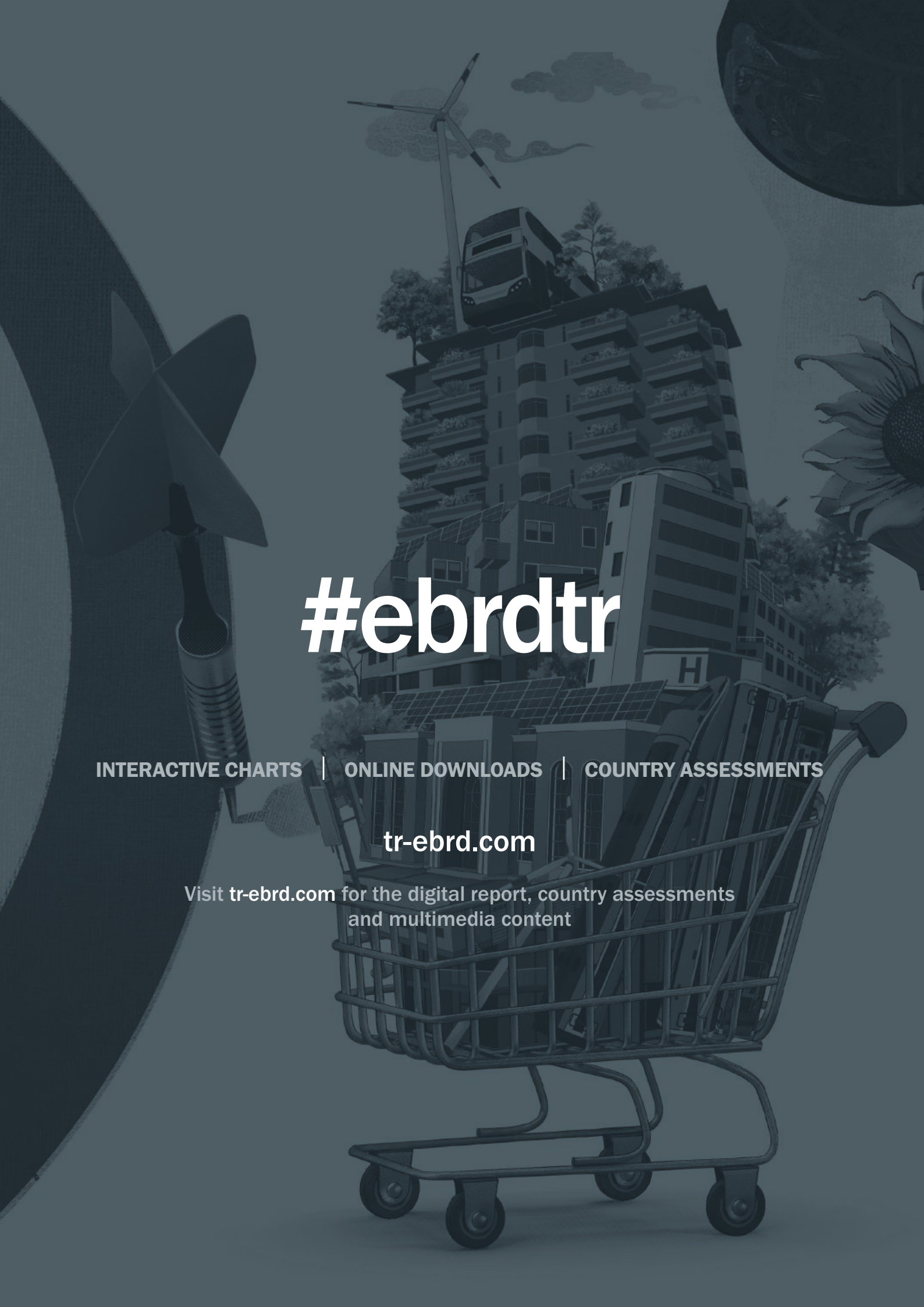
Transition Report 2024-25

European Bank
for Reconstruction and Development

Navigating industrial policy



#ebrdtr

INTERACTIVE CHARTS | ONLINE DOWNLOADS | COUNTRY ASSESSMENTS

tr-ebrd.com

Visit **tr-ebrd.com** for the digital report, country assessments and multimedia content

About this report

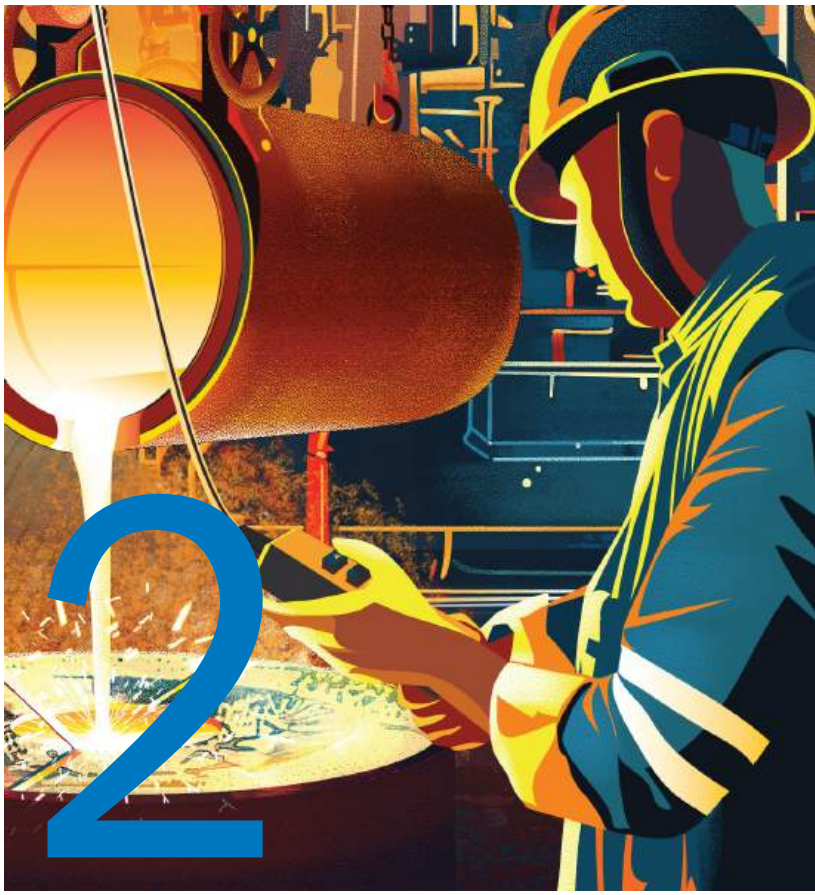
The EBRD seeks to foster the transition to an open market-oriented economy and to promote entrepreneurship in the regions where it invests. To do this effectively, the Bank needs to analyse and understand the process of transition.

The purpose of the *Transition Report* is to advance this understanding and to share our analysis with partners.

Responsibility for the content of the report is taken by the Office of the Chief Economist. The assessments and views expressed are not necessarily those of the EBRD. All analysis and data in the online country assessments are based on information available in late October 2024. In the report chapters, all assessments and data are based on information available in late August 2024.

Contents

1



2

Foreword

Industrial policies – strategic interventions designed to reshape an economy's production structure – have experienced a remarkable global resurgence. These policies can be effective and justified when addressing clear and pressing market failures, such as climate change and environmental degradation. However, their overall track record is mixed, particularly when considering their actual benefits, the costs incurred and the consequences of missteps.

Indeed, with every market failure that they seek to correct, there is a looming risk of government failure. With 80 to 90 per cent of industrial policies discriminating against foreign interests, such measures can undermine the level playing field and place strains on multilateral cooperation. There is also a risk that industrial policies may be viewed as a "quick fix", diverting attention away from necessary – but more demanding – tasks such as improving the business environment, enhancing infrastructure and raising skill levels.

Yet voters in the EBRD regions and beyond are increasingly expressing a preference for government intervention, large states and subsidies. And active pursuit of industrial policies by large economies – often to the detriment of their trading partners – is compelling more and more governments to embark on similar endeavours. Thus, domestic political economy considerations, geopolitical tensions and the actions of others are steering policymakers away from optimal economic solutions and international cooperation.

As a result, industrial policies are increasingly being rolled out in economies with lower levels of income per capita, less fiscal space and weaker institutions. As this report shows, those economies tend to use less costly but much more distortionary instruments to achieve their policy objectives, such as export bans and quotas, or licensing requirements for exports and imports. When implemented poorly, these have the potential to cause a misallocation of labour and capital, increase costs for local producers and breed corruption.

"Industrial policies are increasingly being rolled out in economies with lower levels of income per capita, less fiscal space and weaker institutions"

This report provides a rich characterisation of industrial policies in the EBRD regions and beyond using several novel datasets. It offers several principles that can increase the chances of success and reduce the chances of failure when pursuing industrial policies. In most cases, though, the conclusions of our analysis are somewhat nuanced. For instance, investment promotion policies can be effective in attracting foreign investment in targeted sectors – but only in economies with sufficient state capacity. Where state capacity is low, such policies are costly but yield no significant benefits. Similarly, tax incentives can be a good means of developing knowledge-intensive service sectors – but only in regions where the right human capital is available. Elsewhere, the returns may not be sufficient to compensate for the tax revenue that has been forgone. Moreover, special economic zones often have some positive impact on economic activity at a local level – but this impact is conditional on a variety of local circumstances, including the skill base of the local population and proximity to key physical infrastructure such as ports.

Applying the various principles that increase the chances of an industrial policy being a success is easier said than done, judging by the landscape of industrial policies that is surveyed in this report. Clearly articulating the goals of each policy – at least privately, and preferably publicly – and establishing a hierarchy of objectives is key. However, most policies combine two or three different objectives, and those goals often clash with each other. For example, the objective of speeding up the transition to a green economy often runs counter to the objective of protecting domestic employment or the desire to control the supply chain owing to security considerations. Consequently, a lack of coordination and a clear hierarchy of objectives can mean that a country's industrial policies cancel each other out or pile distortions upon distortions. Lastly, there is scope to make industrial policies – especially state assistance for firms – much more targeted by tailoring them more explicitly to targeted firms' age, growth potential and capacity to innovate.

In conclusion, industrial policies have the potential to deliver results, but making this happen is hard enough in the economies with the strongest institutions. If emerging market economies want to scale up the use of industrial policies, they will have to learn fast with little room for mistakes. The costs of failure – increased government spending, economic distortions and forgone revenue – can pile up quickly in the balance sheets of overburdened governments.

Beata Javorcik
EBRD Chief Economist

Executive summary

This report takes an extensive look at industrial policies in the EBRD regions and beyond. Such policies, which are aimed at changing the sectoral composition of production in an economy, have seen a resurgence in recent years, seeking to address increasingly pressing market failures such as environmental degradation. Their track record is mixed at best, with their growing popularity being shaped primarily by domestic political economy considerations and rising geopolitical tensions. While industrial policies are typically employed by higher-income economies, they are also being seen more frequently in economies with less administrative and fiscal capacity to implement them. A typical policy pursues multiple objectives, and these often clash, with no clear prioritisation. Firm-specific policies and policies discriminating against foreign firms are common, and the use of subsidies is on the rise. At the same time, sunset clauses have become more common, perhaps reflecting past experience with addiction to subsidies, but they only apply to a minority of policies.

Pursuit of manufacturing export-led growth has become increasingly challenging for most economies, while the advent of digital technologies has transformed the service sector, facilitating cross-border trade. At the same time, manufacturing has also become more reliant on service inputs. However, this new service export-led growth model is dependent on strong human capital, high-quality infrastructure and well-developed institutional capabilities. Many post-communist EBRD economies have successfully become top exporters of computer and information services, but others need to upgrade their infrastructure, skills and institutional capabilities if they are to excel in a service-based world. Service trade liberalisation and targeted industrial policies can support a shift towards high-value-added services, provided that the right economic and institutional fundamentals are in place.

Special economic zones (SEZs) have proliferated globally as a way of attracting foreign investment, boosting growth and exports, and addressing persistent regional income inequality. The establishment of SEZs tends, on average, to be associated with some strengthening of economic activity, but the effects are highly localised and vary considerably from zone to zone. Economic outcomes tend to be better when SEZs benefit from a strong skill base, high-quality infrastructure and robust local governance. Overall, however, the success of an individual SEZ appears to be very difficult to explain after the fact, let alone predict in advance. Experience with SEZs and European Union (EU) cohesion policies highlights the importance of tailoring place-based interventions to the local context.

Among small and medium-sized enterprises, young firms tend to be characterised by stronger employment growth and higher returns to capital. Direct state assistance for firms is on the rise in EBRD economies, although such policies remain less prevalent overall than in advanced European economies. Direct state assistance can take various forms, including in-kind and financial grants, production subsidies, loans, loan guarantees, interest payment subsidies, tax relief of various kinds and equity capital injections. Tailoring such policies to targeted firms' age and growth potential is crucial in order to maximise their benefits relative to their costs. Thus far, very few policies in the EBRD regions specifically target young, fast-growing firms when deploying state assistance.

CHAPTER 1
An introduction to industrial policy

Industrial policies have seen a resurgence recently, seeking to address market failures such as environmental degradation. Their track record is mixed at best, with their growing popularity shaped primarily by domestic political economy considerations and geopolitical tensions. While industrial policies are typically employed by higher-income economies, they are also becoming more common in economies with less administrative and fiscal capacity to implement them.

Increasingly, industrial policies target multiple objectives, with no clear prioritisation. While such policies have traditionally targeted economic growth and productivity, green objectives are gaining prominence, particularly in advanced economies – often in combination with a strategic goal of ensuring a secure supply of critical materials and technology. Regional development objectives have also become more important, particularly in EBRD economies. Against that background, policymakers need to articulate (ideally publicly or at least privately) the dominant objective of each policy and establish evaluation mechanisms to determine whether a policy will achieve its aims or should be modified or abandoned.

While industrial policies can overcome coordination failures and promote the creation and transfer of knowledge, they can entail high explicit fiscal costs and cause significant implicit costs by distorting the efficient allocation of labour and capital. The risk of capture by special interests is also high. Less-distortive policy instruments typically require greater administrative capacity and more revenue-raising ability.

To minimise distortion, policies can incorporate competitive selection and specific end dates. While the percentage of policies with sunset clauses has risen, firm-specific policies and measures discriminating against foreign firms are common, and use of subsidies has increased. Where administrative capacity is low, policymakers could phase in policies, prioritise projects falling within the remit of a single ministry and establish specialist units to oversee initiatives.

https://2024.tr-ebrd.com/an-introduction-to-industrial-policy

CHAPTER 2
Promoting structural change

Before 1990, many developing economies had growth models that prioritised industrialisation, supported by investment in capital equipment, training and infrastructure. Over time, however, the pursuit of manufacturing export-led growth has become increasingly challenging.

At the same time, the advent of digital technologies has transformed services, facilitating cross border trade, and manufacturing has become increasingly reliant on service inputs. Within services, digitally enabled, tradable services – especially global innovator services such as information and communication technology (ICT) services – exhibit particular growth potential. These have increasingly driven improvements in the labour productivity of the service sector. Such services require high skill levels, can be traded across borders and have strong linkages to other economic sectors.

While many post-communist EBRD economies are top exporters of computer and information services, others need to upgrade their infrastructure, skills and institutional capabilities in today's service-based world.

Service trade liberalisation and targeted industrial policies can support shifts towards high value added services, provided that the necessary fundamentals are in place. For instance, economies with strong state capacity see marked increases in service-related foreign direct investment after investment promotion agencies start to target foreign investment in specific service sectors. No such effects are observed when state capacity is weaker, however. Similarly, tax incentives granted to computer and information service firms in Romania have succeeded in supporting employment growth in that sector, but primarily in regions with strong endowments of specialist human capital.

Service trade liberalisation is also associated with increases in the competitiveness of manufacturing sectors. However, lowering restrictions on trade does not necessarily mean having a regime where anything goes. For example, legislation equivalent to the EU's General Data Protection Regulation has been found to facilitate trade in services by establishing fair and transparent rules on data.

https://2024.tr-ebrd.com/promoting-structural-change

CHAPTER 3
Regional inequality and special economic zones

Place-based industrial policies are strategic interventions aimed at promoting economic development in specific geographical areas – typically those that are underdeveloped or have specific endowments of natural resources or skills. One such policy, the establishment of SEZs, has become increasingly popular as a way of attracting foreign investment, boosting growth and exports, and addressing persistent regional income inequalities.

Such regional inequalities can be seen in both official data and night-time light data, with large – and growing – differences between rural and urban areas as regards economic opportunities. Coastal regions and areas bordering higher-income economies also tend to be richer. Analysis reveals that the average annual rate of intra-country convergence across the EBRD regions was approximately 1 per cent over the period 2010-19. At that rate, it will take about 70 years to halve the existing regional income gaps within EBRD economies.

The number of SEZs in EBRD economies has risen from less than 200 in 1990 to more than 1,100 in 2020, mirroring global trends. While some SEZs are in lower-income regions, others are in richer areas. SEZs in higher income regions tend to be larger and may leverage existing endowments of natural resources or skills.

Analysis of night-time lights suggests that establishing an SEZ is associated with increased economic activity over time within an immediate radius of up to 20 km. Economic outcomes tend to be better when SEZs benefit from a strong skill base, proximity to a port and robust local governance. Analysis also reveals that firms situated near technology development zones in Türkiye have seen stronger increases in employment, exports, investment, sales, profits and total factor productivity. Overall, however, the success of an individual SEZ appears to be very difficult to explain after the fact, let alone predict in advance.

https://2024.tr-ebrd.com/regional-inequality-and-special-economic-zones

CHAPTER 4
Industrial policies supporting firms

In the EBRD regions, a relatively small number of large firms – those with 100 employees or more – account for the majority of employment as a result of their economies of scale, higher levels of productivity and greater propensity to innovate. Meanwhile, the largest listed firms account for a sizeable and rapidly growing share of economies' total output and exports (a trend that can also be observed in other emerging markets), with private-sector firms accounting for most of the recent increases in the total revenue of the largest firms. Among small and medium-sized enterprises, young firms – those that are five years old or less – tend to enjoy stronger employment growth and higher returns to capital.

Direct state assistance for firms is increasing in EBRD economies, although such policies remain less prevalent, on average, than in advanced European economies. The most common forms of direct state assistance in EBRD economies are financial grants and state loans, with other forms of assistance including in-kind grants, production subsidies, loan guarantees, interest payment subsidies, tax relief of various kinds and equity capital injections.

Direct support for firms – including young firms – can be highly effective, as illustrated by the EBRD's Star Venture programme, which targets startups under the age of 10, providing tailored advisory services, training and mentorship. Participation in that programme results in firms securing more funding, employing more people and having more followers on LinkedIn relative to other firms that are shortlisted for participation but ultimately rejected.

At the same time, most direct state assistance policies do not target particular types of firm (such as young or small firms). Tailoring such policies to targeted firms' age, growth potential and innovation potential is crucial in order to maximise their benefits relative to their costs.

https://2024.tr-ebrd.com/industrial-policies-supporting-firms

CHAPTER 5
Structural reform

This final chapter presents updated transition scores for EBRD economies, tracking progress in the area of structural reform. It focuses on six key qualities of a sustainable market economy, looking at whether economies are competitive, well governed, green, inclusive, resilient and integrated.

This year, for the first time, the analysis in this chapter also covers six comparator economies in sub Saharan Africa (SSA): Benin, Côte d'Ivoire, Ghana, Kenya, Nigeria and Senegal. Their scores tend, overall, to be lower than those of EBRD economies, broadly in line with their lower income per capita at market exchange rates. The largest gap between the SSA region and EBRD economies is in the area of integration, reflecting scarce infrastructure and low levels of intra-regional trade and investment in sub-Saharan Africa. Indeed, the SSA region stands out for its low levels of cross border trade and the scarcity of transport and fixed-line broadband infrastructure, even when its modest levels of income per capita are taken into account. There is also a large gap in the area of competitiveness, reflecting low levels of productivity and skills in SSA economies.

Meanwhile, the average inclusion score for SSA economies is, if anything, slightly higher than the average for Central Asia and the southern and eastern Mediterranean – EBRD economies with fairly low levels of income per capita. This reflects the relatively high male and female labour force participation rates in SSA economies.

In the period since 2016, EBRD economies' scores for integration and the green economy have increased the most overall, with competitiveness, inclusion and governance scores improving the least. In SSA economies, meanwhile, scores for competitiveness and resilience have improved the most, with little progress being observed in the area of integration.

https://2024.tr-ebrd.com/structural-reform

1 An introduction to industrial policy

Industrial policies – policies aimed at changing the sectoral composition of production in an economy – have seen a resurgence in recent years. While their track record has been mixed, their growing popularity has been shaped by domestic political economy considerations and rising geopolitical tensions. Increasingly, industrial policies are also being deployed in economies with less administrative and fiscal capacity to implement them. A typical policy pursues multiple objectives, with environmental and regional development goals becoming more common. Firm-specific policies are widespread, as are initiatives discriminating in favour of domestic companies, and use of subsidies is on the rise. At the same time, sunset clauses have become more common, perhaps reflecting past experience with addiction to subsidies.

Introduction

The origins of industrial policies – policies aimed at changing the sectoral composition of production in an economy[1] – can be traced back at least as far as the late 18th century. Indeed, one of the very first things that the US Congress did was to impose import duties on cotton, leather and various forms of clothing, with Alexander Hamilton, the country's first Secretary of the Treasury, arguing that those measures were necessary in order to temporarily protect the country's nascent industries.

While the definition of industrial policies is broad, not all government policies are industrial in nature. Many policies that seek to boost growth or employment – such as measures improving the business environment or the reduction of income tax or value added tax (VAT) rates – do not support one industry at the expense of another. Some "horizontal" policies – such as initiatives aimed at easing immigration requirements for highly skilled labour – nevertheless implicitly target a range of sectors and can thus be regarded as industrial policies. Many industrial policies target a narrow sector, such as the wind energy sector or the semiconductor sector, and these are often referred to as "vertical" policies.

Industrial policies were particularly popular in the aftermath of the Second World War, when government support for innovation and multilateral trade and finance arrangements were seen as the best way to speed up post-war reconstruction and raise living standards. At that point, industrial policies focused primarily on promoting sectors with significant spillovers to the rest of the economy. Industrial policies then fell out of favour in the 1970s and 1980s as new empirical evidence challenging their effectiveness emerged and the focus shifted to broader market-based strategies (see Box 1.1 for a brief overview of the history of industrial policies).

Industrial policies have recently become more popular again, partly because of a desire to address increasingly pressing market failures such as environmental degradation. The increased prominence of such measures reflects a realisation that markets and broad horizontal policies cannot always overcome important economic, social and environmental challenges, such as the need to speed up the transition to a green economy or ensure a guaranteed energy supply.

While industrial policies can be effective in overcoming coordination failures and promoting the creation and transfer of knowledge,[2] they can be associated with high explicit fiscal costs. They may also result in high implicit costs – for example, in terms of distorting the efficient allocation of labour and capital in the market. The risk of capture by special interests is also high. Such market distortion can suppress innovation and drive up the prices of goods and services.[3] Industrial policy instruments that are less distortive typically require greater administrative capacity and the capacity to raise fiscal revenue.

Given their mixed track record, it may be that the popularity of industrial policies is being driven primarily by domestic political economy considerations and rising geopolitical tensions. A succession of economic crises and growing awareness of the need to address environmental challenges have led to a desire for the state to play a larger role in the economy. Meanwhile, voters have tended to show a strong preference for subsidies over taxes.[4] While industrial policies are more commonly seen in higher-income economies, they are also being deployed with growing frequency in economies with lower levels of administrative and fiscal capacity.

Increasingly, industrial policies are tending to target multiple objectives with no clear prioritisation. While these policies have traditionally tended to target economic growth and productivity, green objectives have been gaining in prominence, particularly in advanced economies[5] – often in combination with a strategic desire to ensure the supply of critical materials and technology. Recent examples of industrial policies with such objectives include (i) the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act and the Inflation Reduction Act (IRA) in the United States of America, (ii) the European Green Deal and the European Chips Act in the European Union (EU), and (iii) the Made in China 2025 plan (see Box 1.1). Regional development objectives have also become more important, particularly in the EBRD regions. Policymakers need to be mindful of these trends, articulating – publicly if possible, and in private at least – the key objective of each policy and building in evaluation mechanisms to ascertain whether a policy is on course to achieve its objectives or should be modified or abandoned.

[1] This definition is in line with Juhász et al. (2023a).

[2] See Cherif and Hasanov (2019), Millot and Rawdanowicz (2024) and Lashkaripour and Lugovskyy (2023).

[3] See IMF (2024b).

[4] See EBRD (2020).

[5] All references to advanced economies and emerging market and developing economies (EMDEs) in this chapter are based on International Monetary Fund (IMF) classifications.

In order to minimise distortion, policies can include competitive selection elements and specific end dates. While the percentage of policies with sunset clauses has risen, perhaps reflecting past experience with addiction to subsidies, policies discriminating in favour of domestic firms are widespread and the use of subsidies has increased. Where administrative capacity is low, policymakers could phase in policies, prioritise projects which fall within the remit of a single ministry and set up specialist units to oversee policy initiatives.

This chapter starts by documenting the increases seen in the number and scope of industrial policies, before examining the reasons for those trends and the benefits of industrial policies. It then surveys the changes seen in policy objectives and targeted sectors, before discussing the explicit and implicit costs of industrial policies, various features of policy design and the choice of instruments. The concluding section offers broad recommendations for the design of industrial policies with a view to maximising their benefits while minimising the associated risks and distortions, focusing on scenarios where administrative and fiscal capacity is limited.

How common are industrial policies?

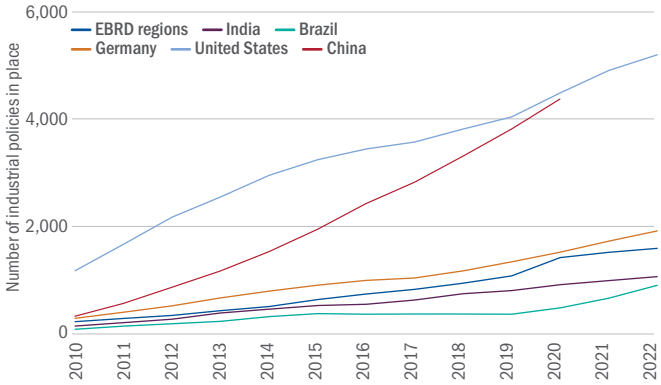
The analysis in this section is based on a novel database of industrial policies around the world. That new database draws on the dataset in Juhász et al. (2023a), which is based on textual analysis of the Global Trade Alert (GTA) database – a repository of information on state interventions affecting trade in goods and services, foreign investment and labour force migration.[6] The coverage has been extended relative to Juhász et al. (2023a) using a finetuned prompt for ChatGPT which seeks to determine whether a given policy in the GTA repository is industrial in nature – that is to say, whether it seeks to support specific sectors at the expense of others. This extended analysis focuses on the EBRD regions and other emerging markets (see Box 1.2 for a more detailed discussion of the methodology).

This analysis is complemented by various other sources of data on industrial policies, including Evenett et al. (2024) (which also draws on the GTA database), the Quantifying Industrial Strategies (QuIS) database established by the Organisation for Economic Co-operation and Development (OECD) and the European Commission's State Aid Transparency Public Search tool.

The number of industrial policies has increased in recent years, particularly since 2019

Data from various sources point to a broad-based rise in the use of industrial policies in recent years, particularly since 2019. This has coincided with an increase in the prevalence of export restrictions on critical raw materials, as documented in the *Transition Report 2023-24*.[7] Use of industrial policies is on the rise in advanced economies, across the EBRD regions and in other emerging markets, with increases being seen in both the number of new policies announced in a given year and the number of policies in place at any given point in time (see Chart 1.1). Around 30 per cent of all industrial policies implemented in the period 2020-22 made reference to Covid-19, the pandemic or a related term. Yet, even if such Covid-related policies are excluded, the upward trend in the total number of industrial policies remains pronounced.

CHART 1.1. The number of industrial policies in place has increased rapidly since 2019



Source: GTA, Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Selected comparator economies are shown. Consistent data on China are not available for the period 2021-22 owing to lags in reporting (see Box 1.2 for details).

[6] See Evenett et al. (2024).

[7] See EBRD (2023).

China and the United States have implemented the largest numbers of industrial policies in the period since 2010, followed by Germany, Brazil, India, Italy, Japan, Russia, Canada, Spain, the United Kingdom and France. In the EBRD regions, the geographical spread of industrial policies is equally broad: Türkiye and Poland have implemented the most policies, followed by Greece, Hungary, Romania, Egypt, Czechia, Kazakhstan, Croatia and the Slovak Republic. (In general, economies with larger populations have implemented more industrial policies.)

The products that are targeted by each policy can be matched to data on exports and imports to get a sense of the scope of the various policies (with the decision to focus on exports and imports – rather than domestic production – being dictated by the availability of data).

In the EBRD regions, the percentage of exports that are affected by industrial policies has increased from around 10 per cent in 2010 to around 45 per cent in 2022 (see Chart 1.2), with similar patterns being observed for imports. These estimates represent upper bounds, since product matching is carried out using the first two digits of the Harmonized System code (referred to as "HS2 codes") – a level at which wines, spirits and vinegar are grouped together, for example. Nevertheless, they point to a clear upward trend in the scope of industrial policies. This trend can also be seen in various other countries around the world. In 2019, for example, the United States introduced localisation into public procurement as part of its "Buy American" policies (see Box 1.3 on localisation rules). And in 2015 Germany introduced trade finance support for a range of goods, including wind turbines and vessels. In China, such policies often target vehicles and machinery. Some economies have small numbers of industrial policies, but they affect a substantial share of the economy. This is true, for instance, of the subsidies supporting the oil industry in Azerbaijan or the agricultural subsidies in Tunisia.

Industrial policies affected

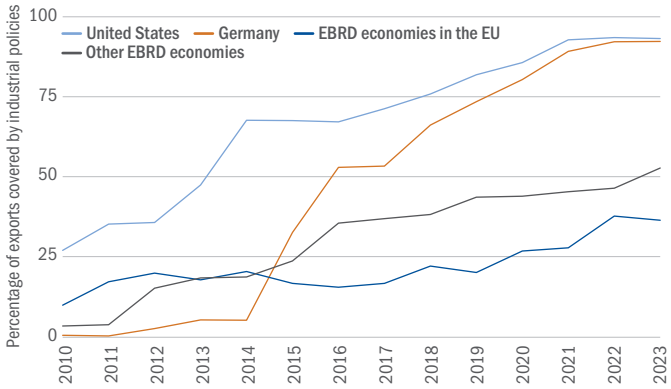
45%

of exports in the EBRD regions in 2022, up from around

10%

in 2010

CHART 1.2. The percentage of exports that are covered by industrial policies has also increased



Source: GTA, Kóczán et al. (2024) Juhász et al. (2023a), UN Comtrade and authors' calculations.

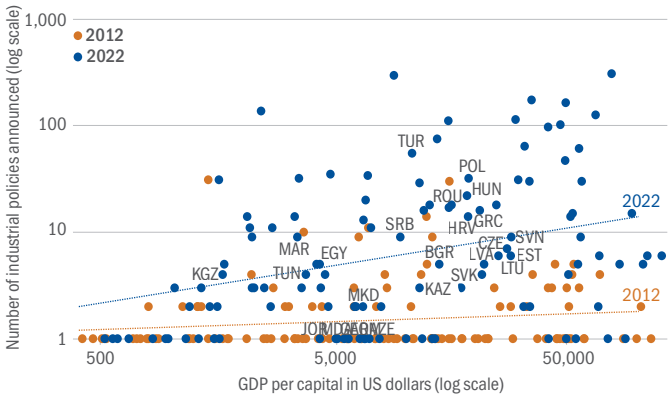
Note: The data for "EBRD economies in the EU" and "other EBRD economies" are simple averages and span 26 economies in total. Once they have been implemented, industrial policies are assumed to remain in place until 2023. A "same-year restriction" is applied (meaning that the chart includes only policies that were announced and included in the GTA database in the same calendar year; see Box 1.2 for details).

Public spending on policies is estimated to total between 1 and 5 per cent of gross domestic product (GDP)

The OECD estimates that public spending on industrial policies in Canada, Denmark, France, Ireland, Israel, Italy, the Netherlands, Sweden and the United Kingdom averaged 3.2 per cent of GDP in 2019-21 (with those estimates including grants, tax expenditure and financial instruments). Other studies reach similar conclusions.[8] For instance, DiPippo et al. (2022) estimate that spending on industrial policies in Brazil, China, France, Germany, Japan, South Korea, Taipei China and the United States in 2019 totalled between 0.3 and 1.5 per cent of GDP. Meanwhile, SCCEI and CCA (2023) estimate that spending on industrial policies in China equates to between 1.7 and 5.0 per cent of GDP, with the higher estimates taking into account the cost of government procurement. Globally, government support for solar panels and aluminium production over the period 2005-19 is estimated at 2 to 3 per cent of total sales in those sectors, while support provided to the automobile, aerospace and defence, and chemical sectors is estimated at around 0.5 per cent of sales.[9]

[8] See OECD (2023).
[9] See Millot and Rawdanowicz (2024).

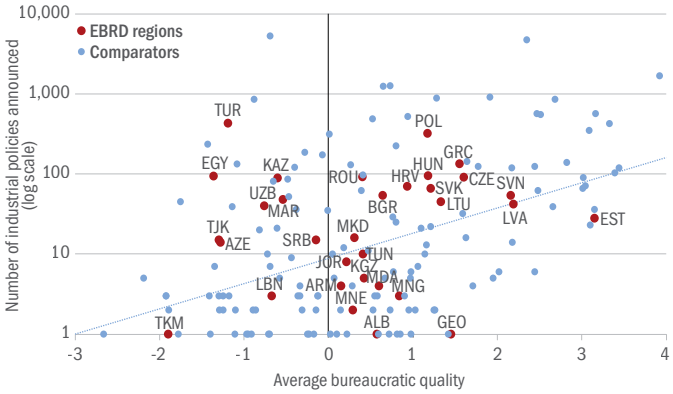
CHART 1.3. Industrial policies have become more common across the income spectrum since 2012



Source: Kóczán et al. (2024), Juhász et al. (2023a), World Bank and authors' calculations.

Note: The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates. The vertical axis shows, on a logarithmic scale, the number of industrial policies announced plus 1. Data are based on the year of announcement, with the same-year restriction applied.

CHART 1.4. Economies with greater administrative capacity tend to implement more industrial policies



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors' calculations.

Note: "Bureaucratic quality" refers to the V-Dem indicator assessing the rigour and impartiality of public administration, which is measured on a scale of -4 to 4, with higher values indicating higher levels of quality. The horizontal axis shows average bureaucratic quality over the period 2010-21. The vertical axis shows, on a logarithmic scale, the total number of industrial policies announced plus 1 over the period 2010-21.

The value of government support for solar panels and aluminium production is estimated at

2-3%

of total sales in those sectors

State aid for firms (including subsidies, grants and concessional finance) increased sharply during the Covid-19 crisis, rising from around 0.8 per cent of GDP to 1.5 per cent in EBRD economies in the EU and rising from 0.5 per cent to 2.2 per cent in Germany, Italy and the Netherlands, according to the European Commission's State Aid Transparency Public Search tool. While state aid fell to 1.2 per cent of GDP in 2023 in those three advanced European economies, it averaged 1.6 per cent of GDP in EBRD economies in the EU.

While total spending on industrial policies may seem modest, it is comparable to government expenditure on education, which averaged 3.7 per cent of GDP globally in 2022 according to data from the United Nations Educational, Scientific and Cultural Organization (UNESCO).[10] Meanwhile, the Marshall Plan payments which supported reconstruction in Europe after the Second World War were equivalent to approximately 2 per cent of US GDP and roughly the same share of the collective GDP of the recipient countries.[11]

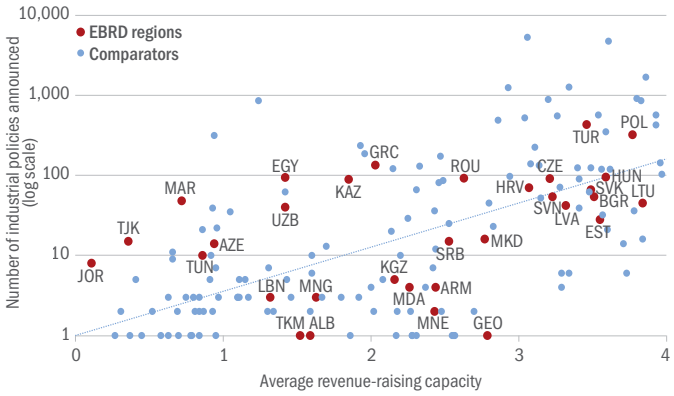
Growing use of industrial policies in lower-income economies

While the rise in the number of industrial policies over the last decade has, to a substantial extent, been driven by higher-income economies, industrial policies have also become more common in EMDEs (see Chart 1.3).

The fact that higher-income economies tend to have more industrial policies may reflect the demands that such policies impose on administrative and fiscal capacity. Industrial policies often require deep knowledge of markets and the technology used by firms, regular collection and analysis of data, and other forms of technical expertise.[12] Perhaps unsurprisingly, economies with higher levels of administrative capacity – as captured by the Varieties of Democracy (V-Dem) indicator assessing the rigour and impartiality of public administration – have implemented larger numbers of industrial policies (see Chart 1.4).

[10] See https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS (last accessed on 6 September 2024).
[11] See Eichengreen (2010).
[12] See Harrison and Rodríguez-Clare (2010).

CHART 1.5. Economies with greater fiscal capacity tend to implement more industrial policies



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors' calculations.

Note: "Revenue-raising capacity" refers to the V-Dem indicator assessing sources of fiscal revenue. The horizontal axis shows average revenue-raising capacity over the period 2010-21. The vertical axis shows, on a logarithmic scale, the total number of industrial policies announced plus 1 over the period 2010-21.

Industrial policies are also more common in economies with greater fiscal capacity, reflecting the high fiscal cost of those policies (see Chart 1.5). Here, fiscal capacity is measured using the V-Dem indicator assessing sources of fiscal revenue. This score is low for economies which are unable to raise revenue and reliant on external financing or ownership of assets (such as commodities), and higher for those where the state derives most of its revenue from the taxation of consumption, income/profits or capital. Even controlling for the logarithm of GDP per capita, economies with greater administrative and fiscal capacity tend to implement more industrial policies. These variables tend to have greater explanatory power than alternative measures of the quality of economic institutions, such as indicators capturing the rule of law or spending capacity.

Notwithstanding these correlations, industrial policies are also increasingly being implemented in environments where administrative and fiscal capacity constraints may be more binding.

What is driving the rise in industrial policies?

Correction of market failures

The use of industrial policies is typically justified by market failures – situations where the market allocation of goods and services is inefficient. Such market failures can include negative externalities such as environmental pollution, positive externalities such as spillovers from innovation, and coordination failures. For instance, while it may be optimal for high-tech firms and highly skilled workers to co-locate in a new area, it may be that neither firms nor workers are willing to make the first move, since firms need a pool of qualified labour and workers need a pool of employers. Firms can also affect the rest of the economy through downstream linkages (providing inputs for their customers) and upstream linkages (as a source of demand for their suppliers). Such spillovers have traditionally been regarded as justification for supporting sectors with strong supply chain linkages, such as the steel and automotive sectors.

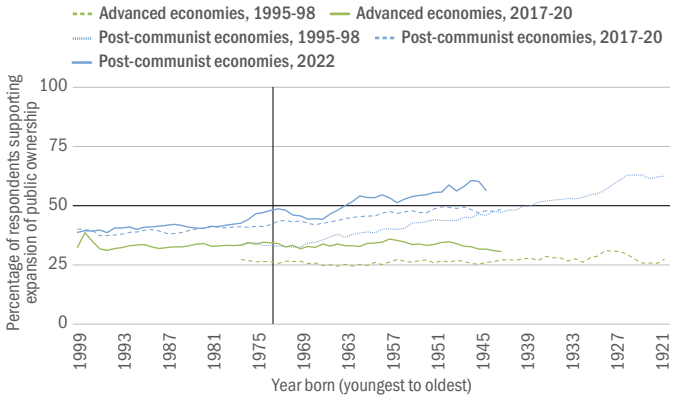
While market failures call for some form of state intervention, interventions that do not involve using industrial policies may be less distortive or more efficient.[13] For instance, environmental externalities could be addressed using carbon taxes, while coordination failures could be mitigated by bringing the various parties together, facilitating simultaneous investment commitments or introducing public guarantees. Indeed, industrial policies tend to be used more widely in economies with less financial depth, suggesting that access to market financing and government intervention may be substitutes.[14] Various factors may have tilted the response to market failures in favour of industrial policy.

A large role for the state in the economy and large firms

As discussed in the *Transition Report 2020-21*, the state has become larger in most economies, and popular support for a large state has grown. The fourth round of the Life in Transition Survey (LiTS IV), which was conducted in the EBRD regions and several comparator economies in 2022 and 2023, suggests that this trend has continued (see Chart 1.6). That representative household survey, which was carried out by the EBRD in collaboration with the World Bank, suggests that over half of all people born before 1980 now favour a further increase in public ownership. This could, in part, reflect the impact of repeated crises, which have increased demand for the state to step in and socialise risks.[15]

[13] See also EBRD (2020).
[14] See Evenett et al. (2024).
[15] See Kóczán and Plekhanov (2024).

CHART 1.6. Demand for the state to play a larger role has grown



Source: EBRD (2020) (based on World Values Survey), LiTS IV and authors' calculations.

Note: This chart shows five-year moving averages across age cohorts, indicating the percentage of respondents who agree (defined as a score between 1 and 5 on a scale of 1 to 10, where 1 means "completely agree" and 10 means "completely disagree") that public ownership should be increased. The chart is based on the 45 economies that featured in both the 1995-98 and 2017-20 waves of the World Values Survey, 20 of which are in the EBRD regions. "Post-communist economies, 2022" is based on LiTS IV. Respondents to the right of the vertical line were adults when the transition process began.

OVER HALF
of all people born before 1980 favour a further increase in public ownership

Political economy considerations are also increasing demand for industrial policy-type solutions. For instance, although well-designed taxes may be a more efficient means of addressing externalities, voters typically prefer subsidies to taxation, as the cost of subsidies in terms of future taxes is less salient. The results of the LiTS IV survey corroborate this.[16] Indeed, studies suggest that industrial policies tend to be used more widely before elections and when economic conditions are weaker.[17]

Increasingly, that larger role for the state in the economy is co-existing with the presence of a handful of large and growing firms, both in emerging markets and in advanced economies.[18] For instance, the combined revenue of the top 15 listed firms in emerging markets doubled as a share of GDP between 2005 and 2022, as discussed in Chapter 4. As many large firms in emerging markets share owners, the level of concentration may be far higher when ownership and personal connections are taken into account.[19] At the same time, the 50 largest US firms accounted for 48 per cent of the total sales of the top 500 US firms in 2015, up from 41 per cent in 1999.[20]

That combination of a large role for the state in the economy and the presence of a handful of large firms may lead to increases in both demand for and the supply of industrial policies. Governments may decide that focusing policy on a few firms that are becoming increasingly important for the overall economy is an attractive option. The size of those firms may, in turn, enable them to successfully lobby governments for various subsidies. Indeed, industrial policies appear to be more common in country-years where the 15 largest listed firms account for a larger share of GDP when controlling for the logarithm of GDP per capita, population and public-sector employment as a percentage of total employment in the preceding year (based on data from Worldscope; see also Chapter 4).

Geopolitical fragmentation

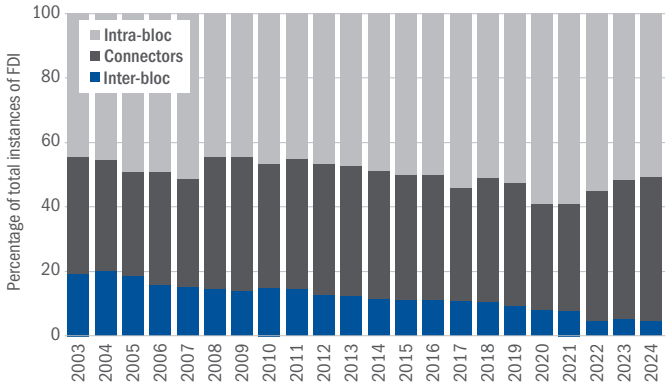
Industrial policies may also appear more attractive when other countries are supporting their own industries, especially in the presence of increasing geopolitical fragmentation. Growing strategic rivalry may give rise to a prisoner's dilemma equilibrium in the use of industrial policies: for an individual economy, lavishing subsidies on domestic producers may be a reasonable response to a rival economy subsidising production, even if such subsidies have a negative impact on the global economy as a result of production becoming more fragmented and inefficient relative to free cross-border trade in goods. However, no economy has an incentive to abandon such industrial policies without other economies doing so at the same time.

[16] See EBRD (2024b).
[17] See Evenett et al. (2024).
[18] See Koltay et al. (2023).
[19] See Commander and Estrin (2022).
[20] See Autor et al. (2020).

Geopolitical fragmentation has become increasingly visible in global patterns of trade and greenfield investment.[21] Foreign direct investment (FDI) between economies that can be seen as geopolitical rivals has declined rapidly as a share of total instances of FDI, especially since 2022, with "connector economies" (which have navigated geopolitical rivalries and benefited from geoeconomic fragmentation) accounting for a growing share (see Chart 1.7).[22]

Explicit responses to other economies' industrial policies are common. In the course of 2022 and 2023, for instance, the European Commission published several legislative proposals in response to the United States' CHIPS and Science Act and the IRA. The EU's response to the IRA has mainly centred on the European Green Deal, which aims to support Europe's green industries by simplifying the regulatory environment, increasing access to finance, improving skills and ensuring open trade. The EU has also responded directly to the IRA by relaxing state aid rules (extending the temporary loosening of state aid regulations that was adopted in response to Russia's war on Ukraine). While the IRA is based primarily on tax relief, the EU's approach relies on the direct disbursement of funds – which is, in turn, financed by an increase in debt. Similarly, in March 2023 Canada outlined a new industrial strategy called "A Made-in-Canada Plan", aiming to attract new investment, create high quality jobs and support the green economy, seeking to match the incentives provided by the United States' IRA. The Canadian government has indicated that this financial assistance will be revised if the incentives in the IRA are reduced or revoked.[23] Also in response to the IRA, South Korea implemented new measures in early 2023 to support various segments of the electric vehicle supply chain (adjusting its own consumer tax credits for electric vehicles and fostering investment in technology and plants), as well as supporting South Korean battery makers.[24]

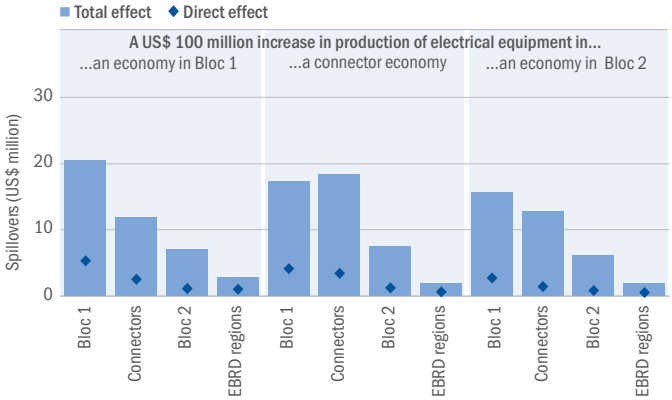
CHART 1.7. Inter-bloc FDI has declined as a percentage of total instances of FDI in recent years, with connector economies accounting for a growing share



Source: Cheng et al. (2024) (which is based on the FT fDi Markets database).

Note: This analysis looks at: (i) a "Bloc 1", comprising countries that have imposed sanctions on Russia; (ii) a "Bloc 2", defined on the basis of Gopinath et al. (2024), which consists of Belarus, China, Mali, Nicaragua, Russia and Syria; and (iii) other economies, which are described as "connectors". "Intra-bloc" refers to FDI where the source economy and the destination economy are in the same bloc; "inter-bloc" refers to FDI where the source economy and the destination economy belong to different blocs; and "connectors" refers to scenarios where at least one of the two economies does not belong to either bloc.

CHART 1.8. Total cross-border spillovers from industrial policies can be significantly larger than direct spillovers to immediate suppliers



Source: World Input-Output Database 2014 and authors' calculations.

Note: See the notes on Chart 1.7 for definitions of Bloc 1, Bloc 2 and connector economies. This chart models increases in the production of electrical equipment in (i) a representative economy in Bloc 1 (constructed as an average of Germany, Japan and the United States), (ii) a representative connector economy (constructed as an average of Brazil, India and Türkiye), and (iii) a representative economy in Bloc 2 (constructed as an average of China and Russia). The direct effect is taken from the World Input-Output Database; the total effect is estimated using a Leontief inversion.

[21] See EBRD (2024a).
[22] See Cheng et al. (2024), Gopinath et al. (2024) and IMF (2023).
[23] See Government of Canada (2023).
[24] See Bown (2023).

Complex cross-border spillovers from industrial policies

Cross-border spillovers from industrial policies are complex in nature, with such policies potentially boosting or weakening the availability and prices of technologies globally.[25] For example, an increase in the production of certain goods in one economy could increase demand for the production of inputs in other economies. Chart 1.8 illustrates the potential spillover effects of US$ 100 million increases in the production of electrical equipment in various economies, differentiating between (i) direct linkages and (ii) indirect linkages (which take into account increases in demand for various inputs along the whole of the supply chain). The calculations are based on historical linkages as captured by the World Input-Output Database in 2014 and do not make assumptions about any future changes.

Total cross-border spillovers from industrial policies can significantly exceed the direct impact on immediate suppliers. For instance, a US$ 100 million increase in the production of electrical equipment in Germany, the United States or Japan is estimated to directly boost global production of various inputs by US$ 9 million, but increase production by US$ 39 million when the entire supply chain is considered. While most of these spillovers accrue to economies within Bloc 1 (defined here as North America, the EU and other economies that imposed sanctions on Russia in 2022), that increase in the production of electrical equipment in Bloc 1 is reliant on significant inputs from Bloc 2 (with those Bloc 2 inputs accounting, in value terms, for 13 per cent of direct inputs and 18 per cent of total inputs across the entire supply chain), as highlighted in last year's *Transition Report*.[26] The same is true of efforts to scale up production of electrical equipment in China or Russia, where the estimated reliance on inputs from economies in Bloc 1 is, if anything, even greater. This shows that "de-risking" the entire supply chain in the context of rising geopolitical tensions – which is, increasingly, a stated objective of industrial policies, as discussed in the next section – is a complex endeavour and can potentially be very costly.

What are the objectives of industrial policies?

A policy may pursue several distinct objectives in support of a particular sector. In the example just given involving the production of electrical equipment, a policy may, for instance, target economic growth and an increase in exports. At the same time, there may also be a desire to ensure the supply of equipment and de-risk supply chains (even if this comes at a high cost). In addition, the policy may also seek to support specific disadvantaged regions by placing production there, or producing equipment that is critical for the green transition (parts of a smart grid, for instance). However, pursuing the above objectives may not create much employment – another common concern among policymakers.

Thus far, those differing objectives of industrial policies have received little attention in economic literature, beyond qualitative studies and research focusing on a few select economies. This section aims to fill that gap using a novel dataset. That dataset uses large language model (LLM) processing to codify the objectives of industrial policies on the basis of the descriptions available in the GTA database (see Box 1.2 for details).[27]

In this exercise, the objectives of industrial policies are grouped together in five clusters:

- growth and productivity, which includes policies that target innovation (by supporting startups, for example), foster exports and investment, and support investment in human capital and infrastructure (with a focus on the intensive margin, as opposed to the creation of jobs)
- creation of employment, which includes policies supporting small and medium-sized enterprises (SMEs), which tend to target employment rather than productivity (as discussed in Chapter 4)
- security of supply (ensuring energy or food security, for example) and protection of strategic industries such as aerospace, defence and semiconductors
- protection of the environment, which includes policies supporting the green transition and encouraging greener practices across the economy (in organic agriculture, for instance)
- regional development, which includes policies aimed at reducing intra-country disparities and supporting disadvantaged regions (for instance, "levelling-up"; see also Chapter 3).

[25] See Goldberg et al. (2024) on the impact that government support has on the semiconductor industry. See also Chang (2011) on the question of how global rules and norms can constrain or facilitate the use of industrial policies.

[26] See EBRD (2023).

[27] The analysis that follows is based on Kóczán et al. (2024).

