associated with census registries, although, in some cases, such as Bulgaria and Poland, commercial information sources are used as well. In Poland, because of limitations in the commercial dataset, the registries are complemented by administrative sources. Given the data-access policies, however, it was not possible to work with the dataset outside the facilities of Statistics Poland, which limits the capacity to pool datasets. Each use of the Polish datasets is therefore explicitly indicated.

All datasets cover all industries considered in this analysis (business activities B–N, except K, of NACE Rev. 2), but may rely on different classification nomenclatures (EC 2008). The sector taxonomies were harmonized to NACE Rev. 2 because most countries use this classification, and this therefore minimizes information losses that typically result from mapping sectors across classification systems.

TABLE A2.3.1 Information sources, industry coverage, and country dataset characteristics

Country	Source	Type	Time span	Minimum size	Industry coverage	Sample size (*M*)
Bulgaria	Orbis	Commercial	2011–18	≥1 emp	NACE R2	2.560
Croatia	Financial agency (FINA)	Census	2008–20	≥0 emp	NACE R2	1.288
Georgia	National Statistics Office of Georgia (GEOSTAT)	Census/ survey	2007–21	≥1 emp	NACE R1	0.114
Kazakhstan	Bureau of National Statistics	Census	2009–18	≥0 emp	ISIC R3	0.313
Kosovo	Tax registry	Census	2011–18	≥0 emp	NACE R2	0.221
Kyrgyz Republic	National Statistical Committee	Census	2010–21	≥0 emp	NACE R2	0.103
Montenegro	Statistical Office of Montenegro (MONSTAT)	Census	2011–19	≥0 emp	NACE R2	0.152
North Macedonia	Statistical Institute of MKD	Census	2011–20	≥0 emp	NACE R2	0.530
Poland	Orbis Statistics Poland	Commercial/ survey	2009–20	≥5 emp	NACE R2	6.591 0.911
Romania	Ministry of Public Finance	Census	2011–20	≥0 emp	NACE R2	4.350
Serbia	Statistical Office of Serbia	Census	2006–19	≥0 emp	NACE R2	0.885

Sources: World Bank elaboration based on data of national statistical institutes; EC 2008; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Raw data based on business activities B–N, except K, of NACE Rev. 2. emp = employees; ISIC = International Standard Industrial Classification; NACE = Statistical Classification of Economic Activities in the European Community; R = Revision.

Time spans differ across countries. While most countries report firm-level registries for 2011–19, there are differences in the time periods covered, which are considered in this analysis.

Table A2.3.2 presents information on the data availability of selected performance variables. It reports the share of firms with nonmissing values of employment, sales, value added, and estimated total factor productivity (TFP) based on previously defined time periods and business sectors. Nearly all firms report employment and sales, but, because of missing intermediate consumption and fixed asset values, value added is available for around 50 percent to 85 percent of firms, while TFP is available for around 35 percent to 75 percent of firms. The share of missing value added and TFP is considerable in certain countries, such as Kazakhstan, Kosovo, and Poland. In Poland, this is strictly driven by firm reporting because only firms with at least five employees are obliged to report performance variables. Because the Orbis dataset contains information about all Polish firms, missing values mostly correspond to businesses with fewer than five workers.

TABLE A2.3.2 Data availability, by country

Selected performance variables; share of firms (%)

		Share of firms with nonmissing data			
Income class	**Country**	**Employment**	**Sales**	**Value added**	**TFP**
Middle income	Bulgaria	96.4	91.6	49.9	37.4
	Georgia	100.0	100.0	86.4	62.7
	Kazakhstan	99.5	78.3	68.4	15.4
	Kosovo	91.9	90.5	9.4	8.5
	Kyrgyz Republic	99.9	90.1	59.0	34.2
	Montenegro	99.9	74.8	64.7	50.4
	North Macedonia	97.6	95.8	73.2	73.2
	Serbia	99.7	93.8	83.4	72.4
High income	Croatia	99.9	96.3	85.1	69.3
	Poland	96.9	8.9	5.3	4.9
	Romania	92.4	82.3	57.8	57.7

Sources: World Bank calculations based on data of national statistical institutes; Melitz and Polanec 2015; Orbis (portal), Moody's, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

Note: Raw data based on business activities B–N, except K, of NACE Rev. 2. NACE = Statistical Classification of Economic Activities in the European Community; TFP = total factor productivity.