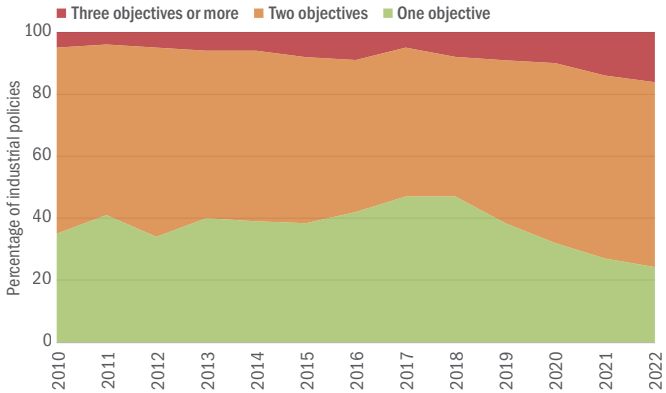
Pursuing multiple objectives may dilute the effectiveness of policies. These clusters of objectives are not mutually exclusive, but one objective does not necessarily support another, so there are likely to be trade-offs between different objectives supporting the same sector. For instance, maximising value added and spillovers to the rest of the economy (through support for high-tech sectors, for example) may be different from maximising employment (through support for labour-intensive sectors such as agribusiness or tourism or support for SMEs, for instance). The latter may be a higher priority in economies where labour forces are growing rapidly. Similarly, a policy that seeks to accelerate the transition to a green economy may prioritise cheaper imports of products such as solar panels or electric vehicles if protecting domestic firms or jobs in those sectors will result in higher prices and slower adoption of green technologies. "Buy American" or "buy European" clauses may achieve geopolitical objectives, but at the cost of reduced efficiency in the short to medium term. Similarly, tariffs on solar panels may help to maintain public support for the green transition, but reduce the speed of that transition owing to the far higher cost of imported panels.[28]

In some cases, different policymakers target different objectives. In this kind of scenario, central coordination is necessary to prevent the objective of one ministry or region from conflicting with and working against the objective of another ministry or region.

Being more explicit about the aims of industrial policies – ideally focusing on a single objective, but at the very least acknowledging trade-offs between them and establishing a formal hierarchy of objectives – will make it easier for policymakers to acknowledge policies' failures while taking credit for their successes.[29]

Around
75%
of industrial policies in emerging markets have multiple objectives

CHART 1.9. Industrial policies are targeting increasing numbers of objectives



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. Data are based on the year of announcement, with the same-year restriction applied.

Industrial policies often have multiple objectives

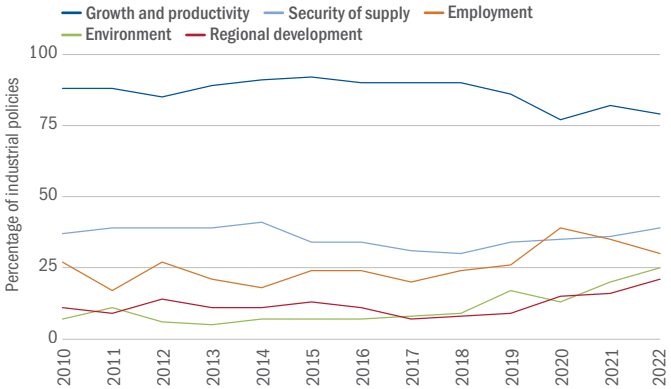
Despite the fact that different objectives may naturally nudge policies in different directions, industrial policies targeting a particular industry will often have two or more stated objectives, with no clear prioritisation. For instance, a government may target green sectors with a view to accelerating the transition to a green economy, while also hoping to ensure energy security and generate jobs.

In fact, in the period 2010-22, 60 per cent of industrial policies in advanced economies and around 75 per cent of industrial policies in the EBRD regions and other emerging markets had multiple objectives, and multiple-objective policies have increased in recent years as a percentage of total policies (see Chart 1.9). More than 10 per cent of policies have three objectives or more, with such policies accounting for a growing share of total policies. As a result, the figure for the average number of objectives associated with an industrial policy has increased from 1.7 in 2010 to almost 2 in 2022.

These results echo the findings of Meckling and Strecker (2022), who found that 65 per cent of green innovation policies had at least one additional objective besides tackling climate change.[30] As environmental policies often entail concentrated losses in the present and diffuse benefits in the future, governments often tie climate-related measures to job creation or other benefits as part of "green bargains".

[28] See also McWilliams et al. (2024).
[29] See also Rodrik (2014).
[30] See OECD (2024).

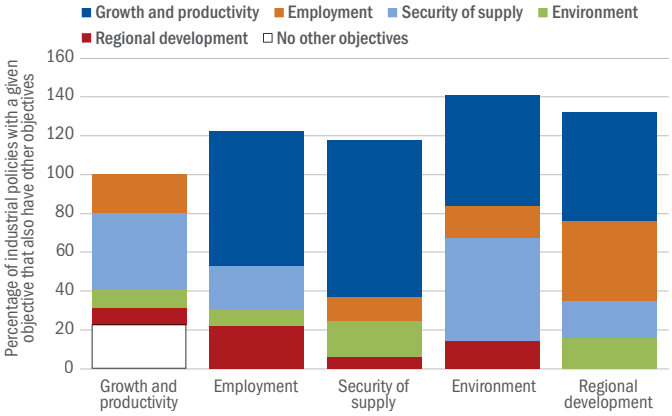
CHART 1.10. The objectives of industrial policies have seen a shift from growth and productivity to the environment and regional development



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. The various figures can add up to more than 100 per cent, as individual industrial policies can have multiple objectives. Data are based on the year of announcement, with the same-year restriction applied.

CHART 1.11. The majority of industrial policies target growth, but often alongside other objectives



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators, covering the period 2010-22. The various figures can add up to more than 100 per cent, as individual industrial policies can have multiple objectives.

Most industrial policies target growth, alongside other objectives

Historically, most industrial policies have tended to target growth and productivity (see Chart 1.10), albeit often alongside other objectives, such as a desire to establish a secure supply of strategically important goods or boost employment (see Chart 1.11). Around 23 per cent of industrial policies have growth as their sole objective, and growth is the only objective that is targeted on its own. In the EBRD regions, industrial policies targeting growth and productivity typically involve the promotion of investment and exports, as well as economic diversification through the creation of industrial parks and special economic zones (see Chapter 3). Examples of targeted sectors include the Hungarian and Moroccan automotive industries and Romania's information technology (IT) sector (see also Chapter 2).

Security of supply considerations and support for strategic sectors have played a key role in recent years, being the second most common objective on average in the period 2010-22.

Shift from growth to support for the green economy and regional development

Over time, there has been an increase in the percentage of policies that support the green economy and regional development, while growth-focused policies have declined as a percentage of total policies (see Chart 1.10). At the same time, green objectives continue to be more common in advanced economies than in emerging markets. For instance, the EU's Net-Zero Industry Act (NZIA) seeks to scale up manufacturing capacity relating to solar photovoltaic and solar thermal technologies, onshore and offshore wind, battery and energy storage, and carbon capture and storage, with a goal of meeting 40 per cent of the EU's manufacturing needs for these technologies domestically by 2030 (a strategic autonomy objective).

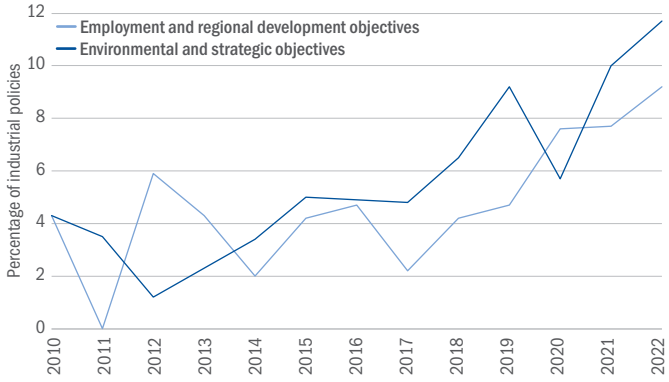
Industrial policies targeting regional development are more common in the EBRD regions than in advanced economies. Many of those policies support agribusiness, and they often target employment creation as well (see Box 1.4). Others (in Estonia, for instance) aim to promote FDI and the upgrading of value chains in the localities that have been most affected by the transition away from mining and carbon-intensive manufacturing.

Around
12%
of industrial policies combine environmental objectives with security of supply in strategic industries

Industrial policies targeting employment and SMEs saw a strong temporary increase during the Covid 19 crisis, with many governments implementing massive support programmes to stabilise the economy and reduce the social costs of unemployment and underemployment. Some of these policies also included measures seeking to address climate change.

Consistent with the examples above, industrial policies combining environmental objectives with a desire to ensure security of supply in strategic industries have gained in prominence in recent years, as have policies combining employment and regional development objectives (see Chart 1.12).

CHART 1.12. Industrial policies with environmental and strategic objectives and policies targeting employment and regional development have become more common in recent years



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 28 economies in the EBRD regions and 105 comparators. Data are based on the year of announcement, with the same-year restriction applied.

Evaluating objectives

The existence of multiple objectives makes it more difficult to ascertain whether a policy is working. This makes it all the more important that policymakers define – in private, at least – the main objective associated with each policy instrument.

Where possible, policies should build in mechanisms allowing the evaluation of their success, based on the main objective of each policy. Such evaluations could enable policymakers to modify or abandon policies that fail to live up to expectations at an early stage. Building in policy evaluations upfront may help to alleviate the challenge of exiting unsuccessful policies. Indeed, past experience with industrial policies suggests that letting losers go may, in fact, be more difficult than picking winners.[31]

While discarding unsuccessful initiatives should, in principle, be a less demanding task than picking winners, political economy considerations may result in governments persisting with ineffective policies. For instance, support for infant industries may be maintained for longer than is necessary, with firms lobbying for the continuation of support rather than focusing on improvements in productivity. Human psychology may also lead to a reluctance to dispense with poorly performing policies, as people tend to be particularly averse to losing what they have and admitting failure.[32] Recent research finds similar patterns for professional asset managers: they outperform the market considerably when picking stocks to invest in, but they perform poorly when it comes to exiting (performing worse than if they had chosen their exit points at random).[33]

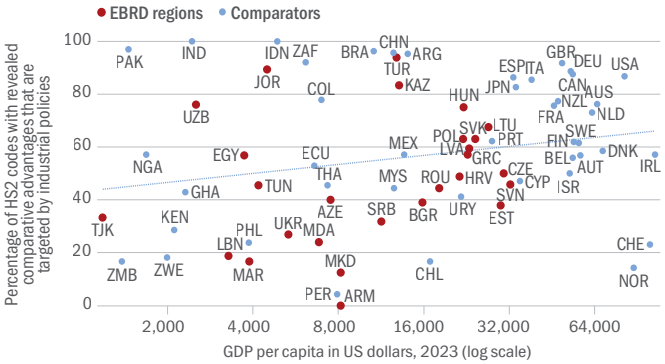
[31] See, for instance, Juhász et al. (2023b).
[32] See also Kahneman et al. (1991).
[33] See Akepanidtaworn et al. (2021).

Higher-income economies are more likely to target sectors where they have existing comparative advantages

Industrial policies also differ in terms of their technological ambition. Some target goods where the country already has a revealed comparative advantage in the global market (that is to say, goods whose share of the country's exports is larger than their share of global trade). In contrast, the "moonshot" approach envisages radical changes to the structure of production, targeting new technologies outside a country's established sources of comparative advantage.[34]

Empirically, industrial policies appear to target a mixture of goods – both with and without comparative advantages (see Chart 1.13). Higher-income economies tend to focus more on existing advantages, perhaps because their more diverse skill base makes it easier to shift to producing and exporting similar products (with those economies being said to have a dense product space).[35] For instance, the UK Innovation Strategy prioritises seven key technology families where the United Kingdom already has globally competitive research and development (R&D). In contrast, lower-income economies are more likely to target "aspirational" sectors.

CHART 1.13. Countries target a mixture of goods, both with and without comparative advantages, but higher-income economies tend to focus more on existing advantages



Source: Kóczán et al. (2024), Juhász et al. (2023a), UN Comtrade, IMF and authors' calculations.

Note: This chart is based on HS2 codes with a revealed comparative advantage greater than 1 according to 2022 data. The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates. Only economies with at least 10 industrial policies are shown. The line is fitted to all economies shown in the chart. Some of that correlation may reflect the success of earlier industrial policies.

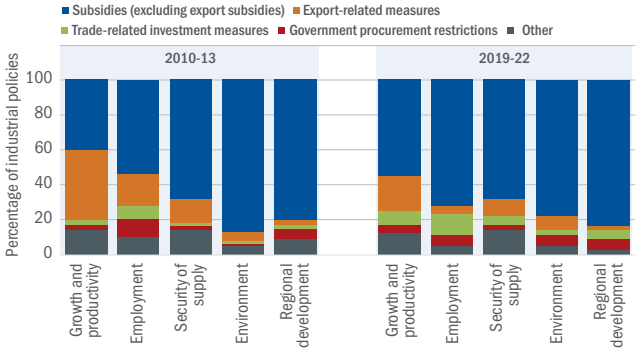
How are industrial policies implemented?

Government procurement restrictions are common when pursuing employment and regional development objectives

The choice of instruments for industrial policies is influenced by policy objectives. For instance, industrial policies with growth objectives rely more heavily on export-related measures (reflecting the importance of commercial tests and international spillovers), although the prevalence of export-related measures has declined (see Chart 1.14). In contrast, policies with employment objectives often involve measures seeking to promote greenfield FDI – an effective, and highly visible, way to create jobs. Government procurement restrictions are more common for industrial policies targeting employment creation or regional development and are becoming increasingly common in environmental policies. Industrial policies with strategic objectives such as a desire to ensure security of supply are more likely to rely on tariff and non-tariff barriers to trade. Subsidies are commonly used in conjunction with all objectives and have become more common over time.

Grants are most useful at earlier stages of the innovation lifecycle, being used to target younger firms and sectors with significant social returns to investment. In contrast, tax incentives may be better suited to supporting more mature firms with larger tax liabilities and established accounting practices.[36]

CHART 1.14. Government procurement restrictions are common for industrial policies targeting employment or regional development



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Data are based on 29 economies in the EBRD regions and 119 comparators.

[34] See, for instance, Reed (2024). See also Cherif and Hasanov (2019) on the experience of the "Asian Tigers" and Mazzucato (2015) on the "mission-oriented" approach.

[35] See Hausmann and Klinger (2006). See also Kee and Tang (2016) on comparative advantages developing through the value chain.

[36] See IMF (2024b).

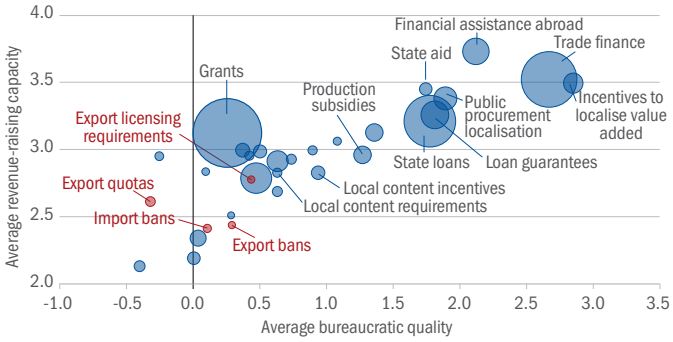
Policy instruments vary in terms of their explicit and implicit costs

An industrial policy with a given objective and target sector can be implemented using a wide range of different instruments (see Chart 1.15, where the size of each bubble is proportionate to the number of industrial policies that use the relevant instrument). Globally, grants (supporting innovation or IT startups, for example), export finance, import tariffs, and loans and loan guarantees provided by the state (often on concessional terms) are the most common instruments, accounting for 67 per cent of industrial policies. Other commonly used instruments include public procurement requirements favouring certain producers, incentives for localising value added in production chains, financial assistance abroad and production subsidies.

The choice of instrument depends on the sector, the objective of the policy and the structure of the market, as well as the government's administrative and fiscal capacity to deploy the instrument while minimising associated risks and distortions. Many of these instruments may implicitly or explicitly involve picking winners – firms or sectors that receive government largesse. This has direct fiscal costs (in terms of the current or future taxation that is needed to pay for the subsidies) and may, in turn, starve other firms of labour and capital. If subsidised firms have a lower return on labour and capital, this introduces significant distortions into the economy, negatively affecting the dynamism of business and productivity growth.

Some industrial policy instruments are particularly distortionary by nature. For instance, schemes involving government handouts – whether explicit (in the case of subsidies) or implicit (in the case of preferential treatment for procurement or export/import licensing) – are prone to capture by special interests, particularly when economic institutions are weaker. Economic distortion is greater when innovation grants are pocketed in the form of shareholder profits with little or no innovation taking place, and it is smaller (or absent entirely) when firms use those grants to achieve the maximum returns on capital. Even if corruption is not a concern, picking winners wisely still requires strong administrative capacity on the part of governments.

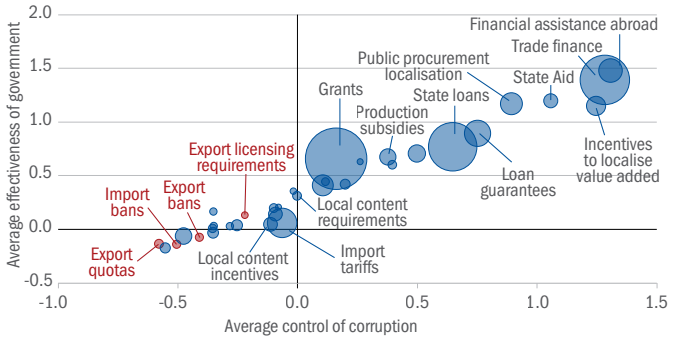
CHART 1.15. Less-distortive instruments require higher bureaucratic quality and greater revenue-raising capacity



Source: Kóczán et al. (2024), Juhász et al. (2023a), V-Dem and authors' calculations.

Note: The size of each bubble is proportionate to the number of industrial policies that use the relevant instrument globally. Data are based on 29 economies in the EBRD regions and 118 comparators. "Bureaucratic quality" refers to the V-Dem indicator assessing the rigour and impartiality of public administration, while "revenue-raising capacity" refers to the V-Dem indicator assessing sources of fiscal revenue (as featured in Charts 1.4 and 1.5). Figures for bureaucratic quality and revenue-raising capacity are averages over the period 2010-21 for economies that implement industrial policies using the relevant instrument. The chart only shows instruments that are used to implement at least 75 policies globally, with selected instruments being labelled. Instruments that are considered highly distortive in IMF (2024a) are labelled in red.

CHART 1.16. Instruments such as trade finance and financial assistance abroad have less risk of capture and distortion than export/import bans, quotas and licensing requirements



Source: Kóczán et al. (2024), Juhász et al. (2023a), the World Bank's Worldwide Governance Indicators (WGIs) and authors' calculations.

Note: The size of each bubble is proportionate to the number of industrial policies that use the relevant instrument globally. Data are based on 29 economies in the EBRD regions and 118 comparators. Figures for control of corruption and the effectiveness of government are averages over the period 2010-21 for economies that implement industrial policies using the relevant instrument, with both measures ranging from -2.5 to 2.5. The chart only shows instruments that are used to implement at least 75 policies globally, with selected instruments being labelled. Instruments that are considered highly distortive in IMF (2024a) are labelled in red.

Less-distortive instruments require greater administrative capacity

Policy instruments differ vastly in terms of the average administrative capacity of the economies that implement them (see horizontal axis of Chart 1.15), as well as the average capacity to raise fiscal revenue (see vertical axis).

In general, bans (such as import/export bans), quotas and licensing requirements tend to be the most distortive (see IMF, 2024b), as they affect firms across the board with little room for adjustment by the affected firms. Perhaps reflecting this, as well as past experience with such policies, those instruments are used fairly infrequently (see Chart 1.15, where the respective bubbles are relatively small). However, those instruments are relatively easy to implement and have low direct fiscal costs. As a result, they tend to be used by economies with lower levels of bureaucratic quality and revenue-raising capacity.

In contrast, instruments such as trade finance, incentives to localise value added and localisation requirements in public procurement are associated with relatively high levels of administrative capacity. Accordingly, they are more common in advanced economies than in the EBRD regions (and tend, more generally, to be used more frequently in richer economies). Grants, meanwhile, are commonly implemented in economies with lower bureaucratic quality but tend to require relatively high levels of revenue-raising capacity – the most notable deviation from the diagonal in Chart 1.15, where the average administrative and revenue-raising capacities that are associated with policy instruments are otherwise broadly aligned.

In order to further examine the question of which instruments tend to be used most often in which economies, Chart 1.16 calculates, for each instrument, average control of corruption and government effectiveness scores on the basis of the World Bank's Worldwide Governance Indicators (WGIs) for all countries that implement policies using the instrument in question. Control of corruption scores capture perceptions of the extent to which public power is exercised for private gain, while government effectiveness scores capture perceptions regarding the quality of public services, the quality of the civil service (and the extent of its independence from political pressure), the quality of the formulation and implementation of policies, and the credibility of the government's commitment to such policies.[37]

Instruments such as trade finance and financial assistance abroad are typically used by economies with high scores for control of corruption and government effectiveness. Local content requirements and incentives, however, are typically used by economies with lower scores.

The instruments that are widely considered to be the most distortive tend to be used in economies with very low scores for the effectiveness of government and control of corruption (see the bottom left corner of Chart 1.16), where government policies in general tend to be distortive and prone to capture.

Competitive elements help to minimise distortion

When political capture, distortion and a poor track record of picking winners are major concerns, industrial policies can generally respond by building more competitive elements into the choice of instruments. Grants can, for instance, be awarded on a competitive basis, private-sector participation can be sought in the case of state loans or state venture capital investment, and firms can be subjected to international competition by not discriminating against foreign firms or encouraging recipients of state support to seek expansion in export markets. Indeed, two of the instruments in the top right corner of Charts 1.15 and 1.16, trade finance and financial assistance abroad, have international competition elements built in by design. Policies incorporating competitive elements are, in general, associated with higher levels of administrative capacity and high scores for control of corruption and government effectiveness; however, policymakers can seek to establish "pockets of excellence" even in weak institutional environments.[38]

Market competition tests can improve accountability and leverage technology spillovers from integration.[39] Investment promotion policies that seek to leverage FDI can be inexpensive, non-distortive and effective[40] in facilitating knowledge transfer and re-shaping countries' comparative advantages and export structures,[41] including by boosting the complexity of exported products.[42]

[37] See Kaufmann et al. (2009).

[38] See also previous discussions of this issue in EBRD (2012, 2013, 2019).
[39] See also IMF (2024b).
[40] See Harding and Javorcik (2011).
[41] See Harding et al. (2019).
[42] See Javorcik et al. (2018) and Javorcik (2004).

Most recent industrial policies have discriminated against foreign entities

At the same time, most recent industrial policies have been "closed" – that is to say, they have discriminated against foreign interests (for instance, by establishing import barriers or subsidising domestic producers). At the same time, some provisions restrict outward foreign investment or exports. For instance, recipients of funding and tax credits in the United States under the CHIPS and Science Act are prohibited from expanding semiconductor manufacturing in countries that pose a threat to national security for 10 years.[43]

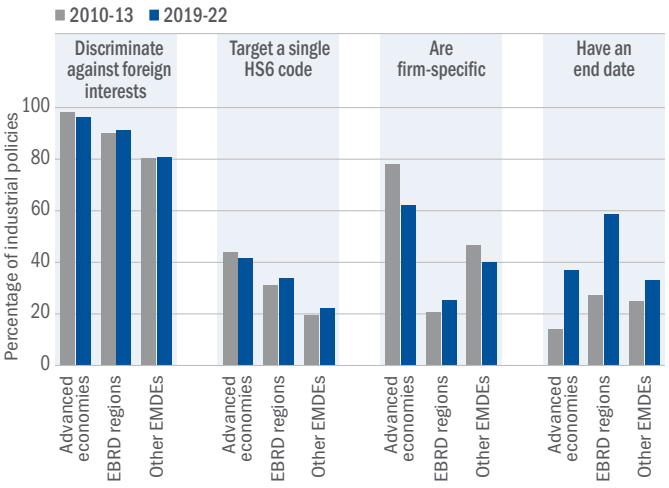
Closed policies account for over 90 per cent of all industrial policies implemented between 2010 and 2022 (see Chart 1.17).[44] The closed nature of most industrial policies increases the importance of strengthening competitive elements in the allocation of funding at domestic level – which, in turn, makes the implementation of those policies more challenging in terms of the administrative capacity that is required to maximise their benefits while limiting distortion.

Industrial policies in the EBRD regions are broader in scope than their equivalents in advanced economies

A given policy instrument, such as subsidies or import tariffs, can be used to target a narrowly defined sector (such as the electrical energy sector, which has the HS6 code 271600) or it can apply more broadly across multiple sectors (such as the group of sectors with HS2 code 27, which relate to mineral fuels). Narrower policies can be easier to define and implement. At the same time, however, the effectiveness of policies favouring specific firms may be undermined by rent-seeking behaviour, since the small number of agents that benefit from such policies will have strong incentives to try to influence decision-makers.[45] Increased scrutiny around the utilisation of funds (such as grants or subsidies) may alleviate such concerns somewhat, but the associated red tape may reduce the uptake of funds, especially for smaller firms.

Industrial policies in the EBRD regions and other emerging market economies tend to be broader in scope than their equivalents in advanced economies (see Chart 1.18). In the EBRD regions, 30 per cent of industrial policies target a single HS6 code, compared with around 40 per cent in advanced economies. Similarly, in the EBRD regions, over 10 per cent of industrial policies are very broad, targeting six HS2 codes or more, compared with less than 5 per cent of industrial policies in advanced economies.

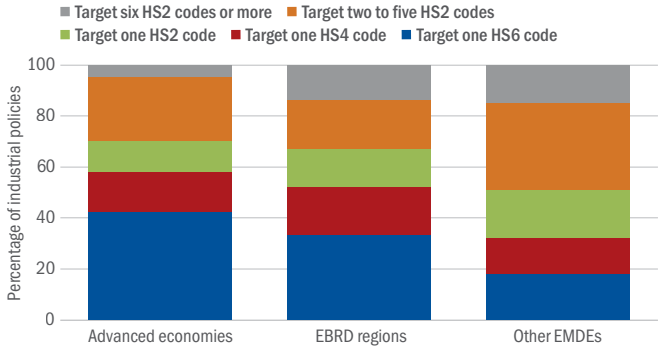
CHART 1.17. Industrial policies are now more likely to have an end date



Source: GTA, Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Data are based on 28 economies in the EBRD regions, 30 advanced economies and 81 EMDE comparators. Figures for firm-specific policies are based on the GTA classification.

CHART 1.18. Industrial policies tend to be broader in scope in the EBRD regions and other emerging market economies than in advanced economies



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: Data are based on 28 economies in the EBRD regions, 30 advanced economies and 81 other EMDEs over the period 2010-22.

Policies that discriminate against foreign interests account for over

90%

of all industrial policies implemented between 2010 and 2022

[43] See Millot and Rawdanowicz (2024).
[44] Based on Evenett et al. (2024) and the GTA database.
[45] See Fernández-Arias et al. (2014).

Firm-specific policies are common

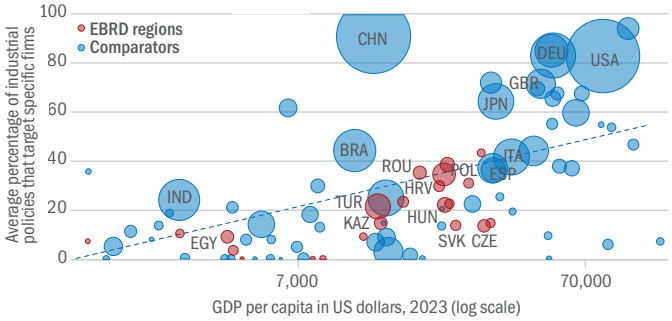
Industrial policies in higher-income economies are also more likely to target specific firms (see Chart 1.19; see also Chapter 4 for a discussion of the instruments used and examples of firm-specific policies). For instance, around 25 per cent of industrial policies in India target individual firms, as do 35 per cent of policies in Poland and Romania. In contrast, over 80 per cent of industrial policies in Canada and the United States target specific firms (through export-import loans, for instance). China stands out as having a high percentage of firm-specific policies for its level of development, with its policies typically targeting large enterprises in the manufacturing sector (which are often state owned).[46] In contrast, in Peru and Romania, for example, up to a quarter of industrial policies are aimed specifically at SMEs, often with an employment objective (see also Chapter 4).

The fact that firm-specific policies make up a larger percentage of total industrial policies in higher income economies is, in part, a reflection of the choice of instruments. Policy instruments such as trade finance, financial assistance in foreign markets and incentives to localise value added are more likely to target specific firms, and those instruments are more commonly used in advanced economies. Indeed, at a global level, more than 80 per cent of all industrial policies that use such instruments are firm-specific. At the same time, when using those particular instruments, higher income economies are also more likely to target specific firms than lower-income economies.

Higher incidence of firm-specific policies in a particular economy might also reflect a focus on global competition between economies, rather than competition within the economy in question.[47] In many economies, a small number of "superstar" firms are now shaping their countries' trade patterns and comparative advantages. For instance, Krka, a pharmaceutical company in Slovenia, accounts for around 3 per cent of the country's exports and GDP. Similarly, at Nokia's peak in the mid-2000s the firm accounted for 25 per cent of Finland's total exports and 4 per cent of Finnish GDP.[48] While firm specific policies are still used less widely in the EBRD regions than in advanced economies, they have become more common over time (see Chart 1.17).

Firm-specific policies in emerging markets often cite security of supply objectives (with such goals accounting for over 90 per cent of firm-specific policies in China and 60 per cent in Türkiye, for instance). In contrast, non-firm-specific industrial policies are more likely to have employment objectives, a trend that can be observed in advanced economies and emerging markets alike.

CHART 1.19. In higher-income economies, industrial policies are more likely to target specific firms



Source: GTA, IMF, Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: The size of each bubble is proportionate to the total number of industrial policies announced in the relevant economy over the period 2010-22. Figures for firm-specific policies are based on the GTA classification. Data on firm-specific policies are averages covering the period 2010-22. Only economies with at least 10 industrial policies are shown. The line is fitted to all economies shown in the chart, with selected economies labelled. The horizontal axis shows, on a logarithmic scale, GDP per capita in US dollars at market exchange rates.

"Soft" industrial policies

At the opposite end of the spectrum from policies awarding subsidies and grants to specific firms are "soft" industrial policies – policies that institutionalise information sharing and collaboration between the government and industry and help to identify key bottlenecks obstructing development. Peru's *Mesas Ejecutivas* are a good example of this kind of initiative. These working groups, which bring together private and public actors with an interest in a particular sector or factor of production, seek to identify and remove constraints affecting the productivity of the sector or factor in question. They help to identify market and coordination failures, and can, importantly, evaluate and expedite solutions across different areas of the country's public administration. They are most successful as dynamic processes that involve joint learning. In some cases, their impact has extended far beyond their initial objectives and programmes and resulted in long-term collaboration. This experience suggests that durable industrial policy bodies can be established even in lower-capacity environments.[49]

[46] See Lardy (2019) and Branstetter et al. (2022).
[47] See Gaubert and Itskhoki (2021).
[48] See Freund and Pierola (2015).
[49] See Fernández-Arias et al. (2014, 2017).

In the EBRD regions, Lithuania, Montenegro, Serbia and Slovenia all have programmes promoting collaboration between universities and the private sector in support of innovation, while Armenia and Mongolia have programmes focusing on marketing and branding.[50] The EBRD's Investment Councils – platforms for public-private dialogue where businesses and policymakers can come together to tackle investment climate-related challenges – can also be regarded as an example of "soft" policies. This type of approach can be particularly advantageous in situations where administrative capacity is low and the risk of capture by special interests is high.[51]

Sunset clauses have become more common

Industrial policies tend to be easier to introduce than abandon. Subsidies given to specific firms or narrowly defined industries can result in addiction and calls for that promotional policy to be extended indefinitely, regardless of its benefits.[52] Indeed, infant industry policies are often continued well beyond those industries' childhood years.[53] This issue of "dynamic inconsistency" also applies to policies facilitating the winding-down of "sunset industries" (such as policies phasing out coal mines).

In addition to the establishment of built-in evaluation mechanisms to monitor progress towards policy objectives, incorporating sunset clauses (that is to say, automatic end dates) in policies at the outset may make it easier to phase policies out. Globally, around one-third of all industrial policies have an end date – one that has been announced publicly – according to information in the GTA database. End dates tend to be more common for (i) policies with a higher fiscal cost, such as financial grants and state aid, and (ii) policies targeting regional development (with 45 per cent of regional development policies having sunset clauses).

The incorporation of end dates has become more common in recent years, both in the EBRD regions and in advanced economies (see Chart 1.17). This development, which has coincided with the rise in more addictive instruments such as subsidies, is welcome and may, to some extent, indicate that countries are learning from decades of past experience with industrial policies. Nonetheless, the risk of policies being rolled over irrespective of their merits remains, even if the default option is for those policies to expire.

Conclusion and policy implications

The externalities and market failures that industrial policies seek to address – such as environmental degradation – are very real and becoming increasingly pressing. Industrial policies are one option available to policymakers in terms of responding to such market failures. While their track record has been mixed (see Box 1.5), the decision to opt for that approach may be dictated by domestic political economy considerations and rising geopolitical tensions. This appears to be resulting in a situation where industrial policies are increasingly being deployed by economies with less administrative and fiscal capacity to implement them.

There are a number of intrinsic trade-offs in the design and implementation of industrial policies. Those policies may pursue multiple objectives – such as a desire to speed up the green transition while ensuring a secure domestic supply of green technologies; or a desire to encourage innovation while increasing job creation – which may not necessarily be aligned with each other. Industrial policies can produce substantial benefits in terms of spillovers to the rest of the economy, as well as to neighbouring economies, but they can also be associated with high explicit fiscal costs and significant implicit costs in terms of distorting the market-based allocation of capital and labour in the economy. Policies that have lower fiscal costs and require less administrative capacity for their implementation may be particularly distortive. Policies that are narrower in scope may be easier and less expensive to implement, but they can lead to addiction and be prone to political capture. At the same time, attempts to alleviate concerns about the misuse of funds may increase red tape and hinder the uptake of incentives, particularly for small, young innovative firms. "Moonshot" approaches and coordinated policy packages targeting capabilities that are not currently present in the economy promise large benefits, but entail far greater risks than incremental approaches based on economies' existing comparative advantages.[54]

Globally, around
ONE-THIRD OF INDUSTRIAL POLICIES
have an explicit end date

[50] See Fernández-Arias et al. (2014).
[51] See Harrison and Rodríguez-Clare (2010) and Juhász and Lane (2024).
[52] See Fernández-Arias et al. (2014).
[53] See Juhász and Lane (2024).
[54] See World Bank (2024).

Past experience with industrial policies suggests that there are a number of general principles which can help to maximise social returns on policy measures while minimising distortion:

- The main objectives of each policy measure should be articulated – in private at least, and publicly if possible – with clear prioritisation in the event of multiple objectives.[55] Being more explicit about industrial policies' objectives – ideally focusing on a single objective, but at the very least acknowledging trade-offs between them and establishing a formal hierarchy of objectives – will make it easier for policymakers to acknowledge policies' failures while taking credit for their successes. Central coordination can help to prevent policies from counteracting each other.
- If the objective is clear, evaluations should be built in to assess whether policies are on track. In this context, letting losers go is more important than picking winners. Evaluation should be seen as an iterative process resulting in "learning by doing" and modifications to policy instruments and objectives.[56]
- Where feasible, policies should build in competitive pressures and market tests, including through outward orientation and incentives for knowledge transfer.[57]
- The choice of policy instruments should be appropriate given the policy's objectives, the available fiscal space and the administrative capacity to design and implement the policy.
- Policy choices should address the question of how policies can eventually be phased out. Addictive policies should be avoided by including institutional safeguards (such as clear benchmarks), close monitoring and explicit mechanisms for ending support.[58]
- As the ability to implement industrial policies is crucial, they should be accompanied by continuous investment in administrative capacity and bureaucratic quality.[59]

Where the administrative capacity to design and implement policies is fairly limited, there are a number of important additional considerations for policymakers:

- Narrow sectors should be targeted, depending on the constraints in terms of fiscal space.
- It is important to start with "quick wins" to increase trust in policies and create momentum.[60]
- If collaboration within the public sector is difficult, it is better to focus on projects falling within the remit of a single ministry.[61]
- Setting up specialist units with superior skills and pay outside civil service structures makes it easier to hire, fire or reassign experts.[62]
- Supplementing traditional policy instruments with "soft" industrial policies institutionalising information sharing and collaboration between the public and private sectors is a low-cost approach which can be implemented even in the context of weak overall institutions.[63]
- In less technologically advanced countries, policymakers should focus on promoting the diffusion of technologies developed elsewhere, leveraging foreign investment, while at the same time continuing to invest in human capital, infrastructure and institutions as the key ingredients for growth and development.
- Policymakers should prioritise instruments with competitive selection elements, particularly if they are targeting large individual firms, with selection ideally delegated to expert bodies with a well-established reputation and the capacity to undertake technical evaluations.[64]

[55] See Harrison et al. (2017) and Terzi et al. (2022).
[56] See Fernández-Arias et al. (2014) and Rodrik (2004).
[57] See Harrison and Rodríguez-Clare (2010).
[58] See Millot and Rawdanowicz (2024).
[59] See Fernández-Arias et al. (2014) and Juhász and Lane (2024).
[60] See Utterwulghe and Ghezzi (2017).
[61] See Fernández-Arias et al. (2014) and Utterwulghe and Ghezzi (2017).
[62] See Fernández-Arias et al. (2014).
[63] See Harrison and Rodríguez-Clare (2010).
[64] See Millot and Rawdanowicz (2024) and Juhász and Lane (2024). See also Box 4.3 on the role that a new state agency is playing in the former East Germany in the area of privatisation.

BOX 1.1.

A brief history of industrial policies

The origins of industrial policies can be traced back at least as far as the late 18th century. In 1791 Alexander Hamilton laid the foundations for US industrial policy with his *Report on the Subject of Manufactures*, in which he advocated (i) high tariffs to protect emerging US industries from foreign competition, (ii) subsidies to support small domestic firms, (iii) import restrictions to create a more favourable market for US producers, (iv) tax exemptions for strategic sectors, (v) an export ban on new technologies to safeguard US innovations and (vi) significant investment in infrastructure, with the objective of establishing industrial self-sufficiency and reducing reliance on imports.[65]

In the 19th century, governments increasingly prioritised infrastructure. The United Kingdom invested heavily in the expansion of railways and steamships and began liberalising trade, while the United States constructed railways, canals and telegraph networks.

In the late 19th century and the early 20th century, industrial policies evolved in order to strike a balance between state intervention and reliance on market forces. The United States, for example, implemented antitrust laws such as the Sherman and Clayton Acts to prevent monopolies and ensure competition, while the United Kingdom supported SMEs using tariffs, subsidies and tax breaks in order to promote economic growth. France, meanwhile, nationalised key industries and supported selected strategic sectors (including aviation), and Latin American countries such as Argentina, Brazil and Mexico used import substitution industrialisation (ISI) to reduce their dependence on foreign goods, deploying quotas, tariffs and subsidies in order to support their domestic industries.[66]

Industrial policies became particularly popular in the aftermath of the Second World War. At that time, there was a broad consensus that the provision of public goods and services, government support for innovation, and multilateral trade and finance arrangements were the key to speeding up post-war reconstruction and raising living standards.[67] This policy consensus, which lasted around three decades, was also endorsed by developing economies, with notable examples including the success of industrial policies in the "miracle countries" of East Asia and the failure of import substitution in Latin America. Prominent examples of policies in East Asia and Latin America included support for the South Korean steel company POSCO and the Brazilian aircraft manufacturer Embraer.[68] Emphasis was often placed on addressing coordination failures and promoting sectors that could supply essential inputs to other industries, thereby fostering complementary demand across the economy.[69]

In the 1970s, industrial policies started to lose their appeal, with mainstream economics stressing the distortion that arose from state intervention and documenting the failures of governments that had sought to rectify market failures. In 1986 US President Ronald Reagan famously remarked that the nine most terrifying words in the English language were "I'm from the government and I'm here to help". Nevertheless, many countries continued to use industrial policy instruments, albeit often in a lower-key fashion.[70]

The late 1990s and early 2000s witnessed a resurgence in state intervention. Industrial policy evolved to address growing concerns about market failures (including in the area of environmental protection), reflecting broader recognition of the state's role in fostering innovation and economic development.[71] The succession of major economic crises over the last 15 years, coupled with increased awareness of environmental challenges and perceptions of rising inequality within economies, have further increased demands for state intervention.[72]

Rising geopolitical tensions have brought strategic industries and security of supply considerations into the spotlight.[73] In the United States, the CHIPS and Science Act, which was adopted in 2022, aims to strengthen competitiveness, innovation and national security in the semiconductor sector and increase the numbers of people working in science, technology, engineering and maths (STEM) sectors by using tax credits to support investment in manufacturing, sectoral R&D funding and funding for education and skills.[74] Meanwhile, the IRA aims to reshape the power sector by fostering the decarbonisation of the electricity generation and electric vehicle industries using production and investment tax credits for clean electricity and energy storage.[75]

[65] See Nester (1998).
[66] See Tafunell (2007).
[67] See Salazar-Xirinachs et al. (2014).
[68] See, for instance, Cherif and Hasanov (2019).
[69] See Hirschman (1958).
[70] See Wade (2012).
[71] See Aiginger and Rodrik (2020).
[72] See EBRD (2020).
[73] See Millot and Rawdanowicz (2024).
[74] See Cooper (2022).
[75] See Bistline et al. (2023).

In the European Union, major industrial policies adopted in recent years include (i) the New Industrial Strategy for Europe, which aims to support the green and digital transitions and reduce strategic dependence on imports, (ii) the European Chips Act, which is aimed at supporting semiconductor production in the European Union and reducing dependence on external producers, and (iii) the European Green Deal, which aims to make the EU climate-neutral by 2050 through initiatives that support renewable energy use, energy efficiency and sustainable agriculture, foster significant investment in clean technologies and create green jobs, while ensuring a "just transition" for all regions and industries.

The Made in China 2025 plan was the centrepiece of the industrial strategy that China launched in 2015, which sought to shift the economy towards innovation-driven production of higher-value products and services and reduce dependence on foreign suppliers in those sectors. That programme targeted 10 industries, including next-generation IT, high-end digital control machine tools and robotics, and electric power equipment.[76]

[76] See Branstetter and Li (2022).

BOX 1.2.

Identifying industrial policies and their objectives

This box provides further details on the methodology behind the novel database of industrial policies – an expanded version of the database in Juhász et al. (2023a) – which forms the basis for most of the analysis presented in this chapter.

Juhász et al. (2023a) used a text-based approach to measure the number of industrial policies at a global level over time. Their algorithm categorised policies recorded in the GTA database over the period 2009-22 using supervised machine learning. By zooming in on the objectives of policies, the algorithm was able to categorise commercial policies as "industrial" or "non-industrial".[77] In the absence of information that unambiguously identified a policy as industrial, the policy in question was left unclassified. Thus, the number of policies classified as "industrial" by the algorithm is likely to constitute a lower-bound estimate of the total number of industrial policies.

Unclassified policies accounted for 43 per cent of all policies globally and 69 per cent of policies in emerging market economies (with figures as high as 100 per cent being recorded in some economies in Central Asia and the Caucasus). In Estonia, Germany, Latvia, the United Kingdom and the United States, by contrast, less than 20 per cent of policies were unclassified.

In order to examine industrial policies in the EBRD regions and other emerging markets, the Juhász et al. (2023a) dataset was expanded using ChatGPT and a finetuned prompt. In order to develop the prompt, stratified random samples of policies at the instrument-country-year level were coded manually for the United States and Kazakhstan. This manual coding was then compared with ChatGPT classifications obtained using a minimal prompt. It became apparent that the minimal prompt had resulted in ChatGPT repeatedly excluding certain types of policy, including policies in the transport, infrastructure and agriculture sectors, as well as policies used by various government agencies to support firms (such as guaranteed loans issued by the Export-Import Bank of the United States to support Boeing's exports). The prompt was then adjusted to account for those discrepancies, resulting in the following prompt:

> "You are an expert in industrial policy. You are very familiar with such policies, including but not limited to infrastructure, transportation, agriculture, manufacturing, etc. Specifically, if a policy clearly aims to support a domestic company's export behaviour by granting loans to a foreign company (such as policies used by the Export-Import Bank of the United States to support US companies, and other similar policies used by similar government agencies in different countries), this policy should also be considered an industrial policy. Given the below policy text, is it an industrial policy? Please think step by step. Your answer should start with 'Yes' or 'No', and then the next paragraph should provide a concise explanation."

As a result of this adjustment to the prompt, around 55 per cent of the policies that had previously been unclassified were coded as industrial policies. Thus, the ChatGPT classification now matched the manual coding for 94 per cent of the US policies and 85 per cent of the Kazakh policies. More generally, when looking at trends in terms of numbers of policies and distributions by instrument and by product targeted, the patterns in the expanded dataset were very similar to those in the Juhász et al. (2023a) dataset for advanced economies.

A number of entries were identical in terms of the policy instruments listed and concerned the same country and year, but had slight differences in their descriptions as regards the level of detail on objectives. In the Juhász et al. (2023a) dataset, those differences could result in policies being placed in different categories, but the same was not true of the ChatGPT classification. For example, there were two very similar descriptions of policies in the same country and year: "a ban on fuel exports" and "a ban on fuel exports, *with the objective of protecting domestic producers*". In the Juhász et al. (2023a) dataset, the former was unclassified, but the latter (which included additional information on the objective of the policy) was classified as an industrial policy. In the expanded dataset, ChatGPT classified both as industrial policies.

[77] For more details on the classification process, see Juhász et al. (2023a).

The GTA database, which was the basis for the Juhász et al. (2023a) dataset, the expanded dataset used in this chapter and the dataset used by Evenett et al. (2024), is updated on a rolling basis when new information becomes available. Some policies are added when they are announced, while others are backfilled. Backfilling can mean that data for more recent years are less complete. For instance, at the time of writing, in 2024, authorities have only had two years to report policies that were implemented in 2022, but they have had 10 years to document state intervention that took place in 2014.[78] The amount of backfilling varies by country. It is particularly common with China, reflecting the decentralised implementation of many policies.[79] In order to make the flows of industrial policies comparable over time, analysis in this chapter generally follows the approach adopted in Juhász et al. (2023a) by applying a "same-year restriction" – that is to say, it only considers policies that are announced and included in the GTA database in the same calendar year.[80]

The expanded dataset also used ChatGPT to code the objectives of industrial policies on the basis of their descriptions in the GTA database. First, manual analysis of the descriptions of 65 industrial policies in various economies yielded 11 commonly used objectives.[81] These were then grouped together in five main clusters: "growth and productivity" (which included measures to enhance competitiveness, investment promotion, export promotion and trade facilitation, infrastructure development, human capital development, and R&D and innovation), "employment" (which included employment creation and support for SMEs), "security of supply and strategic industries", "environment" and "regional development". ChatGPT was then asked to identify whether each policy pursued one of the 11 disaggregated objectives and provide a justification for its answer.

[78] See Evenett (2019).
[79] See Goldberg et al. (2024).
[80] See Juhász et al. (2023a).
[81] There was considerable overlap between these objectives and those identified in UNCTAD (2018), for instance.

BOX 1.3.

Localisation rules

Localisation rules – policies that require firms to use a certain percentage of domestically produced inputs – have a long history and are a popular way of supporting domestic industries. They are often a feature of public procurement policies. Variants of such rules may require foreign investors to share technology with domestic joint venture partners or store all data locally.

Localisation rules accounted for 15 per cent of all industrial policies in 2022, up from 9 per cent in 2010. Around 41 per cent of those rules relate to localisation in public procurement, 32 per cent provide incentives to localise value added, while 16 per cent are local content incentives. They are used in a wide variety of countries, from India to the United Kingdom and from Brazil to Germany, and cover a broad range of sectors. Examples include local sourcing requirements attached to grants for developing local broadband infrastructure in the United States, export rebates encouraging the use of local components in textiles and manufacturing in Egypt, local content requirements for subsoil operations in Kazakhstan and local operations requirements for the installation of 5G networks in Türkiye.

Like many other non-tariff measures, localisation rules are motivated by infant industry arguments asserting that less-established local producers in various value chains require state intervention in order to grow. They are more likely to target employment creation than other industrial policies (with 53 per cent of localisation policies having that as a stated objective, compared with 24 per cent for industrial policies in general). In turn, security of supply objectives are less common with localisation policies than with industrial policies in general (with those objectives being observed for only 31 per cent of localisation policies, compared with 42 per cent for industrial policies in general).

Localisation rules can help to deepen supply chains and upgrade technology. Such requirements may incentivise companies to reach out to existing or new local suppliers – and those suppliers, in turn, may be in a position to adopt the latest technologies, leveraging the scale of the new market open to them and benefiting from training provided by large off-takers. That was the case in Norway, for example, following the discovery of offshore oil and gas.[83]

However, such requirements can also increase the cost of domestic production and impose higher prices on consumers by shielding domestic producers from competition.[84] If the right skills and incentives are not present, such requirements may create excess profits for firms supplying substandard products at inflated prices and limit imports of the latest technologies, thus undermining the development of the very industries that the local content requirements were intended to support.[85] This can result in the multiplication of production facilities (which is not economically rational and entails higher production costs), the loss of jobs elsewhere in the economy, and lags in the introduction of new technologies and practices.

Localisation rules are likely to be less distortive where (i) domestic markets are large, allowing local producers to scale up quickly and subsequently expand abroad using knowledge they have acquired domestically, (ii) the goods and services that are sourced locally are produced competitively (so would probably be used even in the absence of such requirements), and (iii) goods and services are non-tradeable.

In order to minimise the distortion associated with local content requirements, it is important to provide an unambiguous definition of what constitutes local content and ensure that policy ambitions match the economy's technical potential and resource capacity.[86] As with other policies, it is important to monitor whether these rules are on course to achieve their stated objectives (in terms of boosting employment or increasing value added, for instance). Policy accountability could be further enhanced by creating a dedicated independent government authority responsible for monitoring local content and ensuring that eligible firms have equal opportunities to apply and compete for contracts with local content rules.

Calibrating such requirements and gradually phasing them out as local producers become internationally competitive relies on industry regulators being highly independent and highly professional. Thus, governments with significant administrative capacity have far more policy options than those with more limited capacity.[87]

Notable alternatives to conventional local content instruments include joint ventures with foreign firms, programmes supporting vocational training, and measures incentivising R&D.[88]

[82] See Deringer et al. (2018).
[83] See EBRD (2020).
[84] See Veloso (2006) and Hufbauer et al. (2013) for a review.
[85] See EBRD (2020).
[86] See Klueh et al. (2007, 2009).
[87] See EBRD (2020).
[88] See Klueh et al. (2007).

BOX 1.4.

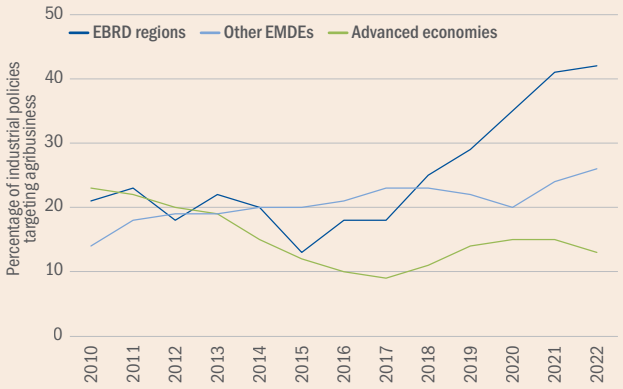
Industrial policies targeting agribusiness

While industrial policies are often associated with manufacturing, high-tech sectors and the generation of energy, a large number of those policies are aimed at the agricultural sector. In fact, policies targeting agriculture have become far more common in the EBRD regions in recent years (see Chart 1.4.1).

Industrial policies targeting agribusiness are more likely to have regional development objectives and employment objectives than industrial policies in general (with those objectives being observed for 46 per cent and 27 per cent of industrial policies targeting agribusiness respectively). The recent rise in industrial policies targeting agribusiness in the EBRD regions and other EMDEs has been driven by policies with environmental and regional development objectives (primarily relating to sustainable agriculture), while food security objectives have declined in prominence.

In the EBRD regions, industrial policies targeting agribusiness typically involve financial grants, subsidies, import tariffs and mechanisms aimed at stabilising the prices of agricultural commodities. In advanced economies, by contrast, trade finance, production subsidies and state loans are common features of such policies, while price stabilisation mechanisms are rare.

CHART 1.4.1. The percentage of industrial policies targeting agribusiness has increased in the EBRD regions



Source: Kóczán et al. (2024), Juhász et al. (2023a) and authors' calculations.

Note: This chart shows simple averages across 27 economies in the EBRD regions, 28 advanced economies and 70 EMDE comparators. It indicates the percentage of industrial policies that target at least one HS section within the agribusiness sector and is normalised such that shares across all sectors sum to 100 per cent. Agribusiness includes vegetable products, live animals and animal products, prepared foodstuffs and tobacco, and fats, oils and waxes. Figures represent three-year moving averages. Data are based on the year of announcement, with the same-year restriction applied.

BOX 1.5.

The broader effects of industrial policies: selected case studies

Despite the renewed interest in industrial policies, empirical evidence on their benefits and costs remains scarce. According to a number of recent studies, industrial policies often deliver on their narrowly defined objectives, but the direct and indirect costs of such interventions can be high.[89] As a result, it can often be difficult to determine whether the benefits of specific policies have outweighed their costs after the fact, let alone predict the success or failure of policies in advance.

For instance, "Buy American" provisions introduced for purchases of final goods in the United States are estimated to have created up to 100,000 jobs, at an estimated cost of between US$ 111,000 and US$ 238,000 per job, with the cost per job rising over time.[90] Under these policies – the origins of which date all the way back to 1933 – goods purchased by the US federal government must be manufactured in the United States, with local US content totalling at least 50 per cent, unless specific waiver conditions are met.

In contrast, the United Kingdom's Regional Selective Assistance business support scheme, which offers investment subsidies to firms in depressed areas on the condition that they create or protect jobs, can be regarded as a relatively low-cost intervention, creating jobs at an estimated cost of US$ 6,300 per job.[91] Increases in manufacturing employment under that scheme have been observed primarily for smaller firms with fewer than 150 employees and have been associated with lower levels of local unemployment.

Meanwhile, China's support for its shipbuilding industry over the period 2016-23 (including both direct fiscal outlays and forgone revenue) is estimated to have totalled CNY 550 billion (equivalent to 1 per cent of its 2013 GDP). Entry subsidies (such as the option to purchase land at a discounted price) and production subsidies attracted many firms and increased China's global market share by 40 per cent. Three-quarters of that increase is estimated to have come at the expense of producers in other countries, with the remaining quarter adding to the global supply of vessels. As a result of that support, the net profits of domestic producers rose by CNY 145 billion and consumers worldwide saved CNY 230 billion on their purchases of ships (relative to the amounts they had been willing to pay). The combination of those two effects fell short of the total value of subsidies, and industry profits failed to increase in the long run.[92] Entry subsidies, which accounted for 60 per cent of total spending, attracted large numbers of inefficient producers and resulted in excess capacity.

Industrial policies can also create significant distortions in other industries, whether in upstream sectors that are supplying the target industry or in downstream sectors that are using its products. For instance, many economies have implemented industrial policies with the aim of boosting their steel industries, with examples including production subsidies in Argentina in the 1970s, government equity injections in Belgium from 1979 onwards, special export tax rebates in Brazil between 1977 and 1996, and debt forgiveness for steel producers in Germany in the 1990s. Quotas and high import tariffs are common across the board. While they are in place, such policies typically support local production of steel and associated employment; however, a study of such policies spanning 21 economies documents a sharp drop in the export competitiveness of local industries that use steel as a major production input, with larger adverse effects found in lower-income economies.[93]

[89] See Warwick and Nolan (2014), Lane (2020) and Juhász et al. (2023b).
[90] See Bombardini et al. (2024).
[91] See Criscuolo et al. (2012).
[92] See Barwick et al. (2019).
[93] See Blonigen (2016).

References

K. Aiginger and D. Rodrik (2020)
"Rebirth of industrial policy and an agenda for the twenty-first century", *Journal of Industry, Competition and Trade*, Vol. 20, No. 2, pp. 189-207.

K. Akepanidtaworn, R. Di Mascio, A. Imas and L.D.W. Schmidt (2023)
"Selling Fast and Buying Slow: Heuristics and Trading Performance of Institutional Investors", *The Journal of Finance*, Vol. 78, No. 6, pp. 3055-3098.

D. Autor, D. Dorn, L.F. Katz, C. Patterson and J. Van Reenen (2020)
"The fall of the labor share and the rise of superstar firms", *The Quarterly Journal of Economics*, Vol. 135, No. 2, pp. 645-709.

P.J. Barwick, M. Kalouptsidi and N. Bin Zahur (2019)
"China's Industrial Policy: An Empirical Evaluation", NBER Working Paper No. 26075.

J. Bistline, N. Mehrotra and C. Wolfram (2023)
"Economic implications of the climate provisions of the Inflation Reduction Act", NBER Working Paper No. 31267.

B.A. Blonigen (2016)
"Industrial policy and downstream export performance", *The Economic Journal*, Vol. 126, No. 595, pp. 1635-1659.

M. Bombardini, A. González-Lira, B. Li and C. Motta (2024)
"The increasing cost of buying American", NBER Working Paper No. 32953.

C.P. Bown (2023)
"How the United States solved South Korea's problems with electric vehicle subsidies under the Inflation Reduction Act", Peterson Institute for International Economics Working Paper No. 23-6.

L.G. Branstetter and G. Li (2022)
"Does 'Made in China 2025' work for China? Evidence from Chinese listed firms", NBER Working Paper No. 30676.

L.G. Branstetter, G. Li and M. Ren (2022)
"Picking winners? Government subsidies and firm productivity in China", NBER Working Paper No. 30699.

H.-J. Chang (2011)
"Industrial policy: Can we go beyond an unproductive confrontation?", in J.Y. Lin and B. Pleskovič (eds.), *Lessons from East Asia and the Global Financial Crisis: Annual World Bank Conference on Development Economics – Global, 2010*, pp. 83-109.

C.-H. Cheng, B. Javorcik and A. Plekhanov (2024)
"Geopolitical fragmentation and foreign direct investment", EBRD working paper, forthcoming.

R. Cherif and F. Hasanov (2019)
"The return of the policy that shall not be named: Principles of industrial policy", IMF Working Paper No. WP/19/74.

S. Commander and S. Estrin (2022)
The Connections World: The Future of Asian Capitalism, Cambridge University Press.

V. Cooper (2022)
"Explainer: The CHIPS and Science Act 2022", United States Studies Centre.

C. Criscuolo, R. Martin, H. Overman and J. Van Reenen (2012)
"The causal effects of an industrial policy", NBER Working Paper No. 17842.

H. Deringer, F. Erixon, P. Lamprecht and E. van der Marel (2018)
"The economic impact of local content requirements: A case study of heavy vehicles", ECIPE Occasional Paper No. 1/2018.

G. DiPippo, I. Mazzocco and S. Kennedy (2022)
"Red Ink: Estimating Chinese Industrial Policy Spending in Comparative Perspective", joint report by the CSIS Economics Program and the CSIS Trustee Chair in Chinese Business and Economics.

EBRD (2012)
Diversifying Russia – Harnessing regional diversity, London.

EBRD (2013)
Transition Report 2013 – Stuck in Transition?, London.

EBRD (2019)
Transition Report 2019-20 – Better Governance, Better Economies, London.

EBRD (2020)
Transition Report 2020-21 – The State Strikes Back, London.

EBRD (2023)
Transition Report 2023-24 – Transitions Big and Small, London.

EBRD (2024a)
May 2024 Regional Economic Prospects – Taming inflation, London.

EBRD (2024b)
Life in Transition IV – Household resilience in a turbulent world, London.

B. Eichengreen (2010)
"Lessons from the Marshall Plan", background case note for the 2011 *World Development Report*, World Bank.

S. Evenett (2019)
"Protectionism, state discrimination, and international business since the onset of the Global Financial Crisis", *Journal of International Business Policy*, Vol. 2, No. 1, pp. 9-36.

S. Evenett, A. Jakubik, F. Martín and M. Ruta (2024)
"The return of industrial policy in data", IMF Working Paper No. WP/24/1.

E. Fernández-Arias, C.F. Sabel, E.H. Stein and A. Trejos (2014)
"Overview: Public-Private Collaboration on Productive Development Policies", input for *Development in the Americas: Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation*, Inter American Development Bank.

E. Fernández-Arias, C.F. Sabel, E.H. Stein and A. Trejos (2017)
"Two to tango: Public-private collaboration for productive development policies", IDB Working Paper No. IDB-WP-855.

C. Freund and M.D. Pierola (2015)
"Export superstars", *The Review of Economics and Statistics*, Vol. 97, No. 5, pp. 1023-1032.

C. Gaubert and O. Itskhoki (2021)
"Granular comparative advantage", *Journal of Political Economy*, Vol. 129, No. 3, pp. 871-939.

P.K. Goldberg, R. Juhász, N.J. Lane, G. Lo Forte and J. Thurk (2024)
"Industrial policy in the global semiconductor sector", NBER Working Paper No. 32651.

G. Gopinath, P.-O. Gourinchas, A.F. Presbitero and P. Topalova (2024)
"Changing global linkages: A new Cold War?", IMF Working Paper No. WP/24/76.

Government of Canada (2023)
"Budget 2023: A Made-in-Canada-Plan", Ottawa.

T. Harding and B. Javorcik (2011)
"Roll Out the Red Carpet and They Will Come: Investment Promotion and FDI Inflows", *The Economic Journal*, Vol. 121, No. 557, pp. 1445-1476.

T. Harding, B. Javorcik and D. Maggioni (2019)
"FDI promotion and comparative advantage", mimeo.

A. Harrison, L.A. Martin and S. Nataraj (2017)
"Green industrial policy in emerging markets", *Annual Review of Resource Economics*, Vol. 9, pp. 253-274.

A. Harrison and A. Rodríguez-Clare (2010)
"Trade, foreign investment, and industrial policy for developing countries", *Handbook of Development Economics*, Vol. 5, pp. 4039-4214.

R. Hausmann and B. Klinger (2006)
"Structural Transformation and Patterns of Comparative Advantage in the Product Space", KSG Working Paper No. RWP06-041.

A.O. Hirschman (1958)
The Strategy of Economic Development, Yale University Press.

G.C. Hufbauer, J.J. Schott, C. Cimino-Isaacs, M. Vieiro and E. Wada (2013)
"Local content requirements: A global problem", Peterson Institute for International Economics.

IMF (2023)
World Economic Outlook, October, Washington, DC.

IMF (2024a)
"Industrial policy coverage in IMF surveillance: Broad considerations", Policy Paper No. 2024/008, Washington, DC.

IMF (2024b)
"Expanding frontiers: Fiscal policies for innovation and technology diffusion", *Fiscal Monitor*, April, Washington, DC.

B. Javorcik (2004)
"Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages", *The American Economic Review*, Vol. 94, No. 3, pp. 605-627.

B. Javorcik, A. Lo Turco and D. Maggioni (2018)
"New and improved: Does FDI boost production complexity in host countries?", *The Economic Journal*, Vol. 128, No. 614, pp. 2507-2537.

R. Juhász and N. Lane (2024)
"The political economy of industrial policy", CESifo Working Paper No. 11143.

R. Juhász, N. Lane, E. Oehlsen and V.C. Pérez (2023a)
"The who, what, when, and how of industrial policy: A text-based approach", STEG Working Paper No. WP050.

R. Juhász, N. Lane and D. Rodrik (2023b)
"The new economics of industrial policy", *Annual Review of Economics*, Vol. 16.

D. Kahneman, J.L. Knetsch and R.H. Thaler (1991)
"Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias", *The Journal of Economic Perspectives*, Vol. 5, No. 1, pp. 193-206.

D. Kaufmann, A. Kraay and M. Mastruzzi (2009)
"Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008", World Bank Policy Research Working Paper No. 4978.

H.L. Kee and H. Tang (2016)
"Domestic value added in exports: Theory and firm evidence from China", *The American Economic Review*, Vol. 106, No. 6, pp. 1402-1436.

U.H. Klueh, G. Pastor and A. Segura (2009)
"Policies to improve the local impact from hydrocarbon extraction: Observations on West Africa and possible lessons for Central Asia", *Energy Policy*, Vol. 37, No. 3, pp. 1128-1144.

U.H. Klueh, G. Pastor, A. Segura and W. Zarate (2007)
"Inter-sectoral linkages and local content in extractive industries and beyond – The case of São Tomé and Príncipe", IMF Working Paper No. WP/07/213.

Zs. Kóczán and A. Plekhanov (2024)
"Scarred for life? Recession experiences, beliefs and the state", *International Tax and Public Finance*, Vol. 31, No. 4, pp. 1074-1111.

Zs. Kóczán, A. Plekhanov and V. Marino (2024)
"Moving the goalposts: The changing objectives of industrial policies", EBRD working paper, forthcoming.

G. Koltay, S. Lorincz and T. Valletti (2023)
"Concentration and competition: Evidence from Europe and implications for policy", *Journal of Competition Law & Economics*, Vol. 19, No. 3, pp. 466-501.

N. Lane (2020)
"The New Empirics of Industrial Policy", *Journal of Industry, Competition and Trade*, Vol. 20, pp. 209-234.

N.R. Lardy (2019)
The State Strikes Back: The End of Economic Reform in China?, Peterson Institute Press.

A. Lashkaripour and V. Lugovskyy (2023)
"Profits, scale economies, and the gains from trade and industrial policy", *The American Economic Review*, Vol. 113, No. 10, pp. 2759-2808.

M. Mazzucato (2015)
The Entrepreneurial State: Debunking Public vs. Private Sector Myths, Public Affairs.

B. McWilliams, S. Tagliapietra and C. Trasi (2024)
"Smarter European Union industrial policy for solar panels", Bruegel policy brief, 8 February.

J. Meckling and J. Strecker (2022)
"Green bargains: Leveraging public investment to advance climate regulation", *Climate Policy*, Vol. 23, No. 4, pp. 418-429.

V. Millot and L. Rawdanowicz (2024)
"The return of industrial policies: Policy considerations in the current context", OECD Economic Policy Paper No. 34.

W.R. Nester (1998)
"Introduction: The Industrial Policy Debate – Jefferson versus Hamilton", *A Short History of American Industrial Policies*, Palgrave Macmillan, pp. 1-14.

OECD (2023)
"Quantifying industrial strategies across nine OECD countries", OECD Science, Technology and Industry Policy Paper, No. 150.

OECD (2024)
"Mission-oriented innovation policy for net-zero", Paris, forthcoming.

T. Reed (2024)
"Productivity as a guide for industrial policies", *World Bank Blogs*, 14 February.

D. Rodrik (2004)
"Industrial Policy for the Twenty-First Century", John F. Kennedy School of Government, Harvard University.

D. Rodrik (2014)
"Green industrial policy", *Oxford Review of Economic Policy*, Vol. 30, No. 3, pp. 469-491.

J.M. Salazar-Xirinachs, I. Nübler and R. Kozul-Wright (2014)
"Transforming economies: Making industrial policy work for growth, jobs and development", International Labour Organization.

SCCEI and CCA (2023)
"China's industrial policy", roundtable summary report, Stanford Center on China's Economy and Institutions and Asia Society Policy Institute's Center for China Analysis.

X. Tafunell (2007)
"On the origins of ISI: the Latin American cement industry, 1900-30", *Journal of Latin American Studies*, Vol. 39, No. 2, pp. 299-328.

A. Terzi, A. Singh and M. Sherwood (2022)
"Industrial Policy for the 21st Century: Lessons from the Past", European Economy Discussion Paper No. 157, European Commission.

UNCTAD (2018)
World Investment Report 2018 – Investment and New Industrial Policies, Geneva.

S. Utterwulghe and P. Ghezzi (2017)
"From policy dialogue to implementation: How to solve public-private coordination failures?", *World Bank Blogs*, 3 October.

F.M. Veloso (2006)
"Understanding local content decisions: Economic analysis and an application to the automotive industry", *Journal of Regional Science*, Vol. 46, No. 4, pp. 747-772.

R.H. Wade (2012)
"Return of industrial policy?", *International Review of Applied Economics*, Vol. 26, No. 2, pp. 223-239.

K. Warwick and A. Nolan (2014)
"Evaluation of Industrial Policy: Methodological Issues and Policy Lessons", OECD Science, Technology and Industry Policy Paper No. 16.

World Bank (2024)
"The magic of investment accelerations", *Global Economic Prospects,* January, pp. 97-148, Washington, DC.

2 Promoting structural change

Pursuit of manufacturing export-led growth has become increasingly challenging, while the rise of digital technologies has transformed the service sector, facilitating cross-border trade. Meanwhile, manufacturing has also become more reliant on service inputs. However, the emerging service export-led growth model is dependent on strong human capital, high-quality infrastructure and well-developed institutional capabilities. Many post-communist economies in the EBRD regions have successfully become top exporters of computer and information services, but other economies should upgrade their infrastructure, skills and institutions in order to excel in the increasingly service-based global economy. Service trade liberalisation and targeted industrial policies can facilitate this shift towards high-value-added service exports, provided that certain economic fundamentals are in place.

Introduction

This chapter looks at structural change and ways of promoting it in the EBRD regions in the context of shifting global trade patterns and the need to diversify sources of growth. Thus far, the history of structural transformation has comprised two distinct phases: a shift from agriculture to manufacturing (industrialisation) and a shift from manufacturing to highly productive services (deindustrialisation or post-industrialisation). While the 20th century was the age of industrialisation, the 21st century is the age of services.

Recently, however, several countries (such as Ghana, India and Zambia) have more or less moved straight from agriculture to services.[1] This "premature deindustrialisation" is sometimes viewed as troubling owing to the unique role that manufacturing plays in aiding economic growth and development. Unlike services, manufacturing exhibits unconditional convergence – that is to say, convergence of manufacturing output per worker is not, in principle, dependent on the quality of economic institutions, governance and education.[2]

Indeed, before 1990 the growth models of many developing economies prioritised industrialisation, supported by investment in capital equipment, technology, education and infrastructure. Post-communist economies in the EBRD regions began the 1990s with larger manufacturing sectors than other countries at a similar level of development. Their proximity to the European Union also meant that they became integrated into European value chains relatively quickly and were able to pursue manufacturing export-led growth. As a result, their manufacturing sectors remained larger than those of their peers.

Over time, the pursuit of manufacturing export-led growth has become increasingly challenging for many countries, largely as a result of competition from China and other developing economies. Moreover, in most economies in the EBRD regions, as well as China and India, the service sector's contribution to economy-wide labour productivity growth has far exceeded that of the manufacturing sector in the period since the 1990s.

At the same time, the advent of digital technologies has transformed the service sector, making services easier to trade across borders. Manufacturing has also become increasingly reliant on service inputs. Within services, digitally enabled, tradeable services – especially global innovator services such as information and communication technology (ICT)-related services (which are defined, for the purposes of this chapter, as telecommunications, computer and information services), financial services, insurance services, professional services, and scientific and technical services – exhibit particular growth potential. These have increasingly driven improvements in the labour productivity of the service sector. These services rely on high levels of skill, can be traded across borders and have strong linkages to the rest of the economy.

The legacy of central planning meant that post-communist economies in the EBRD regions initially had underdeveloped service sectors and experienced a slower shift from manufacturing to services. That shift has indeed taken place, however, and those economies' historical legacy of strong human capital focused specifically on engineering and technical skills has allowed them to develop ICT services, professional services and other services with high levels of output per worker (that is to say, high levels of labour productivity). While many post-communist economies in the EBRD regions are top exporters of computer and information services, others need to upgrade their infrastructure, skills and institutional capabilities if they are to excel in a service-based world.

Service trade liberalisation and targeted industrial policies can help to support the shift towards high value-added services, provided that the necessary fundamentals are in place. For instance, economies with stronger state capacity see a marked increase in service-related FDI projects after investment promotion agencies (IPAs) start to target foreign investment in specific service sectors. At the same time, no such effects are observed in economies with weaker state capacity, and such targeting of service sectors has no impact on manufacturing-related FDI projects. Similarly, tax incentives granted to computer and information service firms in Romania have been effective in supporting employment growth in the computer and information service sector, but primarily in regions with strong historical endowments of specialist human capital.

This chapter starts with an overview of structural change in the EBRD regions since the early 1990s. It then discusses the rising importance of services, including as an input for manufacturing, and analyses the conditions and policies that are necessary for a structural shift to more productive service sectors, such as service trade liberalisation and FDI promotion. The chapter ends with several policy recommendations.

[1] See McMillan et al. (2017).
[2] See Rodrik (2013).

Structural change and labour productivity growth

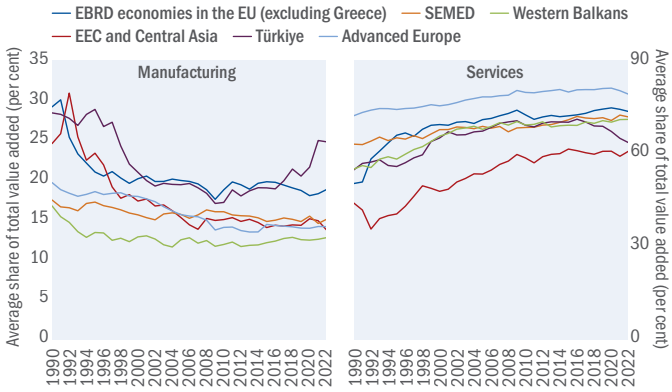
Economic growth and structural change are closely related. At lower levels of development, gaps between the productivity levels in the various sectors of the economy tend to be large. In other words, capital and labour can become stuck in low-productivity sectors, slowing down economic development. The challenge of development is therefore twofold. There is a structural transformation challenge, which involves ensuring that resources can flow freely and rapidly towards sectors with relatively higher levels of productivity. And there is a challenge in terms of *fundamentals*, which involves ensuring that the economy accumulates the physical and human capital and institutional capabilities that are necessary to generate sustained economy-wide growth across industry and services, and in both tradeable and non-tradeable sectors of the economy.[3]

The traditional role of manufacturing in structural transformation

Before 1990, the growth models of many developing economies prioritised industrialisation, supported by investment in capital equipment, technology, education and infrastructure.[4] This resulted in manufacturing export-led growth. This trend continued after 1990, but with an important difference: advances in ICT enabled the spatial separation of the various stages of production for a given good. As a result, firms in advanced economies increasingly shifted production to low-cost developing economies, transferring their high-tech know-how at the same time.

Since 2008, however, manufacturing exports and FDI have stagnated as a share of total output, with newcomers facing far stiffer competition. The world's top 10 countries in terms of the production of manufactured goods have accounted for around 71 per cent of gross global production since 1995, but production has become more geographically concentrated. In 1995, the world's top manufacturing producer was the United States of America, accounting for 21 per cent of gross global production. By 2020, however, China was at the top of the list with 35 per cent (up from just 5 per cent in 1995).[5] Against this backdrop, economies are increasingly looking for an alternative growth model based on a shift from manufacturing to highly productive services.

CHART 2.1. In most EBRD regions, manufacturing's share of total value added has declined substantially since the early 1990s



Source: UN Statistics Division, harmonised national accounts and authors' calculations.

Note: "EBRD economies in the EU (excluding Greece)" comprises Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. "EEC" refers to eastern Europe and the Caucasus and comprises Armenia, Azerbaijan, Georgia, Moldova and Ukraine. "Central Asia" comprises Kazakhstan, the Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan and Uzbekistan. "SEMED" denotes the southern and eastern Mediterranean and comprises Egypt, Jordan, Lebanon, Morocco, Tunisia and the West Bank and Gaza. "Western Balkans" comprises Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia. "Advanced Europe" comprises Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The anatomy of structural change in the EBRD regions

In many economies in the EBRD regions, manufacturing's share of total value added declined sharply in the early 1990s (see Chart 2.1), as did its share of total employment. This reflected overindustrialisation under central planning – especially in heavy industry, where production was highly inefficient and proved unsustainable when exposed to international competition.[6]

[3] See McMillan and Rodrik (2011) and McMillan et al. (2017).
[4] See Baldwin (2024a).
[5] See Baldwin (2024b).
[6] See Sachs (1996).

Large shifts from manufacturing to services are a conventional post-industrialisation pattern in advanced economies, with employment typically shifting to services once manufacturing has achieved a certain level of productivity. In the post-communist economies of the EBRD regions, however, this shift started when manufacturing productivity was still relatively low. Nevertheless, in 2022 manufacturing's average share of total value added in those post-communist economies was still around 5 percentage points higher than in comparator economies with equivalent levels of income per capita and similar characteristics.

This premature deindustrialisation is a more general trend, rather than a phenomenon specific to the EBRD regions. The most plausible explanation for this trend is globalisation. When these developing economies were first exposed to global markets, those without a comparative advantage in manufacturing became net importers of manufactured goods. Moreover, in advanced economies, the relative price of manufactured products had been declining owing to productivity improvements and the ability to import cheaply. When they were exposed to these price declines, the developing economies effectively "imported" deindustrialisation.[7]

However, the experiences of the EBRD regions have not been uniform. The post-communist EBRD economies in the EU[8] have benefited from (i) better initial conditions, (ii) reforms that were largely driven by the EU accession process, and (iii) their membership of the EU's single market, which has allowed them to maintain a stronger manufacturing core than other post-communist economies (notably those in the EEC region and Central Asia).[9] In 1997, the two groups of economies were roughly similar in terms of exports' share of GDP: 39.8 per cent in the EEC region and Central Asia, and 43.3 per cent in the post-communist EBRD economies in the EU. By 2021, that figure had risen to 69.3 per cent in the second group, while it had dropped to 35.7 per cent in the first. In that same year, trade-weighted import tariffs averaged 4.6 per cent in the EEC region and Central Asia, compared with 1.4 per cent in the post-communist EBRD economies in the EU.

The Western Balkans and SEMED regions experienced similar shifts, but from a much smaller industrial base, exemplifying the premature deindustrialisation phenomenon. This is concerning, since manufacturing has historically played an important role in terms of driving unconditional convergence in labour productivity,[10] absorbing unskilled labour and providing opportunities for export-led growth, as it is tradeable and not constrained by the size of the domestic market.

Türkiye stands out as an economy in the EBRD regions that has managed to buck the downward trend in the importance of manufacturing. Since 2008, manufacturing's share of total value added in Türkiye has increased by almost 7 percentage points. After the "lost decade" of the 1990s, which was marked by three major economic crises, a number of reforms have been implemented in Türkiye since 2001. The establishment of closer links with the EU through Türkiye's membership of the customs union for manufactured goods as of 1995 and the start of accession negotiations in 2005 have resulted in increased trade and investment opportunities for Turkish companies and triggered significant improvements in the sophistication and quality of export products through the adoption of EU standards and the transfer of knowledge.[11]

A common way of quantifying the share of aggregate labour productivity growth that is due to structural change involves using a shift-share decomposition.[12] This separates growth in aggregate labour productivity into two components: *fundamentals* and *structural change*. The fundamentals component captures intra-sector contributions to growth through innovation and the upgrading of capital stock (which result in improvements in the labour productivity of firms within a given sector), whereas the structural change component captures the productivity dividend that is derived from workers shifting into sectors with relatively higher levels of productivity (see Chart 2.2).[13]

In post-communist economies in the EBRD regions, manufacturing's average share of total value added as around

5 PERCENTAGE POINTS

higher than that of similar comparator economies in 2022

[7] See Rodrik (2016).
[8] These are the "EBRD economies in the EU (excluding Greece)", as defined in the notes on Chart 2.1.
[9] See Hamilton and de Vries (2023).
[10] See Rodrik (2013).
[11] See Kaya and Çiçekçi (2023).
[12] See McMillan and Rodrik (2011), Diao et al. (2019) and Box 2.1.
[13] See Hamilton and de Vries (2023).

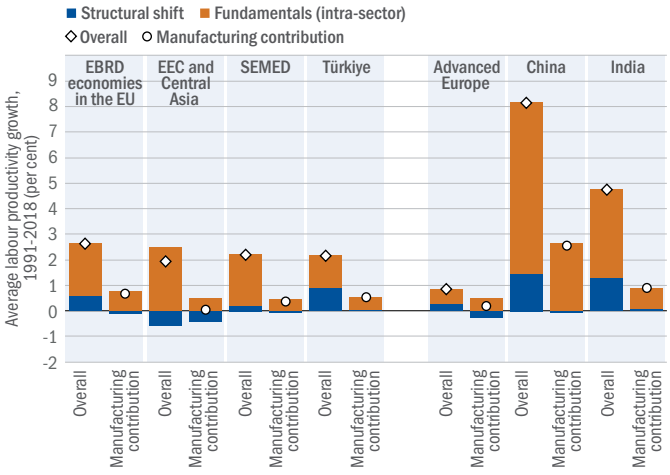
Average labour productivity growth in the EBRD regions between 1991 and 2018 was weaker than in China and India, reflecting the EBRD economies' different starting points and thus the smaller remaining gaps in labour productivity. Most of the overall growth in labour productivity was driven by intra-sector growth. However, growth-enhancing structural change was also observed in advanced European economies, China and India, as well as all EBRD regions except the EEC region and Central Asia.

In the EEC region and Central Asia, structural change was growth-reducing between 1991 and 2018 – a development that was driven primarily by manufacturing. This reflected a shift from industry to low-productivity services and informality.[14] Intra-sector productivity growth was significantly stronger in those economies, primarily owing to the wider margin for improvement as a result of their lower initial productivity levels.

In contrast, EBRD economies in the EU, the economies of the SEMED region and Türkiye all experienced a small growth-enhancing structural change over the same period (with manufacturing making a negative contribution in both EBRD economies in the EU and the SEMED region). In EBRD economies in the EU, structural shifts accounted, on average, for around 20 per cent of total labour productivity growth, compared with 28.8 per cent in advanced Europe and 41.4 per cent in Türkiye. Increasingly, the remaining labour productivity gaps in the EBRD regions reflect differences between the productivity levels of manufacturing and other sectors that cannot absorb unskilled labour to the same extent, such as business services.

In China, an average of 17.5 per cent of the country's labour productivity growth over that period was attributable to structural shifts (primarily shifts from agriculture to manufacturing and services). In India, meanwhile, structural change consisted mostly of shifts straight from agriculture to the service sector, possibly owing to numerous restrictions on the manufacturing sector (including industrial licensing, tariff and non-tariff barriers to imports and restrictions on FDI).[15] In 1995, agriculture accounted for 27 per cent of India's total value added and manufacturing accounted for a further 20 per cent. By 2018, the shares of manufacturing and agriculture had fallen to 16 per cent each.

CHART 2.2. Most of the economy-wide labour productivity growth seen between 1991 and 2018 came from intra-sector productivity growth



Source: EU KLEMS, Groningen Growth and Development Centre's Economic Transformation Database (ETD) and Economic Transformation Database of Transition Economies (ETD-TE), and authors' calculations.

Note: See Box 2.1 for details of the methodology. Each economy is split into 10 sectors: agriculture, mining, manufacturing, utilities, construction, business services (including ICT, professional services, finance, insurance, and real estate), trade services, transport services, government services, and other services (including arts, entertainment, activities of households as employers, and extraterritorial organisations). There are no data available for Lebanon, Mongolia, Turkmenistan, the West Bank and Gaza or the Western Balkans. Data for EU economies relate to the period 1995-2018. "EBRD economies in the EU" comprises Bulgaria, Croatia, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. "EEC and Central Asia" comprises Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, Tajikistan, Ukraine and Uzbekistan. "SEMED" comprises Egypt, Morocco and Tunisia. "Advanced Europe" comprises Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

[14] See Sachs (1996).
[15] See Bollard et al. (2013) for an overview.

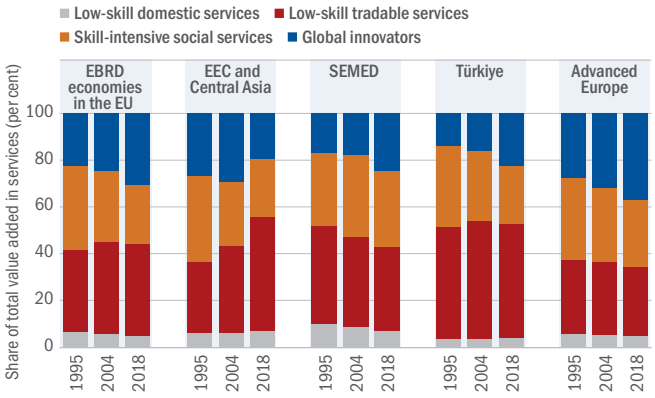
Global innovator services play a key role

In most EBRD regions, as well as China and India, the manufacturing sector's contribution to economy-wide labour productivity growth has been relatively small in the period since the 1990s (see Chart 2.2). In addition to structural shifts across broad sectors, this reflects improvements in the labour productivity of the service sector, which have, in particular, been made possible by the arrival of digital technologies. These have made services more storable, codifiable and transferable, reducing the need for the producer and the consumer to be in close proximity at the time of delivery, as well as improving their linkages to other sectors. Examples of such services include online banking and call centres. This is akin to the role that ICT played in the spatial separation of production stages in the manufacturing sector in the 1990s, which gave a boost to developing economies with large endowments of cheap low-skilled labour.

At the same time, services cover many different economic activities, ranging from retail shops, restaurants, hairdressers, hotels and transport on the one hand to education, health, R&D, and information and computer activities on the other. These activities vary in terms of the extent to which they can be traded internationally, as well as in their scalability, the extent to which they can benefit from innovation and digitalisation, their linkages to other sectors in the economy and their capacity to absorb low-skilled workers. On the basis of these characteristics, services can be grouped together in four broad categories: global innovator services, low-skill tradeable services, skill-intensive social services and low-skill domestic services.[16]

Global innovator services consist of ICT services, financial services, insurance services, professional services, and scientific and technical services.[17] These services can be traded internationally through remote cross-border delivery, they mostly employ skilled workers, and they have strong links to other domestic sectors. ICT services and financial services are relatively capital-intensive, while ICT services, professional services, and scientific and technical services are highly R&D-intensive.

CHART 2.3. In most EBRD regions, skill-intensive social services and low-skill tradeable services account for the majority of value added in the service sector



Source: EU KLEMS, ETD, ETD-TE and authors' calculations.

Note: This chart uses the service-sector classification in Nayyar et al. (2021), excluding real estate and construction. See the notes on Chart 2.2 for definitions of the various regions.

In advanced Europe, global innovator services account for

37%

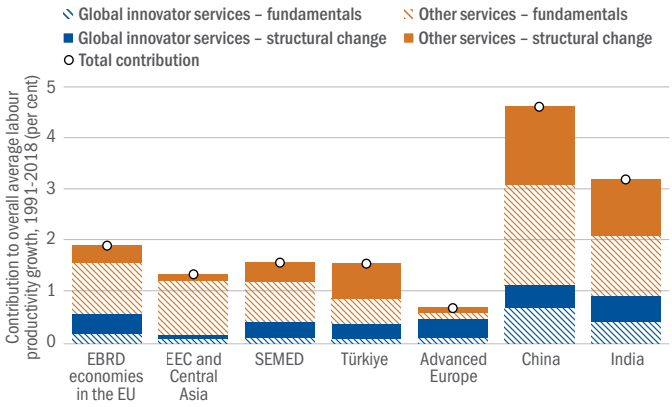
of all value added in services, compared with about

30%

in EBRD economies in the EU

[16] See Nayyar et al. (2021) for details.
[17] See also Box 2.1.

CHART 2.4. Global innovator services have been driving improvements in the labour productivity of the service sector in advanced European economies



Source: EU KLEMS, ETD, ETD-TE and authors' calculations.

Note: Services are defined as sectors F to U in the International Standard Industrial Classification (ISIC) Rev. 4. The chart total divides services into global innovator services and all other services. The bars show contribution to overall average labour productivity growth for those two groups of services, broken down into the contributions of intra-sector growth (fundamentals) and structural change. Each group of services is treated as one sector. Data for EU economies relate to the period 1995-2018. See the notes on Chart 2.2 for definitions of the various regions.

Low-skill tradeable services such as wholesale trade, transport and logistics services, and accommodation and food services are also traded internationally, but they mostly employ low-skilled workers. Transport and logistics services and wholesale trade have greater linkages to other sectors, making them amenable to offshoring. Accommodation and food services, meanwhile, are exported by being consumed by tourists abroad – they cannot be provided remotely.

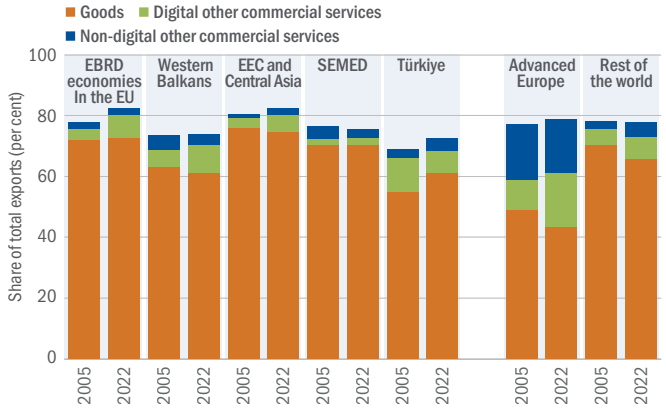
Skill-intensive social services encompass education and healthcare services. These also have a comparatively high percentage of skilled workers and are tradeable (albeit to a more limited extent): they can be exported through FDI, enrolment of foreign students or "medical tourism". In the EBRD regions, the Kyrgyz Republic, Serbia, North Macedonia and Slovenia were all among the world's top 10 exporters of personal healthcare services in 2022 as a percentage of GDP.

In contrast, low-skill domestic services are not typically traded internationally, they employ a comparatively high percentage of low-skilled workers and they tend to have fewer linkages to other sectors. Such services include retail trade, administrative and support services, arts, entertainment and recreation services, and other community and personal services.

In most EBRD regions, skill-intensive social services and low-skill tradeable services account for the majority of value added in the service sector (see Chart 2.3). In advanced Europe, global innovator services account for 37 per cent of all value added in services, compared with about 30 per cent in EBRD economies in the EU. In other EBRD regions, global innovator services account for smaller percentages of total value added in services, which is limiting the potential for service-led productivity growth in the short term.

The service sector's contribution to economy-wide labour productivity growth has exceeded that of the manufacturing sector in all EBRD regions, as well as India and China (see Charts 2.2 and 2.4). Advanced European economies have less scope for improvements in service-sector labour productivity than the EBRD regions, China and India, since services have historically accounted for a much larger share of total value added in those advanced economies. Most of the improvements there have been driven by global innovator services, reflecting both shifts towards the global innovator service sector and improvements in productivity within that sector. In EBRD economies in the EU, labour productivity growth in the service sector has slowed since 2009, reflecting the fact that the service sector's share of total value added has increased substantially since 1990 and services have already reached a high level of sophistication. Elsewhere, global innovator services' contribution to total productivity growth in the service sector has been significant, but relatively modest, partly reflecting those services' smaller share of total value added as shown in Chart 2.3.

CHART 2.5. Goods still account for more than half of all exports in the EBRD regions



Source: CEPII BACI dataset, Trade in Services data by Mode of Supply (TiSMoS) dataset produced by the World Trade Organization (WTO) and authors' calculations.

Note: Shares are calculated as unweighted averages of country-level values. "Other commercial services" comprise construction, insurance and pension services, financial services, charges for the use of intellectual property not elsewhere classified, ICT services, other business services, and personal, cultural and recreational services. The category not shown consists of manufacturing services relating to physical inputs owned by others, maintenance and repair services not included elsewhere, transport services, distribution services, and tourism and travel services. See the notes on Chart 2.1 for definitions of the various regions. There are no data available for the West Bank and Gaza.

Goods exports still dominate, but service exports have been growing faster

Structural change can also be seen through the lens of exports of goods and services. Post-communist economies in the EBRD regions experienced a boom in goods exports in the 1990s when they opened up their own markets and obtained better access to foreign markets. In the economies that subsequently joined the EU, for example, average trade-weighted import tariffs dropped from 6.3 per cent in 1995 to 2.4 per cent in 2000. In 2022, goods exports still accounted for more than half of total exports in all EBRD regions: more than 70 per cent in EBRD economies in the EU, the SEMED region, and the EEC region and Central Asia, and over 60 per cent in the Western Balkans and Türkiye – similar to the average of 65.6 per cent seen in the rest of the world (see Chart 2.5). In advanced European economies, on the other hand, goods' share of total exports has declined to around half, while exports of "other commercial services" (defined as commercial services other than goods-related services, transport and travel services) accounted for more than a third of all exports in 2022. In comparison, such service exports accounted for 13 per cent of total exports in the Western Balkans in 2022 (the largest share in the EBRD regions) and only 5 per cent in the SEMED region.

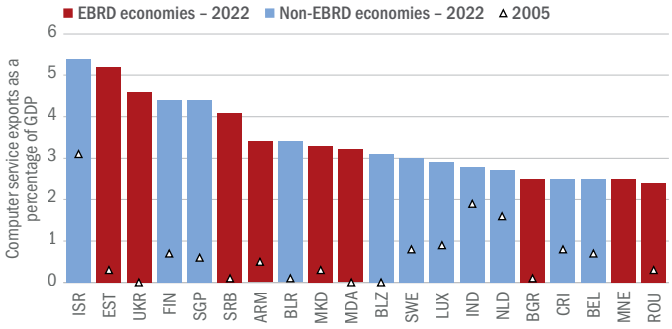
Within exports of other commercial services, the average share of digitally enabled global innovator services is, if anything, higher in the EBRD regions than in advanced Europe (with the exception of the SEMED region). Since 2020, exports of these services have also been growing faster than goods exports in all EBRD regions apart from the SEMED region, the EEC region and Central Asia. In EBRD economies in the EU, the Western Balkans and Türkiye, the average annual compound growth rate for exports of digitally enabled services exceeded the equivalent rate for their non-digital counterparts by a factor of 1.8 between 2005 and 2022.

While economies in the SEMED region have liberalised trade in goods, that region is one of the most restrictive when it comes to trade in services, with an estimated service trade restrictiveness score that is twice that of Europe and Central Asia.[18] In those economies, trade in services and the competitiveness of services have been held back by restrictive policies that (i) limit the entry of competitors seeking to take on incumbent state-owned enterprises (in the telecommunications sector, for instance) or (ii) impose licensing requirements and charge high operating fees (especially for professional services).[19] Despite improvements since 2016, trade in services remains highly restricted in all SEMED economies: a global dataset spanning 134 countries considers that Tunisia and Egypt have the 5th and 10th most restrictive practices of all the countries covered, with Jordan in 17th place and Morocco in 21st.[20]

In 2022,
6 EBRD ECONOMIES
were among the
TOP 10 EXPORTERS
of computer services worldwide
as a share of GDP

[18] See Hoekman (2016), as well as the discussion later in the chapter.
[19] See Saidi and Prasad (2023).
[20] See Borchert et al. (2020) and Baiker et al. (2023).

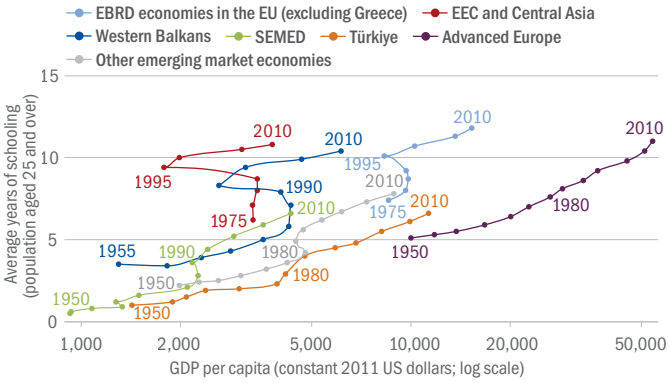
CHART 2.6. Several economies in the EBRD regions were among the world's top 20 exporters of computer services as a share of GDP in 2022



Source: WTO TiSMoS dataset, World Bank World Development Indicators (WDIs) and authors' calculations.

Note: Ireland and Cyprus are excluded because their exports are dominated by foreign-owned multinational enterprises that use those countries as centralised locations for overseeing elements of their value chains owing to the favourable tax regimes. There are no data available for Montenegro in 2005.

CHART 2.7. Post-communist economies in the EBRD regions have a relatively large stock of human capital compared with other countries at a similar level of development



Source: Barro-Lee Educational Attainment Dataset (see Barro and Lee, 2013), Maddison Project, World Bank WDIs and authors' calculations.

Note: "EBRD economies in the EU (excluding Greece)" comprises Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. "Western Balkans" includes data for Serbia and Albania only. "EEC and Central Asia" comprises Armenia, Kazakhstan, the Kyrgyz Republic, Moldova, Mongolia, Tajikistan and Ukraine. "SEMED" comprises Egypt, Jordan, Morocco and Tunisia. "Advanced Europe" comprises Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. "Other emerging market economies" comprises all other economies with available data that are classified as middle income in the World Bank's 1995 income group classification.

Several economies in the EBRD regions are excelling in exports of ICT services

Worldwide, the sectors with the highest average compound annual growth rates for exports of digitally enabled services are computer services (15.9 per cent), advertising, market research and public opinion polling services (14.1 per cent), and legal, accounting, management, consulting and public relations services (12.6 per cent). In the EBRD regions, average compound annual growth rates for these sectors are around the same level or higher. Several EBRD economies have also seen strong growth in the information service sector.

Estonia, Ukraine, Serbia, Armenia, North Macedonia and Moldova were all among the top 10 exporters of computer services worldwide in 2022, measured as a share of GDP (see Chart 2.6). In the same year, Bulgaria, Estonia, Romania, Georgia, Slovenia and Czechia were among the top 10 exporters of information services as a share of GDP.[21] Most of these economies have seen marked increases in the ratio of computer service exports to GDP since 2005, catching up with the early movers in that industry (which include countries such as Israel, India and the Netherlands; see Chart 2.6).

Human capital and shifting demand for skills

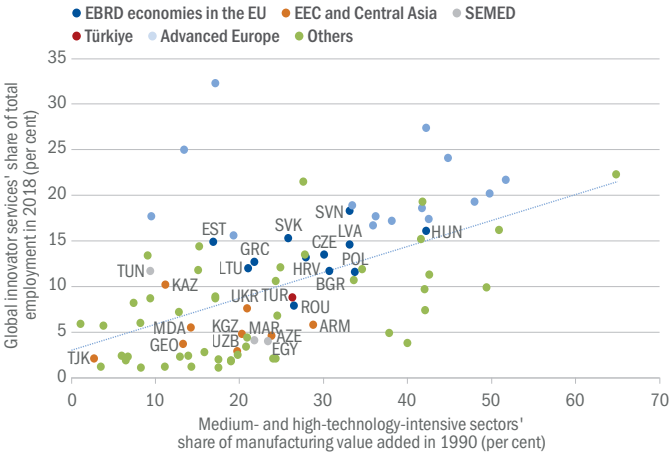
Compared with countries at a similar level of development, most EBRD regions have had relatively well-educated populations since at least the early 1990s (see Chart 2.7). This, too, is a legacy of communist systems, which emphasised education and skills as public goods serving the needs of society rather than individual interests. Education was free and mandatory, with emphasis placed on the specialist vocational and technical skills and knowledge that were required for industrial development.[22] This means that post-communist economies are well placed to provide high-productivity tradeable services such as ICT services, which require a highly skilled workforce.[23] Box 2.2, for example, illustrates the role that human capital has played in the success of Romania's computer and information service sector.

[21] These rankings exclude Cyprus and Ireland because their exports are dominated by foreign-owned multinational enterprises (such as Apple in Ireland and Logicom in Cyprus) that use those countries as centralised locations for overseeing elements of their value chains owing to the favourable tax regimes. See, for example, Conefrey et al. (2023) and Cyprus Economy and Competitiveness Council (2022).

[22] See Frumin and Platonova (2024).

[23] See Atolia et al. (2020).

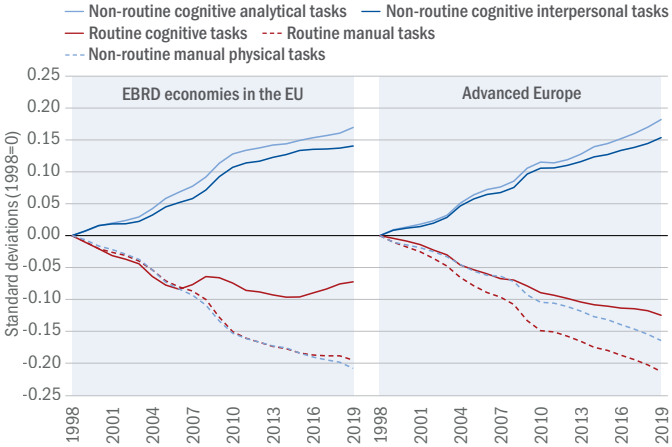
CHART 2.8. Global innovator services tend to have a higher share of total employment in countries where medium- and high-technology-intensive manufacturing sectors had a higher share of manufacturing value added in 1990



Source: EU KLEMS, ETD, ETD-TE, UNIDO CIP index and authors' calculations.

Note: "Medium- and high-technology-intensive manufacturing sectors" are defined as all manufacturing sectors except food products and beverages, tobacco, textiles, textile products, leather and footwear, wood and wood products, paper and paper products, printing and publishing, furniture, manufacturing not elsewhere classified and recycling.[24] See the notes on Chart 2.2 for definitions of the various regions. "Others" comprises all other economies with the required data.

CHART 2.9. The importance of non-routine tasks has increased in EBRD economies in the EU and advanced European economies



Source: EU LFS, O*NET (releases 5.0, 10.0, 16.0, 21.0 and 24.0) and authors' calculations based on Acemoğlu and Autor (2011).

Note: O*NET-SOC classifications are mapped to one-digit International Standard Classification of Occupations (ISCO) codes in the EU LFS. Each composite index is calculated as the sum of constituent task items based on Acemoğlu and Autor (2011), standardised within each country and re-scaled so that the figure for 1998 is 0. See Box 2.1 for more details. "Advanced Europe" comprises Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. "EBRD economies in the EU" comprises Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Romania, the Slovak Republic and Slovenia. Bulgaria, Croatia, Cyprus, Malta and Poland are not included owing to a lack of available data for 1998.

Moreover, there is a strong positive correlation between (i) medium- and high-technology-intensive sectors' share of manufacturing value added in 1990 and (ii) global innovator services' share of total employment in 2018 (see Chart 2.8). This correlation reflects the importance of human capital for both sets of industries – which, in turn, facilitates the transition from technology-intensive manufacturing to highly productive services.

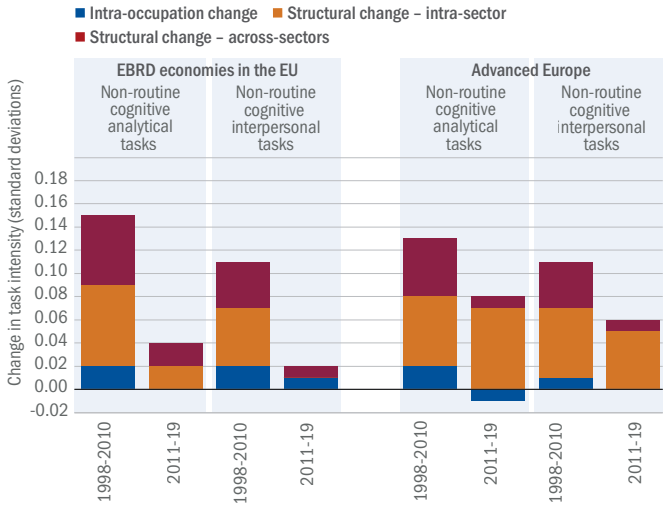
Educational upgrading and structural change also have implications for the types of task for which there is demand in the local labour market. Analysis drawing on individual-level data from the EU Labour Force Survey (LFS) and the O*NET-SOC occupational taxonomy shows that since 1998, the importance of non-routine cognitive tasks – that is to say, tasks that require creativity, problem solving and complex communication skills – has increased across EBRD economies in the EU, almost as much as in advanced European economies (see Chart 2.9).[25]

This trend reflects both the evolving demands of a service-oriented economy and the ways in which technology responds to available sets of skills.[26] On the supply side, educational advancements have helped to increase the supply of skilled workers who are capable of performing complex tasks. On the demand side, technological change has simultaneously reduced demand for routine tasks that are susceptible to computerisation and increased demand for non-routine cognitive skills that are complementary to computer technology.[27] This shift has supported the growth of occupations in high-productivity service sectors, such as ICT services, which rely heavily on abstract tasks that cannot easily be automated.[28]

Using a shift-share decomposition, the observed increase in the intensity of non-routine cognitive tasks can be broken down into (i) a change in the composition of tasks within occupations (for example, the fact that a secretary's job now involves complex tasks using computers and software,

[24] See UNIDO (2010).
[25] See also Hardy et al. (2018).
[26] See Acemoğlu and Autor (2011).
[27] This concept, known as routine-biased technical change (RBTC), was developed within a larger body of literature that examines routinisation as a driver of job polarisation in labour markets. See Autor (2015) for a review.
[28] See Michaels et al. (2014).

CHART 2.10. Structural change across sectors and occupations has resulted in an increase in the intensity of non-routine cognitive tasks in European economies



Source: EU LFS, O*NET (releases 5.0, 10.0, 16.0, 21.0 and 24.0) and authors' calculations.