Notes

1. Estonia's product market competition score is higher than the average in the Organisation for Economic Co-operation and Development (OECD 2018a).
2. If value added is used as the measure instead of firm revenue per worker, labor productivity growth would have been much more modest. This would, however, imply losing one-third of the observations because, while information on sales and workers is available for most firms, intermediate consumption, which is necessary to calculate value added, is missing in some cases. The firm revenue measure used here is based on firm-level registries rather than on macronational accounts. As a robustness check, the correlation between micro- and macrodata labor productivity growth rates was assessed. This revealed that they are positively and statistically correlated (at the 1 percent significance level). Nonetheless, in specific years, there may be discrepancies in productivity growth rates because of differences in statistical sources. The measure used here is based on revenues and employment reports of enterprises operating in business activities B to N (except K) of the Statistical Classification of Economic Activities in the European Community (NACE), Rev. 2 (EC 2008), while the macrodata are based on national account methodologies. Refer to annexes 2.1 to 2.3.
3. The results do not change qualitatively if value added per worker is used as the labor productivity measure. In most ECA MICs (except Kosovo and the Kyrgyz Republic), the contribution of the within-firm component is still negligible, while the effect of the between-firm component is much more modest.
4. There is a caveat. Entry or exit in the sample may sometimes be the result of misreporting rather than a purely economic event, especially in countries such as Georgia, where the firm survey involved minimum inclusion criteria rather than administrative records covering the universe of businesses.
5. The analysis here relies on the global innovation index constructed by Dutta et al. (2023). The authors implement a comprehensive innovation framework, including the institutional environment, the operational stability of businesses, entrepreneurship policies and culture, finance for start-ups, unicorn valuation, high-tech manufacturing, International Organization for Standardization 9001 quality (ISO 2015), creative goods exports, and GitHub commits. Refer to GII (Global Innovation Index) (dashboard), World Intellectual Property Organization, Geneva, https://www.wipo.int/global_innovation_index/en/.
6. Measured by data on global international patent families in sustainable technologies in 2000–19, the HICs were investing in green innovation during their transition to high income. As with overall innovation, the expansion in green innovation in the ECA HICs started before this transition, which suggests that successful countries raise investment in R&D and innovation as their per capita income is rising and not after they reach high-income status. Refer to PATSTAT (Patent Statistical Database), European Patent Office, Munich, https://www.epo.org/en/searching-for-patents/business/patstat#:~:text=PATSTAT%20contains%20bibliographical%20and%20legal,or%20can%20be%20consulted%20online.
7. Croatia in 2008, Poland in 2009, and Romania in 2019; the available data do not cover Bulgaria, which was assessed to have reached the high-income threshold in 2023.
8. The most common interventions delivered by governments and innovation agencies include tax incentives for R&D (such as subsidies, tax exemptions, and tax credits); patent boxes (which operate as special tax regimes that lower the tax rate on revenues deriving from patents); R&D grants, loans, and subsidies; and policies that seek to increase human capital (Bloom, Van Reenen, and Williams 2019).
9. This analysis compares firms of similar scale operating in the same industry. Refer to WBES (World Bank Enterprise Surveys) (dashboard), World Bank, Washington, DC, https://www.enterprisesurveys.org/en/enterprisesurveys.
10. Cusolito et al. (2024) examine the counterfactual TFP gains achieved by removing financial distortions (if finance misallocation were reversed) relative to the corresponding gains in the United States.
11. Albania, Azerbaijan, Bulgaria, Croatia, Czechia, Estonia, Georgia, Hungary, Kyrgyz Republic, Lithuania, North Macedonia, Poland, Serbia, Slovenia, Türkiye, and Ukraine. Refer to WBES (World Bank Enterprise Surveys) (dashboard), World Bank, Washington, DC, https://www.enterprisesurveys.org/en/enterprisesurveys.
12. The Herfindahl-Hirschman index is computed as the sum of the squared market shares of each firm in the economy (or industry). A value equal to 1 means that the entire market share in the economy (or sector) is concentrated in one firm. As the value approaches 0, the market shares become more evenly distributed among competing firms.