Note: For details, see the note accompanying Chart 2.9.

which are more complicated than the simple clerical work carried out in the past) and (ii) a structural change component reflecting changes in the occupational structure of employment. The latter can be broken down further into changes attributable to (i) shifts in the occupational structure of individual sectors and (ii) the movement of workers across sectors (see Chart 2.10).

The results reveal that while the abstract task content of specific occupations has remained relatively stable, structural change has been the primary driver of the increased intensity of non-routine cognitive tasks in European labour markets. This structural change is playing two roles. First, existing industries are transforming to incorporate more occupations with greater intensity of non-routine cognitive tasks. For example, professional occupations' share of total occupations within sectors increased by an average of 57 per cent in EBRD economies in the EU between 1998 and 2019 and by an average of 86 per cent in advanced European economies over the same period (with the ISCO definition of "professional occupations" including professions such as lawyers and IT professionals). Second, there has been a broader shift towards sectors that require more abstract skills. In particular, global innovator services' share of total employment in EBRD economies in the EU increased by 7 percentage points between 1998 and 2019, reaching 20 per cent.[29]

Global innovator services' share of total employment in EBRD economies in the EU increased by

7 PERCENTAGE POINTS

between 1998 and 2019, reaching

20%

Links between manufacturing and services

Is manufacturing export-led growth still possible?

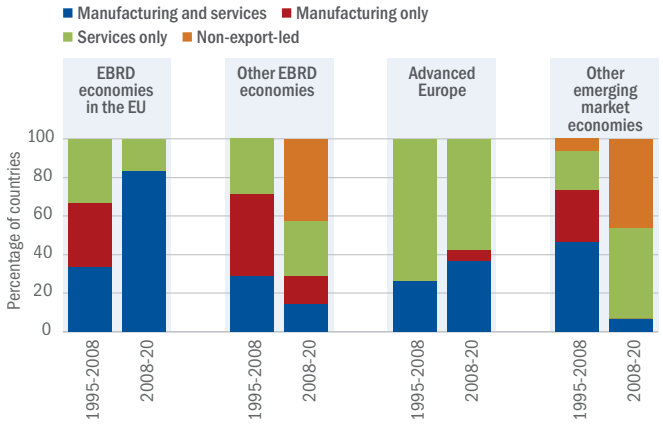
The increase in the geographical concentration of manufacturing production and the slowdown in the growth of manufacturing exports since 2008 raises the question of whether manufacturing export-led growth is still possible. Growth can be thought of as export-led if the domestic value added that is embodied in exports grows faster than GDP. Export-led growth can, in turn, be led by (i) manufacturing only, (ii) services only (with "services" referring to global innovator services) or (iii) both manufacturing and services.[30]

Data suggest that growth is often still export-led, but it is now more likely to be led by exports of services. Before 2008, growth was led by manufacturing exports in the majority of

[29] Global innovator services are typically defined as NACE Rev. 2 sectors J, K and M. As the EU LFS data do not include NACE Rev. 2 sector information for the full 1998-2019 period, this analysis uses NACE Rev. 1.1 classifications. Global innovator services are approximated here using sectors I (transport, storage and communications), J (financial intermediation) and K (real estate, renting and business activities).

[30] See Baldwin (2024a).

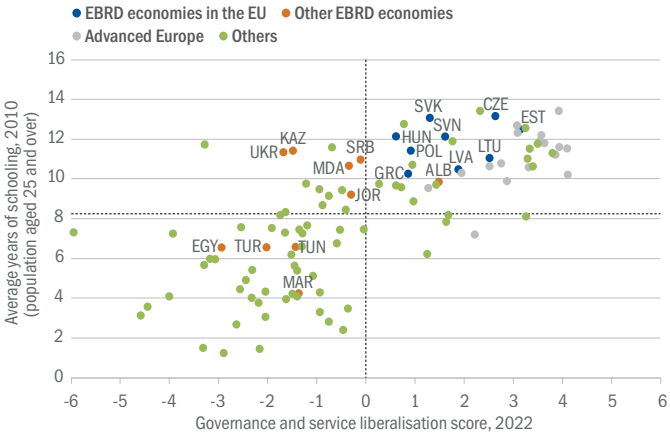
CHART 2.11. Growth is often still export-led, but it is now more likely to be led by exports of services



Source: OECD TiVA database and authors' calculations.

Note: Growth led by manufacturing exports is defined as a situation where the domestic value-added content of manufacturing gross exports grows faster than GDP. Growth led by service exports is defined as a scenario in which the domestic value added content of gross exports of global innovator services grows faster than GDP. "Other EBRD economies" comprises Egypt, Jordan, Kazakhstan, Morocco, Tunisia, Türkiye and Ukraine. "Other emerging market economies" comprises Argentina, Belarus, Brazil, Chile, Colombia, Costa Rica, Indonesia, Malaysia, Mexico, Peru, the Philippines, Russia, Saudi Arabia, South Africa and Thailand.[31] "Advanced Europe" and "EBRD economies in the EU" are as defined in Chart 2.1, except for the fact that the latter includes Greece here.

CHART 2.12. Economies with stronger governance and higher levels of human capital are more likely to achieve service export-led growth



Source: Barro-Lee Educational Attainment Dataset, World Bank WGIs, World Bank-WTO Services Trade Restrictions Index (STRI) database and authors' calculations.

Note: For each economy, this chart plots average years of schooling in 2010 against a score calculated as the first principal component of (i) a set of WGI indicators measuring voice and accountability, political stability and the absence of violence, government effectiveness, regulatory quality, the rule of law and control of corruption, and (ii) STRI scores for trade in computer, communications, financial and professional services derived from the World Bank-WTO STRI database. See the notes on Chart 2.2 for definitions of the various regions. "Others" comprises all other economies with the required data.

the EBRD economies outside the EU, and it was led solely by service exports in most advanced European economies. It was led by both manufacturing exports and service exports in other emerging market economies (see Chart 2.11). Since 2008, by contrast, growth in EBRD economies in the EU has tended to be led by both manufacturing exports and service exports, and in a significant percentage of other EBRD economies growth has been non-export-led. In other emerging market economies, meanwhile, growth is now just as likely to be led by service exports as non-export-led. In some economies, growth has gone from being led solely by service exports before 2008 to being led by both manufacturing exports and service exports since 2008 (see Box 2.3, which describes the example of Morocco).

Countries with highly skilled workforces and other strong fundamentals (such as robust governance and liberalised trade in services) have the best potential to achieve service export-led growth (see Chart 2.12). In the EBRD regions, the economies that fall into this category are the EU member states and Albania. Jordan, Kazakhstan, Moldova, Serbia and Ukraine already have relatively highly skilled workforces, but need to improve their fundamentals in order to realise their potential. Egypt, Morocco, Tunisia and Türkiye, on the other hand, need to improve both the skills of their workforces and their fundamentals.

Increase in the service content of manufacturing

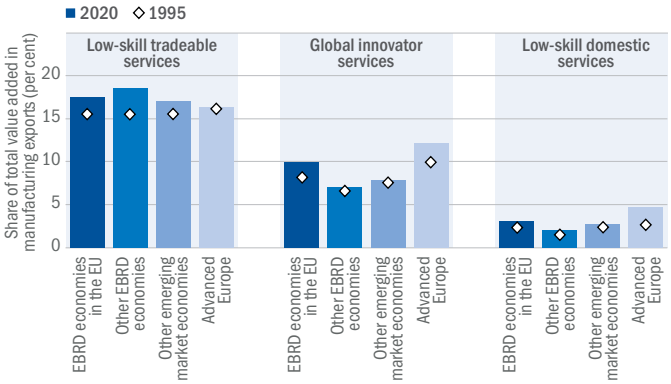
Not only is manufacturing export-led growth being replaced by service export-led growth, manufacturing is also – as a result of the fragmentation of production in global value chains (GVCs) – becoming increasingly reliant on services, whether as intermediate inputs, as activities within firms or as services sold together with goods to add more value.[32] This phenomenon, referred to as the "servicification" of manufacturing, can be traced back to the ICT revolution of the 1990s.[33]

[31] "Other emerging market economies" comprises all other economies with available data that are classified as middle-income in the World Bank's 1995 income group classification.

[32] See Miroudot and Cadestin (2017).

[33] See National Board of Trade Sweden (2016).

CHART 2.13. Almost a third of all value added in manufacturing exports originates in the service sector



Source: OECD TiVA database (2023 edition) and authors' calculations.

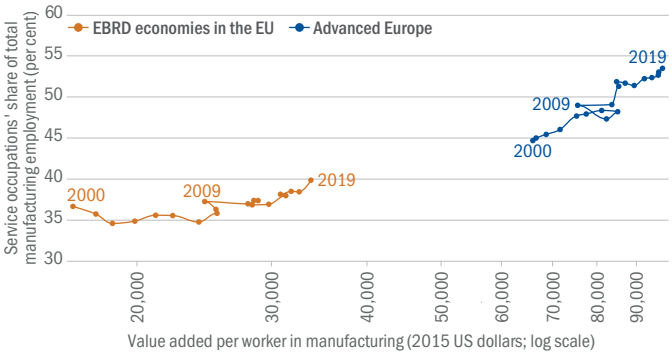
Note: Shares are calculated as unweighted averages of country-level values. The shares of skill-intensive social services (not shown) are small. See the notes on Chart 2.11 for definitions of the various regions.

In emerging market economies outside the EBRD regions, value added originating in the service sector accounted for almost a third of the total value added in manufacturing exports in 2020. In advanced Europe, it accounted for a third (see Chart 2.13). In those advanced economies, global innovator services such as ICT services and financial services typically accounted for between 8 and 23 per cent of the total value added in manufacturing exports. However, in all regions shown in Chart 2.13, the service sector's largest contribution to total value added in manufacturing exports came from low-skill tradeable services such as transport, followed by global innovator services.

In addition, service-related functions such as R&D, logistics, marketing and ICT services now account for a larger share of total employment in manufacturing firms. EU LFS data show that service-related occupations in the manufacturing sector (referred to as "embodied services") accounted for an average of 55 per cent of all manufacturing-sector occupations in advanced European economies in 2019, up from about 45 per cent in 2000 (see Chart 2.14). In EBRD economies in the EU, that share increased by an average of 5 percentage points over the same period, standing at 40 per cent in 2019.

In emerging market economies outside the EBRD regions, value added derived from services accounted for **ALMOST A THIRD** of total value added in manufacturing exports in 2020

CHART 2.14. Service occupations' share of total employment in the manufacturing sector has increased in European economies



Source: EU KLEMS, EU LFS, World Bank WDIs and authors' calculations.

Note: Data on service-related occupations' share of total employment in the manufacturing sector and value added per worker in manufacturing are unweighted averages of the figures for the various countries. "Advanced Europe" comprises Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. "EBRD economies in the EU" comprises Bulgaria, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. Ireland has been omitted, since it is an outlier. Croatia, Iceland, Malta, Norway and Switzerland are not included owing to a lack of available data.

Manufacturing value added per worker is often higher in countries where services play a larger role in the manufacturing process. This is probably because advanced European economies have focused on retaining intangible high-skill production activities within their global value chains. These activities include pre-production tasks such as R&D and product design, as well as post-production tasks such as after-sales services and marketing.

At the same time, those economies have outsourced or automated labour-intensive low-skill production activities such as assembly. As a result, more value tends to be added to manufactured products in the pre- and post-production stages than in the intermediate production stage. This creates a "smile curve" pattern in the distribution of value added along global supply chains, with higher values at the beginning and the end of the process and lower values in the middle.[34]

Hungary case study

The Hungarian economy is strongly integrated into GVCs, particularly in sectors such as the automotive industry, electronics, pharmaceuticals and food. In 2020, participation in GVCs accounted for 62 per cent of Hungary's gross exports according to estimates in the OECD's TiVA database – second only to the Slovak Republic in the EBRD regions and the fifth highest out of 76 economies around the world.

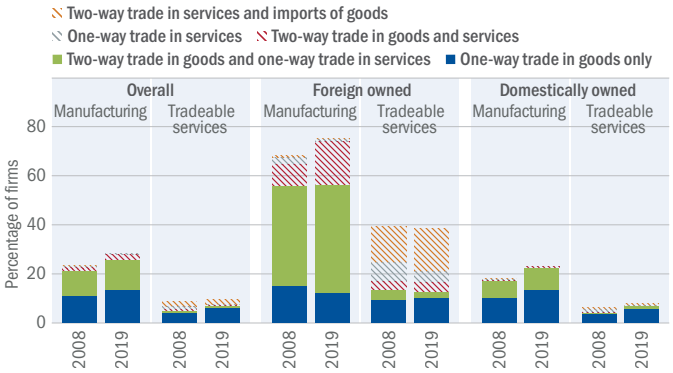
Firm-level data from Hungary can thus provide useful insights into the "servicification" of the manufacturing sector, as well as trade in services more broadly.[35] Goods and services are traded across borders by manufacturing firms and tradeable service firms alike,[36] but the percentage of firms that are engaged in international trade tends to be lower in the service sector. Moreover, firms are more likely to trade goods than services (see Chart 2.15).

Almost all of Hungary's manufacturing firms export goods before they start exporting services. However, over time, some are able to add complementary services (referred to as "servitisation"[37]), which may mean moving up the value-added ladder. Examples include bundling "other plastic articles" with "engineering services", or "iron or steel articles" with "maintenance and repair services". In 2019, almost two-thirds of goods exports by value were accompanied by services exported by the same firm to the same destination – a 20 percentage point increase relative to 2008.

Foreign investment has been a key driver of this trend. Foreign-owned manufacturing firms (defined as those where foreign ownership totals at least 50 per cent) are much more likely than domestic firms to trade across borders, especially as two-way traders that export and import both goods and services. Such two-way traders in goods and services accounted for 17.5 per cent of all foreign-owned manufacturing firms in 2019, up from 9.2 per cent in 2008, pointing to an increase in the "servicification" of Hungarian manufacturing, driven by participation in GVCs. In contrast, only 0.7 per cent of domestic firms were two-way traders in both goods and services in 2019. Not surprisingly, most of Hungary's top five exporters of services by export value are foreign-owned.

Increasingly, services are digitally enabled, so being close to customers is less important for suppliers of services than for manufacturers of goods. As a result, value-weighted average export distances are longer for service exports than for goods exports – 2.4 times longer in 2019 for Hungarian firms that export both goods and services. Of the top 10 destinations for service exports, 7 are in the 10 foreign investor countries

CHART 2.15. Firms are more likely to trade goods cross-border than services



Source: Bisztray et al. (2024), Hungarian Central Statistical Office and authors' calculations.

Note: "Foreign-owned" firms are defined as those where foreign ownership totals at least 50 per cent. "One way trade in services" comprises firms that are one-way traders in services and either (i) trade goods one-way or (ii) do not trade goods at all.

[34] This phrase was first used by Stan Shih, Acer's chief executive officer (CEO) in the early 1990s.
[35] This section is based on Bisztray et al. (2024). It uses corporate financial statements, customs data, data on trade in goods and services, and firm registry data from the Hungarian Central Statistical Office.
[36] See Box 2.1 for details of sector definitions and data sources.
[37] See Crozet and Milet (2017).

In 2020, participation in GVCs accounted for

62%

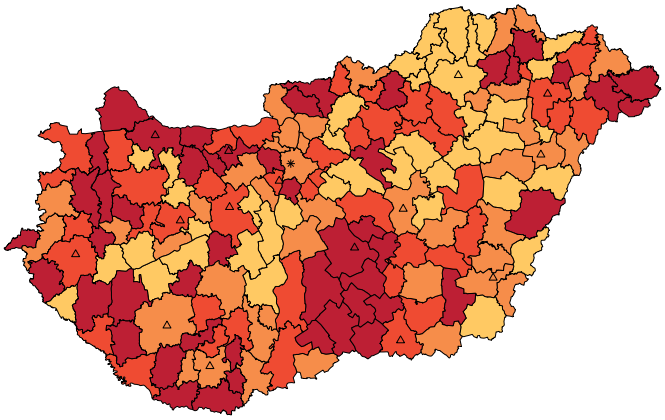
of Hungary's gross exports

with the largest subsidiaries in Hungary (Germany, the United States, Austria, France, the United Kingdom, the Netherlands and Switzerland).[38]

Firms that export services tend to be larger and more productive than those that export only goods, and they tend to pay higher wages. They are also more likely to be foreign-owned and clustered in or around large cities with strong skill bases (see Chart 2.16, which shows the percentage of firms that export goods and services at the level of 174 districts). Several multinational companies have set up R&D centres in Hungary (with Audi and Thyssenkrupp doing so in Győr and Budapest, respectively).[39] There are also close to 100 shared service centres operating in Hungary, serving companies such as Deutsche Telekom, IBM, Tata Consultancy Services, Citi and BP, as well as business process outsourcing (BPO) companies such as Avaya and Ubiquity (most of which are based in Budapest).[40] The majority of Hungary's large software companies are located in Budapest.

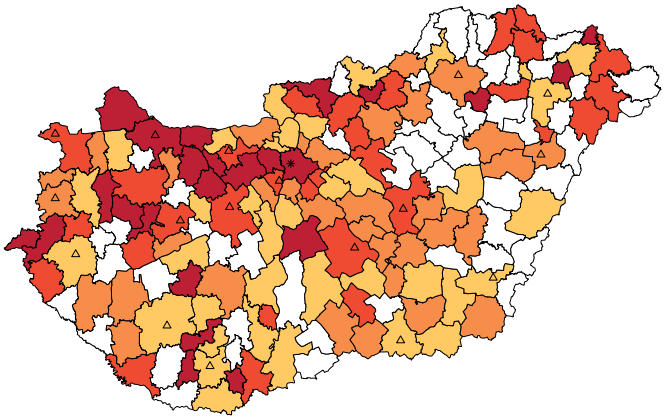
CHART 2.16. Exporters of services are concentrated in large cities

Goods exporters as a percentage of all firms, 2019



1.38-4.72% 4.72-5.94% 5.94-7.25% 7.25-15.57%

Service exporters as a percentage of all firms, 2019



0% 0-0.57% 0.57-0.89% 0.89-1.28% 1.28-3.15%

Source: Bisztray et al. (2024), Hungarian Central Statistical Office and authors' calculations.

Note: The star denotes Budapest, while the triangles denote other cities with populations of 50,000 or more.

[38] Based on total sales of all subsidiaries in 2013 broken down by investor country, taken from inward foreign affiliate statistics (https://statinfo.ksh.hu/Statinfo/themeSelector.jsp?&lang=en; last accessed on 6 August 2024).

[39] See https://hipa.hu/news/thyssenkrupp-has-moved-into-a-new-r-d-competence-centre-in-budapest (last accessed on 7 August 2024).

[40] See www.europeanbusinessservices.com/hungary.html and www.statista.com/statistics/1384492/hungary-shared-service-centers-by-number-of-employees (last accessed on 22 August 2024).

How can we foster a shift to productive services?

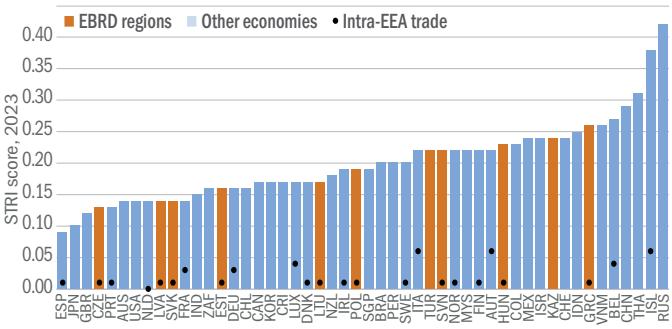
How does structural change happen?

The shift from agriculture to manufacturing did not require significant investment in the skills of workers.[41] Neither did it require wide-ranging improvements to governance or regulatory frameworks, as these changes could often be confined to special economic zones or customised policy regimes, with only modest institutional improvements – if any – at the level of the economy as a whole. The required machinery, equipment and technology could be imported or obtained by attracting foreign direct investors, and access to global markets could, to a large extent, be achieved through the liberalisation of trade in goods.

That kind of policy-light approach would not work as well now. Innovation in manufacturing is increasing demand for specific skills, while the use of robots, 3D printing and other forms of automation have reduced the benefits of having plenty of cheap unskilled labour.[42]

Services, meanwhile, have different requirements. Global innovator services such as ICT services and business process outsourcing require (i) skilled labour, (ii) investment in physical capital, technology and innovation (private fundamentals), and (iii) strong infrastructure, robust economic institutions and a conducive business environment (public fundamentals).[43] The liberalisation of trade in services may allow economies to target some low-hanging fruit in terms of facilitating a structural shift towards services with higher value added. However, most other enabling factors cannot be changed overnight and will require a sustained policy effort over the medium term.

CHART 2.17. Intra-EEA trade in computer services is less restricted



Source: OECD Services Trade Restrictiveness Index (STRI) and authors' calculations.

Note: The bars show STRI scores for trade in computer services in 2023. For EEA countries, dots indicate STRI scores for intra-EEA trade in computer services in the same year. Scores are on a scale of 0 to 1, where 0 denotes a complete absence of restrictions.

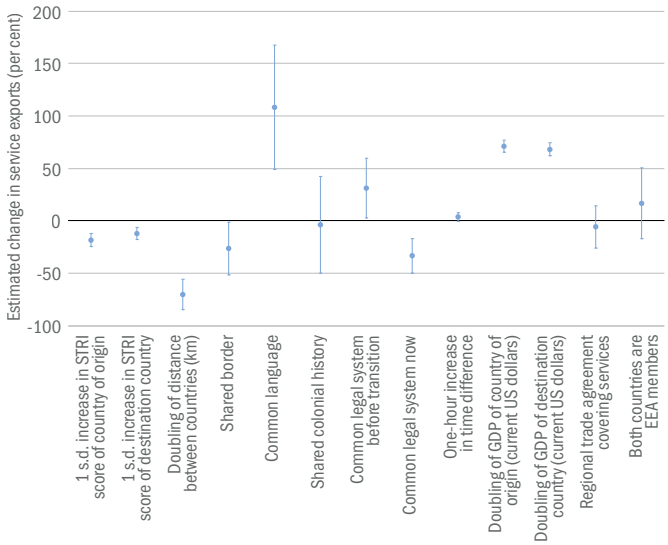
Liberalisation of trade in services

The early 1990s saw the EBRD regions open their economies to the world, removing tariff and non-tariff barriers to trade in goods – a crucial step in their transition to market economies. The liberalisation of goods trade allowed those countries to overcome legacies of central planning such as distorted pricing systems, poor productivity and outdated technology. However, the pace and extent of trade reforms varied across economies owing to differences in countries' initial circumstances and their approach to reforms. In particular, central European countries and the Baltic states benefited from their geographical proximity to advanced European markets and more successful and rapid macroeconomic stabilisation.[44]

The EBRD economies in the EU became part of the European single market – the European Economic Area (EEA) – when they joined the European Union. In addition to the free movement of goods, capital and people, the single market also includes the free movement of services following the adoption of the EU's Services Directive in 2006. As a result, restrictions on trade in services are much lower inside the EEA than outside it, as illustrated by Chart 2.17 on computer services – a sector that is playing an increasingly important role. As the chart shows, EEA countries such as Iceland, Belgium and Greece have STRI scores in the top quartile

[41] See Rodrik and Sandhu (2024).
[42] Ibid.
[43] See Atolia et al. (2020).
[44] See OECD (1997).

CHART 2.18. Restrictions on trade in services reduce service exports



Source: OECD-WTO Balanced Trade in Services (BaTIS) database (BPM6 edition), OECD STRI database, CEPII Gravity database and authors' calculations.

Note: This chart shows the estimated change in service exports that is derived by regressing bilateral service exports on the characteristics listed on the horizontal axis using a Poisson pseudo-maximum-likelihood (PPML) estimator (see Santos Silva and Tenreyro, 2006). The regression includes sector and year fixed effects and covers transport services, insurance and pension services, financial services, ICT services, other business services, and personal, cultural and recreational services. As these sectors are broader than the sectors for which STRI scores are available, weights based on data in the WTO's TiSMoS dataset are used to calculate weighted average STRI scores (see Box 2.1). The 95 per cent confidence intervals shown are based on standard errors clustered at the level of trading pairs.

of the global distribution for trade with non-EEA countries, with much lower restrictions for intra-EEA trade. In the EBRD regions, trade in computer services is less restricted than in middle-income comparator economies, but more restricted than in advanced economies.

The cost of trade in services is almost double that of trade in goods, with differences in the quality of governance, trade policy and regulations accounting for more than a quarter of total variation in the cost of bilateral trade in services.[45] In addition, the extent of ICT adoption is more important for services than goods in terms of facilitating trade. The WTO estimates that the cost of trade in services dropped by 9 per cent between 2000 and 2017 thanks to digital technologies, investment in infrastructure and the lowering of policy barriers to trade.

Restrictions on trade in services have a detrimental impact

What gains could be made in terms of trade in services if sector-specific restrictions or restrictions on digital trade were relaxed? The gravity model of international trade postulates that trade flows between two countries are dependent on the countries' economic size, the geographical distance between them and the extent of any frictions impeding bilateral trade (which are typically alleviated by shared borders, common languages, common legal systems, shared colonial legacies and regional trade agreements).

Analysis suggests that market access matters for service exports and that liberalising your own service market does more to boost service exports than exporting to a liberalised service market (see Chart 2.18). For example, if all countries of origin with higher STRI scores reduced their restrictions to match the 25th percentile of the STRI distribution in the relevant sector, their service exports would grow by 9.1 per cent and their service imports would increase by 5.5 per cent. A similar reduction in the STRI score of a destination country is associated with smaller increases in exports and imports (increases of 2.1 and 3.4 per cent, respectively).[46] The reason for this is twofold: (i) a country's own services are more competitive if its service market is liberalised, and (ii) imported services are an input for service exports.[47]

A common spoken language and a common legal system are more important for trade in services than trade in goods. At the same time, having a shared border does not appear to be a significant determinant of bilateral trade in services, unlike trade in goods. As with goods, bilateral trade in services tends to be stronger when the two countries are larger, and it tends to be weaker when the two countries are further apart geographically.

Further analysis suggests that relaxing restrictions on digital trade in services in the country of origin or destination is also associated with increases in exports and imports of services. This analysis is conducted by incorporating OECD Digital Services Trade Restrictiveness Index (DSTRI) scores (and excluding transport services, digital delivery of which is uncommon), as well as adding an indicator for the application of the EU's General Data Protection Regulation (GDPR) or GDPR-equivalent legislation. Relaxing restrictions on digital trade in services in the country of origin to match the 25th percentile of the DSTRI distribution is associated with a 20.4 per cent increase in service exports and a 25.5 per cent increase in service imports. A similar reduction in the DSTRI score of a destination country, on the other

[45] See WTO (2019).

[46] These estimates are statistically significant at the 1 per cent level.

[47] See Javorcik et al. (2024).

hand, is associated with a 25.4 per cent increase in service exports and a 20.4 per cent increase in service imports. These estimates are statistically significant at the 1 per cent level (while including DSTRI scores in the model results in the estimated coefficients for the two variables involving STRI scores becoming smaller and losing their statistical significance). In addition, less restrictive regimes for digital trade in services have been shown to be associated with increases in the productivity of manufacturing firms.[48]

Having the GDPR (or equivalent legislation) in force in the country of origin is associated with an increase in service exports, while having such legislation in force in the destination country is associated with an increase in service imports, probably because having clear privacy and security regulations – even if the rules are strict – reduces ambiguity around data protection and supports trade in services.

Can investment promotion facilitate structural change?

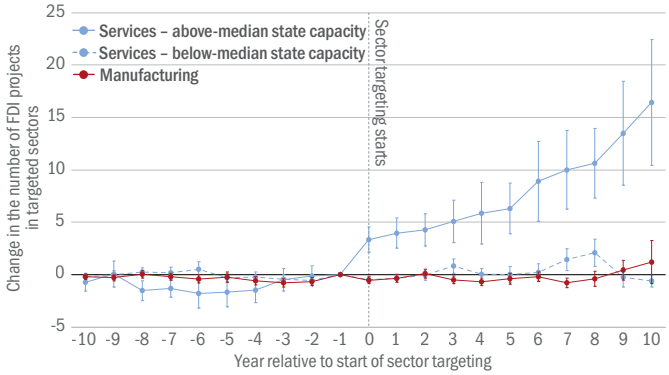
Most countries have investment promotion agencies – government bodies that are tasked with attracting businesses and investment to the country. Most IPAs target specific sectors when attracting FDI, and investment promotion can therefore be viewed as an industrial policy.

In 2023, the EBRD conducted an online survey of the national IPAs in its shareholder economies, gathering data on the sectors targeted, the strategies employed and the timing of the relevant initiatives.[49] The information collected was combined with data in the FT fDi Markets database – a project-level dataset on FDI projects – to assess the effectiveness of sector-targeting policies.

The effects of sector targeting are evaluated here using a difference-in-differences approach. The outcome of interest is the number of investment projects in a given country, sector and year. The analysis compares the actual outcomes for targeted sectors with counterfactual outcomes in the absence of policy intervention. The counterfactual outcomes are estimated by using sectors that are never targeted or have not yet been targeted as a control group.[50]

The results suggest that sector-targeting policies tend to have a positive effect on FDI.[51] Ten years after a policy has been rolled out, targeted sectors see, on average, 2.8 times as many FDI projects as non-targeted sectors. This increase is driven predominantly by investment in service-related projects, with no significant effect being observed for manufacturing projects. This mirrors global trends in FDI, which is dominated by services: service-related projects' share of total cross-border greenfield projects increased

CHART 2.19. The number of service-related FDI projects increases following the introduction of sector targeting policies when state capacity is sufficiently high



Source: FT fDi Markets database, O'Reilly and Murphy (2022) and authors' calculations.

Note: This chart shows the estimated coefficients derived from a difference-in-differences regression comparing targeted sectors with not-yet-targeted and never-targeted sectors in terms of the number of FDI projects at country-sector-year level, looking at service-oriented and manufacturing-oriented projects separately. For service-oriented projects, separate estimates are shown for countries with below-median and above-median levels of state capacity. Spikes indicate 95 per cent confidence intervals based on standard errors clustered at the country-sector level.

Ten years after a policy has been rolled out, targeted sectors see, on average,

2.8 TIMES

as many FDI projects as non-targeted sectors

[48] See Arnold et al. (2011).
[49] See EBRD (2023) for more details.
[50] See Borusyak et al. (2024).
[51] This is consistent with the findings of Harding and Javorcik (2011), who used a similar approach.

from 66 per cent in 2004 to 81 per cent in 2023. Moreover, service-related projects' share of total cross-border greenfield projects within manufacturing industries (involving activities such as R&D, for instance) has nearly doubled to about 70 per cent, propelled by rapid technological advances. In contrast, manufacturing FDI has recently experienced a significant downturn (and was already stagnating before that).[52]

Furthermore, the effectiveness of sector targeting in terms of service-related FDI is also contingent on state capacity.[53] Indeed, countries with stronger state capacity see a marked increase in service-related FDI projects following the targeting of sectors, whereas countries with weaker state capacity see no differences between targeted and non-targeted sectors in terms of the number of projects (see Chart 2.19).

Investment promotion can be used to foster structural change and a shift towards services, and policymakers should prioritise services in such strategies. At the same time, they should also implement reforms aimed at enhancing governance, improving the efficiency of public administration and strengthening the rule of law, which can amplify the impact of those investment promotion efforts.

Conclusion and policy implications

The sectors that are thriving in the 21st century are significantly different from those that prospered most in the 20th century. With the pursuit of manufacturing export-led growth becoming increasingly difficult for most countries, the prospect of service export-led growth beckons. The advent of digital technologies promises to revolutionise the delivery of services around the world, much as ICT transformed manufacturing in the 1990s.

Of the various services, digitally enabled tradeable services – especially global innovator services – have the most potential for growth. These are the services that have played the largest role in the recent improvements in labour productivity within the service sector, and they have strong connections to other economic sectors. At the same time, services are also playing an increasingly important role within the manufacturing sector, both as inputs for manufactured goods (as in the case of design services, R&D, supply chain logistics and marketing, for example) and as products bundled together with goods (such as installation, support, maintenance and repair services). By contrast with the assembly of manufactured goods, such higher-value-added services are dependent on a relatively high level of human capital.

In order to strengthen countries' competitiveness in today's service-oriented economy, policymakers should prioritise fundamentals such as digital infrastructure, governance and education, with emphasis on the skills that are required by global innovator services. As the example of Romania shows (see Box 2.2), targeted industrial policies can help to further accelerate the transition to more productive service sectors, provided that the necessary fundamentals are in place.

Lowering restrictions on trade in services can be an effective way of boosting service exports, particularly for digitally enabled services. At the same time, lowering restrictions does not necessarily mean having a regime where anything goes. For example, GDPR-equivalent legislation has been found to facilitate trade in services by establishing fair and transparent rules governing the handling of data.

Firms and workers may require targeted assistance in order to use the new digital technologies effectively, which could, for example, involve the provision of management training or technology training, or the award of loans or grants, particularly for smaller firms.[54] In order to help less educated workers to acquire the skills needed to transition to more productive employment in the service sector, and to improve firms' productivity, training programmes should be developed in close collaboration with employers to better understand their needs.

[52] See UNCTAD (2024).

[53] State capacity is measured by an index that captures the first principal component of four V-Dem indicators assessing (i) the provision of public goods, (ii) the rigour and impartiality of the public administration, (iii) the rule of law and (iv) the state's authority over its territory (see O'Reilly and Murphy, 2022).

[54] See Rodrik and Sandhu (2024) for an overview of the strategies that can be used to boost employment in productive service sectors.

BOX 2.1.

Databases and definitions

Breakdown into structural change and fundamentals

This chapter uses the following decomposition for economy-wide labour productivity growth y.[55]

$$g_y^t = \sum_i \theta_i^{t-1} \pi_i^{t-1} g_{y_i}^t + \sum_i \Delta\theta_i^t \pi_i^{t-1}(1 + g_{y_i}^t)$$

The first term represents the sum of the intra-sectoral productivity growth components for the various sectors indexed i (fundamentals). The second term captures the contribution made by the reallocation of labour between sectors (structural change). y_i denotes sector-specific labour productivity, g is annual growth in labour productivity ($g_y^t = \frac{\Delta y^t}{y^{t-1}}$ and $g_{y_i}^t = \frac{\Delta y_i^t}{y_i^{t-1}}$), θ_i is sector i's share of total employment, π_i is the relative labour productivity in sector i, defined as $\frac{y_i}{y}$, and t denotes time. Labour productivity is measured as value added per employee. Data are taken from the Groningen Growth and Development Centre's Economic Transformation Database and Economic Transformation Database of Transition Economies, and EU KLEMS.[56]

Defining global innovator services

Global innovator services are defined as those in ISIC Rev. 4 sectors J (information and communication), K (financial and insurance activities) and M (professional, scientific and technical activities). The Groningen Growth and Development Centre aggregates data on information and communication (sector J), professional, scientific and technical activities (sector M) and administrative and support services (sector N) in "business services", so data on global innovator services that use the Groningen Growth and Development Centre datasets include sector N in addition to sectors J, K and M.

Databases capturing trade in services

Measuring trade in services is difficult. Unlike goods, many services do not pass through customs, unless they are embodied in goods (such as software on a DVD) or involve the movement of goods (as in the case of transport services). In some cases, it is the provider – rather than the service itself – that crosses the border (for example, in the case of a Polish management consultant working on a project in Germany). In other cases, it is the consumers of services who are the ones crossing borders (as in the case of German tourists visiting Croatia).

Balance of payment statistics are the main source of data on trade in services. However, there are differences across countries in terms of both the availability of certain data and the methodologies applied. This often leads to asymmetries between reported exports and imports of services. This chapter relies mainly on the WTO-OECD Balanced Trade in Services dataset,[57] which contains bilateral data on trade in services for the period 2005-21 and aims to reconcile these asymmetries.

The BaTIS dataset uses broad sectors; for example, telecommunications, computer and information services are grouped together. The WTO's experimental Trade in Services data by Mode of Supply dataset contains information on each of these three subsectors, including details of how the service is supplied (cross-border, consumption abroad, commercial presence or movement of people). Thus, TiSMoS allows trade in services to be broken down into non-digital and digitally enabled components. It does not, however, contain bilateral data, and it relies on a set of assumptions to allocate trade to different modes of supply, as most countries do not distinguish between different modes in their official statistics.[58]

Mapping the task content of jobs from O*NET to the EU LFS

The importance scores for task items in the O*NET-SOC occupational taxonomy were linked to the EU LFS microdata by mapping US SOC occupational codes to one-digit ISCO occupations. To allow for task content changes within occupations over time, the analysis used five different releases of the O*NET database (5.0, 10.0, 16.0, 21.0 and 24.0). Task intensities for each occupation and year were calculated using a linear interpolation between the importance scores for the two nearest O*NET releases, with weights inversely proportionate to the periods of time between the year in question and the respective release dates. Occupations in the armed forces were excluded from the analysis.

Each of the composite indices shown in Chart 2.9 is constructed as the sum of constituent task items.[59] First, the individual O*NET task item scores are standardised within each country so that they have a mean of 0 and a standard deviation of 1. These standardised scores are summed to

[55] See Diao et al. (2019).
[56] See Kruse et al. (2022), Hamilton and de Vries (2023) and Bontadini et al. (2023).
[57] See Liberatore and Wettstein (2021).
[58] See Wettstein et al. (2019).
[59] See Acemoğlu and Autor (2011).

obtain five different composite task intensity indices ("non-routine cognitive analytical tasks", "non-routine cognitive interpersonal tasks", "routine cognitive tasks", "routine manual tasks" and "non-routine manual physical tasks"), which are then standardised within each country. Next, the average of these occupation-level composite measures is computed for each country-year cell, and a two-year moving average is applied to the resulting country-level indices to smooth year-to-year volatility. Lastly, the country-level task intensity measures are aggregated into broader country groupings using unweighted cross-country averages.

The structural break in task intensities stemming from the switch from ISCO-88 to ISCO-08 in 2011 was corrected by equalising the means of the task importance measures for the two years immediately before and after the classification change.[60]

Decomposing non-routine cognitive task intensity

Using a three-way decomposition, the economy-wide change in non-routine cognitive task intensity that is observed over time can be broken down into an intra-occupation component and two structural change components that account for intra-sectoral and cross-sector changes in task intensities as follows:

$$\Delta\bar{I} = \underbrace{\sum_j S_{jt} \sum_i s_{ijt}\left(I_{i,t+1} - I_{it}\right)}_{\text{Intra-occupation change}} + \underbrace{\sum_j S_{jt} \sum_i \left(s_{ij,t+1} - s_{ijt}\right) I_{i,t+1}}_{\text{Structural change: intra-sector}} + \underbrace{\sum_j \left(S_{j,t+1} - S_{jt}\right) \sum_i s_{ij,t+1} I_{i,t+1}}_{\text{Structural change: across-sectors}}$$

where I_{it} the non-routine cognitive task intensity of occupation i in year t, s_{ijt} is occupation i's share of employment within sector j in year t, and S_{jt} is sector j's share of employment in the economy in year t. To ensure consistency over the period studied, this analysis is based on 12 groups of NACE Rev. 1.1 sectors: A and B (agriculture, hunting and forestry; and fishing); C (mining and quarrying); D (manufacturing); E (electricity, gas and water supply); F (construction); G (wholesale and retail trade; and repair of motor vehicles, motorcycles and personal and household goods); H (hotels and restaurants); I (transport, storage and communication); J (financial intermediation); K (real estate, renting and business activities); L, M and N (government services); and O, P and Q (other services).

Calculating employment in embodied services in manufacturing

Manufacturing can broadly be divided into core activities (operations and assembly) and supporting functions that could be outsourced as services (R&D, design activities, logistics, marketing, IT, management and so on).[61] Using EU LFS data, and mapping ISCO-88 to ISCO-08 at the one-digit level, employees within the manufacturing sector can be crudely assigned to either core manufacturing activities or support functions, with the latter effectively representing embodied services within the manufacturing sector.[62]

Hungarian firm-level data

The analysis of Hungarian firms trading in goods and services is based on a combination of four datasets using anonymous firm identifiers: a trade in services database (with data available at the firm-BPM service-source/destination country-year level); a trade in goods database (with data available at the firm-HS6 product-source/destination country-year level); balance sheet and profit and loss statements; and firm registry data. The trade in services database covers a sample of firms that export or import a considerable amount of services (based on their VAT statements and corporate tax returns).

The analysis covers the period between 2008 and 2019 and focuses on firms which had at least five employees in at least one year between 2000 and 2021. The manufacturing sector is defined as NACE Rev. 2 codes 10-33, while the tradeable service sector is defined as NACE Rev. 2 codes 58-63, 66 and 69-82. Data are not available for the financial and insurance industries (NACE Rev. 2 codes 64 and 65).

The OECD's STRI and DSTRI databases

The nature of restrictions on trade in services, which are spread across multiple country-specific laws and regulations, makes them difficult to record in a consistent

Continued on page 62

[60] See Hardy et al. (2018).

[61] See Miroudot and Cadestin (2017).

[62] Core manufacturing occupations include craft and related trade workers, plant and machine operators, assemblers, and agricultural, forestry and fishery workers. Embodied service occupations include managers, professionals, technicians and associate professionals, clerical support workers, and service and sales staff. The armed forces are excluded from this sample, as they are difficult to categorise.

BOX 2.1.

Databases and definitions

Continued from page 61

and comparable manner across countries.[63] In 2014 the OECD introduced its Services Trade Restrictiveness Index, which assesses measures affecting trade in 18 service sectors in 50 countries, including 11 economies in the EBRD regions. The sectors covered are: construction; wholesale and retail trade; freight rail transport; freight transport by road; water transport; air transport; warehousing and storage; cargo handling; postal and courier services; motion pictures, video and television; sound recording and music publishing; programming and broadcasting activities; telecommunications; computer services; financial service activities, except insurance and pensions; insurance, reinsurance and pension funds; accounting, bookkeeping and auditing; and legal services.[64] For members of the European Economic Area, there is a separate services trade restrictiveness index.[65] STRI scores assess restrictions on foreign entry and the movement of people, barriers to competition, other discriminatory measures and regulatory transparency. On average, trade in sound recording and music publishing is the least restricted area, while trade in air transport services is the most heavily restricted.

Trade in digital services – the fastest-growing segment – is less affected by conventional restrictions such as barriers to foreign entry and the movement of people. However, all services that are traded digitally can be constrained by the quality of digital infrastructure and connectivity, cross-border payment systems, intellectual property rights and other barriers, regardless of the sector. In order to take account of these issues, the OECD compiles the Digital Services Trade Restrictiveness Index, which covers 90 countries, including 17 economies in the EBRD regions.[66]

The sectors used in the OECD's STRI database tend to be more detailed than those used in other databases. Table 2.1.1 shows the mapping used between the BaTIS, TiSMoS and STRI databases. Where more detail was available in TiSMoS, the average STRI score for a BaTIS sector was calculated using weights based on the value of exports in the relevant TiSMoS subsectors.

Sectors targeted by investment promotion agencies and the FT fDi Markets database

The sectors included in the EBRD's IPA survey were based on ISIC Rev. 4, covering a wide range of primary, manufacturing and service industries. Meanwhile, the FT fDi Markets database uses its own custom sector classification system. To bridge this gap between the two classifications, each FDI project in the FT fDi Markets database was matched to the most appropriate IPA survey sector using the Claude 3.5 Sonnet API on the basis of the project's subsector information provided in the FT fDi Markets database.

To distinguish between different types of FDI project within sectors, projects were categorised as either manufacturing-oriented or service-oriented investment. This categorisation was based on the specific function or purpose of each project as recorded in the FT fDi Markets database. Manufacturing-oriented projects were those explicitly listed as engaging in manufacturing activities, while service-oriented projects encompassed activities such as business services, customer contact centres, ICT infrastructure, logistics, R&D, and sales and marketing support.

Romanian firm-level data

These data come from Bureau van Dijk's Orbis database and cover the period 2010-16. They are processed using the methodology developed in Kalemli-Ozcan et al. (2024). In addition, firms with missing information on employment, operating revenue or total assets for any year between 2012 and 2014 are excluded, as are firms with zero employees in any year between 2010 and 2016. The employees of firms in NACE Rev 2. sectors 58.21, 58.29, 62.01, 62.02 and 62.09 are considered to be eligible for the income tax cut; firms in ineligible ICT service sectors and the scientific R&D service sector are used as a control group.[67]

[63] See Nordås and Rouzet (2017).
[64] See Geloso Grosso et al. (2015).
[65] See Benz and Gonzales (2019).
[66] See Ferencz (2019).
[67] This is loosely based on the methodology in Manelici and Pantea (2021).

Table 2.1.1. Sector crosswalk between the STRI, BaTIS and TiSMoS databases

STRI sector code	STRI sector name	BaTIS sector code	BaTIS sector name	TiSMoS sector code	TiSMoS sector name
F	Construction	**SE**	Construction	**SE**	Construction
G	Wholesale and retail trade	**N/A**	N/A	**SW**	Trade margins of wholesalers and retailers
H4912	Freight rail transport	**SC**	Transport	**SC32**	Freight (other)
H4923	Freight transport by road				
H50	Water transport			**SC1**	Sea transport
H51	Air transport			**SC2**	Air transport
H521	Warehousing and storage			**SC13, 23, 33**	Other (sea) + Other (air) + Other (other)
H5224	Cargo handling				
H53	Postal and courier activities			**SC4**	Postal and courier services
J591	Motion picture, video and television	**SK***	Personal, cultural and recreational services	**SK1**	Audio-visual and related services
J592	Sound recording and music publishing				
J60	Programming and broadcasting activities				
J61	Telecommunications	**SI***	Telecommunications, computer and information services	**SI1**	Telecommunications services
J62_63	Computer programming, consultancy and information service activities			**SI2+SI3**	Computer services + Information services
K64	Financial service activities, except insurance and pensions	**SG***	Financial services	**SG**	Financial services
K65	Insurance, reinsurance and pension funds	**SF***	Insurance and pension services	**SF**	Insurance and pension services
M691	Legal activities	**SJ***	Other business services	**SJ21**	Legal, accounting, management, consulting and public relations
M692	Accounting, bookkeeping and auditing				
N/A	N/A	**SH***	Charges for the use of intellectual property	**SH**	Charges for the use of intellectual property not included elsewhere

Source: OECD-WTO BaTIS database, WTO TiSMoS database and OECD STRI database.
Note: * denotes sectors covered by the DSTRI database.

BOX 2.2.

Exports of computer and information services and human capital: evidence from Romania

Romania's emergence as a significant hub for computer and information services in eastern Europe has resulted in it being compared to Silicon Valley. This success story exemplifies the benefits of global innovator services as an engine of growth, highlighting a key lesson from this chapter: well-crafted industrial policies that build on pre-existing fundamentals can promote structural change and growth in high-productivity services.

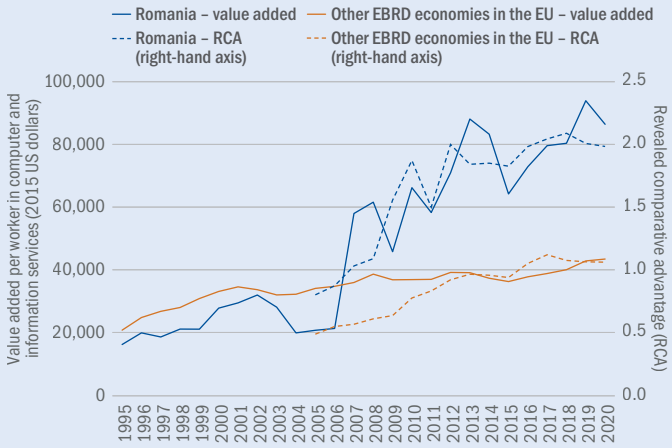
Since 2010, Romania has had the highest labour productivity in computer and information services and the greatest revealed comparative advantage in that sector of any EBRD economy in the EU (see Chart 2.2.1). This advantage stems from two key factors: targeted policy interventions and strong human capital. Since the early 2000s, Romania's computer and information service sector has undergone significant liberalisation. In 2001, a personal income tax break effectively reduced the tax rate for programmers to zero, down from 40 per cent. This policy was then broadened in 2013 to cover a larger portion of the computer and information service sector. Romania also liberalised its telecommunications sector in 2002.

A recent study found that the 2001 tax cut and its expansion in 2013 had significantly boosted growth in the computer and information service sector relative to other EBRD economies in the EU. Eligible firms had experienced substantial, long-lasting growth in employment and revenue. Moreover, downstream sectors dependent on computer and information services had also seen stronger growth, indicating that the policy had been effective in helping Romania to transition to a knowledge economy.[68]

The success of these industrial policy interventions was dependent on Romania having a well-educated population.[69] Romania's educational reforms in the 1970s and 1980s had strongly prioritised science and technology and laid the foundations for an educational system that channelled high-achieving students into specialist secondary schools at a young age.[70]

This box builds on existing studies and explores the importance of human capital for the success of industrial policies' success. Computer and information service firms that were eligible to benefit from the 2013 tax reform grew faster than ineligible firms in the control group, while eligible firms located in NUTS-3 regions with above-median STEM-focused human capital endowments

CHART 2.2.1. Romania's computer and information service sector has outperformed those of other EBRD economies in the EU



Source: EU KLEMS, WTO TiSMoS database and authors' calculations.

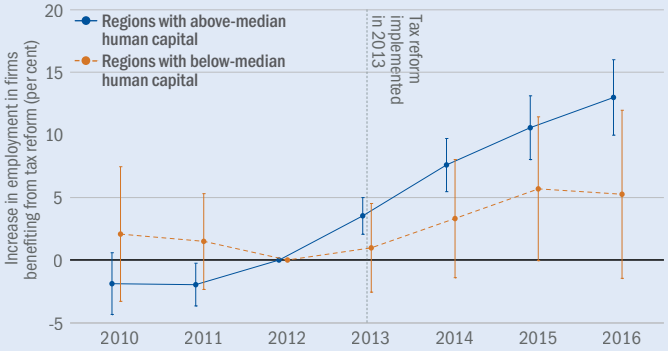
Note: Data for "other EBRD economies in the EU" are unweighted averages of national data and cover Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia. The computer and information service sectors are defined as NACE Rev 2. codes 62 and 63 in EU KLEMS and EBOPS 2010 codes SI2 and SI3 in TiSMoS.

outperformed their counterparts in below-median regions (see Chart 2.2.2).[71] Moreover, the income tax reform had a positive effect on FDI inflows in Romania's computer and information service sector, with FDI projects increasing by an estimated 20 per cent relative to the computer and information service sectors of other EBRD economies in the EU, holding other factors constant.

As development policy shifts its focus from the promises of industrialisation to service-based growth, education is becoming increasingly crucial as an enabling factor for successful industrial policies. If economies are to accelerate structural transformation and lay the foundations for sustained economic growth in the 21st century, they need to expand access to education and build a skilled workforce. It remains to be seen whether Romania can continue this impressive growth, with the government revoking part of that income tax exemption in 2024 and a full rollback expected by 2028.

[68] See Manelici and Pantea (2021).
[69] As regards the impact that human capital has on sector-level development, see also Coelli et al. (2023) and Porzio et al. (2022).
[70] See OECD (2017).
[71] See Box 2.1 for information on eligible firms and the control group used.

CHART 2.2.2. Human capital has augmented the effects of the tax incentives granted to Romanian computer and information service firms in 2013



Source: Bureau van Dijk's Orbis database, 1992 Romanian census, Manelici and Pantea (2021) and authors' calculations.

Note: This chart shows the estimated coefficients derived from a difference-in-differences regression comparing computer and information service firms that were eligible to benefit from the 2013 tax reform with ineligible firms in the control group. The subsamples cover eligible firms located in NUTS-3 regions with an above-median stock of STEM-enabling human capital in 1992 (prior to the global ICT boom) and eligible firms in regions with a below-median stock of such human capital. The endowment of STEM-enabling human capital is captured by the first principal component of indicators such as (i) the percentage of workers in computer-related professions, (ii) university graduates as a percentage of the workforce, (iii) the ratio of universities to people of university age, and (iv) the percentage of workers in STEM-related professions, with all data relating to 1992. Firm employment is winsorised at the 1st and 99th percentiles.

BOX 2.3.

Morocco's automotive sector

The example of Morocco shows how a well-designed industrial policy can help countries increase their participation in global value chains for manufacturing. This can be achieved by expanding production and moving up the value chain, even in highly competitive global markets.[72]

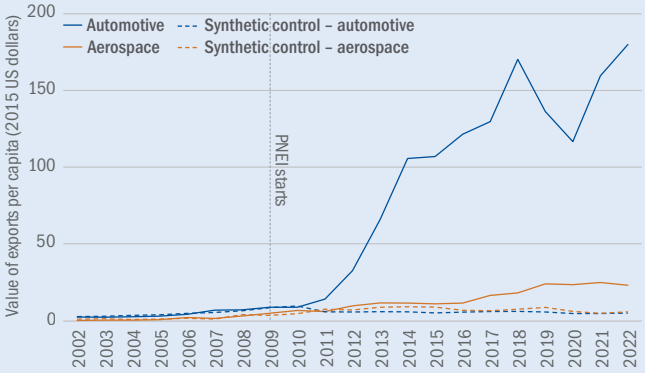
Over the past 15 years, Morocco has implemented a series of industrial strategies aimed at developing globally competitive manufacturing sectors, with a focus on the automotive and aerospace sectors. One of those initiatives was the 2009-15 National Industrial Emergence Plan (PNEI), which sought to create 220,000 jobs and increase exports by US$ 11 billion, primarily by attracting FDI, training 94,000 skilled workers and increasing cooperation between the public and private sectors in the target areas.[73] This was followed by the even more ambitious 2014-20 Industrial Acceleration Plan (PAI), which more than doubled the employment target.[74] In addition, the Moroccan government invested US$ 15 billion in infrastructure between 2010 and 2015, and established special economic zones in key locations such as Casablanca, Kenitra and Tangier.[75]

As a result, medium- and high-technology-intensive exports' share of total goods exports rose from 33 per cent in 2009 to 65 per cent in 2022. In two of the target areas, the automotive and aerospace sectors, exports per capita rose, in real terms, by 2,390 per cent and 550 per cent, respectively, over that period (see Chart 2.3.1).[76] Moreover, between 2008 and 2020 Morocco managed to achieve manufacturing export-led growth – something it had been unable to do between 1995 and 2008.

In order to separate the effect of Morocco's policy interventions from the impact of concurrent global trends, Morocco's export performance in the automotive and aerospace sectors is compared with synthetic controls – weighted averages for a group of economies (Algeria, Croatia, Egypt, Greece and Tunisia) that were similar to Morocco prior to the adoption of policies promoting those specific sectors. The synthetic control matches Morocco's performance in terms of the average value of exports per capita (in constant US dollars) between 2002 and 2009, average GDP, average GDP per capita, trade in goods as a share of GDP, the manufacturing sector's share of total value added, an indicator for EU membership and average years of schooling in 2005. This analysis confirms the exceptional nature of Morocco's export performance in the target sectors. Similar results can be observed if the analysis is repeated at the HS4 level (separating automobiles from automotive components, for example).

While Morocco's industrial policy has significantly boosted exports and employment in the target sectors, spillovers to the rest of the local economy have been limited. Few Moroccan firms have joined the country's automotive clusters, with foreign-owned firms accounting for most of the automotive sector's production and employment. Attempts to foster the integration of local small and medium-sized enterprises (SMEs) have been hindered by obstacles to investment and scalability, as well as the prevalence of informality. The Moroccan government is aware of these issues and is attempting to improve local sourcing in industrial ecosystems with its new 2020-25 Industrial Acceleration Plan (PAI2).[77]

CHART 2.3.1. Morocco's automotive and aerospace exports have increased markedly since 2010



Source: CEPII BACI dataset (2002 vintage), World Bank WDIs and authors' calculations.

Note: The synthetic controls have been constructed at the HS2 level and relate to codes 87 (automotive sector) and 88 (aerospace sector).

[72] See World Bank (2020).
[73] See Rahal (2012).
[74] See Zoubir (2020).
[75] See Paetzold and Riera (2020).
[76] The automotive and aerospace sectors are defined as HS2 codes 87 and 88, respectively. Calculations are based on data from CEPII's BACI dataset. See Gaulier and Zignago (2010).
[77] See AfDB et al. (2021).

References

D. Acemoğlu and D.H. Autor (2011)
"Chapter 12 – Skills, tasks and technologies: Implications for employment and earnings", in D. Card and O. Ashenfelter (eds.), *Handbook of Labor Economics*, Vol. 4, Part B, Elsevier, pp. 1043-1171.

AfDB, EBRD and EIB (2021)
Private Sector Development in Morocco: Challenges & Opportunities in Times of Covid-19, joint report.

J.M. Arnold, B. Javorcik and A. Mattoo (2011)
"Does services liberalization benefit manufacturing firms? Evidence from the Czech Republic", *Journal of International Economics*, Vol. 85, No. 1, pp. 136-146.

M. Atolia, P. Loungani, M. Marquis and C. Papageorgiou (2020)
"Rethinking development policy: What remains of structural transformation?", *World Development*, Vol. 128, Article 104834.

D.H. Autor (2015)
"Why Are There Still So Many Jobs? The History and Future of Workplace Automation", *The Journal of Economic Perspectives*, Vol. 29, No. 3, pp. 3-30.

L. Baiker, I. Borchert, J. Magdeleine and J.A. Marchetti (2023)
"Services trade policies across Africa: New evidence for 54 economies", World Bank Policy Research Working Paper No. 10537.

R. Baldwin (2024a)
"Is export-led development even possible anymore?", *LinkedIn*, 7 June. Available at: www.linkedin.com/pulse/export-led-development-even-possible-anymore-richard-baldwin-nusge (last accessed on 21 July 2024).

R. Baldwin (2024b)
"Why is manufacturing-export-led growth so difficult?", *LinkedIn*, 14 June. Available at: www.linkedin.com/pulse/why-manufacturing-export-led-growth-so-difficult-richard-baldwin-vb6he (last accessed on 21 July 2024).

R.J. Barro and J.-W. Lee (2013)
"A New Data Set of Educational Attainment in the World, 1950-2010", *Journal of Development Economics*, Vol. 104, pp. 184-198.

S. Benz and F. Gonzales (2019)
"Intra-EEA STRI database: Methodology and results", OECD Trade Policy Paper No. 223.

M. Bisztray, B. Javorcik and H. Schweiger (2024)
"Services exporters and importers in Hungary", KRTK-KTI working paper, forthcoming.

A. Bollard, P.J. Klenow and G. Sharma (2013)
"India's mysterious manufacturing miracle", *Review of Economic Dynamics*, Vol. 16, No. 1, pp. 59-85.

F. Bontadini, C. Corrado, J. Haskel, M. Iommi and C. Jona-Lasinio (2023)
"EUKLEMS & INTANProd: industry productivity accounts with intangibles. Sources of growth and productivity trends: methods and main measurement challenges", LUISS Lab of European Economics. Available at: https://euklems-intanprod-llee.luiss.it/wp-content/uploads/2023/02/EUKLEMS_INTANProd_D2.3.1.pdf (last accessed on 9 August 2024).

I. Borchert, B. Gootiiz, J. Magdeleine, J.A. Marchetti, A. Mattoo, E. Rubio and E. Shannon (2020)
"Applied services trade policy: A guide to the Services Trade Policy Database and the Services Trade Restrictions Index", WTO Staff Working Paper No. ERSD-2019-14.

K. Borusyak, X. Jaravel and J. Spiess (2024)
"Revisiting event-study designs: Robust and efficient estimation", *The Review of Economic Studies*.

F. Coelli, D. Ouyan, W. Yuan and Y. Zi (2023)
"Educating like China", mimeo, November. Available at: https://drive.google.com/file/d/1CbzPMFM3x6YixxXt8KI0FTd7-soGq6lv/view?usp=drive_link (last accessed on 7 August 2024).

T. Conefrey, E. Keenan, M. O'Grady and D. Staunton (2023)
"The role of the ICT services sector in the Irish economy", *Quarterly Bulletin Q1 2023*, Central Bank of Ireland, March, pp. 86-105.

M. Crozet and E. Milet (2017)
"Should everybody be in services? The effect of servitization on manufacturing firm performance", Journal of Economics & Management Strategy, Vol. 26, No. 4, pp. 820-841.

Cyprus Economy and Competitiveness Council (2022)
2021 Cyprus Competitiveness Report, Nicosia. Available at: https://economy-finance.ec.europa.eu/system/files/2022-03/2021_cyprus_competitiveness_report.pdf (last accessed on 8 August 2024).

X. Diao, M. McMillan and D. Rodrik (2019)
"The recent growth boom in developing economies: A structural-change perspective", in M. Nissanke and J.A. Ocampo (eds.), The Palgrave Handbook of Development Economics, Palgrave Macmillan, pp. 281-334.

EBRD (2023)
Transition Report 2023-24 – Transitions Big and Small, London.

J. Ferencz (2019)
"The OECD Digital Services Trade Restrictiveness Index", OECD Trade Policy Paper No. 221.

I. Frumin and D. Platonova (2024)
"The socialist model of higher education: The dream faces reality", Dædalus, Vol. 153, No. 2, pp. 178-193.

G. Gaulier and S. Zignago (2010)
"BACI: International Trade Database at the Product-Level. The 1994-2007 Version", CEPII Working Paper No. 2010-23.

M. Geloso Grosso, F. Gonzales, S. Miroudot, H.K. Nordås, D. Rouzet and A. Ueno (2015)
"Services trade restrictiveness index (STRI): Scoring and weighting methodology", OECD Trade Policy Paper No. 177.

C. Hamilton and G.J. de Vries (2023)
"The structural transformation of transition economies", GGDC Research Memorandum No. 196, University of Groningen.

T. Harding and B. Javorcik (2011)
"Roll out the red carpet and they will come: Investment promotion and FDI inflows", The Economic Journal, Vol. 121, No. 557, pp. 1445-1476.

W. Hardy, R. Keister and P. Lewandowski (2018)
"Educational upgrading, structural change and the task composition of jobs in Europe", Economics of Transition and Institutional Change, Vol. 26, No. 2, pp. 201-231.

B. Hoekman (2016)
"Intra-Regional Trade: Potential Catalyst for Growth in the Middle East", MEI Policy Paper No. 2016-1, Middle East Institute.

B. Javorcik, B. Kett, K. Stapleton and L. O'Kane (2024)
"Unravelling deep integration: Local labour market effects of the Brexit vote", Journal of the European Economic Association, forthcoming.

S. Kalemli-Ozcan, B.E. Sørensen, C. Villegas-Sanchez, V. Volosovych and S. Yeşiltaş (2024)
"How to construct nationally representative firm-level data from the Orbis global database: New facts on SMEs and aggregate implications for industry concentration", American Economic Journal: Macroeconomics, Vol. 16, No. 2, pp. 353-374.

A.I. Kaya and C. Çiçekçi (2023)
"Structural transformation and sources of growth in Turkey", WIDER Working Paper No. 2023/71.

H. Kruse, E. Mensah, K. Sen and G.J. de Vries (2022)
"A manufacturing (re)naissance? Industrialization in the developing world", IMF Economic Review, Vol. 71, pp. 439-473.

A. Liberatore and S. Wettstein (2021)
"The OECD-WTO Balanced Trade in Services database (BaTIS)". Available at: www.oecd.org/content/dam/oecd/en/data/methods/OECD-WTO-Balanced-Trade-in-Services-database-methodology-BPM6.pdf (last accessed on 4 August 2024).

I. Manelici and S. Pantea (2021)
"Industrial policy at work: Evidence from Romania's income tax break for workers in IT", European Economic Review, Vol. 133, Article 103674.

M. McMillan and D. Rodrik (2011)
"Globalization, structural change and productivity growth", in M. Bacchetta and M. Jansen (eds.), Making Globalization Socially Sustainable, International Labour Organization and World Trade Organization, Geneva, pp. 49-84.

M. McMillan, D. Rodrik and C. Sepúlveda (eds.) (2017)
Structural Change, Fundamentals, and Growth: A Framework and Case Studies, International Food Policy Research Institute.

G. Michaels, A. Natraj and J. Van Reenen (2014)
"Has ICT polarized skill demand? Evidence from eleven countries over twenty-five years", The Review of Economics and Statistics, Vol. 96, No. 1, pp. 60-77.

S. Miroudot and C. Cadestin (2017)
"Services in global value chains: from inputs to value-creating activities", OECD Trade Policy Paper No. 197.

National Board of Trade Sweden (2016)
The servicification of EU manufacturing: Building competitiveness in the internal market, Stockholm. Available at: www.kommerskollegium.se/globalassets/publikationer/rapporter/2016/publ-the-servicification-of-eu-manufacturing_webb.pdf (last accessed on 5 August 2024).

G. Nayyar, M. Hallward-Driemeier and E. Davies (2021)
At your service? The promise of services-led development, World Bank.

H.K. Nordås and D. Rouzet (2017)
"The impact of services trade restrictiveness on trade flows", The World Economy, Vol. 40, No. 6, pp. 1155-1183.

OECD (1997)
Designing new trade policies in the transition economies, Paris. Available at: https://one.oecd.org/document/OCDE/GD(97)199/En/pdf (last accessed on 31 July 2024).

OECD (2017)
OECD Reviews of Evaluation and Assessment in Education: Romania, Paris. Available at: www.oecd-ilibrary.org/education/romania-2017_9789264274051-en (last accessed on 8 August 2024).

C. O'Reilly and R.H. Murphy (2022)
"An index measuring state capacity, 1789-2018", Economica, Vol. 89, No. 355, pp. 713-745.

P. Paetzold and O. Riera (2020)
"Global value chains diagnostic – Case Study: Automobiles – Made in Morocco", EBRD. Available at: www.ebrd.com/documents/admin/gvc-automobiles-in-morocco.pdf (last accessed on 9 August 2024).

T. Porzio, F. Rossi and G. Santangelo (2022)
"The human side of structural transformation", The American Economic Review, Vol. 112, No. 8, pp. 2774-2814.

A. Rahal (2012)
"Plan de développement de l'industrie marocaine", Moroccan Ministry of Industry, Commerce and New Technologies. Available at: www.finances.gov.ma/Publication/dtfe/2012/2686_pdim_rabat_20_6_12.pdf (last accessed on 21 August 2024).

D. Rodrik (2013)
"Unconditional convergence in manufacturing", The Quarterly Journal of Economics, Vol. 128, No. 1, pp. 165-204.

D. Rodrik (2016)
"Premature deindustrialization", Journal of Economic Growth, Vol. 21, No. 1, pp. 1-33.

D. Rodrik and R. Sandhu (2024)
"Servicing development: Productive upgrading of labor-absorbing services in developing countries", CEPR Discussion Paper No. DP19249.

J.D. Sachs (1996)
"The transition at mid decade", The American Economic Review, Vol. 86, No. 2, Papers and Proceedings of the Hundred and Eighth Annual Meeting of the American Economic Association, San Francisco, 5-7 January 1996, pp. 128-133.

N. Saidi and A. Prasad (2023)
"A mercantile Middle East", Finance & Development Magazine, International Monetary Fund, September. Available at: www.imf.org/en/Publications/fandd/issues/2023/09/a-mercantile-middle-east-nasser-saidi-aathira-prasad (last accessed on 1 August 2024).

J.M.C. Santos Silva and S. Tenreyro (2006)
"The log of gravity", The Review of Economics and Statistics, Vol. 88, No. 4, pp. 641-658.

UNCTAD (2024)
Global economic fracturing and shifting investment patterns: A diagnostic of 10 FDI trends and their development implications, Geneva. Available at: https://unctad.org/system/files/official-document/diae2024d1_en.pdf (last accessed on 20 August 2024).

UNIDO (2010)
Industrial Statistics – Guidelines and Methodology, Vienna.

S. Wettstein, A. Liberatore, J. Magdeleine and A. Maurer (2019)
"A global trade in services data set by sector and mode of supply (TiSMoS)". Available at: www.wto.org/english/res_e/statis_e/daily_update_e/tismos_methodology.pdf (last accessed on 4 August 2024).

World Bank (2020)
World Development Report 2020: Trading for Development in the Age of Global Value Chains, Washington, DC.

WTO (2019)
World Trade Report 2019: The future of services trade, Geneva.

Y.H. Zoubir (2020)
"Expanding Sino-Maghreb Relations: Morocco and Tunisia", Chatham House. Available at: www.chathamhouse.org/sites/default/files/CHHJ7839-SinoMaghreb-Relations-WEB.pdf (last accessed on 22 August 2024).

3

Regional inequality and special economic zones

This chapter examines regional inequalities in EBRD economies and the role played by place-based industrial policies – particularly special economic zones (SEZs) – in reducing those disparities. The analysis shows that SEZs are able to stimulate local economic growth, but their success is heavily influenced by regional factors such as the quality of infrastructure, the availability of human capital and the effectiveness of governance. Predicting the success of individual SEZs is a challenge, which highlights the important roles that local conditions and effective SEZ management play in determining outcomes. A case study looking at technology development zones (TDZs) in Türkiye shows how exactly such zones support the growth and performance of firms.


H

Introduction

Place-based industrial policies are strategic interventions by governments aimed at promoting economic development and industrial growth in specific geographical areas – particularly those that are economically underdeveloped or underutilised.[1] Examples include initiatives fostering the development of industry clusters (such as the biotech cluster in Cambridge, England), which seek to use such clusters to drive innovation, or the establishment of regional development funds (such as the EU's European Regional Development Fund), which provide financial support to less-developed areas in order to reduce disparities. Governments can also establish SEZs (such as the Shenzhen SEZ in China or the Aegean Free Trade Zone in Izmir), using special regulatory regimes to attract FDI, boost exports, generate employment opportunities and address persistent regional income inequality within their economies.

Such persistent regional inequalities can be seen in both official data and night-time light (NTL) data, with large – and growing – differences between rural and urban areas in terms of economic opportunities. Coastal areas and areas bordering economies with higher income per capita also tend to be richer. Analysis reveals that the average rate of intra-country convergence across the EBRD regions was approximately 1 per cent a year over the period 2010-19. At that rate, it will take about 70 years to halve the existing regional income gaps within EBRD economies.

SEZs have become increasingly important for economic development worldwide. Initially adopted on a limited scale in the 1970s and 1980s, their numbers then increased significantly in the late 1990s and early 2000s. Another wave of SEZs have been established more recently, particularly in emerging markets and developing economies. It is estimated that more than 5,400 of these zones are in existence globally, with more under development or at the planning stage.[2] The number of SEZs in the EBRD regions has risen from 198 in 1990 to 1,114 in 2020, with SEZs increasingly being seen as a way to catalyse economic transformation and structural change.

Analysis of NTL density suggests that the establishment of SEZs is associated with an increase in economic activity over time within an immediate 20 km radius. Outcomes depend not only on the zone's competitiveness in terms of wage costs, but also on the skill base, the infrastructure and the quality of local governance. In particular, proximity to a port, a higher percentage of workers with a tertiary education and the maintenance of law and order are all associated with stronger economic performance in the area surrounding an SEZ. In Türkiye, for example, firms in districts where TDZs have been established have seen stronger increases in employment, exports, investment, sales, profits and total factor productivity.

This chapter begins by documenting income inequality and urban-rural divides at the level of individual economies in the EBRD regions, providing an overview of regional economic disparities. It then turns its attention to the location and effectiveness of SEZs in EBRD economies, investigating their impact and the factors that drive their success or failure. Building on these insights, the chapter then investigates the impact that TDZs have had on firms' performance in Türkiye.

Persistent regional inequalities

Trends in terms of the evolution of income inequality in the EBRD regions have been mixed (see Chart 3.1, which plots the Gini index – a measure of income inequality where 0 indicates perfect equality and 1 indicates perfect inequality). Between 2000-09 and 2014-22, Bulgaria, Lithuania, Romania and the West Bank and Gaza experienced sizeable increases in income inequality (with their Gini indices rising by at least 0.03 point). Conversely, income inequality declined substantially in Armenia, Georgia, Kazakhstan, Moldova, North Macedonia, Serbia and Tunisia over the same period, with their Gini indices falling by 0.05 point or more.

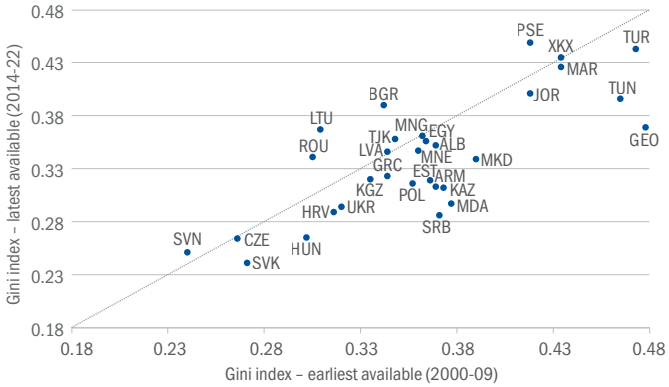
While many economies in the EBRD regions have seen income inequality decline slightly (with those economies sitting below the 45-degree line in Chart 3.1), such declines may mask growing economic disparities within countries at regional level. In order to illustrate patterns of spatial inequality between regions, this chapter uses subnational data on gross regional product (GRP) per capita and NTL density.

[1] See Barca et al. (2012).
[2] See UNCTAD (2019).

Significant income disparities persist both within and across economies in the EBRD regions (see Chart 3.2). There is a clear east-west divide, with central European countries and Baltic states generally achieving higher levels of GRP per capita than Central Asia and parts of eastern Europe. Within economies, there are clear regional disparities in countries such as Poland (where higher incomes can be seen in the west) and Türkiye (where incomes are higher in coastal regions). More generally, coastal regions and areas adjacent to more developed economies tend to have higher GRP per capita. Capital cities and major urban centres also tend to stand out as high-income areas, highlighting pronounced urban-rural divides.

INEQUALITY HAS DECLINED THE MOST in Armenia, Georgia, Kazakhstan, Moldova, North Macedonia, Serbia and Tunisia

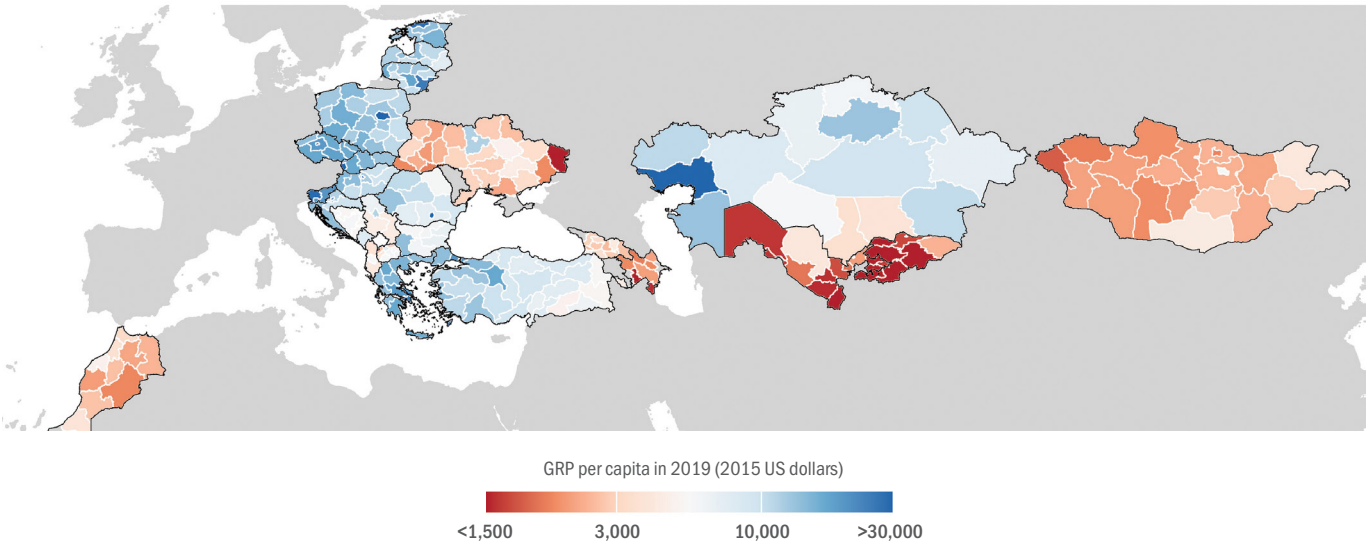
CHART 3.1. Income inequality has declined modestly in many economies in the EBRD regions since the 2000s



Source: Companion dataset (28 November 2023 edition) accompanying the UNU-WIDER World Income Inequality Database (WIID) and authors' calculations.

Note: Data are not available for Azerbaijan, Bosnia and Herzegovina, Lebanon, Turkmenistan or Uzbekistan.

CHART 3.2. Major urban centres tend to stand out as high-income areas, highlighting the existence of urban-rural divides



Source: ARDECO database, Wenz et al. (2023), Kazakhstan's Bureau of National Statistics, GISCO, GADM and authors' calculations.

Note: This chart shows GRP per capita at the level of NUTS-3 regions for Estonia, Latvia, Lithuania and North Macedonia, at the level of NUTS-2 regions for other EBRD economies in the EU, Albania, Serbia and Türkiye, and at the level of GADM-1 regions for all other EBRD economies except Montenegro. There is a single observation for Montenegro at national level. Data are not available for Armenia, Egypt, Jordan, Kosovo, Lebanon, Moldova, Tunisia, Turkmenistan or the West Bank and Gaza, or for the regions of Abkhazia, Absheron, Crimea or Kalbajar-Lachin.

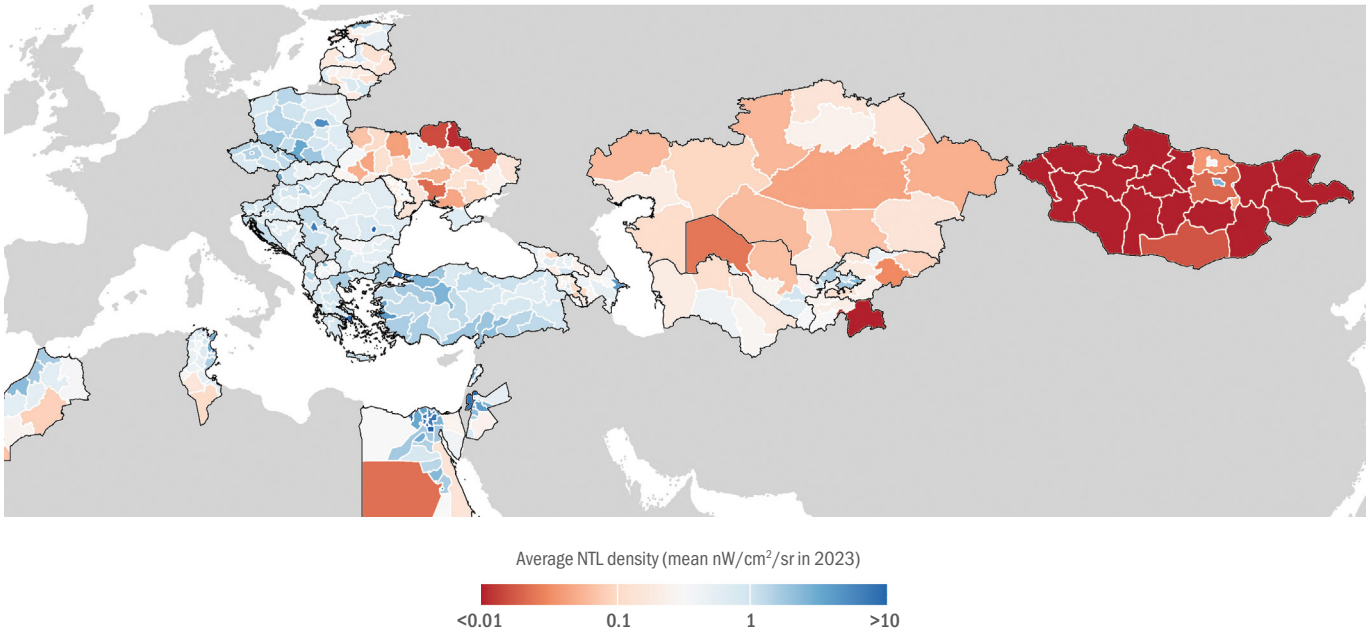
NTL density as a proxy for local economic activity

Given the limited availability of granular data on value added by region, this chapter also uses NTL density as a complementary measure of economic activity. NTL data quantify the average brightness of artificial light emitted at night as captured by satellite imagery and provide a reliable approximation of economic activity, allowing granular spatial analysis of economic disparities. Greater NTL density is, in particular, associated with higher levels of economic activity, urbanisation and development. NTL data are updated frequently and cover remote areas where traditional data collection can be challenging and infrequent.[3] At the same time, however, NTL data may overestimate economic activity in densely populated urban areas, while potentially underestimating activity in rural regions,[4] and the results of such analysis need to be considered in conjunction with other economic indicators.

The patterns seen in NTL data for 2023 tend to mirror those obtained using GRP per capita in 2019 (see Chart 3.3). Similar east-west splits, intra-country disparities and urban-rural divides can be observed. At the same time, however, the NTL data show more pronounced contrasts in populated areas, potentially overestimating economic activity. Conversely, some regions in Central Asia and eastern Europe have low NTL levels relative to their GRP per capita, possibly as a result of weaker light emissions in rural or less-developed areas.

Persistent spatial disparities within countries are a source of concern, as they can lead to economic inefficiencies, social tensions and political instability.[5] Limiting regional inequalities and urban-rural divides is essential in order to ensure balanced economic development and social cohesion and prevent the concentration of poverty and unemployment. This helps to ensure a fairer distribution of resources and opportunities across different areas of a country.[6] Moreover, excessive concentration of economic activity in a few urban centres can result in congestion, environmental degradation and a reduced quality of life.[7]

CHART 3.3. Major urban areas tend to be wealthier



Source: Elvidge et al. (2017), VIIRS NTL database, GISCO, GADM and authors' calculations.

Note: This map shows average NTL density (measured as mean nW/cm/sr) across 1 km x 1 km grid cells within subnational regions in 2023. Data are at the level of NUTS-3 regions for Estonia, Latvia, Lithuania and North Macedonia, at the level of NUTS-2 regions for other EBRD economies in the EU, Albania, Serbia and Türkiye, and at the level of GADM-1 regions for all other EBRD economies except Montenegro. There is a single observation for Montenegro at national level.

[3] See Elvidge et al. (2014) and Chen and Nordhaus (2011).
[4] See Mellander et al. (2015) and Jean et al. (2016).
[5] See World Bank (2009).
[6] See UN DESA (2024).
[7] See OECD (2018).

Intra-country convergence

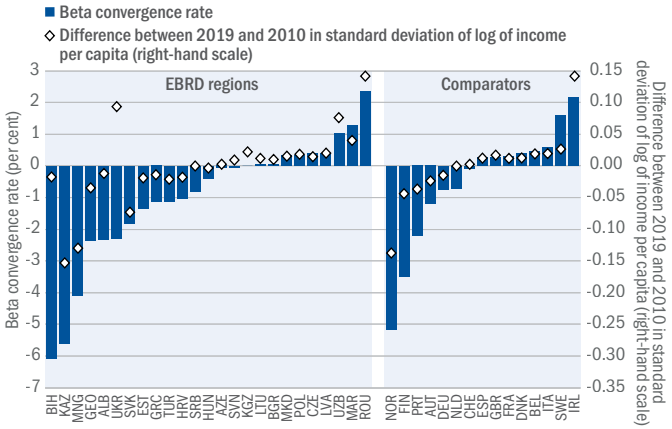
Economic convergence occurs when poorer economies (or poorer regions within economies) catch up with richer ones in terms of income levels.[8] Analysis of convergence typically distinguishes between beta and sigma convergence. In this chapter, beta convergence measures the extent to which regions with lower initial income levels experience stronger subsequent growth rates and thus catch up with higher-income peers. Beta convergence coefficients are derived from country-specific analysis regressing growth in regional income per capita on the initial level of regional income per capita. Negative values indicate stronger growth in poorer regions, with a value of -0.02 implying that the income gap between regions is narrowing by approximately 2 per cent each year. Conversely, a positive value implies that richer regions are growing faster, and thus the income gap between regions is widening. Sigma convergence, on the other hand, assesses the extent to which the dispersion of the distribution of income levels across regions decreases over time, with negative values indicating a decline in cross-regional inequality (see also Box 3.1).

Analysis reveals that the average rate of intra-country convergence across the EBRD regions was approximately 1 per cent a year over the period 2010-19 (see Chart 3.4). At that rate, it will take about 70 years to halve the existing regional income gaps within EBRD economies. While that is lower than the cross-country convergence rate typically reported in economic literature (which is close to 2 per cent),[9] it is above the average intra-country convergence rate for advanced European economies, which stands at 0.5 per cent.

Poorer regions are catching up with richer ones in approximately two-thirds of all economies in the EBRD regions, with the highest levels of convergence being seen in Bosnia and Herzegovina, Kazakhstan and Mongolia (where convergence rates are estimated to stand at around 5 per cent a year; see also Box 3.2 for a further discussion on Kazakhstan). In economies such as Morocco and Romania, on the other hand, poorer regions have been struggling to catch up with their wealthier counterparts.

Even in the presence of beta convergence, sigma convergence is still not guaranteed if economic shocks have a disproportionate effect on some regions.[10] As a result, the evolution of cross-regional inequality can vary significantly across economies with similar average catch-up rates (see, for instance, Albania and the Slovak Republic in Chart 3.4).

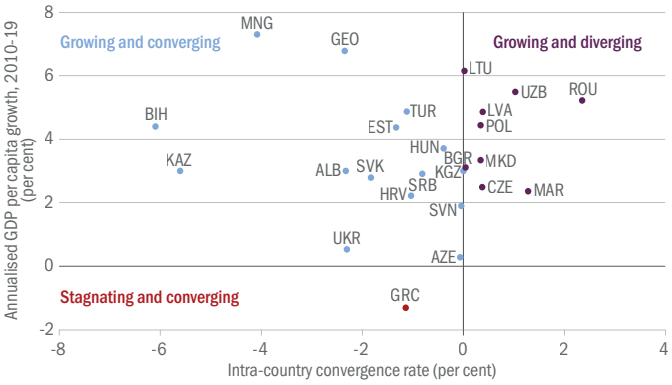
CHART 3.4. Regional income gaps have narrowed in many economies in the EBRD regions since 2010, albeit at a slow pace



Source: ARDECO database, Wenz et al. (2023), Kazakhstan's Bureau of National Statistics, World Bank WDIs and authors' calculations.

Note: Analysis is based on NUTS-3 regions for EBRD economies in the EU, Albania, North Macedonia, Serbia and Türkiye, and GADM-1 regions for all other EBRD economies. Data for Morocco relate to the period 2013-19; data for all other economies relate to the period 2010-19. Negative rates of beta convergence indicate that poorer regions have grown faster than richer ones (see Box 3.1).

CHART 3.5. Regional incomes have converged in some fast-growing economies, but diverged in others



Source: ARDECO database, Wenz et al. (2023), Kazakhstan's Bureau of National Statistics, World Bank WDIs and authors' calculations.

Note: Analysis is based on NUTS-3 regions for EBRD economies in the EU, Albania, North Macedonia, Serbia and Türkiye, and GADM-1 regions for all other EBRD economies. Data for Morocco relate to the period 2013-19; data for all other economies relate to the period 2010-19. The intra-country convergence rate measures beta convergence, indicating whether poorer regions within a country have grown faster than richer ones (see Box 3.1).

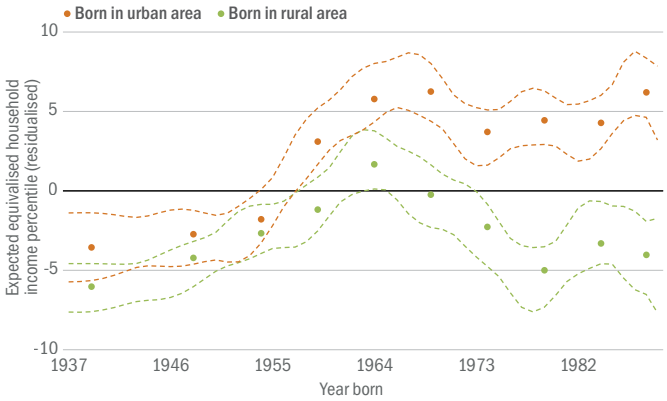
[8] See Barro and Sala-i-Martin (1992).
[9] See Barro (2015).
[10] See Barro and Sala-i-Martin (1992).

Over the period 2010-19, some economies experienced relatively strong growth in average income and fast cross-regional convergence (see, for example, Georgia and Mongolia in the top-left corner of Chart 3.5). In other economies, however, strong growth was not accompanied by convergence. For instance, no convergence was observed in Lithuania, even though its five poorest counties averaged annual GRP per capita growth of 5.3 per cent between 2010 and 2019 – far above the rate achieved in the five Croatian counties with the lowest incomes (3.2 per cent), where convergence was observed but average growth was modest. This range of experiences underscores the importance of looking at convergence in the context of overall growth to obtain a more comprehensive picture of regional development.

Persistent urban-rural disparities

Urban-rural disparities offer another important perspective on intra-economy inequality. These can be seen in the fact that individuals born in rural areas are less able to successfully access economic opportunities. Economic research has established the importance of "place effects", whereby the characteristics of a person's birthplace and childhood environment can have a long-lasting impact on their future economic prospects.[11] The following two-step analysis uses data from the third and fourth rounds of the Life in Transition Survey (LiTS III and LiTS IV) to provide insight into the question of how a person's place of birth (urban or rural) influences their economic outcomes in adulthood.[12] First, in order to isolate the influence of people's birthplace, the analysis regresses household income percentiles in adulthood on country-year fixed effects capturing circumstances that apply to all residents, as well as individual-specific factors that are predetermined at birth (such as gender and parents' level of education), and retains the residuals from that regression. Second, a statistical method is used to see how the average remaining variation in household income percentiles differs across birth cohorts, looking separately at individuals born in urban and rural areas. The difference in the remaining unexplained variation for a given birth cohort shows how much higher the income ranking of an urban-born individual is expected to be, relative to an individual born in a rural area in the same year, taking into account other factors (see Box 3.3 for further details of the methodology).

CHART 3.6. Among younger cohorts, individuals born in urban areas tend, on average, to have significantly higher incomes in adulthood than those born in rural areas



Source: LiTS III, LiTS IV and authors' calculations.

Note: This chart presents a binned scatter plot of the expected residualised household income percentile (after accounting for predetermined factors; see Box 3.3 for details). The analysis only covers individuals who were born between 1930 and 1990. The dotted lines indicate 95 per cent confidence intervals.

The results of this analysis show that the urban-rural income gap has become more pronounced among younger generations (see Chart 3.6). While there is no statistically significant income gap for people born before 1960, the gap widens substantially for those born in later years. For example, individuals born in a rural area after 1980 are, on average, about 9 percentiles lower in the income distribution than their peers born in an urban area in the same year. Complementary evidence from the Life in Transition Survey shows that these urban-rural disparities at birth can explain a sizeable percentage of total observed income inequality in EBRD economies.[13] They can also contribute to the intergenerational transmission of economic disadvantage, deepening and reinforcing spatial inequalities over time.

Individuals born in a rural area after 1980 are, on average, about

9 PERCENTILES LOWER

in the income distribution than their urban-born peers

[11] See Chyn and Katz (2021) for a review.
[12] See Kanbur and Venables (2005) and Young (2013).
[13] See EBRD (2024).

Regional disparities: SEZs to the rescue?

SEZs are often established with a view to addressing regional disparities, mitigating urban-rural divides and promoting economic development in specific regions.[14] They often target the cost effective provision of industrial infrastructure in a particular area, seeking to attract international investors. Other SEZs leverage local endowments of natural resources or the potential for innovation. Their legal frameworks often offer benefits such as exemption from customs duties and taxes and simplified regulations. In this respect, SEZs often serve as a starting point for nationwide reforms and help to sustain improvements in investment climates, particularly in economies with weaker governance where it may be easier to establish simplified regulations governing a specific area.

The popularity of SEZs as an industrial policy has increased dramatically across the EBRD regions, with the number of SEZs in EBRD economies rising from 198 in 1990 to 1,114 in 2020 (see Chart 3.7). The analysis in this chapter draws on a comprehensive new dataset on SEZs in the EBRD regions that contains detailed information on each SEZ's name, geo-location, year of announcement, year of establishment, size and purpose, with information taken from government websites, international reports and various other sources.

The number of SEZs in the EBRD regions has increased dramatically, rising from

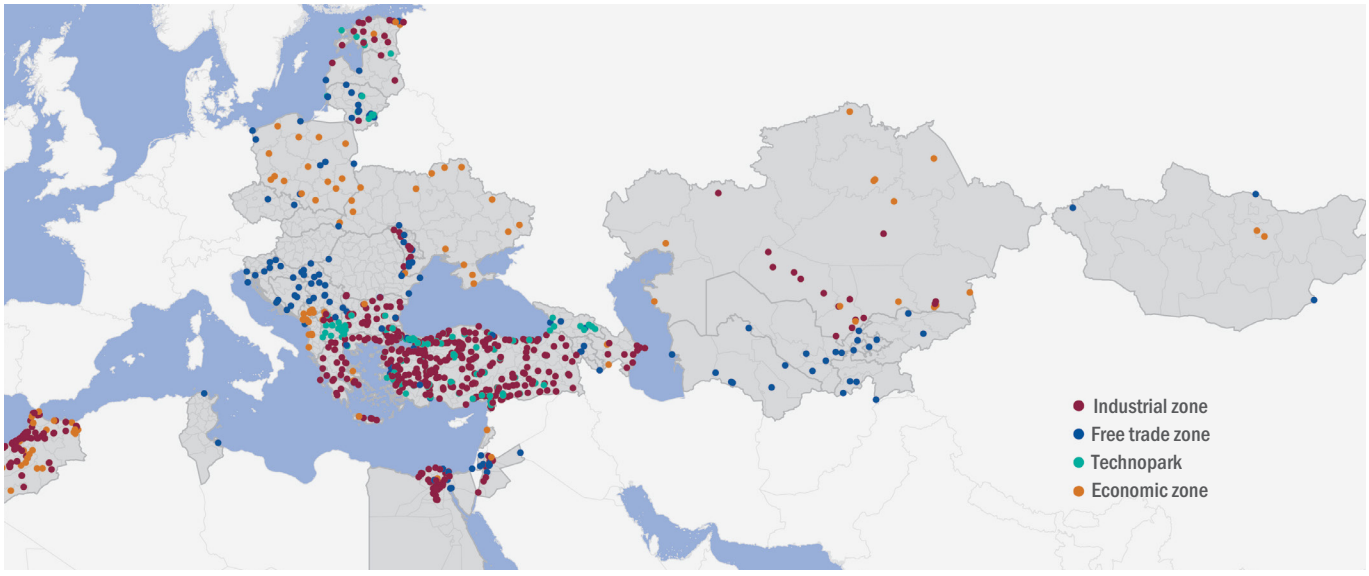
198

in 1990 to

1,114

in 2020

CHART 3.7. SEZs are becoming increasingly popular across the EBRD regions

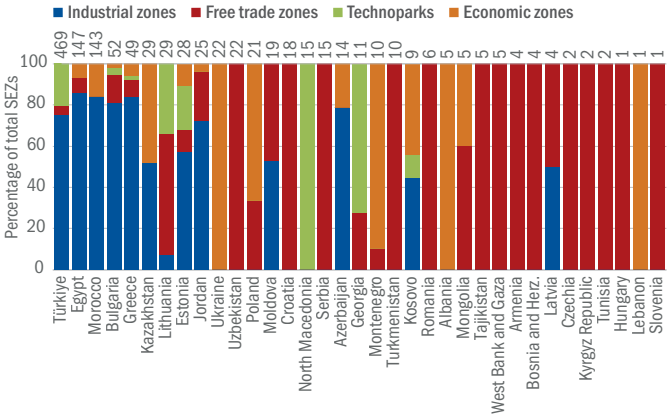


Source: EBRD database of SEZs, GADM 3.6 and authors' calculations.

Note: This map indicates the locations of various types of SEZ in the EBRD regions.

[14] See Frick and Rodríguez-Pose (2018) and UNCTAD (2019).

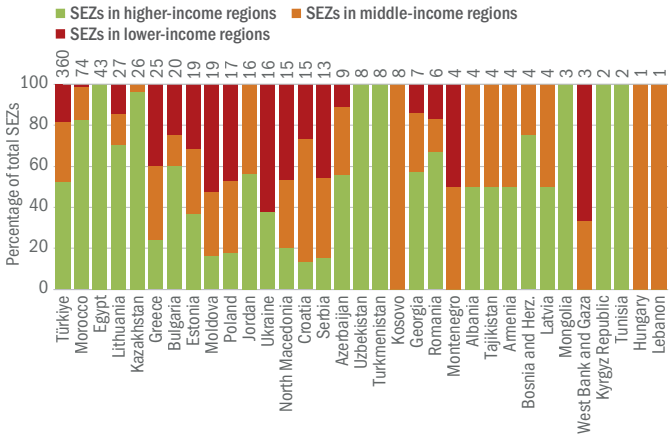
CHART 3.8. EBRD economies vary significantly in their use of SEZs



Source: EBRD database of SEZs and authors' calculations.

Note: The figure at the top of each bar indicates the total number of SEZs in the relevant economy. There are no SEZs in the Slovak Republic. Separate subzones that are managed by a single body are counted as one SEZ. Zones that span entire regions or countries are not included.

CHART 3.9. A substantial proportion of the SEZs in the EBRD regions are in higher-income regions



Source: EBRD database of SEZs, Li et al. (2020) and authors' calculations.

Note: This chart indicates the distribution of SEZs across regions in three broad income categories, which are based on the three terciles of the distribution of NTL density. The figure at the top of each bar indicates the number of SEZs that were classified for this purpose in the relevant economy, with some SEZs being omitted owing to a lack of available data. Where an SEZ comprises a number of subzones, the income category selected is the one that corresponds to the largest number of subzones.

Türkiye has the largest number of SEZs (**469**), followed by Egypt (**147**) and Morocco (**143**)

There are four main types of SEZ, each pursuing different economic objectives. Economic zones target the creation of specific ecosystems in support of comprehensive regional development; industrial zones leverage economies of scale and strategic locations to enhance global competitiveness in manufacturing sectors;[15] technoparks foster innovation and support high-tech industries, often in collaboration with academic institutions;[16] and free trade zones facilitate international trade, export-oriented growth and integration into global value chains, often by offering duty-free environments.[17] The choice of SEZ type will depend on factors such as a country's development priorities, endowments and infrastructure.

Industrial zones are the most common type of SEZ in the EBRD regions, with large numbers of them in eastern Europe and Türkiye (see Charts 3.7 and 3.8). There are also significant numbers of free trade zones, particularly in Central Asia and eastern Europe. Technoparks and economic zones are less common, but have been established in several countries. Türkiye stands out as having the highest number of SEZs (469), with a diverse range of zone types, including technoparks.

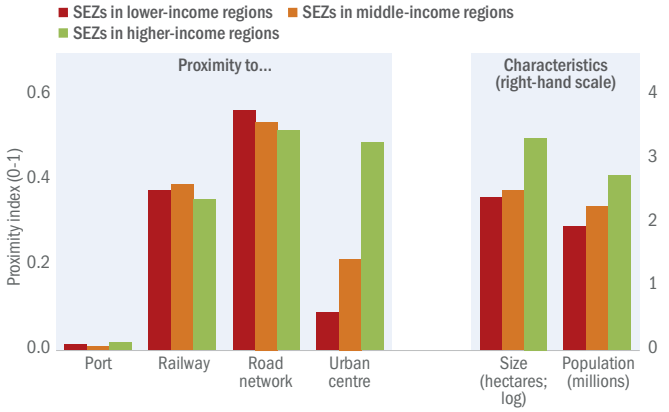
Insights into SEZ rollout strategies and regional characteristics

SEZs can be found in regions with different income levels (see Chart 3.9). While some target lower-income and less-populated areas in order to address regional disparities, others are placed in higher-income regions to leverage existing endowments of human capital or natural resources. For instance, economies such as Poland and Serbia tend to focus largely on lower-income areas with a view to reducing regional disparities, while others (such as Egypt, Kazakhstan and Morocco) put most of their SEZs in more developed regions. In the analysis in this section, "lower-income regions" are defined as areas in the bottom tercile of the distribution of NTL density within the relevant economy, "middle-income regions" fall within the middle tercile and "higher-income regions" are in the top tercile. For each SEZ, NTL density is measured for all areas within a 20 km radius of the centre of the zone in the year prior to its establishment.

SEZs in higher-income regions are generally larger and located in more populous areas closer to urban centres (see Chart 3.10). However, SEZs in all three income categories enjoy similar levels of access to ports, railways and road networks, suggesting consistent infrastructure provision.

[15] See Farole and Akinci (2011).
[16] See OECD (2019).
[17] See World Bank (2017).

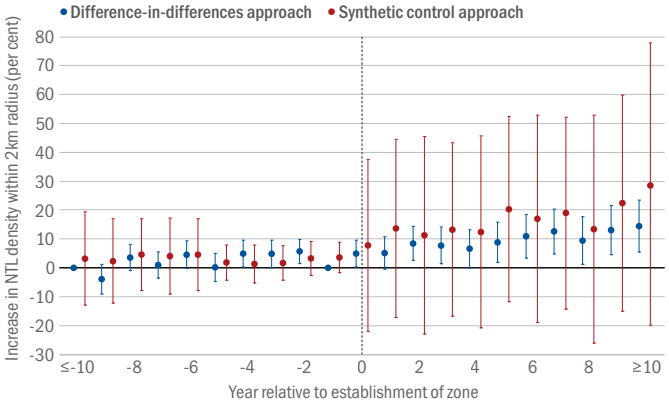
CHART 3.10. SEZs in lower- and higher-income regions enjoy similar levels of access to ports, railways and road networks



Source: EBRD database of SEZs, Li et al. (2020), Schiavina et al. (2023), Wenz et al. (2023), US National Geospatial Intelligence Agency's Vector Map Level 0 (VMAP0) dataset and World Port Index (2010), Global Roads Open Access Dataset (gROADS), version 1 (produced by Information Technology Outreach Services (ITOS) at University of Georgia), and authors' calculations.

Note: The proximity index is calculated as the normalised inverse of distance. A proximity of 1 means extremely close and a proximity of 0 means extremely far. The bars show simple average values for the SEZs in each of the three income categories.

CHART 3.11. SEZs tend, on average, to stimulate local economic activity



Source: EBRD database of SEZs, Li et al. (2020) and authors' calculations.

Note: The whiskers indicate 95 per cent confidence intervals.

Evaluating the impact that SEZs have on local economic development

How successful SEZs have been in promoting local economic development has been a subject of considerable debate. Previous studies of SEZs have largely focused on case studies or produced conflicting results, with no comprehensive cross-country evidence.[18] Some studies have found significant positive effects. For example, the establishment of SEZ programmes in China significantly increased foreign investment in target areas without displacing domestic investment, with a positive impact on capital investment, employment, output, productivity, wages, secondary school enrolment rates and the number of firms in designated areas, with new firms driving these effects more than existing ones.[19] Other studies point to uncertain outcomes for SEZs, with success dependent on the design of the zone, the local context, the quality of governance and how well the zone is integrated into the broader economy.[20]

This section reports on comprehensive analysis of SEZs' performance across the EBRD regions using difference-in-differences and synthetic control approaches. The first approach compares the evolution of NTL density around SEZs following their establishment with areas where a future SEZ is planned, but not yet in operation. The second approach, in contrast, seeks to estimate what the NTL density would have been in the absence of an SEZ on the basis of the evolution of NTL density in a number of areas with similar characteristics (see Box 3.4 for details).[21] As part of the synthetic control analysis, evenly spaced grid points were established with 0.05-degree gaps, and points that were within 20 km of any zone were removed. For each zone, the 100 most similar points were identified on the basis of night-time lights within 20 km, population within 20 km, the distance to a railway, the distance to a port, the distance to a main road and road density.

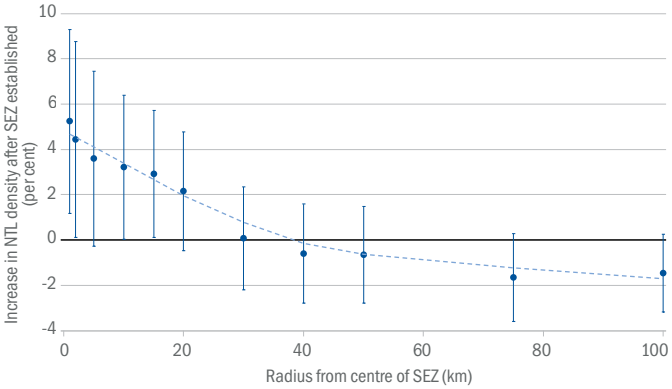
Both approaches point to an increase in local economic activity following the establishment of an SEZ, with effects building gradually over time (see Chart 3.11, which focuses on NTL density within a 2 km radius of the centre of the zone). Given that the median size of an SEZ is just 0.2 km^2 and even the 75th percentile is only 1 km^2, the 2 km radius (which results in a total area of 12.6 km^2) extends well beyond the zone itself. The impact that SEZs have on those areas probably reflects increased demand for services owing to business operations within the SEZs, as well as improved infrastructure. Importantly, the estimates do not reveal any pre-existing trends in terms of NTL density prior to the establishment of SEZs.