13. Refer to LPI (Logistics Performance Index) (dashboard), World Bank, Washington, DC, https://lpi.worldbank.org/.
14. WDI (World Development Indicators) (dashboard), World Bank, Washington, DC, https://datatopics.worldbank.org/world-development-indicators/.
15. Productive capacities involve worker skills, management capacities, finance, innovation, access to modern equipment, high-quality imported inputs, and access to foreign markets.
16. The threshold in the definition of very large firms in this chapter is 500 or more employees.
17. Teal (2023) and Tybout (2014) test the missing middle hypothesis in African countries, India, Indonesia, Mexico, and the United States. Following Tybout (2014), Pareto-shape employment shares at each size plant class are computed as follows: $\hat{s}\left(l_i, l_j \mid k\right) = l_j^{1-k} - l_j^{1-k}$, where l_i and l_j are the lower and upper bound of each size class bin; and parameter k is chosen to minimize the Euclidean distance between the log of the vector of actual shares s and $\hat{s}$.
18. The results are robust to different definitions of “middle” and to comparisons against the employment distribution of US firms where firms with at least 500 employees account for 35 percent of employees in the US private sector, but only 5 percent in the ECA HICs and less than 2.5 percent in the ECA MICs.
19. Based on firm-level data and report team calculations.
20. The analysis identifies the top 100 firms in each ECA country and selected European countries based on data availability and average results across countries. Only firms with at least five employees are considered. Conclusions do not change if top 20 or top 50 firms are considered instead. Refer to Orbis (portal), Moody’s, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html. Because of data availability, the ECA MICs included are Bosnia and Herzegovina, Bulgaria, Georgia, Montenegro, North Macedonia, Serbia, and Ukraine. The ECA HICs are Croatia, Poland, and Romania. The EU+United Kingdom countries (also referred to as Europe in this section) are Austria, Belgium, Czechia, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.
21. Intangible assets include patents, software, and intellectual property.
22. The Nomenclature of Territorial Units for Statistics is a geocode standard for referencing the administrative divisions of countries for statistical purposes. In those countries with no such taxonomy, the analysis relied on equivalent administrative divisions. Refer to NUTS Overview (Nomenclature of Territorial Units for Statistics: Overview) (dashboard), Eurostat, European Commission, Luxembourg, https://ec.europa.eu/eurostat/web/nuts.
23. The baseline specification includes various controls, such as the share of foreign-owned companies in the relevant market; a proxy of the level of competition level, that is, the Herfindahl-Hirschman index; value added and capital per worker, which control for capital accumulation and changes in market development; the year-on-year change in market size; the Olley-Pakes static covariance term, which measures the extent to which resources flow toward more productive firms; and market-level fixed effects because structural market characteristics may be associated with the presence of SOEs.
24. The results are available upon request.
25. SOE presence is measured as the percentage of firms (firm share) or the labor or market share of SOEs.
26. This is the share of firms entering and exiting each year.
27. This analysis can be performed only for a subset of ECA countries for which information is available on the year in which the business began operations.
28. The background analysis is based on firm-level data; the results are available upon request.
29. If the firm transitions to a higher size class five years later, it is recorded a score of 1, while, if it remains in the same size class or falls to a lower bin, it is recorded a score of 0.
30. Only 11 percent and 15 percent of ECA businesses with fewer than five employees and with five to nine employees, respectively, manage to move to superior bins. Thus, only a small share of microfirms become small, medium, or large.
31. Refer to Orbis (portal), Moody’s, New York, https://www.moodys.com/web/en/us/capabilities/company-reference-data/orbis.html.

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