[18] See Aggarwal (2012), Frick et al. (2019) and Zeng (2021).
[19] See Wang (2013) and Lu et al. (2019, 2023).
[20] See World Bank (2017), UNCTAD (2019), Duranton and Venables (2018) and Alkon (2018).
[21] See Arkhangelsky et al. (2021). The difference-in-differences approach may be biased when SEZs are established at different times and the effects of SEZs vary across locations. The synthetic control method is robust in this respect.

It is estimated that the positive effects of SEZs increase over time and continue to be observed more than 10 years after their creation. Over the 10-year period following the establishment of a zone, difference-in-differences estimations – which are more conservative in terms of the size of the effect – indicate that local NTL density around the SEZ will, on average, be approximately 14 per cent higher than would otherwise have been expected (see also Box 3.5 on air pollution and Box 3.6 on the ways in which place-based industrial policies affect credit markets). The widening of the confidence intervals over time – particularly for the synthetic control method – point to increasing variability in the effects of SEZs as time passes.

The positive impact that an SEZ is estimated to have on local economic activity diminishes rapidly as the distance from the centre of the SEZ increases (see Chart 3.12). It is statistically insignificant for a radius of around 20 km and economically negligible for a radius of 30 km. This weakening of the economic spillover effects of an SEZ is consistent with the findings of previous research.[22]

CHART 3.12. The impact that an SEZ has on economic activity decreases with distance



Source: EBRD database of SEZs, Li et al. (2020) and authors' calculations.

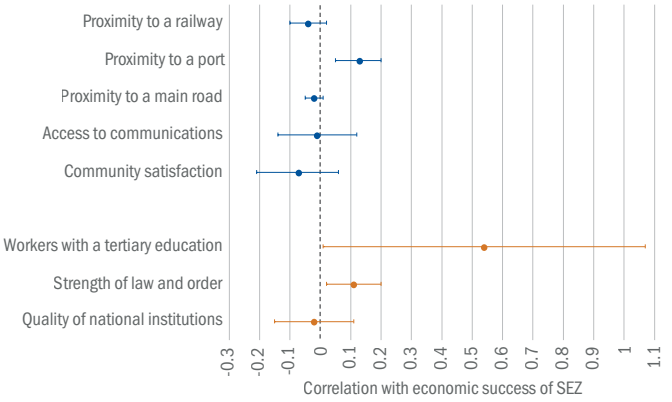
Note: The whiskers indicate 95 per cent confidence intervals.

What determines the success of SEZs?

This subsection looks at why some SEZs have more success than others, with a zone being deemed to be successful if NTL density within a 5 km radius grows faster over the 10-year period following the establishment of the zone than the average for that economy as a whole. On that basis, roughly 40 per cent of SEZs can be regarded as successful, with the effectiveness of zones varying significantly within a single economy. A horse race regression is used here to assess the relative importance of various variables in explaining the success of SEZs. The analysis uses individual responses to the World Gallup Poll (a representative survey of individuals) over the period 2005-08 to construct measures of institutions and public services at a granular regional level across economies.

Of the various infrastructure variables, only proximity to a port is a statistically significant determinant of success (see Chart 3.13). In contrast, other factors – such as distance to the nearest railway, distance to a main road, access to communications (which reflects the perceived quality of telephone and internet infrastructure) and community satisfaction (which measures individuals' satisfaction with public amenities such as roads and schools) – are not consistently associated with the success or failure of SEZs. Infrastructure variables only explain around 3.5 per cent of total variation in the success of SEZs, as measured by the R^2 fit of the regression models (see Chart 3.14).

CHART 3.13. Proximity to a port, larger numbers of workers with a tertiary education and better law and order are all associated with economically successful SEZs

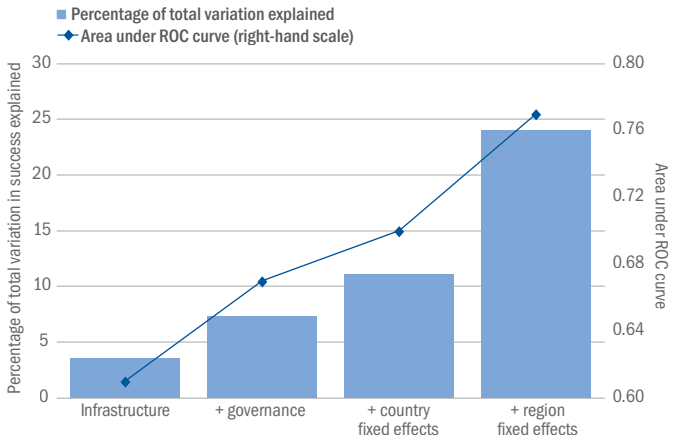


Source: EBRD database of SEZs, Li et al. (2020), US National Geospatial-Intelligence Agency's VMAP0 dataset and World Port Index (2010), ITOS's gROADS dataset (version 1), Gallup World Polls 2005-08 and authors' calculations.

Note: An SEZ is regarded as successful if cumulative growth in NTL density within a 5 km radius over a 10-year period is stronger than the average for the economy as a whole over the same period. The community satisfaction index measures satisfaction with public transport, roads and highways, the quality of schools, healthcare and the environment. The access to communications index assesses the availability of high-quality telephone and internet infrastructure, and the law and order index evaluates the level of security. The national institutions index gauges citizens' confidence in national government, the judicial system and the fairness of elections. The tertiary education index measures the percentage of a subnational region's population who have a tertiary education. All of these indices are derived from Gallup World Poll data at subnational level. The whiskers indicate 95 per cent confidence intervals.

[22] See Lu et al. (2019).

CHART 3.14. Even with infrastructure, governance and fixed effects accounted for, much of SEZs' success – and failure – remains unexplained



Source: EBRD database of SEZs, Li et al. (2020), US National Geospatial-Intelligence Agency's VMAP0 dataset and World Port Index (2010), ITOS's gROADS dataset (version 1), Gallup World Polls 2005-08 and authors' calculations.

Note: The factors analysed include infrastructure (distance to a railway, distance to a port, distance to a main road, access to communications and community satisfaction), governance (tertiary education, law and order and national institutions), and country and region fixed effects.

Over a 10-year period following the creation of an SEZ, local NTL density around the zone is, on average, around

14%

higher than one would otherwise expect

The quality of infrastructure and governance only explains about

7%

of total variation in SEZs' success

The percentage of people in a subnational region who have a tertiary education – a measure of local human capital based on representative household surveys – also exhibits a strong positive correlation with the success of SEZs. Meanwhile, the law and order index for the region – a measure of how secure survey respondents feel – shows a modest but statistically significant positive correlation, indicating that a stable and secure environment contributes to the success of SEZs. Adding governance-related factors increases the total explanatory power to 7 per cent, and that then rises to 11 per cent when country fixed effects are included (see Chart 3.14). The area under the receiver operating characteristic (ROC) curve – an alternative measure of how well models explain the success and failure of SEZs – produces similar results, with much of the total variation in the success of SEZs remaining unexplained.

Previous research has shown that SEZs' performance can also be influenced by a wide range of factors that may be difficult to quantify in a large sample of SEZs. These include the quality of relevant policy frameworks and institutional structures at the national and local levels.[23] Including region fixed effects – unobserved characteristics of various regions that do not change over time – further improves the R^2 of models explaining the success of SEZs, with the percentage of variation explained rising to 24 per cent.

In addition, the evolving nature of global production networks and changes to countries' comparative advantages can significantly impact SEZs' performance over time, and local zone-specific factors and effective SEZ management (which are not captured by region fixed effects) can also play a role. Indeed, SEZs often seek to overcome deficiencies in governance at regional and national levels by creating a more favourable environment for business within the zone itself.

[23] See Farole and Akinci (2011), Aggarwal (2012) and Frick et al. (2019).

Technology development zones in Türkiye

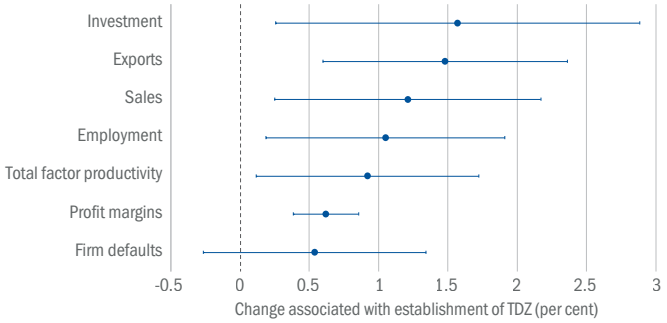
While the last section analysed the relationship between SEZs and a broad measure of economic activity (NTL density), this section explores the impact that SEZs have on firms' performance by looking at Türkiye's TDZs.

TDZs are specialist technoparks that are designed to foster technological advancement by providing a supportive environment for collaboration between universities, research institutions and businesses. These zones offer incentives to attract high-tech companies and startups, promoting innovation and entrepreneurship. At the time of writing, Türkiye has 87 fully operational TDZs and another 14 that are in the process of being established. The rollouts began in 2000 and accelerated during the 2010s, partly on the back of a nationwide university expansion programme aimed at bridging the gap between academia and industry.

The design of the research in this section takes advantage of the gradual rollout of TDZs (see also Box 3.8 for more details on the methodology). The analysis looks at firms in the regions where TDZs are located, but, importantly, firms within the TDZs themselves are excluded, thereby allowing an examination of the broader economic impact of such zones. The findings reveal that the establishment of a TDZ has a significant positive effect on various measures of the performance of firms located in the vicinity of that zone, including sales, investment, employment, exports and profit margins (see Chart 3.15). For example, the establishment of a TDZ is associated with a 1.6 per cent increase in investment, a 1.5 per cent increase in exports and a 1.2 per cent increase in total factor productivity (a measure of how efficiently a firm combines labour, capital and material inputs to produce its final output). Overall, these findings are consistent with recent research showing that the place-based and industry-specific subsidies which were introduced in Türkiye in 2012 have led to increased revenue and employment for firms, as well as meaningful spillovers to their suppliers and customers.[24]

These results provide preliminary evidence of the positive impact that TDZs can have on firms' performance in Türkiye. However, they only cover the experiences of firms within the relevant region and do not capture broader economic spillovers, the impact that TDZs have in terms of reducing regional income inequality, or the impact of TDZs on patenting and innovation. To address persistent regional disparities, TDZs may need to be complemented by other measures aimed at boosting human capital, improving governance and enhancing economic connectivity in less-developed regions.

CHART 3.15. Türkiye's TDZs have a positive impact on nearby firms' employment, exports and investment



Source: Turkish Revenue Administration, TurkStat, Turkish Ministry of Trade, Turkish Firm Registry, Turkish Ministry of Industry and Technology, and authors' calculations.

Note: Explanatory variables include district, sector-year and firm fixed effects. Investment is calculated as the annual growth rate of total long-term tangible fixed assets (including items such as buildings, land, machinery and other equipment, and vehicles). Exports are measured as the log of (1 + exports in US dollars). Sales growth is calculated as the log difference in total sales between consecutive years. Employment is the log of (1 + number of employees). Total factor productivity is estimated using the Levinsohn-Petrin method and expressed in logs. Profit margins are calculated as the log of (1 + net income/total revenue). "Firm defaults" is a binary variable. The whiskers indicate 95 per cent confidence intervals.

Türkiye has
87
fully operational TDZs, with another
14
in the process of being established

[24] See Atalay et al. (2023).

Conclusion and policy implications

The analysis in this chapter highlights the complex dynamics of income inequality and regional disparities within economies in the EBRD regions. Income inequality has declined modestly in the EBRD regions since the 2000s, but urban-rural disparities remain considerable. Although regional income gaps have been slowly narrowing, young urban-born individuals earn considerably more in adulthood than their rural-born counterparts, and this gap has widened substantially for younger cohorts.

Many economies in the EBRD regions use SEZs of different kinds as part of a package of measures aimed at promoting growth and reducing regional disparities. Industrial zones are the most common type of SEZ, particularly in eastern Europe and Türkiye, while free trade zones are popular in Central Asia and eastern Europe. SEZs are frequently found in higher-income regions, where they tend to be larger, closer to urban centres and better integrated into existing infrastructure.

Across the EBRD regions, the establishment of SEZs results in increases in local NTL density in the areas immediately surrounding those zones over a 10-year period. The performance of SEZs varies widely, however, even within a particular economy. Predicting the success of SEZs is challenging, with policy frameworks, institutional quality, local conditions, effective zone management and various other characteristics of zones all playing an important role. In Türkiye, the establishment of TDZs is associated with improvements in the performance of firms located in the relevant regions.

In order to maximise the impact of place-based policies and foster more balanced regional development, policymakers should consider a multidimensional approach. SEZ strategies should be tailored to local contexts, identifying the types of zone and region that have the most potential.[25] At the same time, investment in infrastructure – especially transport infrastructure and digital connectivity – should be prioritised. Indeed, proximity to transport networks is an important determinant of the success of SEZs and regional development as a whole.[26]

The development of human capital is critical in order to enhance the performance of SEZs and underpin a successful transition to higher-value-added economic activities.[27] This calls for a focus on expanding educational opportunities and skill development programmes, particularly in tertiary and vocational education. Furthermore, strengthening governance and legal frameworks is also essential, as highlighted by analysis of the determinants of SEZs' success in this chapter and numerous other studies looking at the crucial role that inclusive institutions play in fostering economic development.[28] Lastly, robust monitoring and evaluation systems are essential in order to assess the ongoing impact of SEZs and other place-based policies, allowing timely adjustments to policy designs.[29]

[25] See Frick and Rodríguez-Pose (2023).
[26] See Aggarwal (2012).
[27] See Rodrik and Stantcheva (2021).
[28] See Acemoğlu and Robinson (2013).
[29] See European Commission (2022).

BOX 3.1.

Convergence analysis

The analysis of intra-country convergence that is presented in this chapter is based on subnational income data from two sources: the European Commission's ARDECO database for EBRD economies in the EU, Albania, North Macedonia, Serbia and Türkiye (at the NUTS-3 level), and the DOSE dataset of subnational economic output for all other EBRD economies (at the GADM-1 level).[30] Data for the region of West Kazakhstan were sourced from Kazakhstan's Bureau of National Statistics, since they were not available in the DOSE dataset for the entire period of study. The analysis uses regional data on GRP per capita in constant 2015 US dollars and focuses on the period 2010-19. For Morocco, the period under review is 2013-19 owing to a discontinuity caused by a change to regional administrative boundaries that affects the availability of subnational income data.

Measures of beta convergence assess whether poorer regions grow faster than richer ones. Estimates are obtained by running the following regression separately for each country:[31]

$$\frac{1}{T} log\left(\frac{y_{i\in C,t}}{y_{i\in C,0}}\right) = \alpha_C + \beta_C log\left(y_{i\in C,0}\right) + \epsilon_{i\in C,t}$$

where $y_{i\in C,t}$ represents the income level of region i in country C at time t, $y_{i,0}$ is the initial income level, and T is the time span between the period t and the initial period. The left-hand side approximates the average annual growth rate over the period studied. The speed of convergence is given by the coefficient β which is negative when regions are converging.

Measures of sigma convergence, on the other hand, assess whether income dispersion across subnational regions decreases over time. Estimates of sigma convergence are obtained by comparing the standard deviation of the log of GRP per capita across regions within each country at the start and end of the period:

$$\sigma_C = SD(log(y_{i\in C,t})) - SD(log(y_{i\in C,0}))$$

Negative values correspond to convergence.

[30] See Wenz et al. (2023).
[31] See Barro and Sala-i-Martin (1992).

BOX 3.2.

Competitiveness and regional development traps in Kazakhstan

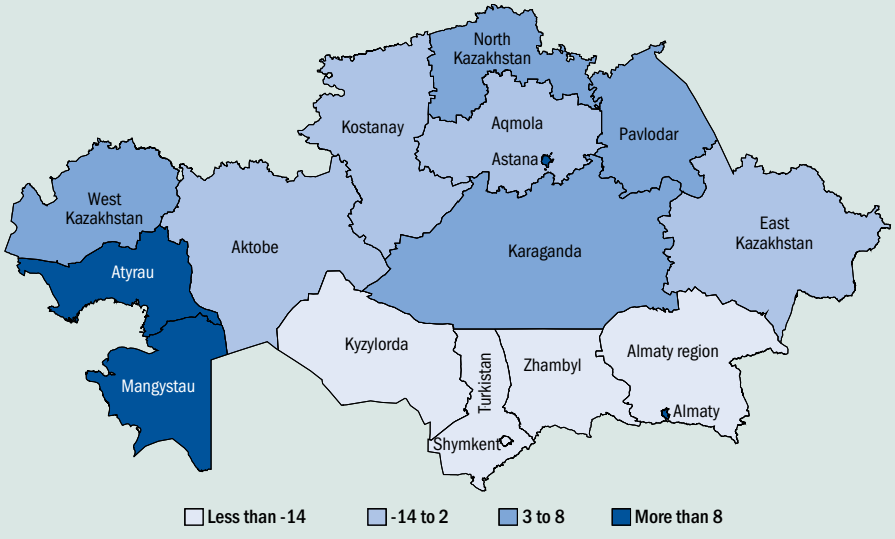
Since 2000, Kazakhstan has experienced remarkable economic growth, with GDP nearly tripling between 2000 and 2022. This strong performance has been driven by the country's abundant natural resources and a number of strategic initiatives. While Chart 3.4 shows a significant degree of regional convergence, inequalities continue to persist in Kazakhstan. This box examines those ongoing disparities, drawing on recent research that introduces two new measures: the Regional Competitiveness and Cohesion Index (RCCI) and the Regional Development Trap Index (RDTI).[32]

The RCCI measures the economic dynamism and competitiveness of Kazakhstan's regions, looking at six different aspects: health and a basic standard of living; higher education and training; labour market efficiency; market size; technological readiness; and innovation. As such, this indicator moves beyond the realm of traditional economic metrics, incorporating social and institutional factors in order to reflect the diverse range of factors that influence regional productivity and development. In contrast, the RDTI identifies regions that are at risk of economic stagnation by comparing GDP per capita, productivity and employment rates with historical averages at regional and national level.

This dual focus on competitiveness and development traps provides a comprehensive framework for understanding why some regions thrive while others stagnate. Regions that score highly in terms of competitiveness are not immune to falling into development traps if they fail to sustain diverse and innovative economic activities. Conversely, regions with lower competitiveness may also find themselves trapped owing to persistent underdevelopment and limited economic opportunities.

The RCCI reveals significant disparities in regional competitiveness, with the Atyrau and Astana regions and Almaty city ranking highest, while the Turkistan, Zhambyl and Almaty regions lag behind (see Chart 3.2.1). Similarly, the RDTI shows that both high-income regions (such as Atyrau and Mangystau) and low-income regions (such as Turkistan) risk falling into development traps owing to a lack of economic diversification or persistent underdevelopment. By combining assessments of competitiveness and economic dynamism, these two measures can guide policymakers when it comes to designing targeted interventions that enhance the competitiveness and resilience of regional economies.

CHART 3.2.1. There is significant variation in the competitiveness of individual regions in Kazakhstan



Source: Rodríguez-Pose and Bartalucci (2021) and Rodríguez-Pose et al. (2024).

Note: The RCCI measures the economic dynamism and competitiveness of Kazakhstan's regions, looking at six different aspects: health and a basic standard of living; higher education and training; labour market efficiency; market size; technological readiness; and innovation. This map shows the competitiveness of the various regions on the basis of the four quartiles of the RCCI distribution: dark blue denotes the most competitive quartile (which comprises regions with an RCCI score of more than 8), while light blue denotes the least competitive quartile (which comprises regions with a score of less than -14). The RCCI scores are based on data for 2019, so the map shows Kazakhstan's regional boundaries as they were at that point in time and does not reflect more recent changes.

[32] See Rodríguez-Pose and Bartalucci (2021) and Rodríguez-Pose et al. (2024).

BOX 3.3.

Measuring the urban-rural gap across cohorts

This chapter uses individual-level data from the 2016 and 2022-23 rounds of the Life in Transition Survey (a representative household survey conducted by the EBRD in partnership with the World Bank) to document the income gap between individuals born in urban and rural areas across different birth cohorts. The analysis involves two steps. First, residuals are obtained from the regression:

$$Rank_{i,t} = \mu_{c,t} + X'_i\Theta + \epsilon_{i,t}$$

where $Rank_{i,t}$ it is the equivalised household income percentile of individual i, $\mu_{c,t}$ is a country-year fixed effect, and X'_i is a vector of variables that are predetermined at birth (gender and parents' level of education). Residualising the dependent variable removes the influence that these factors have on income, thereby isolating the effect that urban and rural birthplaces have on income disparities.

Second, the following function is estimated separately for those born in urban and rural areas:

$$Residual\ rank_{i,t} = f(Birth\ cohort_i) + \epsilon_{i,t}$$

where $Residual\ rank_{i,t}$ is the resulting household income percentile residual for individual i, and $f(\cdot)$ is a flexible, non-parametric function capturing the relationship between individuals' income rankings and birth cohorts. A binned scatter plot is used, partitioning the range of birth cohorts into bins and estimating the conditional mean of the dependent variable within each bin.

BOX 3.4.

Evaluating the impact of SEZs on the basis of NTL density

This chapter uses an event study to evaluate the impact that SEZs have on NTL density, which serves as a proxy for economic activity. The empirical strategy used isolates the effect that the establishment of SEZs has on economic activity by comparing NTL density before and after the establishment of zones, while controlling for fixed effects and potential confounding factors. The primary equation used is:

$$nightlights_{i,c,t} = \sum_{-10 \le \tau \le 10,\ \tau \ne -1,\ -10} \beta_\tau \mathbf{1}(t - start\_year_i = \tau) + \theta_i + \psi_c \times \delta_t + \varepsilon_{i,\,c,\,t}$$

where i denotes the zone, c indicates the country and t represents the calendar year. The "start year" is the year when the zone becomes operational. θ_i represents zone fixed effects, accounting for baseline factor endowment, economic structure and other zone-specific characteristics, and $\psi_c \times \delta_t$ represents country-year fixed effects, capturing country-specific shocks and policies that could influence outcomes for all zones in a given country in a given year. Standard errors are clustered at zone level. The analysis is conducted for the period from 1992 to 2020, which is based on the availability of NTL data.

BOX 3.5.

SEZs and pollution

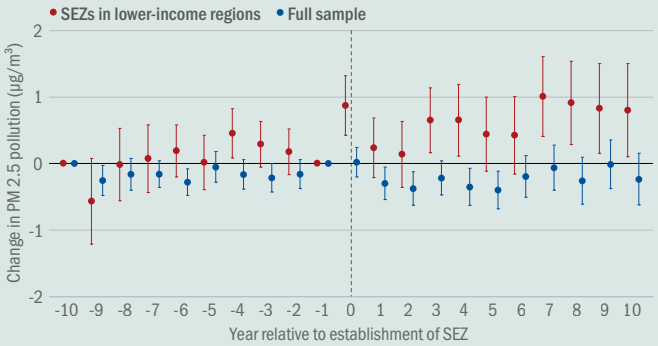
The impact of SEZs extends beyond economic growth. Since they are designed to attract investment through preferential economic regulation and other incentives, SEZs may also have the effect of increasing local pollution. Studies examining the large expansion of SEZs in China reveal that regions with SEZs have, on average, tended to experience lower air quality than other regions.[33] However, the magnitude of those effects varies significantly across zones and regions. This box extends that analysis to the EBRD regions.

This environmental impact is of particular concern given the well-established links between pollution and public health outcomes.[34] In particular, economic literature has demonstrated a clear causal link between pollution and mortality rates, especially among vulnerable people such as children and the elderly.[35] For instance, researchers have found that a 1 standard deviation increase in levels of PM 2.5 on a given day in the United States is associated with a 1.2 per cent increase in subsequent three-day mortality rates for older adults.[36,37] In addition, pollution has also been shown to negatively affect workers' productivity.[38]

This analysis leverages the differential timing of SEZs' establishment across the EBRD regions to analyse their impact on localised pollution (which is captured by average annual PM 2.5 levels within a 1 km radius of the centre of each zone). While PM 2.5 pollution does not increase, on average, across all SEZs, zones located in lower-income regions show a notable increase of about 1 μg/m³ after 8 years, representing an increase equivalent to 4 per cent of the global mean (with similar results being obtained when PM 2.5 concentrations are measured within a radius of up to 10 km around the centre of the zone). One plausible explanation for the differential increase in pollution from SEZs in lower income regions could be that lower levels of state capacity are affecting the implementation of environmental laws. Another possible mechanism could be the greater prevalence of labour-intensive polluting industries in lower-income regions.

At the same time, people living in lower-income areas are more vulnerable to the adverse impact of pollution. Lower-income groups often face higher exposure to air pollution owing to their dependence on outdoor jobs. Furthermore, more limited healthcare options in those regions may exacerbate mortality from pollution-related diseases.

CHART 3.5.1. Pollution increases that are due to SEZs tend to be concentrated in lower-income regions



Source: Van Donkelaar et al. (2021) and authors' calculations.

Note: This chart shows the effect that establishing an SEZ has on subsequent average PM 2.5 pollution within a 1 km radius of the centre of the zone.

[33] See Martin and Zhang (2021).
[34] See World Bank (2022).
[35] See Chay and Greenstone (2003).
[36] See Deryugina et al. (2019).
[37] PM 2.5 indicates the amount of particulate matter that is less than 2.5 micrometres in diameter and is a standard measure of air pollution.
[38] See Chang et al. (2016).

BOX 3.6.

Place-based industrial policies and credit markets: Evidence from the former East and West Germany

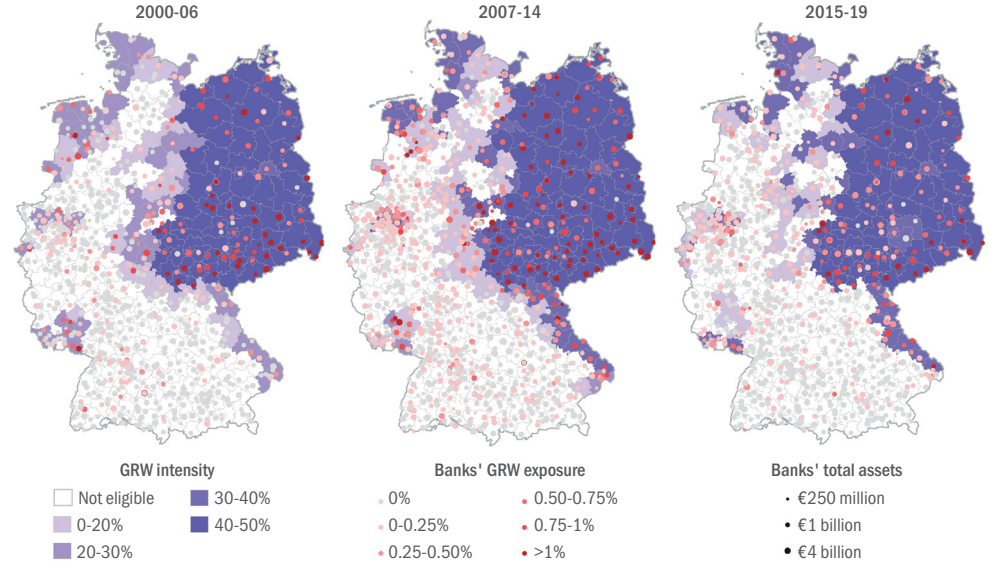
Many place-based industrial policies involve direct transfers to companies, which can be thought of as equity contributions to investment projects. These transfers can affect credit markets in two opposing ways. Subsidies can reduce the cost of capital such that previously unprofitable projects become viable, increasing aggregate investment and potentially leading to more bank lending. However, subsidising projects that would have gone ahead even without those transfers can distort credit markets. Subsidised companies can replace planned borrowing with transfers, reducing their need for bank loans and crowding out bank funding. Moreover, banks that are unwilling or unable to increase total lending may reallocate credit to subsidised firms at the expense of non-subsidised ones.

In order to analyse the impact that place-based industrial policies have on credit markets, this box leverages a unique project-level dataset on the largest place-based policy scheme in Germany: the Improvement of Regional Economic Structures (GRW) programme. Since the unification of East and West Germany in 1990, federal and state (*"Land"*) governments have allocated a combined total of €68 billion through the GRW programme. Firms can apply for subsidies if they are located in an eligible region and comply with the conditions imposed by the GRW programme, which are typically aimed at boosting employment and wages.

The analysis in this box also looks at whether credit markets' responses to subsidy programmes are more pronounced in the less-developed regions of the former East Germany than in the more mature regions of the former West Germany. Information on the existence, duration and size of transfer payments has been obtained from confidential administrative data provided to the Halle Institute for Economic Research (IWH) for the purpose of a programme evaluation.[39] Firms are linked to banks on the basis of Creditreform survey data provided as part of the Dafne database. Further details on the construction of data can be found in Kazakov et al. (2022).

The analysis reveals considerable variation both between and within the former East and West Germany as regards the implementation of this place-based programme, as well as significant variation across banks as regards their involvement with subsidised borrowers. Chart 3.6.1 shows spatial variation in firms' GRW eligibility across the 401 German counties (*"Kreise"*) during the review period of 1998-2019, measured as the intensity of potential subsidies relative to planned investment volumes. The chart also shows regional savings and cooperative banks' exposure to the policy, as measured by subsidised firms' share of total borrowers in a bank's portfolio. All information is depicted separately for the three GRW funding cycles, each of which featured different eligibility criteria.

CHART 3.6.1. There is significant variation in (i) the implementation of the programme across regions and (ii) banks' involvement with subsidised borrowers

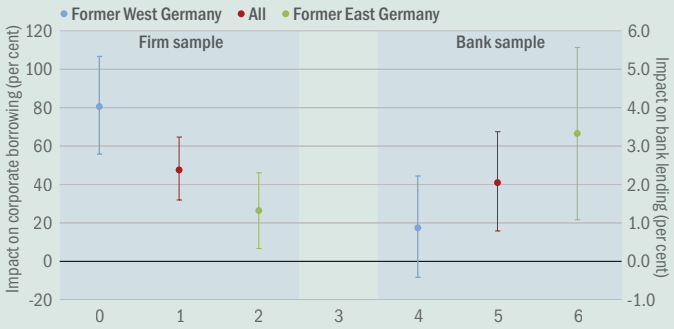


Source: Kazakov et al. (2022).

Note: This chart shows maps of Germany, with county-level measures of GRW intensity depicted using shades of purple and geo-located banks depicted as circles. GRW intensity is calculated as the maximum share of an eligible firm's project investment which can be covered by the subsidy and ranges from 0 to 50 per cent. The colour of the circles depicting banks shows the extent of each bank's exposure to subsidised firms, measured as subsidised firms' average share of all firms with which the bank maintains links over the relevant period. The size of each circle is proportionate to the logarithm of total bank assets. The sample comprises German savings and cooperative banks.

[39] See Brachert et al. (2018).

CHART 3.6.2. GRW subsidies tend, on average, to boost local credit markets, with larger effects in the former East Germany and stronger borrowing by subsidised firms



Source: Kazakov et al. (2022).

Note: This chart shows the impact that the GRW programme has on corporate borrowing and bank lending. These effects are obtained from the estimation of the two equations above. All point estimates are accompanied by 95 per cent confidence intervals. The firm sample comprises German non-financial subsidised firms, each of which is matched to one non-subsidised counterpart, and spans the period from 2002 to 2020. The main variable of interest for that sample is an indicator variable that is equal to 1 in all years after a firm receives its first GRW subsidies (and 0 otherwise). The bank sample comprises German savings and cooperative banks and spans the period from 1998 to 2019. The main variable of interest for that sample is an indicator capturing subsidised firms' share of a bank's total customers in a given year.

Over the review period as a whole (that is to say, between 1998 and 2019), the average bank is linked to a total of 962 firms. On average, 2,282 projects are subsidised each year, with an average subsidy of €350,000 per project. Note that banks' exposures to subsidised firms are typically small, with subsidised firms' shares of banks' customer portfolios ranging from 0 to 4.6 per cent. However, many local banks are involved in the GRW programme, with an average of 42 per cent of the banks in each county being linked to subsidised firms. Moreover, GRW subsidies are an important element of the funding of investment projects from firms' perspectives. Where projects are subsidised, government transfers account, on average, for 28 per cent of total investment volumes.

In order to see whether subsidies affect credit market activity, panel regressions are run at bank and firm level. A first panel regression explains the logarithm of lending L by bank b in year t:

$$\ln L_{bt} = \beta_0 + \beta_1 GRW_{bt} + \beta_2\, GRW_{bt} \times East_b + \beta_3\, X_{bt-1} + \alpha_b + \alpha_{st} + \varepsilon_{bt}$$

where α_b and α_{st} denote bank and state-year fixed effects respectively. The specification also controls for observable bank and firm traits, which are lagged by one period (and averaged in the case of firms). The main variable of interest is an interaction combining (i) an indication of whether the bank is located in the former East Germany and (ii) an indication of the exposure to GRW-subsidised firms in the bank's portfolio. Standard errors are clustered at bank level.

In order to test for responses to the GRW programme on the flipside of local credit markets, the following panel regression seeks to explain the logarithm of the level of corporate debt D for firm f in year t:

$$\ln D_{ft} = \gamma_0 + \gamma_1 GRW_{ft} + \gamma_2\, GRW_{ft} \times East_f + \gamma_3\, X_{ft-1} + \alpha_f + \alpha_{st} + \varepsilon_{ft}$$

Here, GRW is an indicator variable that is equal to 1 in all years after the firm obtains a subsidy for the first time; $East$ is an indicator variable that is equal to 1 if the firm is headquartered in a county in the former East Germany; and X is a vector of lagged control variables at firm level. The approach to fixed effects and standard errors is the same as in the specification above.

The results of this analysis show that bank lending and corporate borrowing both tend to increase in response to GRW subsidies, indicating that place-based programmes tend, overall, to have an expansionary effect on local credit markets (see Chart 3.6.2). Moreover, unreported results indicate that place-based programmes do not crowd out lending to non-subsidised firms either. Thus, place based subsidy programmes support activity in local banking markets.

At the same time, banks' response to larger GRW exposures is only statistically significant in eligible regions of the former East Germany. The insignificant lending response in regions of the former West Germany suggests that the expansionary effect which subsidies have on local credit markets is particularly relevant in counties that are arguably lagging behind more in terms of economic performance. This suggests that access to credit could be particularly effective in amplifying the impact of place-based programmes in regions with a more pronounced need for economic transition and transformation.

Lastly, the analysis shows that subsidised firms engage, on average, in approximately 60 per cent more bank borrowing than their non-subsidised counterparts. Across all counties, there is a significant positive correlation between corporate borrowing and firms that have previously received a GRW subsidy. However, the magnitude of this effect is noticeably larger for firms in the former West Germany (see Chart 3.6.2).

BOX 3.7.

Lessons from the EU's Cohesion Policy

The EU's Cohesion Policy – the world's most extensive territorial development initiative – offers valuable insights for policymakers considering regional development strategies. Since 1989, it has invested over €1 trillion with a view to reducing regional disparities and promoting balanced economic growth across the EU. It has influenced similar initiatives in other parts of the world, including place-based industrial policies in the United States and regional development programmes in China. Operating on the basis of a multi-annual financial framework, with the current period running from 2021 to 2027, the policy aims to strengthen economic and social cohesion by reducing disparities between subnational regions and EU member states in terms of development levels.

The Cohesion Policy works by channelling investment through several structural funds – primarily the European Regional Development Fund, the European Social Fund Plus and the Cohesion Fund. These funds support a wide range of initiatives, focusing on key priority areas such as research and innovation, digital technologies, support for small businesses, the low-carbon economy, infrastructure development, job creation, education and training, and environmental protection. Funds are allocated on the basis of regional GRP per capita, with less-developed regions receiving the bulk of the support. Management of the policy's implementation is shared between the European Commission and national/regional authorities, with member states developing their own operational programmes outlining how they intend to use the funds to address their specific development needs.

The Cohesion Policy has had a positive impact in several areas. There has been noticeable success in the area of infrastructure development, with EU transfers significantly increasing growth in GRP per capita in recipient regions, particularly through improvements in transport, energy and other infrastructure.[41] EU funds have also had a positive influence on regional innovation, helping to narrow the innovation gap between regions.[42] In addition, the Cohesion Policy has made a significant contribution to job creation and educational attainment in supported regions.[43]

However, the policy has faced criticism in several areas. Some member states – particularly newer and less-developed ones – have struggled to use the allocated funds effectively owing to administrative and institutional barriers.[44] In particular, the policy has been criticised for its complex implementation procedures and high administrative costs. Simplification efforts have had limited success in terms of reducing bureaucratic obstacles.[45]

Despite significant investment, regional disparities persist, with the Cohesion Policy's ability to effectively reduce regional inequalities being limited in the face of broader economic trends and globalisation.[46] Questions have been raised about the efficiency of fund allocation and targeting, with some critics arguing that the policy sometimes prioritises political considerations over economic efficiency in the distribution of funds.[47]

There are concerns as to whether EU funds truly add value or simply displace national investment. Evidence points to both positive spillover effects and negative displacement effects, suggesting that the impact on regional economies is complex.[48]

In conclusion, while the Cohesion Policy has had a significantly positive impact in areas such as infrastructure development, innovation and employment, it continues to face challenges when it comes to effectively tackling persistent regional disparities and ensuring efficient use of funds. Reforms are ongoing with a view to addressing these issues, focusing on simplification, a result oriented approach and better targeting of investment in order to maximise the impact on cohesion within the EU.

[40] See European Commission (2021).
[41] See Becker et al. (2010).
[42] See Ferrara et al. (2017).
[43] See Pellegrini et al. (2013).
[44] See Tosun (2014).
[45] See Mendez and Bachtler (2017).
[46] See Rodríguez-Pose and Garcilazo (2015).
[47] See Bachtler and Gorzelak (2007) and Midelfart-Knarvik and Overman (2002).
[48] See Le Gallo et al. (2011).

BOX 3.8.

Evaluating the impact that TDZs have on firm-level outcomes in Türkiye

This box analyses the impact that Türkiye's TDZs have on firm-level outcomes, comparing the performance of firms located in districts with TDZs with that of firms in other districts without TDZs. It employs the following regression model:

$$Firm\ Outcomes_{idt} = \beta 0 + \beta 1(TDZ_{dt}) + \theta(Sector * Year_t) + \alpha_d + \alpha_f + \varepsilon_{idt}$$

where $Firm\ Outcomes_{idt}$ denotes measures of the performance of firm i operating in district d at time t. Outcome variables include (i) the annual growth rate of total long-term tangible fixed assets (including items such as buildings, land, machinery and other equipment, and vehicles), (ii) the log of 1 plus exports in US dollars, (iii) the log difference in total sales between consecutive years, (iv) the log of 1 plus the number of employees, (v) total factor productivity estimated using the Levinsohn Petrin method and expressed in logs, (vi) profit margins calculated as the log of (1 + net income/total revenue) and (vii) a binary variable for firm defaults. TDZ_{dt} is a dummy variable indicating the existence (or not) of a TDZ in district d at time t. All specifications include district, sector-year and firm fixed effects. District fixed effects account for time-invariant factors at district level. Sector year fixed effects control for confounding factors that vary across sectors and over time. Standard errors are clustered at district level.

The data cover the period 2009-22. Firm location data have been obtained from tax authorities at district level. Financial statements (including annual income statements and balance sheets for all Turkish non-financial firms) have been sourced from the Turkish Revenue Administration and TurkStat, as have employment data detailing the number of employees at each firm. Export data have been obtained from the Turkish Ministry of Trade. Credit registry data, which provide details of credit balances, have been sourced from the Central Bank of the Republic of Türkiye's Credit Registry. Data on the rollout of TDZs, which detail their locations and dates of establishment, have been sourced from the Ministry of Industry and Technology.

References

D. Acemoğlu and J.A. Robinson (2013)
Why Nations Fail: *The Origins of Power, Prosperity and Poverty*, Crown Business.

A. Aggarwal (2012)
Social and economic impact of SEZs in India, Oxford University Press.

M. Alkon (2018)
"Do special economic zones induce developmental spillovers? Evidence from India's states", *World Development*, Vol. 107, pp. 396-409.

D. Arkhangelsky, S. Athey, D.A. Hirshberg, G.W. Imbens and S. Wager (2021)
"Synthetic difference-in-differences", *The American Economic Review*, Vol. 111, No. 12, pp. 4088 4118.

E. Atalay, A. Hortaçsu, M. Runyun, C. Syverson and M.F. Ulu (2023)
"Micro- and Macroeconomic Impacts of a Place-Based Industrial Policy", NBER Working Paper No. 31293.

J. Bachtler and G. Gorzelak (2007)
"Reforming EU Cohesion Policy: A reappraisal of the performance of the Structural Funds", *Policy Studies*, Vol. 28, No. 4, pp. 309-326.

F. Barca, P. McCann and A. Rodríguez-Pose (2012)
"The case for regional development intervention: place-based versus place-neutral approaches", *Journal of Regional Science*, Vol. 52, No. 1, pp. 134-152.

R.J. Barro (2015)
"Convergence and modernisation", *The Economic Journal*, Vol. 125, No. 585, pp. 911-942.

R.J. Barro and X. Sala-i-Martin (1992)
"Convergence", *Journal of Political Economy*, Vol. 100, No. 2, pp. 223-251.

S.O. Becker, P.H. Egger and M. von Ehrlich (2010)
"Going NUTS: The effect of EU Structural Funds on regional performance", *Journal of Public Economics*, Vol. 94, No. 9-10, pp. 578-590.

M. Brachert, E. Dettmann and M. Titze (2018)
"Public Investment Subsidies and Firm Performance – Evidence from Germany", *Jahrbücher für Nationalökonomie und Statistik*, Vol. 238, No. 2, pp. 103-124.

T. Chang, J. Graff Zivin, T. Gross and M. Neidell (2016)
"Particulate Pollution and the Productivity of Pear Packers", *American Economic Journal: Economic Policy*, Vol. 8, No. 3, pp. 141-169.

K.Y. Chay and M. Greenstone (2003)
"The Impact of Air Pollution on Infant Mortality: Evidence from Geographic Variation in Pollution Shocks Induced by a Recession", *The Quarterly Journal of Economics*, Vol. 118, No. 3, pp. 1121-1167.

X. Chen and W.D. Nordhaus (2011)
"Using luminosity data as a proxy for economic statistics", *Proceedings of the National Academy of Sciences*, Vol. 108, No. 21, pp. 8589-8594.

E. Chyn and L.F. Katz (2021)
"Neighborhoods Matter: Assessing the Evidence for Place Effects", *The Journal of Economic Perspectives*, Vol. 35, No. 4, pp. 197-222.

T. Deryugina, G. Heutel, N.H. Miller, D. Molitor and J. Reif (2019)
"The Mortality and Medical Costs of Air Pollution: Evidence from Changes in Wind Direction", *The American Economic Review*, Vol. 109, No. 12, pp. 4178-4219.

G. Duranton and A.J. Venables (2018)
"Place-based policies for development", World Bank Policy Research Working Paper No. WPS8410.

EBRD (2024)
Life in Transition IV – Household resilience in a turbulent world, London.

C.D. Elvidge, K.E. Baugh, M. Zhizhin, F.-C. Hsu and T. Ghosh (2017)
"VIIRS night-time lights", *International Journal of Remote Sensing*, Vol. 38, No. 21, pp. 5860-5879.

C.D. Elvidge, F.-C. Hsu, K.E. Baugh and T. Ghosh (2014)
"National Trends in Satellite-Observed Lighting: 1992-2012", in Q. Weng (ed.), *Global Urban Monitoring and Assessment through Earth Observation*, CRC Press, pp. 97-118.

European Commission (2021)
"New Cohesion Policy", Luxembourg. Available at: https://ec.europa.eu/regional_policy/en/2021_2027 (last accessed on 15 September 2024).

European Commission (2022)
Cohesion in Europe towards 2050 – Eighth report on economic, social and territorial cohesion, Luxembourg.

T. Farole and G. Akinci (2011)
"Special Economic Zones: Progress, Emerging Challenges, and Future Directions", World Bank.

A.R. Ferrara, P. McCann, G. Pellegrini, D. Stelder and F. Terribile (2017)
"Assessing the impacts of Cohesion Policy on EU regions: A non-parametric analysis on interventions promoting research and innovation and transport accessibility", *Papers in Regional Science*, Vol. 96, No. 4, pp. 817-842.

S.A. Frick and A. Rodríguez-Pose (2018)
"Big or small cities? On city size and economic growth", *Growth and Change*, Vol. 49, No. 1, pp. 4-32.

S.A. Frick and A. Rodríguez-Pose (2023)
"What draws investment to special economic zones? Lessons from developing countries", *Regional Studies*, Vol. 57, No. 11, pp. 2136-2147.

S.A. Frick, A. Rodríguez-Pose and M.D. Wong (2019)
"Toward economically dynamic Special Economic Zones in emerging countries", *Economic Geography*, Vol. 95, No. 1, pp. 30-64.

N. Jean, M. Burke, M. Xie, W.M. Davis, D.B. Lobell and S. Ermon (2016)
"Combining satellite imagery and machine learning to predict poverty", *Science*, Vol. 353, No. 6301, pp. 790-794.

R. Kanbur and A.J. Venables (eds.) (2005)
Spatial Inequality and Development, Oxford University Press.

A. Kazakov, M. Koetter, M. Titze and L. Tonzer (2022)
"Firm Subsidies, Financial Intermediation, and Bank Risk", IWH Discussion Paper No. 2/2022.

J. Le Gallo, S. Dall'Erba and R. Guillain (2011)
"The Local Versus Global Dilemma of the Effects of Structural Funds", *Growth and Change*, Vol. 42, No. 4, pp. 466-490.

X. Li, Y. Zhou, M. Zhao and X. Zhao (2020)
"A Harmonized Global Nighttime Light Dataset 1992-2018", *Scientific Data*, Vol. 7, Article 168.

F. Lu, W. Sun and J. Wu (2023)

"Special economic zones and human capital investment: 30 years of evidence from China", *American Economic Journal: Economic Policy,* Vol. 15, No. 3, pp. 35-64.

Y. Lu, J. Wang and L. Zhu (2019)
"Place-based policies, creation, and agglomeration economies: Evidence from China's economic zone program", *American Economic Journal: Economic Policy*, Vol. 11, No. 3, pp. 325-360.

L.A. Martin and K. Zhang (2021)
"Changing population exposure to pollution in China's Special Economic Zones", *AEA Papers and Proceedings*, Vol. 111, pp. 406-409.

C. Mellander, J. Lobo, K. Stolarick and Z. Matheson (2015)
"Night-time light data: A good proxy measure for economic activity?", *PLOS ONE*, Vol. 10, No. 10, Article e0139779.

C. Mendez and J. Bachtler (2017)
"Financial Compliance in the European Union: A Cross-National Assessment of Financial Correction Patterns and Causes in Cohesion Policy", *Journal of Common Market Studies*, Vol. 55, No. 3, pp. 569 592.

K.H. Midelfart-Knarvik and H.G. Overman (2002)
"Delocation and European integration: is structural spending justified?", *Economic Policy*, Vol. 17, No. 35, pp. 321-359.

OECD (2018)
OECD Regions and Cities at a Glance 2018, Paris.

OECD (2019)
Rethinking Innovation for a Sustainable Ocean Economy, Paris.

G. Pellegrini, F. Terribile, O. Tarola, T. Muccigrosso and F. Busillo (2013)
"Measuring the effects of European Regional Policy on economic growth: A regression discontinuity approach", *Papers in Regional Science*, Vol. 92, No. 1, pp. 217-234.

A. Rodríguez-Pose and F. Bartalucci (2021)
"Joint Government of Kazakhstan and the Asian Development Bank Knowledge and Experience Exchange Program, Phase 4: Regional Inequality Study for Kazakhstan – Technical Assistance Consultant's Report", Asian Development Bank, Project No. 54093-001.

A. Rodríguez-Pose, F. Bartalucci, B. Kurmanov, G. Rau and K. Nigmetov (2024)

"Assessing regional inequalities in Kazakhstan through well-being", *Asian Development Review*, Vol. 41, No. 1, pp. 301-333.

A. Rodríguez-Pose and E. Garcilazo (2015)
"Quality of government and the returns of investment: Examining the impact of cohesion expenditure in European regions", *Regional Studies*, Vol. 49, No. 8, pp. 1274-1290.

D. Rodrik and S. Stantcheva (2021)
"A Policy Matrix for Inclusive Prosperity", NBER Working Paper No. 28736.

M. Schiavina, M. Melchiorri and M. Pesaresi (2023)
"GHS-SMOD R2023A – GHS settlement layers, application of the Degree of Urbanisation methodology (stage I) to GHS-POP R2023A and GHS-BUILT-S R2023A, multitemporal (1975-2030)", European Commission Joint Research Centre.

J. Tosun (2014)
"Absorption of Regional Funds: A Comparative Analysis", *Journal of Common Market Studies*, Vol. 52, No. 2, pp. 371-387.

UNCTAD (2019)
World Investment Report 2019 – Special Economic Zones, Geneva.

UN DESA (2024)
World Social Report 2024 – Social Development in Times of Converging Crises: A Call for Global Action, New York.

A. van Donkelaar, M.S. Hammer, L. Bindle, M. Brauer, J.R. Brook, M.J. Garay, N.C. Hsu, O.V. Kalashnikova, R.A. Kahn C. Lee, R.C. Levy, A. Lyapustin, A.M. Sayer and R.V. Martin (2021)
"Monthly Global Estimates of Fine Particulate Matter and Their Uncertainty", *Environmental Science & Technology*, Vol. 55, No. 22, pp. 15287-15300.

J. Wang (2013)
"The economic impact of Special Economic Zones: Evidence from Chinese municipalities", Journal of Development Economics, Vol. 101, pp. 133-147.

L. Wenz, R.D. Carr, N. Kögel, M. Kotz and M. Kalkuhl (2023)
"DOSE – Global data set of reported sub-national economic output", *Scientific Data*, Vol. 10, Article 425.

World Bank (2009)
World Development Report 2009: Reshaping Economic Geography, Washington, DC.

World Bank (2017)
Special Economic Zones: An Operational Review of Their Impacts, Washington, DC.

World Bank (2022)

The Global Health Cost of PM 2.5 Air Pollution. A Case for Action Beyond 2021, Washington, DC.

A. Young (2013)
"Inequality, the Urban-Rural Gap, and Migration", *The Quarterly Journal of Economics*, Vol. 128, No. 4, pp. 1727-1785.

D.Z. Zeng (2021)
"Special Economic Zones: Lessons from the Global Experience", PEDL Synthesis Paper No. 1, Centre for Economic Policy Research.

4 Industrial policies supporting firms

Young firms in the EBRD regions often struggle to scale up their operations and transform into larger, more productive enterprises. This chapter analyses the growth dynamics of such firms, revealing that many promising young businesses experience a slowdown in growth when they become SMEs. The inability to grow fast enough hinders their transformation into large firms, and it is large firms which drive job reallocation and innovation. These findings suggest that targeted government interventions tailored to firms' age and growth potential can effectively promote growth among promising young businesses. Proper targeting is important in this regard, as direct state assistance often lacks differentiation – a problem that is prevalent in both the EBRD regions and advanced economies.

Introduction

In the economies where the EBRD invests, young firms – defined as those that are five years old or less – often struggle to scale up their operations and transform into larger, more productive and more innovative enterprises. Despite their dynamism and resilience during crises, many promising young firms in the EBRD regions experience a slowdown in growth when they cease to be micro-enterprises and become SMEs. After achieving SME status, a significant number of those firms continue to operate on a relatively small scale compared with their counterparts in more advanced economies.

The inability of young firms to grow fast enough can hinder their transformation into large firms, which tend to be more productive and innovative. Larger firms (especially those with over 100 employees) are the primary drivers of job reallocation (both job creation and job destruction) in the EBRD regions. Those larger firms often pay better wages, attract workers from smaller companies during crises and benefit from economies of scale. Moreover, the presence of large firms – particularly "superstar" firms whose markups are above the average for their industries (exporting domestic firms or multinationals, for instance) – can generate positive spillover effects at a local level, such as productivity increases in firms that supply to large firms entering a new market.[1]

Over the past two decades, EBRD economies have made greater use of direct state assistance when seeking to address the challenges faced by young firms (although the overall level of such assistance remains low compared with more advanced economies). This chapter reveals that direct state assistance often lacks differentiation and targets firms indiscriminately – a problem that is not unique to EBRD economies and is also prevalent in more economically advanced regions. Countries could benefit from making their industrial policies more targeted, addressing the specific challenges faced by young firms and designing interventions that support their growth and scaling-up processes.

Larger firms – especially those with

100+ EMPLOYEES

– are the primary drivers of job reallocation (both job creation and job destruction) in the EBRD regions

The business landscape in the EBRD regions

This section documents key stylised facts about firms in the EBRD regions using four data sources. First, Bureau van Dijk's global Orbis database provides granular financial information and balance sheet data for more than 1.8 million firms in selected EBRD economies and Portugal from 2016 to 2021. Analysis that is based on this dataset focuses on seven EBRD economies in "emerging Europe" (Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia), plus Portugal as a comparator. Those countries were selected on the basis of two criteria: filing with national business registries had to be mandatory, and data had to be representative at the national level.[2] While Orbis is one of the most granular sources of firm-level microdata, allowing in-depth analysis, its coverage is only comprehensive for a specific set of countries and it is less reliable for tracking firms' entries and exits. This limitation should be borne in mind when interpreting the results.

The second dataset used is the EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS), which has covered more than 50,000 firms across 44 countries over 14 years, offering insights into firms' financial situations, innovation practices and business obstacles. While this is a survey-based dataset and only covers a subsample of the firm population, it provides novel insights into innovation practices, business obstacles and other aspects of firms' circumstances that are otherwise difficult to observe.

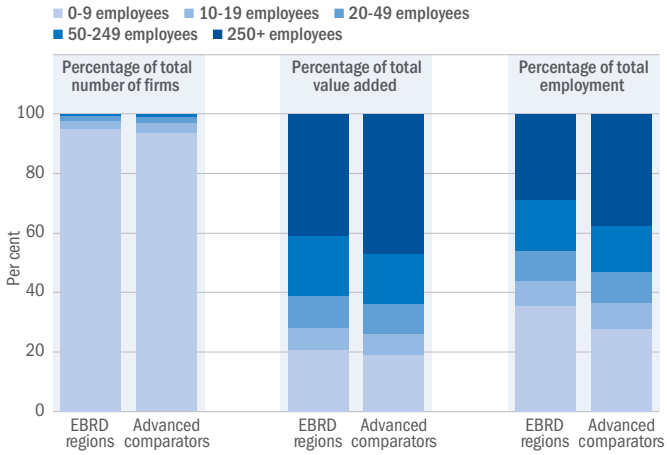
Third, Eurostat's Structural Business Statistics (SBS) contain official aggregate data for all EU member states over time. Although Eurostat provides high-quality statistics, these data are only available at an aggregate level and are limited to EU countries.

The fourth dataset, Worldscope, is a comprehensive financial database that provides detailed and standardised financial information on publicly listed companies worldwide. Worldscope is used to describe "superstar" firms in the EBRD regions and compare them with their peers in other emerging market economies.

[1] See Amiti et al. (2023).

[2] Representativeness was validated using the methodology employed by Kalemli-Ozcan et al. (2024).

CHART 4.1. Smaller firms dominate in terms of numbers, but larger firms contribute more to aggregate output and employment



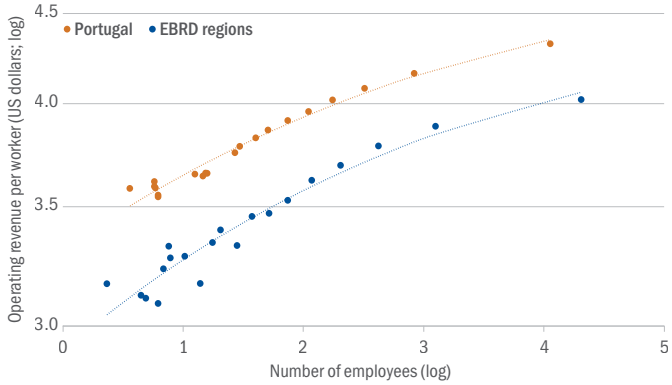
Source: Eurostat's SBS database (2021).

Note: The sample comprises firms in the manufacturing and service sectors. Data for the EBRD regions cover Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Greece, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Serbia, the Slovak Republic and Slovenia. The advanced comparators are Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Malta, the Netherlands, Norway, Spain and Sweden.

SMEs are abundant, but large firms contribute more to aggregate output

Chart 4.1 reveals two key insights about the breakdown of firms by size in the EBRD regions and advanced comparator economies. First, firms with fewer than 250 employees make up the majority of businesses, accounting for more than 99 per cent of all firms in the EBRD regions and more advanced European economies (see left-hand panel). Micro-firms (those with nine employees or fewer) make up a slightly larger share of the business landscape in the EBRD regions, accounting for almost 95 per cent of all firms, compared with just over 93 per cent in more advanced comparator economies. Second, despite being small in number, firms with 250 employees or more are the primary contributors to aggregate economic activity. In terms of value added, those larger firms generate almost 41 per cent of total output in the EBRD regions and 47 per cent in comparator economies (see central panel). In terms of employment, they account for 29 per cent of aggregate employment in the EBRD regions and 38 per cent in comparator economies (see right-hand panel), with similar figures being observed in the United States of America.[3] In short, while smaller firms dominate in terms of numbers, larger firms play a bigger role when it comes to driving economic output and employment, both in the EBRD regions and in more advanced economies.

CHART 4.2. Large firms tend to be more productive



Source: Bureau van Dijk's Orbis database (2016-21).

Note: This binned scatter plot shows the relationship between the log of operating revenue per worker and the log of the number of employees, accounting for country and year fixed effects, as well as a dummy for being in manufacturing. Data cover corporate, individually owned and family-owned firms. They do not cover the financial sector, the education sector, public administrations, the health and social care sector, international organisations or the production of goods for own use. Data for the EBRD regions cover Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia.

Large firms tend to be more productive

Large firms are important not only for their contribution to total output and employment, but also because of their more efficient production processes. Chart 4.2 illustrates this relationship using Orbis data for emerging Europe and Portugal, looking at how output per worker changes with firm size. In both emerging Europe and Portugal, there is a positive and statistically significant correlation between the log of operating revenue per worker and the log of the number of employees, accounting for country and year fixed effects, as well as a manufacturing sector indicator.[4] This indicates that larger firms tend to be more productive than smaller ones, with a 1 per cent increase in the number of employees being associated with a 0.25 per cent increase in operating revenue per worker. While the correlations for emerging Europe and Portugal are almost identical, there is a level difference between the two in terms of productivity. The data show that even the most productive large firms in emerging Europe lag behind counterparts of equal size in Portugal in terms of productivity. This may suggest the presence of distortions that affect firms' productivity across the size distribution.[5]

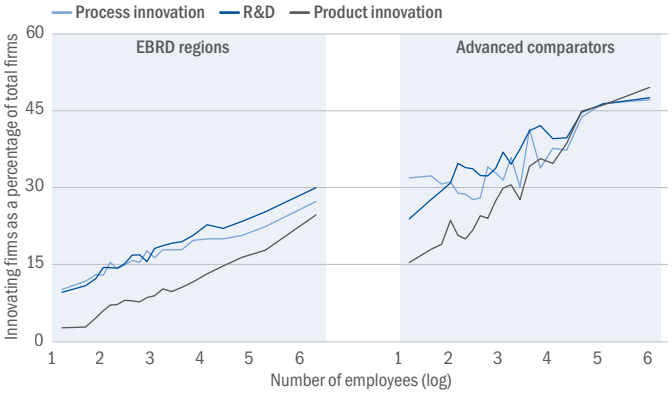
[3] See Guner et al. (2008).
[4] While the log of operating revenue per worker is just a proxy for productivity, this is the best metric available given the data. Ayerst et al. (2024) use this measure instead of value added per worker because material costs are not reported comprehensively in Orbis.
[5] See Hsieh and Klenow (2009).

Larger firms are often more productive for a variety of reasons.[6] First, they can exploit economies of scale and spread costs over larger amounts of output, resulting in lower average costs per unit of production. Second, better managerial practices are associated with higher levels of productivity: since larger firms attract top managers, their productivity can also be explained by their superior managerial practices.[7] More generally, larger firms are able to pay higher wages and are therefore able to attract and retain more skilled workers, which in turn increases their productivity. Third, larger firms can take advantage of a more specialised labour force, which can increase efficiency and productivity.[8] Lastly, larger firms tend to invest more in R&D and are more likely to adopt advanced technologies, which make production processes more productive and efficient (as the next section will show).

Large firms also tend to be more innovative

One reason why larger firms tend to be more productive is that they are also more likely to innovate than smaller firms. Chart 4.3 uses BEEPS data to show the correlations between three different measures of innovation and the log of the number of employees, demonstrating that larger firms are more likely to have (i) improved a production process, (ii) spent money on R&D and (iii) introduced a new product to their market. All in all, a 1 per cent increase in the number of employees is associated with a 4 per cent increase in the number of innovating firms. This positive correlation between firm size and different types of corporate innovation can be seen in both the EBRD regions and more advanced economies.

CHART 4.3. Larger firms tend to innovate more than smaller firms



Source: BEEPS III-VI (unweighted averages).

Note: This binned scatter plot is based on the log of the number of employees plus (i) a dummy variable that is equal to 1 if the firm has improved a process or introduced a new one over the past three years, (ii) a dummy variable that is equal to 1 if the firm has incurred R&D expenses during the past fiscal year, and (iii) a dummy variable that is equal to 1 if the firm has introduced a new product to its market over the past three years. Regressions include country, year and sector fixed effects, plus controls for being an exporter and for having 50 per cent of shares owned by the state. Data for the EBRD regions cover all EBRD economies, while the advanced comparators are Austria, Belgium, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Portugal, Spain and Sweden.

[6] See Ciani et al. (2020) and Bertanzetti et al. (2024).
[7] See Bloom et al. (2013) for a study looking at India and Bloom et al. (2012) for a study covering EBRD economies.
[8] See Chaney and Ossa (2013).

Fresh ventures: young firms in the EBRD regions

Disentangling the roles played by firms' age and size may help to explain differences in the overall efficiency of the private sector.[9] Many studies have documented the role that young businesses play in job creation, emphasising the critical role of startups in the employment growth dynamics of rich countries,[10] emerging markets and developing economies.[11]

If promising new firms are to reap the benefits of operating at scale (such as increased productivity and innovation), they must scale up swiftly without internal or external constraints. This section looks at (i) whether young firms in the EBRD regions face more severe frictions than their counterparts in advanced economies, (ii) which frictions affect them most, and (iii) the importance of such firms for the generation of employment in the EBRD regions.

These questions are addressed using Orbis data for the period 2016-21, with firms classified on the basis of their age and size. "Young" firms are five years old or less, while "mature" firms are more than five years old. Firms are classified on the basis of size using the following commonly applied criteria: "micro-firms" have nine employees or fewer; "SMEs" have between 10 and 99 employees; and "large" firms employ 100 people or more. Table 4.1 summarises this classification.

Job creation and destruction

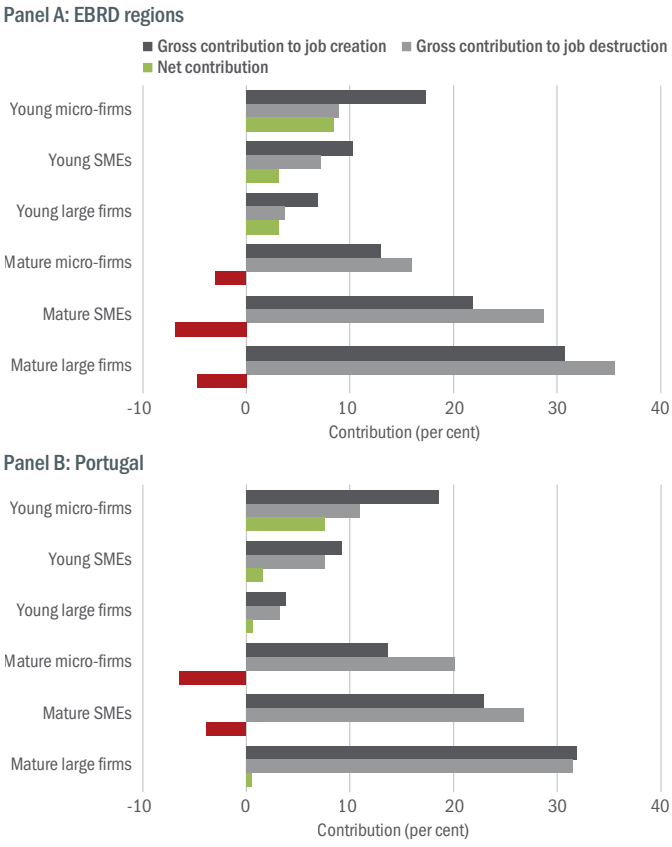
In the EBRD regions, mature firms contributed the most to gross job creation in the period 2016-21, but their net contribution was actually negative as a result of their high levels of job destruction (see Chart 4.4). Mature large firms made the greatest contribution to job reallocation, followed by mature SMEs and mature micro-firms. A similar pattern could be observed in Portugal, although mature SMEs made a small positive contribution to net job creation in that country. In both the EBRD regions and Portugal, young firms are more dynamic than mature firms and make the largest contributions to net job creation.

These results indicate that well-established SMEs and large firms contribute the most to job reallocation and reoptimisation, but their net contribution to job creation is negative or close to zero. In contrast, young firms of all sizes contribute positively to job creation, helping to increase employment. Importantly, this holds for both emerging Europe and Portugal.

TABLE 4.1. Firms are categorised by age and size

		Age in years	
		5 or less	**More than 5**
Number of employees	9 or fewer	Young micro-firms	Mature micro-firms
	10 to 99	Young SMEs	Mature SMEs
	100 or more	Young large firms	Mature large firms

CHART 4.4. Young firms contribute most to net job creation, while mature firms make the largest contribution to job reallocation



Source: Orbis database (2016-21).

Note: This chart shows gross and net contributions to job creation and job destruction for firms in different categories. Data are based on a balanced panel of corporate, individually owned and family-owned firms and do not cover the financial sector, the education sector, public administrations, the health and social care sector, international organisations or the production of goods for own use. Data for the EBRD regions cover Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia.

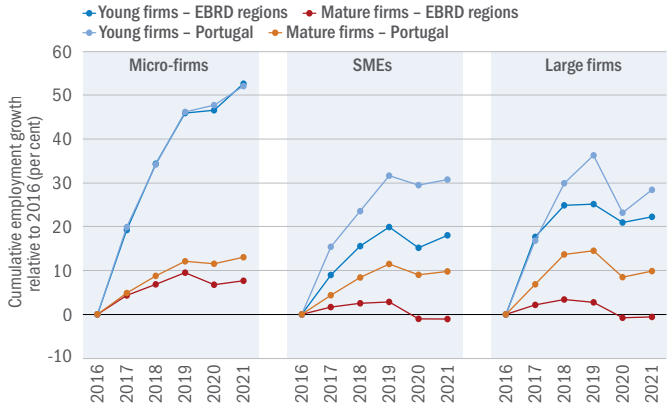
[9] See Criscuolo et al. (2014).
[10] See Haltiwanger et al. (2013) and Sterk et al. (2021).
[11] See Rijkers et al. (2014) and Ayyagari et al. (2014).

Young firms grow fast in terms of employment, but slow with age

Young firms tend to grow faster than mature firms. Chart 4.5 looks at a balanced panel of firms that were active in 2016 and remained so until 2021, plotting the cumulative employment growth rates of firms in the various categories over that period. The chart highlights two important findings. First, young micro-firms in the EBRD regions and Portugal grew by more than 50 per cent over the period 2016-21, with the two groups recording remarkably similar cumulative growth rates. In contrast, mature micro-firms grew at a much slower rate, with firms in the EBRD regions expanding by less than 10 per cent. Second, the data suggest that promising young firms in the EBRD regions encounter a ceiling that hinders their ability to scale up. While young SMEs in Portugal grew by 31 per cent over the review period, young SMEs in the EBRD regions grew by about half as much. This deviation in growth rates occurs relatively early in the five-year period analysed, indicating that these young firms were affected not only by the challenges of Covid-19, but also by other obstacles in their business environments.

One indication that younger firms may face constraints on their growth is their significantly higher average return to capital compared with mature large firms (see Chart 4.6). If younger firms were not facing constraints on their growth, their average return to capital would be comparable to that of firms that had grown in size over longer periods.[12] As Chart 4.6 shows, this is not the case. In fact, after accounting for sector, year and country fixed effects, young firms (of all sizes) exhibit significantly higher average returns to capital (measured as the log of the ratio of operating revenues to total assets) relative to mature large firms. This suggests that, both in the EBRD regions and (to a lesser extent) in comparator countries such as Portugal, there are potential gains to be reaped from reallocating more capital to younger firms.

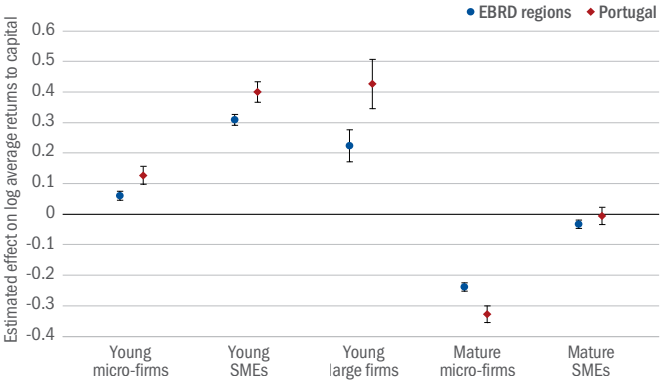
CHART 4.5. Promising young firms grow fast, but growth slows as soon as they become SMEs



Source: Orbis database (2016-21).

Note: The cumulative employment growth rate relative to 2016 is calculated as: $(E_t - E_{2016})/E_{2016}$. Data are based on a balanced panel of corporate, individually owned and family-owned firms and do not cover the financial sector, the education sector, public administrations, the health and social care sector, international organisations or the production of goods for own use. The firms in each sample do not change from year to year (that is to say, categories are based on firms' status in 2016). Data for the EBRD regions cover Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia.

CHART 4.6. Young firms have higher returns to capital than mature firms



Source: Orbis database (2016-21).

Note: This chart shows the coefficients that are derived from the following regression:

$$\log\left(\frac{\text{Operating Revenues}}{\text{Total Assets}}\right) = \beta_1 \text{Young Micro} + \beta_2 \text{Young SME} + \beta_3 \text{Young Large} + \beta_4 \text{Old Micro} + \beta_5 \text{Old SME} + X'\gamma + \varepsilon$$

The excluded category is mature large firms. Data are based on a balanced panel of corporate, individually owned and family-owned firms and do not cover the financial sector, the education sector, public administrations, the health and social care sector, international organisations or the production of goods for own use. Data for the EBRD regions cover Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia. The chart indicates 95 per cent confidence intervals.

[12] See Hsieh and Olken (2014) for a discussion on returns to capital among small and large firms.

Younger firms and mature firms face different challenges

The fact that young firms have higher returns to capital suggests that they are affected by frictions which slow their growth. Chart 4.7 looks at the nature of those challenges in EBRD economies using BEEPS data, indicating the percentages of young and mature firms that are affected by various types of business constraint.

The top three constraints overall in the EBRD regions are political instability, corruption and tax rates, with each affecting over a quarter of all firms. It is noticeable that young firms are more likely than mature firms to list corruption, unfair competition from the informal sector and inefficient courts as challenges. Meanwhile, mature firms are more likely than young firms to report that high tax rates, electricity-related issues and workforce skills are challenging. These differences suggest that young firms, which often need to apply for various types of licence, are particularly vulnerable to everyday corruption by public officials, as well as direct competition from informal competitors. In western European comparator countries, the equivalent figures for most of these constraints are substantially lower.

In the EBRD regions, mature micro-firms – the firms with the weakest growth – account for more than half of the total business landscape, whereas young micro-firms make up one-third of all firms (see Chart 4.8). Mature SMEs account for a further 12 per cent, young SMEs make up about 2 per cent, mature large firms account for approximately 1 per cent, and young large firms make up just 0.1 per cent. Given their importance for job creation, policies should focus on young firms, which make up a small percentage of total firms, but account for a larger share of total job creation.

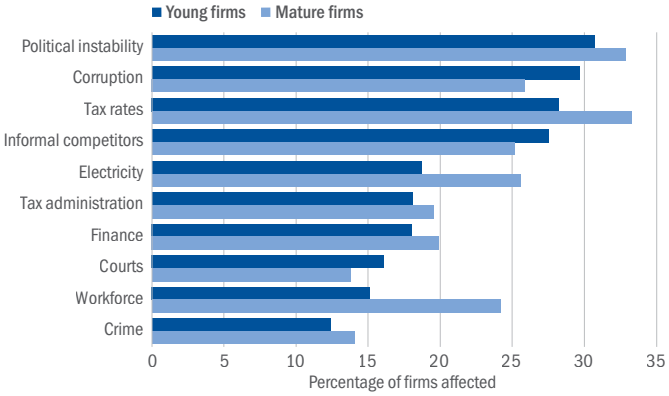
The average returns to capital of young micro-firms, SMEs and large firms are

10 TO 30

PERCENTAGE POINTS

higher than those of mature large firms

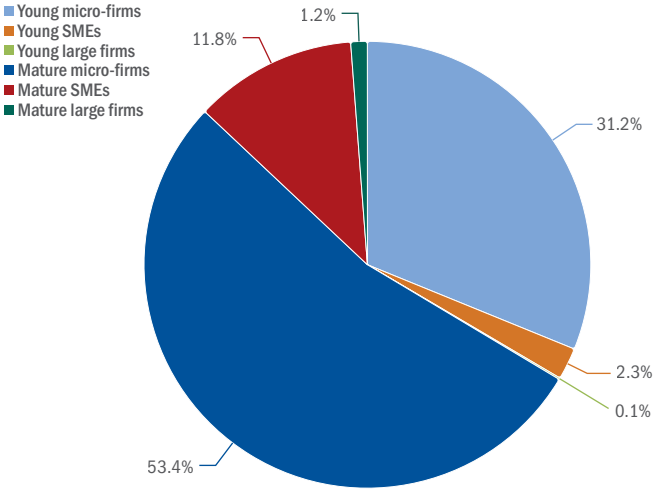
CHART 4.7. Corruption and informal competitors affect young firms more than older ones



Source: BEEPS III-VI and World Bank Enterprise Surveys (using the most recent survey year available for each country; unweighted averages).

Note: This chart indicates the percentages of young and mature firms in EBRD economies which report that the issue in question is a moderate, major or very severe obstacle to their operations. Data cover all EBRD economies with the exception of Turkmenistan.

CHART 4.8. Mature micro-firms far outnumber promising young firms in the EBRD regions



Source: Orbis database (2021 only).

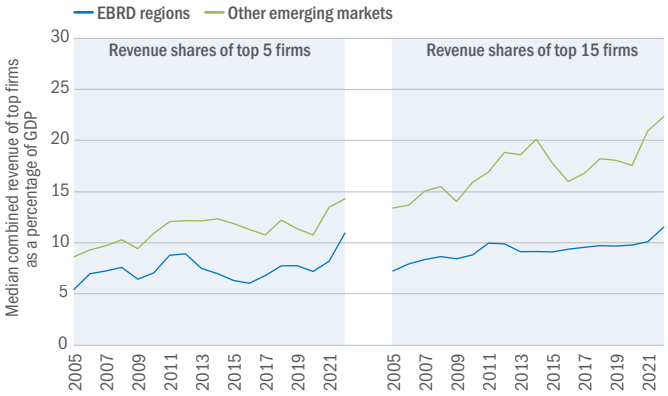
Note: This chart provides a breakdown of total firms in the economy by type of firm. Data are based on a balanced panel of corporate, individually owned and family-owned firms and do not cover the financial sector, the education sector, public administrations, the health and social care sector, international organisations or the production of goods for own use. Data cover Bosnia and Herzegovina, Croatia, Czechia, Hungary, Lithuania, Romania and Serbia.

The rise of "superstar" firms

As shown in the previous sections, while young firms make a disproportionate contribution to net employment growth, large firms are often more productive and innovative. In particular, in many countries, a small set of "superstar" firms are responsible for the bulk of domestic innovation and knowledge spillovers.[13] These are the firms with the largest revenue shares and the highest market values in their industries. Their markups and profit margins often outstrip those of their competitors, and they are at the forefront of innovation in their respective fields.[14] In economically advanced economies such as the United States, industry sales have increasingly become concentrated in a small number of firms in recent decades, fostering an environment where a few firms dominate their respective markets. A key question is whether such firms exist in the EBRD regions and whether EBRD economies differ from other emerging markets in this regard. In order to explore this phenomenon from the perspective of the EBRD regions, this section leverages a comprehensive dataset from Worldscope, analysing key indicators such as revenue shares and markups.[15]

The revenue shares of top 5 and top 15 firms have been growing in recent years, both in the EBRD regions and in other emerging markets (see Chart 4.9). In the EBRD regions, the median revenue share of top 15 firms increased from 5 per cent in 2005 to 11 per cent in 2022, while the median revenue share of top 15 firms in other emerging markets rose from 13 per cent in 2005 to 22 per cent in 2022. The rise of large firms brings both benefits and challenges, which have significant policy implications. On the one hand, large firms tend to be more productive and invest heavily in R&D, stimulating innovation. On the other hand, however, they operate as oligopolists, leading to increases in market concentration. This dominance creates barriers to the entry of new market participants, undermining the competitive environment that fosters dynamic economic activity. What is more, idiosyncratic shocks that affect those very large firms can spread throughout the entire economy, causing large aggregate shocks to GDP and impacting all firms.[16] These features of the growth of large firms have important policy implications. Policymakers should balance the benefits of large firms' innovation and productivity with the need to prevent excessive market concentration. When implementing industrial policies, the need for anti-trust regulations and support for SMEs should also be taken into consideration.

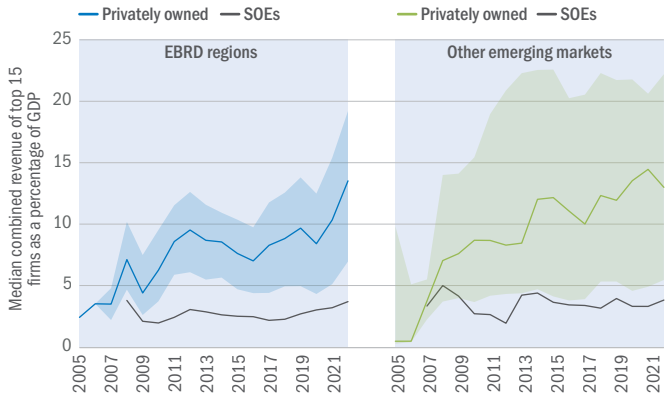
CHART 4.9. The revenue shares of large firms have grown in the EBRD regions, but less than in other emerging markets



Source: Yan (2024), Worldscope and authors' calculations.

Note: This chart is based on firm-level information on publicly listed firms in Worldscope. Top firms were identified on the basis of their revenue. For the EBRD regions, median revenue shares were calculated across five economies (Bulgaria, Morocco, Poland, Romania and Türkiye) for top 15 firms and across seven economies (the same five, plus Hungary and Ukraine) for top 5 firms. For other emerging markets, they were calculated across 15 economies (Argentina, Bangladesh, Brazil, Chile, China, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, the Philippines, Russia, South Africa and Thailand) for top 15 firms and across 16 economies (the same 15, plus Colombia) for top 5 firms.

CHART 4.10. The increase in the revenue share of the largest firms has been driven mostly by private companies



Source: Yan (2024), Worldscope and authors' calculations.

Note: This chart is based on firm-level information on publicly listed firms in Worldscope. Top firms were identified on the basis of their revenue. For the EBRD regions, median revenue shares were calculated across five economies (Bulgaria, Morocco, Poland, Romania and Türkiye); for other emerging markets, they were calculated across 15 economies (Argentina, Bangladesh, Brazil, Chile, China, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, the Philippines, Russia, South Africa and Thailand). Shaded areas show the interquartile ranges for privately owned enterprises.

[13] See Amiti et al. (2024).

[14] See, for instance, Autor et al. (2020) and De Loecker et al. (2020).

[15] Firm markups are estimated on the basis of optimal cost minimisation decisions using balance sheet data and a production approach in line with De Loecker and Warzynski (2012). By estimating a translog production function with non-parametric functions and employing a generalised method of moments (GMM) approach, we obtain the firm-level time-varying output elasticities of variable inputs. The markup is then estimated as the ratio of (i) the output elasticity of the variable input to (ii) expenditure on the input as a share of total sales. This method provides estimates of firm-level markups without specifying how firms compete in the product market.

[16] See Gabaix (2011).

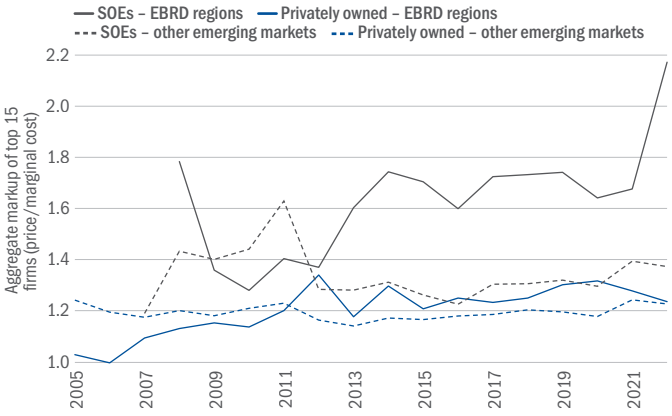
Looking at the ultimate owners of publicly listed firms in emerging markets, we can see that the increase in the aggregate revenue share of top firms has been driven mostly by privately owned enterprises, while the revenue share of state-owned enterprises (SOEs) has been relatively stable (see Chart 4.10). This is true of both EBRD economies and other emerging markets, although the distribution of the revenue share of privately owned enterprises is broader in other emerging markets.

However, looking at firm markups, the aggregate markup for SOEs is still much higher than the equivalent figure for privately owned enterprises (see Chart 4.11). SOEs in the EBRD regions exhibit significantly higher markups than their counterparts in other emerging markets, while private firms' markups are similar across the two groups of economies. The significant increase seen in the markups of SOEs in the EBRD regions has been driven mostly by the mining sector in recent years and by the transport sector and public utilities in the period before that. This disparity in markups may reflect differing levels of competition and market efficiency, particularly for SOEs in EBRD regions, highlighting the need for policy interventions to enhance the competitiveness of markets.

There are several emerging markets and developing economies where the top five exporters account for a significant percentage of total exports. In the Kyrgyz Republic, for example, the top five exporting firms account for 48 per cent of total exports. In Zambia, meanwhile, the equivalent figure is a striking 82 per cent – the highest figure in the group of comparator countries (see Chart 4.12). Similar trends can be observed in some advanced economies: in France, for example, export champions in export-intensive sectors make a major contribution tototal exports.[17]

"SUPERSTAR"
firms accounted for
11%
of total revenue in EBRD economies in 2022, up from
5% in 2005

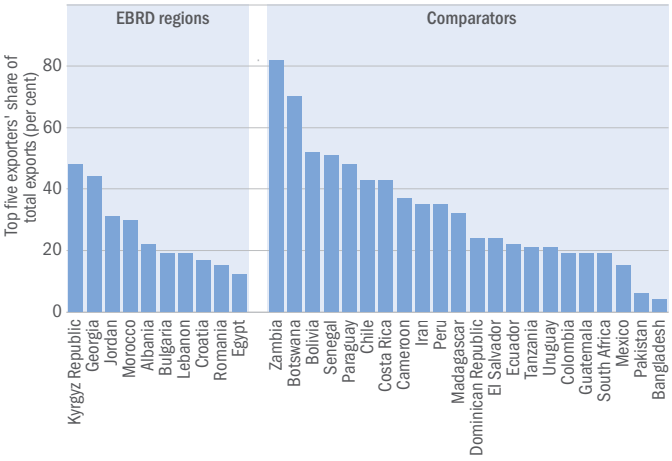
CHART 4.11. SOEs in the EBRD regions have more market power



Source: Yan (2024), Worldscope, Orbis database and authors' calculations.

Note: This chart is based on firm-level information on publicly listed firms. Top firms were identified on the basis of their revenue. Firm markups were estimated on the basis of optimal cost minimisation decisions using balance sheet data and a production approach, in line with De Loecker and Warzynski (2012). Average markups were calculated at firm level, and those averages were then aggregated, being weighted by firm revenue.

CHART 4.12. "Superstar" firms account for a substantial percentage of total exports in emerging markets and developing economies



Source: Exporter dynamics database constructed by Freund and Pierola (2020).[18]

Note: Data represent averages over subsets of years within the period 2000-13, with those subsets varying from country to country.

[17] See Gaubert and Itskhoki (2021).
[18] Worldscope does not provide data at sector level.

The rise of "superstar" firms in the EBRD regions and other emerging markets and developing economies presents both opportunities and challenges. The increasing concentration of revenue among the top firms signals a shift towards a situation where more market power is in the hands of a few private actors. While this could help to drive efficiency and innovation as a result of economies of scale, it also raises concerns about market competition, especially in sectors where SOEs continue to maintain higher markups despite stable revenue shares. In addition, the heavy reliance on a few dominant exporters underscores the need for policies that broaden the export base, reduce barriers to market entry and enhance economic resilience.

So far, this chapter has shown that large firms generally demonstrate greater productivity and innovation. Those companies play a crucial role in economic dynamics, accounting for a significant proportion of both job creation and job destruction. However, young firms drive most *net* job creation and exhibit stronger growth than their mature counterparts. Ideally, successful young firms should be able to scale up rapidly in order to capitalise on economies of scale. However, evidence suggests that young firms in many EBRD economies face constraints, as indicated by their unusually high returns to capital. BEEPS data point to several challenges that these firms encounter, including competition from the informal sector, corruption, inefficient legal systems and infrastructure barriers (such as unreliable electricity supply). The most effective way for policy to support promising young firms would be to reduce these barriers. This could involve improving infrastructure, ensuring reliable access to electricity, combating corruption and reforming the justice system to enhance the efficiency of the courts. Such measures would create a business environment that was more conducive to young firms thriving, growing and contributing to economic growth.

In addition, governments can also employ more active industrial policies, especially when there are indications that promising young firms with projects with high net present values are financially constrained or lack the collateral required to obtain credit from private banks. The next section of this chapter looks at the question of state support for firms, comparing the EBRD regions with advanced and emerging market economies. It also addresses the need for governments to target firms irrespective of size, focusing on the companies with the greatest growth potential. Box 4.1 discusses the EBRD's Star Venture programme, which is an example of how to stimulate the startup ecosystem in emerging market economies.

State assistance for firms

The success of industrial policies hinges on the quality of government intervention (see Chapter 1). This section looks at how economies in the EBRD regions use state assistance to support firms. It begins by describing state assistance and examining the most recent evidence on the causal effect that state assistance has on firms. It then looks at how many of the industrial policies designed by EBRD economies can be classified as state assistance. Lastly, it examines the question of whether EBRD economies differentiate their policies enough to accommodate firm-level heterogeneity, as described in the previous section of this chapter. Box 4.2 uses a case study to look at how governments can ensure the success of targeted direct intervention by "letting losers go" – a task that they may find easier and cheaper than "picking winners".

Defining state assistance

Direct state assistance can be defined as the use of industrial policies to support firms. That assistance can take various forms, including direct instruments such as in-kind grants, state aid, financial grants and production subsidies. Support can also take the form of loans (including loan guarantees, state loans and interest payment subsidies). Tax-based advantages are another avenue of assistance, comprising tax or social insurance relief and tax-based export incentives. Lastly, equity instruments such as capital injections and equity stakes (including bailouts) represent another key form of state support for firms. These diverse mechanisms allow governments to provide targeted assistance to businesses in various sectors and at various stages of development. Table 4.2 details the goals of each of these kinds of intervention with examples from the EBRD regions.

The analysis in this section is based primarily on the Global Trade Alert database, which provides information on state interventions affecting trade in goods and services, foreign investment and labour force migration (see Chapter 1 for more details). In order to identify direct state assistance, the GTA database was filtered to look only at the intervention types listed in Table 4.2, with the analysis covering 23 EBRD economies plus comparator countries over the period 2009-23.[19] Furthermore, firm-specific policies were filtered out, in order to prevent the inclusion of direct state

[19] The 23 EBRD economies covered are Armenia, Azerbaijan, Bulgaria, Croatia, Czechia, Egypt, Estonia, Greece, Hungary, Jordan, Kazakhstan, Latvia, Lithuania, Morocco, North Macedonia, Poland, Romania, the Slovak Republic, Slovenia, Tunisia, Türkiye, Ukraine and Uzbekistan. The comparator countries are Brazil, China, France, Germany, India, Spain, the United Kingdom and the United States. While the GTA database covers the period from 2008 to the present, the analysis in this section looks only at the period 2009-23, since data for 2008 and 2024 are incomplete.

TABLE 4.2. Examples of direct state assistance in the EBRD regions

Type of intervention	Description
In-kind grants	Allocation of non-monetary state resources such as land to support firms. For example, the Turkish government has allocated land for Sino Energy's production facility for battery cells and battery modules.
State aid	Monetary incentives used to boost sectors. "For example, 12 EU member states (including seven EBRD economies) have set up a €1.2 billion scheme to support the development of cloud and edge computing technologies (the IPCEI-CIS project)."
Financial grants	Monetary incentives used to boost sectors (usually with stricter rules than state aid). For example, public financing has been used to develop port infrastructure on Krievu Sala, Latvia.
Production subsidies	Subsidies that lower production costs. For example, tariffs on yarn have been abolished in Egypt, with subsidies put in place instead.
Loan guarantees	Government guarantees on loans. For example, Latvia's guarantee scheme for banks has been extended.
State loans	Loans issued by the government. For example, Türkiye established a loan programme for agricultural producers in 2009.
Interest payment subsidies	Government assistance with interest payments. For example, Kazakhstan subsidised the interest rates on credit and leasing obligations as part of the "Agrobusiness 2020" initiative.
Tax or social insurance relief	Government support that lowers firms' tax liabilities. For example, the Slovak Republic has reduced the excise duty on mineral oils.
Tax-based export incentives	Tax incentives for exporters to increase competitiveness. For example, Moldova introduced VAT and customs duty concessions for export-oriented enterprises in 2015.
Capital injections and equity stakes (including bailouts)	Equity instruments used by governments. For example, Poland has recapitalised certain financial institutions.

assistance that only targeted one specific firm. A two-pronged approach was used for this: first, all firm-specific policies as identified by the GTA database were excluded; and second, policy descriptions were fed into ChatGPT in order to remove any other firm-specific policies from the dataset.[20]

The resulting dataset included 705 direct state assistance policies in EBRD economies over the period 2009-23 (which accounted for 12.18 per cent of the total GTA sample for those economies over that period).

State assistance as a double-edged sword

There is a growing body of research analysing the impact that state assistance policies have on firms' growth – not only in high-income economies,[21] but also in the EBRD regions[22] and other emerging market economies.[23] These studies analyse a wide range of state assistance policies, including the provision of discretionary grants to firms in disadvantaged areas (through the Regional Selective Assistance Programme in the United Kingdom, for example), R&D subsidies (through Regional Law 7/2002 in Italy, for instance) and access to subsidised bank credit via government guarantees and an interest rate cap (through initiatives such as the Credit Certification Programme in Portugal).

[20] The following prompt was given to ChatGPT in order to weed out such single-firm policies: "You are an expert in industrial policy. You are very familiar with such policies, including but not limited to infrastructure, transportation, agriculture, manufacturing, etc. Given the below policy text, is it an industrial policy that only targets a single firm? Please think step by step. Your answer should start with 'Yes' or 'No', and then the next paragraph should provide a concise explanation."

[21] See, for instance, Cerqua and Pellegrini (2014) and Cingano et al. (2023) on Italy, Criscuolo et al. (2019) on the United Kingdom and Bonfim et al. (2021) on Portugal.

[22] See, for example, Horváth and Lang (2021) on Hungary.

[23] See, for instance, De Mel et al. (2008) on Sri Lanka and Rotemberg (2019) on India.

Some of those studies show that policies have a positive effect on the employment and investment levels of the beneficiary firms – which implies that they can, in principle, address major constraints on firms' growth (such as credit constraints), especially for SMEs. Horváth and Lang (2021) found that Hungary's Funding for Growth Programme, a large-scale subsidised loan programme implemented by the country's central bank, had resulted in increases in employment, productivity and investment in SMEs that had benefited from the policy. Similarly, Beņkovskis et al. (2019) found that Latvian firms benefiting from the support of the European Regional Development Fund saw immediate increases in their employment, turnover and capital stock per employee, while productivity growth did not come until two years later.

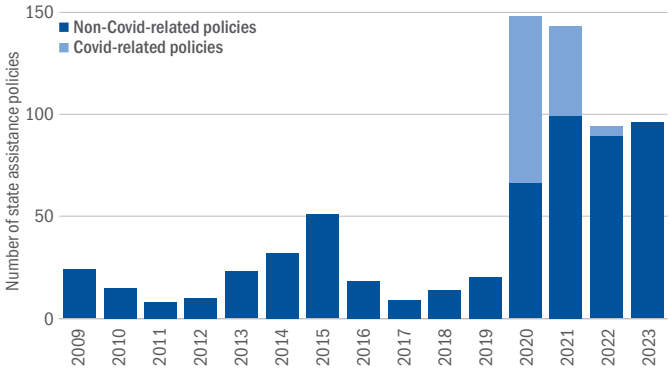
There is a growing body of evidence suggesting that while government support can boost the performance of individual firms, this may come at the cost of displacing competitors' growth. There are studies in various countries illustrating this trade-off. In China, for instance, Cai and Szeidl (2024) found that firms benefiting from government loan programmes improved their performance, but at the expense of their competitors. Similarly, Rotemberg (2019) observed that subsidies for small firms in India led indirectly to losses for ineligible competitors. Ru (2018), meanwhile, showed that loans from the China Development Bank to SOEs had crowded out private firms in the same industries, while crowding in downstream private firms, especially more efficient ones.

Other research has examined the negative spillover effects that state assistance has on ineligible firms in the relevant sectors or clusters. For example, Blonigen (2016) discovered that sector-specific aid could harm the export competitiveness of downstream sectors, and Du et al. (2023) noted that while subsidised firms in China experienced productivity boosts, non-subsidised firms in the relevant clusters saw a weakening of productivity growth.

State assistance in the EBRD regions

EBRD economies have increased their use of state assistance over the last decade (see Chart 4.13). It should be noted, in this regard, that the increase in state assistance's share of total industrial policies has not been driven solely by governments' responses to the Covid-19 pandemic. By 2023, state assistance accounted for approximately 23 per cent of all industrial policies in the EBRD regions.

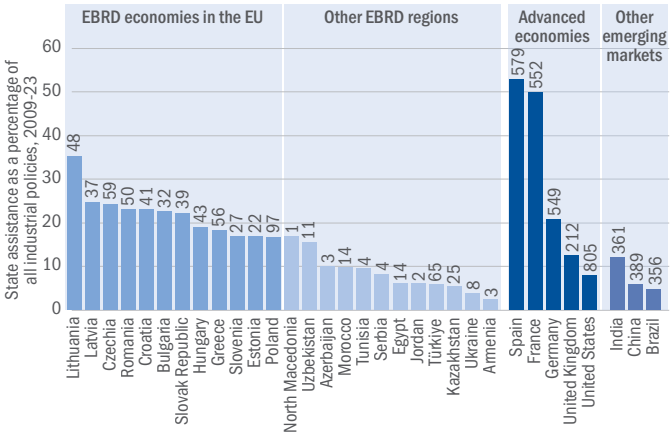
CHART 4.13. Use of state assistance has increased in the EBRD regions



Source: GTA database and authors' calculations.

Note: The data in this chart cover the following EBRD economies: Armenia, Azerbaijan, Bulgaria, Croatia, Czechia, Egypt, Estonia, Greece, Hungary, Jordan, Kazakhstan, Latvia, Lithuania, Morocco, North Macedonia, Poland, Romania, the Slovak Republic, Slovenia, Tunisia, Türkiye, Ukraine and Uzbekistan. Covid-related policies were identified by searching policy descriptions for relevant keywords.

CHART 4.14. EBRD economies make less use of state assistance than richer economies, but more use than other emerging markets



Source: GTA database and authors' calculations.

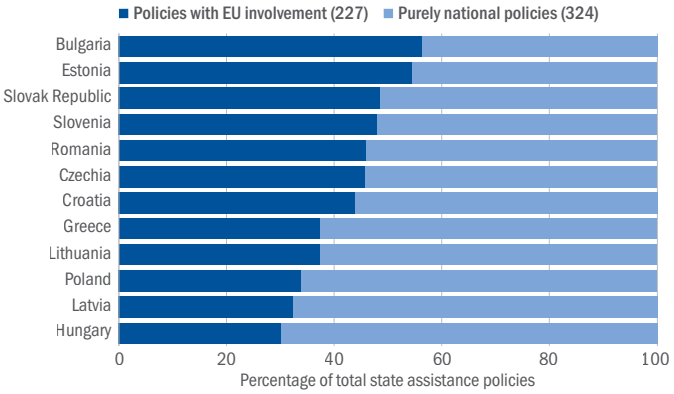
Note: The figures at the top of each bar indicate the total number of state assistance policies in the period 2009-23 for each economy.

The economies in the EBRD regions are no more reliant on state assistance than many other economies. As Chart 4.14 shows, state assistance accounts for a significantly higher percentage of total industrial policies in advanced economies such as Spain and France, where that figure exceeds 50 per cent. This is well above the 35 per cent seen in Lithuania, which is the highest level in the EBRD regions. At the other end of the spectrum, Armenia has the lowest figure, with state assistance accounting for just 2 per cent of all industrial policies. Overall, use of state assistance in the EBRD regions tends, on average, to be lower than in wealthier countries such as Spain and France as a percentage of total industrial policies, but higher than in emerging market economies such as India, China and Brazil, where state assistance accounts for just 7 per cent of all industrial policies. It should be noted, however, that the number of state assistance policies is far lower in the EBRD regions than it is in other emerging markets and advanced economies. China, for example, implemented 389 state assistance policies between 2009 and 2023, while Spain and France both implemented more than 550. The economies of the EBRD regions averaged 47 state assistance policies each over that period, compared with averages of 74 and 180 for other emerging markets and advanced economies respectively.

EBRD economies in the EU make greater use of state assistance than other EBRD economies. Indeed, in 2023 less than 10 per cent of the total number of state assistance policies in the EBRD regions were in economies outside the EU. However, a significant percentage of the state assistance policies that are used in EBRD economies in the EU have some form of EU involvement through the European Commission, the European Investment Bank (EIB), the European Agricultural Fund for Rural Development (EAFRD), the European Investment Fund (EIF), the European Maritime, Fisheries and Aquaculture Fund (EMFAF), the European Agricultural Guarantee Fund (EAGF) and other supranational EU policies. This reflects the fact that EBRD economies in the EU are heavily reliant on external international support when directing state assistance to their firms (see Chart 4.15).

A closer look at the specific instruments employed in the EBRD regions reveals that direct grants and loans are the most commonly used forms of state assistance. However, their relative popularity has shifted over time, as Chart 4.16 shows. In 2023, direct grants accounted for a substantial 81 per cent of all state assistance policies, following significant increases in their use over time. Conversely, loans now make up less than 8 per cent of all state assistance policies, pointing to a decline in their use.

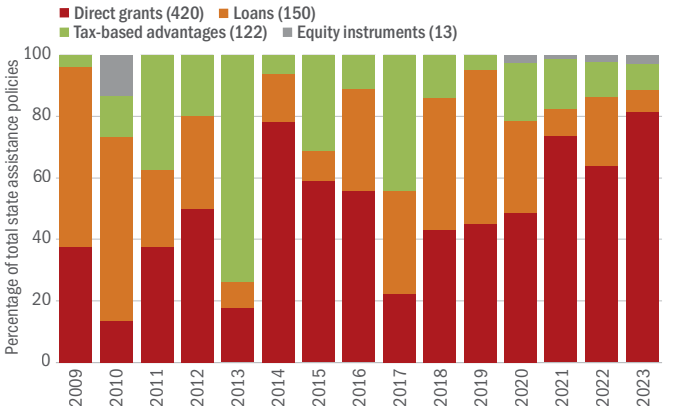
CHART 4.15. A significant percentage of state assistance policies in EBRD economies in the EU over the period 2009-23 had some form of EU involvement



Source: GTA database and authors' calculations.

Note: "Policies with EU involvement" are policies involving the European Commission, the EIB, the EAFRD, the EIF, the EMFAF or the EAGF, as well as other supranational EU policies. The figures in parentheses in the legend are totals for all economies across all years.

CHART 4.16. Direct grants and state loans are the most common types of state assistance instrument in the EBRD regions



Source: GTA database and authors' calculations.

Note: The data in this chart cover the following EBRD economies: Armenia, Azerbaijan, Bulgaria, Croatia, Czechia, Egypt, Estonia, Greece, Hungary, Jordan, Kazakhstan, Latvia, Lithuania, Morocco, North Macedonia, Poland, Romania, the Slovak Republic, Slovenia, Tunisia, Türkiye, Ukraine and Uzbekistan. The figures in parentheses in the legend are totals across all years.

Within the category of direct grants, we can see that financial grants and production subsidies feature prominently. Indeed, as Chart 4.17 illustrates, financial grants account for 55 per cent of all state assistance provided. In the category of tax-based advantages, tax or social insurance relief is the most common form of state assistance.

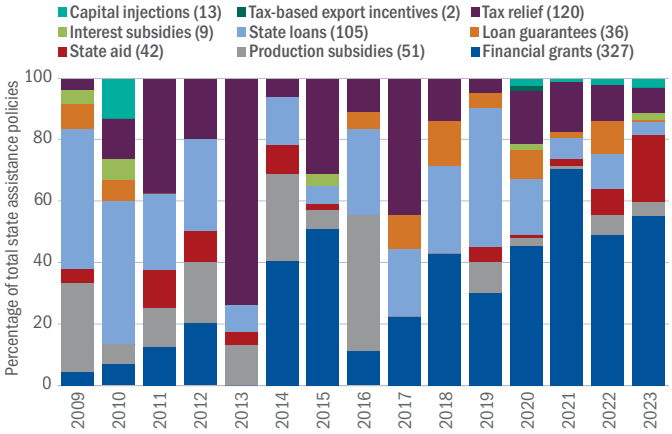
These trends underscore the evolving nature of state assistance in the EBRD regions, with governments showing a clear preference for direct grants, especially in the form of financial grants and production subsidies. While loans and tax-based advantages still have a role to play, their relative importance has diminished over time.

There is scope to better differentiate state assistance for firms

While state assistance is rich in content and variety in the economies where the EBRD invests, there is still poor differentiation in terms of targeting. Chart 4.18 looks at the types of firm that EBRD economies target with their state assistance. In most economies, state assistance policies do not target specific firms, with such targeted policies accounting for just 2 per cent of total state assistance in Lithuania (but 42 per cent in Morocco). It is also important to note that there is very little explicit focus on young firms. Only three EBRD economies have state assistance policies targeting young firms: Hungary (where such policies make up 2 per cent of total state assistance), Kazakhstan (with 4 per cent) and Morocco (with a relatively high 7 per cent).

Only
3 EBRD ECONOMIES
have state assistance policies that explicitly target young firms

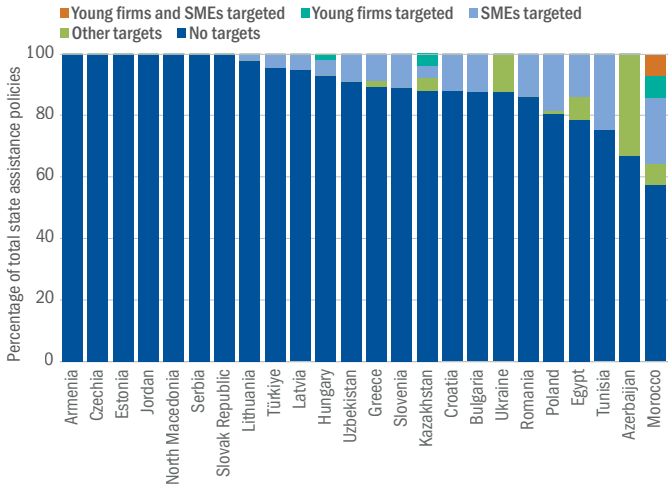
CHART 4.17. Financial grants are an increasingly popular form of state assistance in the EBRD regions



Source: GTA database and authors' calculations.

Note: The data in this chart cover the following EBRD economies: Armenia, Azerbaijan, Bulgaria, Croatia, Czechia, Egypt, Estonia, Greece, Hungary, Jordan, Kazakhstan, Latvia, Lithuania, Morocco, North Macedonia, Poland, Romania, the Slovak Republic, Slovenia, Tunisia, Türkiye, Ukraine and Uzbekistan. The figures in parentheses in the legend are totals across all years.

CHART 4.18. Most state assistance policies in EBRD economies are untargeted



Source: GTA database and authors' calculations.

Note: Policies targeting "young" firms were identified by searching intellectual property descriptions for the following keywords: "entrepreneur", "entrepreneurship", "entrepreneurial", "incubator", "young firms", "accelerator", "startup", "start-up", "start up", "venture capital", "early-stage", "gazelle", "seed" and "angel investment". Policies targeting SMEs were identified using GTA's classification. "Other targets" includes policies targeting specific sectors, locations and SOEs.

Conclusion and policy implications

In many EBRD economies, as this chapter has highlighted, large firms tend to be relatively productive and innovative, and responsible for a large percentage of the total churn and job reallocation in the labour market. At the same time, it is younger firms that contribute most to net job creation. Policymakers can help those younger and more dynamic firms to scale up more quickly by helping them to overcome constraints and barriers such as corruption, inefficient court systems and competition from the informal sector. Well-targeted industrial policies can also play a useful role here, for example by helping firms to overcome informational frictions in credit and venture capital markets. While EBRD economies have made increased use of state assistance over the past decade, the targeting and design of those policies appears to be relatively undifferentiated, with insufficient focus on supporting young, high-growth firms.

Deciding on the appropriate targeting of industrial policies is not an easy task, as governments need to take account of possible indirect effects within the economy. Such policies could include subsidised lending, with governments providing assistance to young firms that have insufficient credit history or collateral (while guarding against the risk of crowding out private lenders).[24] Governments could also offer credit guarantees with the aim of mitigating or removing some of the risks that young, high-growth firms may face. While credit guarantees can allow under-served firms to take more risks, one potential downside is that they can lead to excessive increases in the number of risky projects, increasing the likelihood of defaults. Lastly, government-backed venture capital could make it easier for young firms to raise funds, with governments either acting as "general partners" (actively seeking investment for promising firms) or acting as "limited partners" (providing funds, but not interfering in investment decisions). The main caveat with such an instrument is that government backed venture capital requires highly skilled public administrators and independent evaluation processes that are insulated from political capture.[25]

[24] See Banerjee and Duflo (2014).
[25] See De Haas and González-Uribe (2024) for a discussion of financial industrial policy.

BOX 4.1.

The EBRD's Star Venture programme

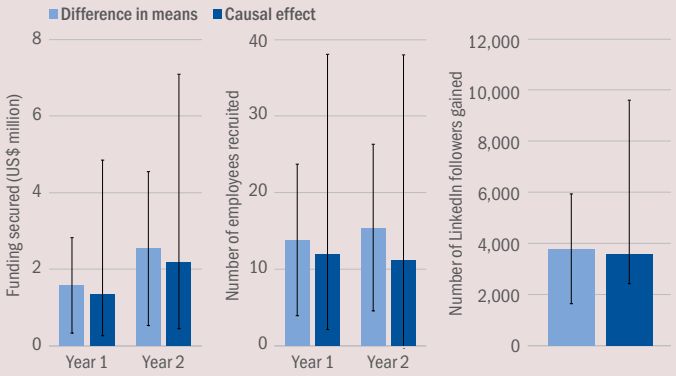
Entrepreneurial ecosystems typically feature structured, time-limited programmes that can help promising startups to grow through funding and capacity building. However, evidence on the effectiveness of such programmes is limited – especially in developing economies and emerging markets, and particularly as regards mentoring and entrepreneurship training. This box presents evidence on the impact of such technical assistance through analysis of the EBRD's Star Venture programme, which supports early-stage startups across various industries through tailored advisory services, training, mentorship and investor networks.

Startups with strong growth potential are vital for market economies owing to their innovation, rapid scaling, job creation and revenue generation. The entrepreneurs behind such firms are typically well educated and driven, requiring less help with basic business skills and more specialist advice on refining their business models and attracting investment. Studies show that, in addition to financing, entrepreneurial know-how, management skills and market access are also essential for successful scaling.[26]

The Star Venture programme provides tailored technical assistance to high-potential startups, offering business know-how, mentorship and access to risk capital. This support focuses on refining business models, improving product-market fit and positioning firms for external investment.

In order to qualify for support, startups must have a marketable product or service, demonstrate strong growth potential and be less than 10 years old. Startups are recruited through public calls for applications, after which EBRD staff and consultants shortlist candidates on the basis of funding and capacity. Shortlisted startups pitch to judges, who score them in six areas, and the top-scoring firms are invited to join the programme. Once they have been selected, startups gain access to a network of mentors, investors and business tools. Over the past four years, Star Venture has supported more than 250 tech startups and 33 local accelerators across 26 economies, with a budget of €25.7 million provided by 12 donors.

CHART 4.1.1. Estimated outcomes for funding, employment and market reach



Source: Star Venture administrative data (including application files), Dealroom, LinkedIn and authors' calculations.

Note: This bar chart shows estimates for simple differences in means (light blue bars) and a local randomisation regression discontinuity approach within an optimally selected window of five ranks left and right of the relevant cut-off for selection (dark blue bars). The error bars for the differences in means and causal effects indicate confidence intervals at the 95 per cent level calculated using ordinary least squares and local randomisation inference respectively. Outcomes for funding and employment are measured one and two years after joining the Star Venture programme. LinkedIn followers are measured as at March 2024 for all startups, so firms' exposure to the programme varies.

This box assesses the causal effect of the Star Venture programme by comparing the performance of participating startups with that of a similar group of startups that were shortlisted but not selected. A quasi-experimental method (a regression discontinuity design) is used to distinguish between the effects of the programme itself and the impact of the initial selection process. The comparison focuses on startups that are near the cut-off point for selection, which is determined by the cohort's capacity. (For example, if eight startups are admitted, the cut-off point is after position 8 in the score-based ranking.)

[26] See González-Uribe and Leatherbee (2018) and McKenzie et al. (2023).

The analysis uses data on 327 shortlisted startups across 23 cohorts in 11 countries/regions. Of those shortlisted startups, 155 were selected to participate in the Star Venture programme, while the other 172 firms were ultimately rejected. The cohorts in question embarked on the programme between 2019 and 2022.

The causal effect of the Star Venture programme is assessed by comparing outcomes for participating startups one and two years after joining with equivalent outcomes for startups that were not selected, using funding, employment and numbers of LinkedIn followers as indicators of success. The results indicate that participation in the programme leads to substantial improvements in key business metrics. In terms of funding, participation in the programme results in startups securing an average of US$ 1.34 million more in funding within one year of joining, with that figure rising to US$ 2.17 million after two years. On average, participating startups also recruit 12 employees more within one year of joining, with that employment growth remaining robust in the second year. And in terms of market reach, participation in the programme results, on average, in startups achieving 3,577 LinkedIn followers more (based on data as at March 2024), pointing to enhanced market visibility and improvements in brand recognition and market access.

These outcomes highlight the programme's effectiveness in facilitating the financial and operational scaling of high-potential startups. A summary of the main results can be found in Chart 4.1.1.

The Star Venture programme provides robust evidence that structured, tailored business assistance can play a pivotal role in the growth of startups in emerging markets. Its combination of strategic business training, targeted advisory support and mentorship has proven to be particularly effective in helping startups to overcome growth challenges and achieve scalability. These findings offer valuable insights for the design and implementation of entrepreneurship support programmes in similar contexts.

Over the past four years, the Star Venture programme has supported more than

250

TECH STARTUPS

and

33

LOCAL ACCELERATORS

across

26

ECONOMIES

BOX 4.2.

Bureaucratic capacity and the privatisation of SOEs in the former East Germany

The success of industrial policy hinges on administrative agencies' capacity to implement policies effectively and efficiently. Bureaucrats need to have the right combination of expertise, resources and technology, and they also need to have enough autonomy to implement the policies mandated by politicians.[27] This can be particularly challenging when policies involve picking "losers" – for instance, deciding which loss-making firms to liquidate.

Against this backdrop, the privatisation of SOEs in the former East Germany after reunification offers important lessons. One of the largest and most rapid privatisation programmes in history, this required the creation of a new agency – the *Treuhand* – to implement industrial restructuring and privatisation within a very short time frame. The *Treuhand*'s mandate required it to ensure "efficiency and competitiveness" through "closure [...] of companies that cannot be restructured". In-depth analysis of contemporary and archival firm-level data by Mergele et al. (2024) reveals three key findings about the *Treuhand*'s performance:

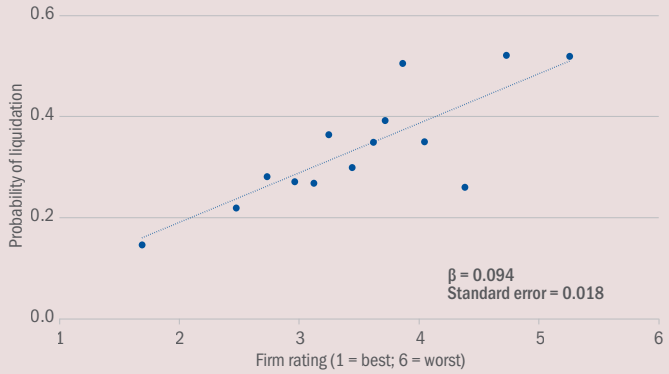
1. Using initial labour productivity as a simple measure of "competitiveness", more productive firms were (i) more likely to be privatised (rather than liquidated), (ii) privatised faster, (iii) sold for higher prices and (iv) more likely to be acquired by buyers in the former West Germany. The agency relied on internal firm rating scores assigned with the help of management consultants, which were an important predictor of liquidation decisions (as demonstrated in Chart 4.2.1), even after controlling for other factors.
2. Firms with higher initial productivity that were not liquidated by the agency were more likely to survive in the long run (up to 20 years post-privatisation). The internal firm rating scores can also help to predict survival post-privatisation.
3. Using a machine learning approach to compare the *Treuhand*'s actual choices with counterfactual scenarios involving the liquidation of different sets of firms, the actual outcomes of the privatisation programme can be benchmarked against those alternative scenarios. This analysis suggests that while the *Treuhand* successfully avoided the worst possible outcomes (that is to say, it did not target the firms with the lowest predicted probability of survival), it did not achieve the best possible results, either (that is to say, it failed to target the firms with the highest predicted probability of survival).

These findings contain three lessons for the design and implementation of industrial policies for firms. First, they suggest that the agency was generally able to identify unviable firms and select them for liquidation. Thus, government agencies may be able to pursue their mandated objectives even in the face of potential pressure from political interest groups. Second, they show that the *Treuhand*'s internal firm ratings proved to be valuable inputs when deciding which enterprises to privatise and liquidate. Moreover, the *Treuhand*'s central office achieved better privatisation outcomes than regional branches, pointing to the importance of having access to detailed information and centralised institutional expertise. And third, they indicate that the rapid pace of privatisation may have come at the expense of achieving the best possible outcomes in terms of retaining viable firms and maintaining local ownership.

These insights from Germany's historical experience of privatisation highlight some of the challenges of implementing large-scale industrial policies and privatisation programmes. They demonstrate the importance of building institutional capacity, establishing careful firm selection processes and balancing speed with the need to ensure optimal long-term outcomes. Even then, policymakers need to recognise the practical difficulties not only of picking winners, but also of letting losers go.

[27] See Barteska and Lee (2024) and Juhász and Lane (2024).

CHART 4.2.1. The probability of liquidation increases as the firm rating deteriorates



Source: Mergele et al. (2024).

Note: This binned scatter plot shows the fitted regression line that is derived by regressing the probability of liquidation (as opposed to privatisation) on firm ratings while controlling for *Land*, industry and survey fixed effects. Industries are defined on the basis of three-digit Standard Industrial Classification (SIC) codes.

References

M. Amiti, C. Duprez, J. Konings and J. Van Reenen (2024)
"FDI and superstar spillovers: Evidence from firm-to-firm transactions", *Journal of International Economics*, Vol. 152, Article 103972.

D. Autor, D. Dorn, L.F. Katz, C. Patterson and J. Van Reenen (2020)
"The fall of the labor share and the rise of superstar firms", *The Quarterly Journal of Economics*, Vol. 135, No. 2, pp. 645-709.

S. Ayerst, D.M. Nguyen and D. Restuccia (2024)
"The micro and macro productivity of nations", NBER Working Paper No. 32750.

M. Ayyagari, A. Demirgüç-Kunt and V. Maksimović (2014)
"Who creates jobs in developing countries?", *Small Business Economics*, Vol. 43, No. 1, pp. 75-99.

A.V. Banerjee and E. Duflo (2014)
"Do firms want to borrow more? Testing credit constraints using a directed lending program", *The Review of Economic Studies*, Vol. 81, No. 2, pp. 572-607.

P. Barteska and J.E. Lee (2024)
"Bureaucrats and the Korean export miracle", mimeo.

K. Beņkovskis, O. Tkačevs and N. Yashiro (2019)
"Importance of EU regional support programmes for firm performance", *Economic Policy*, Vol. 34, No. 98, pp. 267-313.

M. Bertanzetti, S. Mondal, R. Nasir and M. Teachout (2024)
"Why do SMEs matter?", International Growth Centre.

B.A. Blonigen (2016)
"Industrial policy and downstream export performance", *The Economic Journal*, Vol. 126, No. 595, pp. 1635-1659.

N. Bloom, B. Eifert, A. Mahajan, D. McKenzie and J. Roberts (2013)
"Does management matter? Evidence from India", *The Quarterly Journal of Economics*, Vol. 128, No. 1, pp. 1-51.

N. Bloom, H. Schweiger and J. Van Reenen (2012)
"The land that lean manufacturing forgot? Management practices in transition countries", *Economics of Transition*, Vol. 20, No. 4, pp. 593-635.

D. Bonfim, C. Raposo and C. Custódio (2021)
"The sensitivity of SME's investment and employment to the cost of debt financing", Economic and Research Department Working Paper No. 15/2021, Banco de Portugal.

J. Cai and A. Szeidl (2024)
"Indirect effects of access to finance", *The American Economic Review*, Vol. 114, No. 8, pp. 2308-2351.

A. Cerqua and G. Pellegrini (2014)
"Do subsidies to private capital boost firms' growth? A multiple regression discontinuity design approach", *Journal of Public Economics*, Vol. 109, pp. 114-126.

T. Chaney and R. Ossa (2013)
"Market size, division of labor, and firm productivity", *Journal of International Economics*, Vol. 90, No. 1, pp. 177-180.

A. Ciani, M.C. Hyland, N. Karalashvili, J.L. Keller, A. Ragoussis and T.T. Tran (2020)
Making it big: Why developing countries need more large firms, World Bank.

F. Cingano, F. Palomba, P. Pinotti and E. Rettore (2023)
"Granting more bang for the buck: The heterogeneous effects of firm subsidies", *Labour Economics*, Vol. 83, Article 102403.

C. Criscuolo, P.N. Gal and C. Menon (2014)
"The dynamics of employment growth: New evidence from 18 countries", OECD Science, Technology and Industry Policy Paper No. 14.

C. Criscuolo, R. Martin, H.G. Overman and J. Van Reenen (2019)
"Some causal effects of an industrial policy", *The American Economic Review*, Vol. 109, No. 1, pp. 48-85.

R. De Haas and J. González-Uribe (2024)
"Financial industrial policy: A taxonomy of public policies for private finance", forthcoming.

J. De Loecker, J. Eeckhout and G. Unger (2020)
"The rise of market power and the macroeconomic implications", *The Quarterly Journal of Economics*, Vol. 135, No. 2, pp. 561-644.

J. De Loecker and F. Warzynski (2012)
"Markups and firm-level export status", *The American Economic Review*, Vol. 102, No. 6, pp. 2437-2471.

S. De Mel, D. McKenzie and C. Woodruff (2008)
"Returns to capital in microenterprises: Evidence from a field experiment", *The Quarterly Journal of Economics*, Vol. 123, No. 4, pp. 1329-1372.

J. Du, S. Girma, H. Görg and I. Stepanok (2023)
"Who wins and who loses from state subsidies?", *Canadian Journal of Economics/Revue canadienne d'économique*, Vol. 56, No. 3, pp. 1007-1031.

C. Freund and M.D. Pierola (2020)
"The origins and dynamics of export superstars", *The World Bank Economic Review*, Vol. 34, No. 1, pp. 28-47.

X. Gabaix (2011)
"The granular origins of aggregate fluctuations", *Econometrica*, Vol. 79, No. 3, pp. 733-772.

C. Gaubert and O. Itskhoki (2021)
"Granular comparative advantage", *Journal of Political Economy*, Vol. 129, No. 3, pp. 871-939.

J. González-Uribe and M. Leatherbee (2018)
"The effects of business accelerators on venture performance: Evidence from start-up Chile", *The Review of Financial Studies*, Vol. 31, No. 4, pp. 1566-1603.

N. Guner, G. Ventura and Y. Xu (2008)
"Macroeconomic implications of size-dependent policies", *Review of Economic Dynamics*, Vol. 11, No. 4, pp. 721-744.

J. Haltiwanger, R.S. Jarmin and J. Miranda (2013)
"Who creates jobs? Small versus large versus young", *The Review of Economics and Statistics*, Vol. 95, No. 2, pp. 347-361.

A. Horváth and P. Lang (2021)
"Do loan subsidies boost the real activity of small firms?", *Journal of Banking & Finance*, Vol. 122, Article 105988.

C.-T. Hsieh and P.J. Klenow (2009)
"Misallocation and manufacturing TFP in China and India", *The Quarterly Journal of Economics*, Vol. 124, No. 4, pp. 1403-1448.

C.-T. Hsieh and B.A. Olken (2014)
"The missing 'missing middle'", *Journal of Economic Perspectives*, Vol. 28, No. 3, pp. 89-108.

R. Juhász and N.J. Lane (2024)
"The political economy of industrial policy", NBER Working Paper No. 32507.

S. Kalemli-Ozcan, B.E. Sørensen, C. Villegas-Sanchez, V. Volosovych and S. Yeşiltaş (2024)
"How to construct nationally representative firm-level data from the Orbis global database: New facts on SMEs and aggregate implications for industry concentration", *American Economic Journal: Macroeconomics*, Vol. 16, No. 2, pp. 353-374.

D. McKenzie, C. Woodruff, K. Bjorvatn, M. Bruhn, J. Cai, J. González-Uribe, S. Quinn, T. Sonobe and M. Valdivia (eds.) (2023)
"Training entrepreneurs", *VoxDevLit*, Vol. 1, No. 3.

L. Mergele, M. Hennicke and M. Lubczyk (2024)
"The big sell: Privatizing East Germany's economy", forthcoming.

B. Rijkers, H. Arouri, C. Freund and A. Nucifora (2014)
"Which firms create the most jobs in developing countries? Evidence from Tunisia", *Labour Economics*, Vol. 31, pp. 84-102.

M. Rotemberg (2019)
"Equilibrium effects of firm subsidies", *The American Economic Review*, Vol. 109, No. 10, pp. 3475-3513.

H. Ru (2018)
"Government credit, a double-edged sword: Evidence from the China Development Bank", *The Journal of Finance*, Vol. 73, No. 1, pp. 275-316.

V. Sterk, P. Sedláček and B. Pugsley (2021)
"The nature of firm growth", *The American Economic Review*, Vol. 111, No. 2, pp. 547-579.

Treuhandgesetz (1990)
Gesetz zur Privatisierung und Reorganisation des volkseigenen Vermögens (Law on the Privatisation and Reorganisation of the Assets of the People), Law Gazette of the GDR 1990 I, p. 300.

X. Yan (2024)
"Unveiling the ripple effect: US monetary policy and firm markups in emerging markets", forthcoming.

5 Structural reform

This chapter presents the latest assessment of transition challenges in the EBRD regions, looking at whether economies are competitive, well governed, green, inclusive, resilient and integrated. It also provides, for the first time, an assessment of six comparator economies in sub-Saharan Africa (SSA): Benin, Côte d'Ivoire, Ghana, Kenya, Nigeria and Senegal. Their scores tend to be lower than those of EBRD economies, in line with their lower levels of income per capita. The largest gap between the two is in the area of integration, with a smaller gap in the area of inclusion. Since 2016, SSA economies have seen marked improvements in competitiveness and resilience, while little progress has been made in terms of integration.

Introduction

This chapter presents the latest assessment of transition challenges in the EBRD regions, tracking progress in the area of structural reform. It focuses on six key qualities of a sustainable market economy, looking at whether economies are competitive, well governed, green, inclusive, resilient and integrated. For each quality, progress is assessed on a scale of 1 to 10, where 1 denotes the worst possible performance and 10 corresponds to the standards of a sustainable market economy. Those "assessment of transition qualities" (ATQ) scores are based on a wide range of external and internal data sources and calculated in accordance with a detailed methodology (see Table 5.1).[1]

TABLE 5.1. ATQ scores for six key qualities of a sustainable market economy: the EBRD regions

	Competitive			Well governed			Green			Inclusive			Resilient			Integrated		
	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016
Central Europe and the Baltic states (CEB)																		
Croatia	**5.84**	5.81	5.85	**6.51**	6.19	6.32	**6.91**	6.90	6.01	**6.88**	6.83	6.93	**6.73**	6.73	6.01	**6.67**	6.65	6.27
Czechia	**6.43**	6.42	6.50	**7.55**	7.50	7.08	**7.15**	7.18	6.59	**7.10**	7.09	6.98	**7.50**	7.52	7.58	**7.63**	7.58	7.93
Estonia	**7.59**	7.59	7.24	**8.83**	8.82	8.59	**7.17**	7.08	6.22	**7.79**	7.76	7.33	**7.53**	7.54	7.44	**7.72**	7.68	7.57
Hungary	**6.08**	6.07	5.98	**6.04**	6.02	5.89	**6.86**	6.83	6.14	**6.28**	6.29	6.19	**7.02**	7.01	6.76	**7.46**	7.33	7.15
Latvia	**6.12**	6.10	6.04	**7.57**	7.55	6.93	**7.10**	7.11	6.31	**7.19**	7.19	6.79	**7.15**	7.18	6.96	**7.46**	7.38	7.28
Lithuania	**6.44**	6.41	6.31	**7.93**	7.96	7.36	**7.14**	7.17	6.53	**7.33**	7.26	7.07	**7.27**	7.27	6.89	**7.66**	7.59	6.98
Poland	**6.28**	6.27	6.27	**6.85**	6.85	7.46	**7.05**	7.05	6.53	**7.13**	7.08	7.00	**7.49**	7.49	7.31	**7.13**	7.02	6.75
Slovak Republic	**6.28**	6.27	6.17	**6.63**	6.62	6.32	**7.20**	7.27	6.75	**6.81**	6.82	6.64	**7.64**	7.63	7.50	**7.26**	7.33	7.29
Slovenia	**6.28**	6.26	6.33	**7.27**	7.26	7.28	**7.31**	7.29	6.70	**7.64**	7.55	7.28	**7.45**	7.41	7.18	**7.40**	7.32	6.72
South-eastern Europe (SEE)																		
Albania	**4.95**	4.93	4.79	**4.88**	4.87	5.43	**4.89**	4.89	4.86	**5.54**	5.59	5.06	**4.65**	4.61	4.35	**5.51**	5.50	5.41
Bosnia and Herzegovina	**4.62**	4.60	4.56	**4.24**	4.25	4.84	**5.38**	5.32	4.74	**5.65**	5.68	5.46	**4.86**	4.83	4.69	**5.19**	5.22	4.72
Bulgaria	**5.51**	5.49	5.41	**6.08**	6.03	5.97	**6.67**	6.59	5.55	**6.19**	6.17	5.86	**6.10**	6.06	5.81	**6.70**	6.65	6.75
Greece	**5.50**	5.50	5.84	**6.05**	6.06	5.84	**6.72**	6.74	6.00	**6.99**	6.96	6.74	**7.21**	7.16	6.85	**7.08**	7.10	5.90
Kosovo	**5.30**	5.28	4.91	**4.95**	4.99	5.09	**3.72**	3.71	3.56	**5.58**	5.50	5.43	**4.59**	4.56	4.10	**6.51**	6.43	6.01
Montenegro	**5.45**	5.43	5.17	**6.49**	6.45	6.06	**6.21**	6.20	5.48	**5.95**	5.93	5.55	**5.39**	5.35	4.96	**5.81**	5.79	5.30
North Macedonia	**5.09**	5.09	4.85	**5.59**	5.56	5.92	**5.67**	5.68	4.83	**5.65**	5.57	5.38	**5.26**	5.25	4.77	**6.39**	6.36	5.52
Romania	**6.11**	6.08	5.73	**6.31**	6.32	6.12	**6.70**	6.64	5.97	**6.08**	6.07	6.01	**6.66**	6.66	6.23	**6.71**	6.67	6.42
Serbia	**5.29**	5.28	5.10	**6.08**	6.11	5.86	**5.51**	5.52	4.99	**5.99**	5.98	5.68	**5.19**	5.17	5.04	**6.59**	6.55	5.87
Türkiye	**5.64**	5.62	5.64	**6.15**	6.22	6.13	**5.39**	5.38	4.95	**5.42**	5.41	5.36	**6.61**	6.66	6.40	**6.10**	5.99	5.99
Eastern Europe and the Caucasus (EEC)																		
Armenia	**4.41**	4.38	4.08	**6.52**	6.39	5.97	**5.73**	5.71	5.40	**5.23**	5.20	4.98	**5.61**	5.61	4.90	**5.67**	5.61	5.16
Azerbaijan	**3.99**	3.98	4.03	**5.68**	5.74	5.36	**5.04**	5.01	4.72	**5.65**	5.60	5.46	**3.30**	3.24	3.27	**5.18**	5.15	5.53
Georgia	**4.88**	4.84	4.53	**6.32**	6.39	6.58	**5.51**	5.48	5.03	**5.50**	5.50	5.28	**5.55**	5.56	4.50	**6.52**	6.57	5.80
Moldova	**4.58**	4.57	4.43	**5.23**	5.19	4.70	**4.70**	4.71	4.33	**5.77**	5.69	5.56	**4.70**	4.76	4.36	**5.15**	5.22	5.17
Ukraine	**4.72**	4.72	4.85	**4.52**	4.48	4.30	**5.46**	5.44	5.08	**5.90**	5.92	5.63	**4.54**	4.51	3.74	**5.24**	5.31	5.29
Central Asia																		
Kazakhstan	**4.87**	4.85	4.71	**6.33**	6.32	5.77	**5.07**	5.09	4.67	**5.63**	5.59	5.27	**5.46**	5.42	5.01	**5.22**	5.24	4.91
Kyrgyz Republic	**3.78**	3.78	3.64	**4.36**	4.46	4.44	**4.87**	4.86	4.49	**4.93**	4.94	4.79	**4.22**	4.20	4.18	**4.53**	4.57	4.20
Mongolia	**3.91**	3.90	4.23	**5.33**	5.00	5.48	**4.64**	4.68	4.76	**5.65**	5.66	5.23	**4.54**	4.54	4.22	**5.18**	5.28	4.74
Tajikistan	**3.34**	3.33	3.24	**4.66**	4.74	4.31	**5.41**	5.40	5.14	**4.04**	4.02	3.86	**3.47**	3.47	2.91	**4.05**	4.08	3.41
Turkmenistan	**3.02**	3.02	3.27	**2.85**	2.88	3.01	**4.86**	4.84	4.85	**4.45**	4.41	4.19	**3.33**	3.33	3.14	**4.24**	4.30	4.24
Uzbekistan	**3.77**	3.76	3.50	**5.00**	5.02	4.79	**5.42**	5.40	4.91	**4.78**	4.67	4.39	**3.76**	3.76	3.40	**5.25**	5.19	4.37
Southern and eastern Mediterranean (SEMED)																		
Egypt	**3.54**	3.53	3.52	**5.57**	5.58	4.95	**4.98**	5.08	4.53	**4.33**	4.30	4.28	**4.63**	4.61	4.29	**5.66**	5.58	4.70
Jordan	**4.53**	4.52	4.57	**6.12**	6.15	6.08	**5.34**	5.34	5.58	**5.01**	4.91	4.54	**5.06**	5.06	4.63	**5.58**	5.56	5.94
Lebanon	**4.30**	4.29	4.57	**3.63**	3.65	4.11	**4.79**	4.80	4.94	**4.29**	4.30	4.65	**2.95**	2.95	3.89	**5.19**	5.09	5.13
Morocco	**3.81**	3.80	3.71	**5.89**	5.86	5.60	**5.29**	5.29	5.18	**4.91**	4.88	4.66	**4.69**	4.68	4.53	**5.24**	5.18	5.07
Tunisia	**3.91**	3.91	4.13	**4.88**	4.90	5.25	**4.79**	4.82	4.65	**4.96**	4.98	4.86	**4.00**	3.98	3.63	**4.89**	4.93	4.70
West Bank and Gaza	**2.56**	2.56	2.35	**3.60**	3.61	3.52	**4.13**	4.14	3.96	**3.87**	3.88	3.88	**3.68**	3.68	3.50	**4.59**	4.61	4.16

Source: EBRD.

Note: Scores are on a scale of 1 to 10, where 10 represents a synthetic frontier corresponding to the standards of a sustainable market economy. All scores have been updated following methodological changes, so they may differ from those published in previous years' reports. Owing to lags in the availability of underlying data, ATQ scores for 2024 and 2023 may not fully correspond to developments in those calendar years. Exceptionally, Chapter 5 treats Greece as part of the SEE region.

[1] See https://2024.tr-ebrd.com/structural-reform for a detailed description of that methodology and https://2024.tr-ebrd.com/countries for a comprehensive overview of structural reforms over the past 12 months.

Introducing comparator economies in sub-Saharan Africa

For the first time, the analysis in this chapter also covers six new comparator economies in sub-Saharan Africa: Benin, Côte d'Ivoire, Ghana, Kenya, Nigeria and Senegal (see Table 5.2 and Chart 5.1).

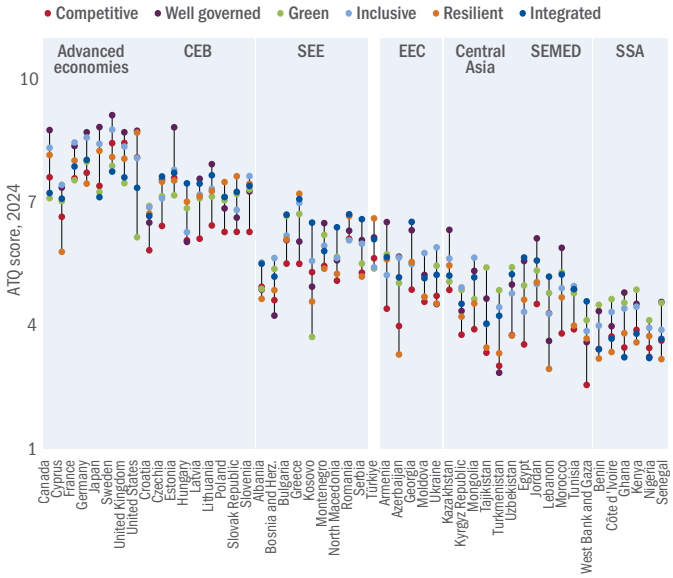
TABLE 5.2. ATQ scores for six key qualities of a sustainable market economy: comparator economies

	Competitive			Well governed			Green			Inclusive			Resilient			Integrated		
	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016	2024	2023	2016
Advanced economies																		
Canada	**7.61**	7.61	7.51	**8.76**	8.74	9.04	**7.10**	7.13	6.52	**8.33**	8.34	8.21	**8.15**	8.16	8.11	**7.23**	7.24	7.22
Cyprus	**6.65**	6.64	7.10	**7.36**	7.37	7.19	**7.03**	7.08	6.04	**7.43**	7.39	7.14	**5.80**	5.73	5.55	**7.09**	7.13	6.95
France	**7.58**	7.58	7.48	**8.37**	8.38	8.28	**7.54**	7.52	7.43	**8.46**	8.45	8.36	**8.02**	8.05	7.89	**7.87**	7.96	7.60
Germany	**7.72**	7.72	7.84	**8.71**	8.71	9.01	**7.99**	7.97	7.81	**8.58**	8.59	8.45	**7.46**	7.47	7.51	**8.03**	7.97	7.90
Japan	**7.40**	7.39	7.37	**8.83**	8.84	8.73	**7.25**	7.26	7.23	**8.42**	8.42	8.20	**8.25**	8.26	8.02	**7.13**	7.16	7.30
Sweden	**8.44**	8.45	8.09	**9.12**	9.13	9.33	**7.89**	7.91	7.69	**8.77**	8.75	8.65	**8.10**	8.11	8.01	**7.75**	7.70	7.77
United Kingdom	**8.45**	8.44	8.50	**8.71**	8.73	9.15	**7.47**	7.45	7.25	**8.36**	8.38	8.43	**8.06**	8.09	7.89	**7.61**	7.54	7.66
United States of America	**8.09**	8.09	8.20	**8.74**	8.78	8.81	**6.15**	6.20	6.70	**8.08**	8.08	7.91	**8.70**	8.68	8.54	**7.35**	7.32	7.37
Sub-Saharan Africa																		
Benin	**3.43**	3.43	3.04	**4.35**	4.23	3.79	**4.50**	4.50	4.38	**4.00**	4.01	3.98	**3.20**	3.25	3.04	**3.42**	3.29	3.18
Côte d'Ivoire	**3.73**	3.73	3.25	**3.98**	3.75	3.95	**4.65**	4.65	4.31	**4.33**	4.36	3.95	**3.36**	3.41	3.04	**3.68**	3.66	3.65
Ghana	**3.47**	3.47	3.23	**4.80**	4.57	4.62	**4.56**	4.56	4.46	**4.42**	4.41	4.41	**3.81**	3.90	2.99	**3.23**	3.24	3.39
Kenya	**3.90**	3.89	3.70	**4.53**	4.41	4.36	**4.87**	4.87	4.67	**4.46**	4.43	4.44	**3.59**	3.65	3.17	**3.80**	3.86	4.10
Nigeria	**3.46**	3.46	3.37	**3.24**	3.15	3.48	**4.13**	4.13	3.78	**3.95**	3.96	4.04	**3.74**	3.74	2.97	**3.21**	3.25	3.46
Senegal	**3.64**	3.63	3.23	**4.57**	4.36	4.32	**4.55**	4.55	4.41	**3.90**	3.89	3.68	**3.18**	3.23	3.04	**3.68**	3.64	3.05
Other comparators																		
Bangladesh	**3.55**	3.54	3.45	**5.77**	5.83	5.73	**4.33**	4.46	4.07	**3.65**	3.64	3.68	**5.47**	5.47	5.10	**4.09**	4.27	4.37
Belarus	**4.73**	4.72	4.39	**4.59**	4.69	4.77	**5.56**	5.58	5.54	**5.52**	5.55	5.69	**3.48**	3.44	3.17	**6.17**	6.04	5.38
Brazil	**4.67**	4.67	4.50	**5.98**	6.04	6.04	**5.92**	5.94	5.84	**5.57**	5.58	5.46	**5.74**	5.70	5.37	**5.14**	5.05	5.07
Colombia	**4.31**	4.30	4.41	**6.29**	6.24	6.37	**5.73**	5.74	5.59	**5.12**	5.11	5.11	**5.76**	5.78	5.53	**5.55**	5.50	5.06
Mexico	**4.86**	4.86	4.84	**6.27**	6.27	6.36	**5.50**	5.52	5.38	**5.20**	5.20	5.00	**5.77**	5.75	5.42	**5.72**	5.85	5.51
Russia	**5.16**	5.13	5.02	**5.48**	5.37	5.56	**5.59**	5.58	5.09	**5.02**	5.05	4.98	**5.68**	5.68	5.28	**4.73**	4.87	5.41
South Africa	**5.70**	5.70	5.74	**7.36**	7.40	7.99	**4.58**	4.65	4.74	**4.93**	4.92	4.92	**5.60**	5.60	5.29	**5.87**	5.89	5.84
Thailand	**5.55**	5.54	5.38	**7.08**	7.05	6.72	**5.40**	5.44	5.16	**5.23**	5.23	5.00	**6.07**	6.06	5.56	**6.10**	5.99	5.73

Source: EBRD.

Note: Scores are on a scale of 1 to 10, where 10 represents a synthetic frontier corresponding to the standards of a sustainable market economy. All scores have been updated following methodological changes, so they may differ from those published in previous years' reports. Owing to lags in the availability of underlying data, ATQ scores for 2024 and 2023 may not fully correspond to developments in those calendar years.

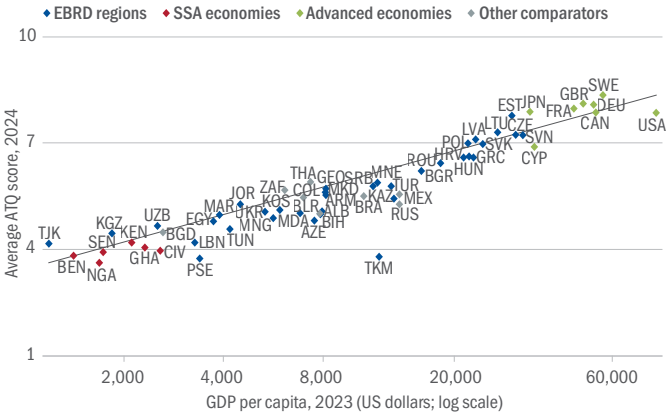
CHART 5.1. ATQ scores for six key qualities of a sustainable market economy, 2024



Source: EBRD.

Note: Scores are on a scale of 1 to 10, where 10 represents a synthetic frontier corresponding to the standards of a sustainable market economy.

CHART 5.2. Scores for SSA economies tend to be lower than those of EBRD economies, in line with their lower levels of income per capita



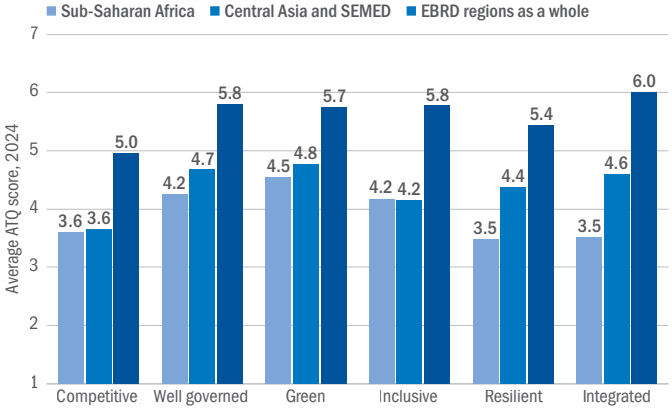
Source: EBRD, IMF and authors' calculations.

Note: ATQ scores are simple averages of the scores for the six qualities. The horizontal axis shows GDP per capita in 2023 at market exchange rates.

Overall, the scores for SSA economies tend to be lower than those of EBRD economies, broadly in line with their lower levels of income per capita at market exchange rates (see Chart 5.2 and Carruthers and Plekhanov (2023) for a discussion of the relationship between income per capita and ATQ scores). At the same time, ATQ scores for economies in Central Asia with comparable levels of income per capita are, on average, somewhat higher than one would expect on the basis of their income per capita alone.

In terms of the individual qualities of a sustainable market economy, the largest gap between the SSA region and EBRD economies is in the area of integration, reflecting the scarce infrastructure and low levels of intra-regional trade and investment in sub-Saharan Africa (see Chart 5.3). The SSA region stands out for its low levels of cross-border trade and the scarcity of transport and fixed-line broadband infrastructure, even when its modest levels of income per capita are taken into account (see Charts 5.4 and 5.5). Indeed, imports and exports are equivalent to less than 50 per cent of GDP in Kenya and Côte d'Ivoire, compared with around 100 per cent in the Kyrgyz Republic and Tunisia.

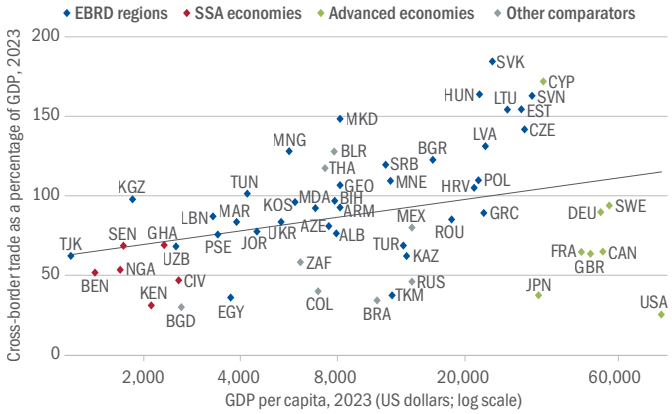
CHART 5.3. The largest gap between the SSA region and EBRD economies is in the area of integration



Source: EBRD and authors' calculations.

Note: Figures are simple averages of the 2024 scores for the economies in the relevant grouping.

CHART 5.4. The SSA region's low levels of cross-border trade stand out even when its modest levels of income per capita are taken into account



Source: World Bank, IMF and authors' calculations.

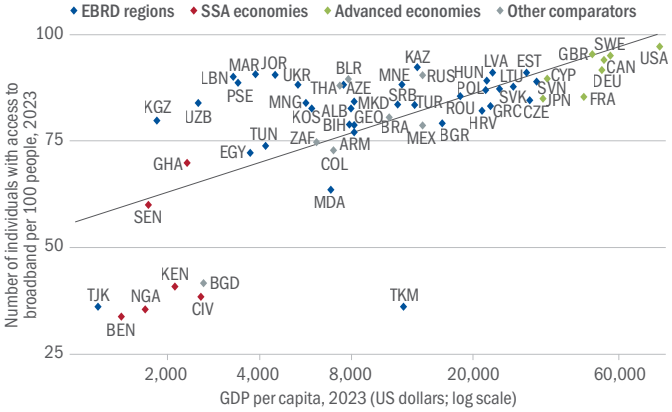
Note: The horizontal axis shows GDP per capita in 2023 at market exchange rates.

Overall, the

ATQ SCORES FOR SSA ECONOMIES

tend to be lower than those of EBRD economies, broadly in line with their lower levels of income per capita at market exchange rates

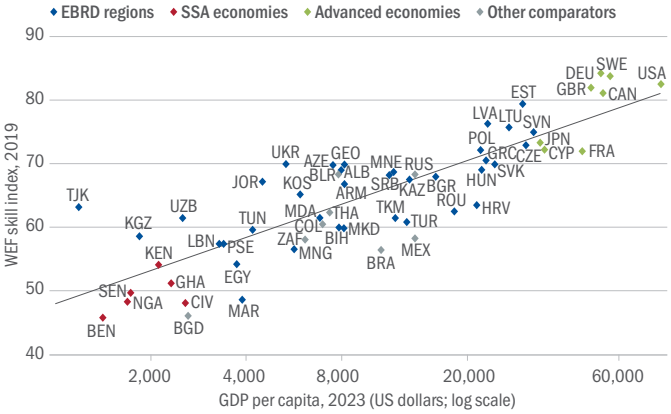
CHART 5.5. The SSA region has low levels of broadband internet penetration



Source: International Telecommunication Union, IMF and authors' calculations.

Note: The horizontal axis shows GDP per capita in 2023 at market exchange rates.

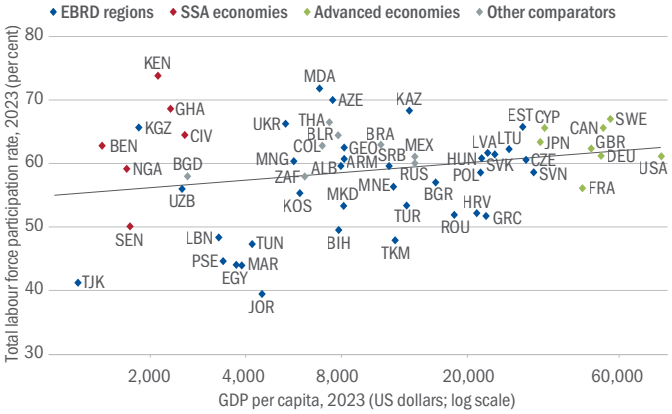
CHART 5.6. There is a clear skill deficit in SSA economies



Source: WEF, IMF and authors' calculations.

Note: The horizontal axis shows GDP per capita in 2023 at market exchange rates.

CHART 5.7. SSA economies have high levels of total labour force participation relative to their income per capita



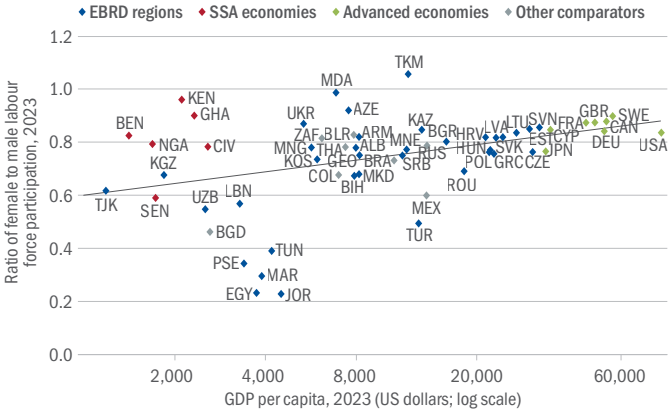
Source: International Labour Organization (ILO), IMF and authors' calculations.

Note: The horizontal axis shows GDP per capita in 2023 at market exchange rates.

Relative to advanced economies, there is also a large gap in the area of competitiveness, reflecting the low levels of productivity and skills in SSA economies (see Chart 5.6). In this analysis, scores for skills are based on the global competitiveness indicators produced by the World Economic Forum (WEF), combining average years of schooling and measures of school infrastructure with qualitative indicators covering the perceived quality of vocational training, graduates' skill sets, digital skills, the ease of finding skilled employees and use of critical thinking in teaching.

Meanwhile, the average inclusion score for the SSA region is, if anything, slightly higher than the average for Central Asia and the SEMED region – EBRD economies with relatively low levels of income per capita. This reflects the relatively high total labour force participation rates in SSA economies (with the possible exception of Senegal), as well as high levels of female labour force participation (see Charts 5.7 and 5.8).

CHART 5.8. The SSA region also has high levels of female labour force participation relative to its income per capita



Source: ILO, IMF and authors' calculations.

Note: The horizontal axis shows GDP per capita in 2023 at market exchange rates. The vertical axis shows the ratio of the female labour force participation rate to the male labour force participation rate, with higher values denoting a smaller gender gap.

Trends in ATQ scores since 2016

In the period since 2016 – the year that ATQ scores were first published – the largest overall improvements in the EBRD regions have been seen in the areas of integration and the green economy, with the smallest amounts of progress being observed in the areas of competitiveness, inclusion and governance (see Chart 5.9).

Remaining gaps relative to advanced economies

Advanced economies have, if anything, gone backwards since 2016 in the area of governance (see Chart 5.9). However, the governance gap between the EBRD regions and advanced economies remains large (and is larger than those observed for the other five qualities of a sustainable market economy using the ATQ metric). This is consistent with the findings set out in the *Transition Report 2019-20*, which highlighted the persistent governance deficit in the EBRD regions relative to economies' levels of economic development.[2]

Persistent gaps in the area of governance primarily reflect perceived deficiencies relating to the protection of intellectual property rights, corruption, the rule of law, the effectiveness of government policymaking, transparency and disclosure standards.

There is also a pronounced gap relative to advanced economies in the area of competitiveness. This reflects large gaps relating to exports of advanced business services, skills and productivity, the quality of transport and logistics services, access to finance, and the economic complexity of production and exports.

The smallest gap between the EBRD regions and advanced economies is in the area of integration. However, significant gaps persist here, too, particularly when it comes to transport and logistics services, the quality of transport infrastructure and the connectivity of the electricity grid.

There is also a more modest gap in the area of the green economy. Most economies in the EBRD regions exhibit gaps relative to more advanced economies when it comes to a fair transition, vehicle emission standards, the implementation of carbon-pricing mechanisms and greenhouse gas emissions from industrial activities.

CHART 5.9 . Since 2016, EBRD economies have made the most progress in the areas of integration and the green economy

Source: EBRD and authors' calculations.

Note: Figures are simple averages of the scores for the economies in the relevant grouping.

In the area of inclusion, gaps relative to advanced economies are most pronounced when it comes to financial inclusion, ICT skills,[3] access to affordable fixed-line broadband and attitudes regarding women's role in the economy.

In the area of resilience, meanwhile, gaps between the EBRD regions and higher-income economies are especially pronounced when it comes to the development of local capital markets, particularly as regards the availability of money market benchmarks, bond issuance in local currencies by financial institutions and firms, and the activity levels of insurance companies, pension funds and other non bank financial institutions.

[2] See EBRD (2019).

[3] See EBRD (2024) for evidence.

Trends in SSA economies since 2016

In the period since 2016, SSA economies have made the most progress in the areas of resilience and competitiveness (see Chart 5.9). Improvements in competitiveness reflect increases in labour productivity, growth in exports of ICT and financial services as a percentage of GDP, increases in the number of new firms and a decline in subsidies as a percentage of GDP. Higher resilience scores, meanwhile, reflect improved liquidity ratios in the region's banking systems, lower non-performing loan (NPL) ratios and lower levels of loan dollarisation. At the same time, however, those improvements to SSA economies' ATQ scores are modest as a percentage of the remaining gap relative to advanced economies or the EBRD regions.

In contrast, little progress has been observed since 2016 in the area of integration, despite a large gap relative to advanced economies in that area. That lack of progress reflects the slow pace of improvements to the quality of transport infrastructure, as well as a decline in observed levels of openness to trade and investment. In fact, exports and imports have declined as a percentage of GDP in all SSA economies except Senegal, while inflows of FDI and foreign portfolio investment have fallen as a percentage of GDP in Benin, Ghana and Nigeria. Progress has also been fairly limited in the area of inclusion, albeit the SSA region started from a stronger position in that respect.

Changes to scores since last year

Changes to scores since last year's *Transition Report* reflect (i) recent developments in the economies in question, (ii) a number of methodological changes (such as the fact that exports of advanced business services are now expressed as a percentage of GDP, rather than as a percentage of total exports of services, in order to measure their contribution to economic activity more accurately) and (iii) changes to historical data series (such as the updating of data on greenhouse gas emissions, which are now sourced from the World Resources Institute and were previously sourced from the International Energy Agency). Where changes have been made to the methodology or historical data, all scores for earlier years have also been updated.

The analysis in this section looks at differences between (i) the updated scores for 2023 (as presented in Table 5.1), which largely reflect indicators for 2022, and (ii) the newly calculated scores for 2024 (which are based on the latest information available, much of which relates to 2023).

Across the six key qualities of a sustainable market economy, increases in scores over the last year have been concentrated in the CEB and SEE regions, while declines have been observed primarily in the SEMED region and Central Asia.

Across the EBRD regions, the largest improvements have tended to be observed in the areas of inclusion, integration and, to a lesser extent, competitiveness. Inclusion scores have increased particularly strongly in Uzbekistan and Jordan. In Uzbekistan, the percentage of young people who are not in employment, education or training has declined, while an indicator based on the Women, Business and the Law index has improved. Jordan, meanwhile, has seen its male and female labour force participation rates increase. In contrast, Albania and Bosnia and Herzegovina have seen their inclusion scores fall, primarily on account of declining labour force participation rates.

Integration scores have increased significantly in Hungary, Poland and Türkiye, driven in part by improvements in broadband internet infrastructure and, in some cases, stronger net inflows of FDI as a percentage of GDP. In contrast, falling scores in Moldova and Mongolia reflect declines in FDI and portfolio investment inflows as a percentage of GDP. In the Slovak Republic and Ukraine, meanwhile, declining scores reflect a reduction in cross-border trade as a percentage of GDP.

Competitiveness scores have risen appreciably in Armenia, Croatia, Georgia, Lithuania and Romania, primarily as a result of improvements in labour productivity.

At the same time, scores for governance have declined slightly further on average, contributing to the large and persistent governance gap relative to advanced economies that was discussed earlier in the chapter. Croatia and Mongolia have seen their governance scores increase markedly, reflecting better compliance with standards aimed at tackling money laundering and improved corporate governance. However, significant declines have been recorded in Georgia, the Kyrgyz Republic, Tajikistan and Türkiye, primarily reflecting changes to indicators measuring media freedom and perceptions of corruption.

Across the EBRD regions, changes to average scores in respect of the green economy and resilience have been fairly limited. Green scores have improved modestly in a number of economies in the CEB region owing to increased production of renewable energy, as well as improved protection of land and maritime areas and a reduction in fossil fuel subsidies. In contrast, a marked decline has been observed in Egypt as a result of increased water stress.

While Ukraine's overall score for resilience has risen, its score for energy resilience has fallen, reflecting the negative impact that Russia's war on Ukraine has had on the operations of the state-owned gas company. Azerbaijan and Greece, meanwhile, have seen their financial resilience scores improve significantly. In Azerbaijan, that increase reflects improved loan-to-deposit ratios, lower NPL ratios, a decline in foreign-denominated loans and an increase in the average return on assets in the banking sector. The increase in Greece's financial resilience score has been driven mainly by improved capital adequacy ratios, increased provisioning for NPLs and lower NPL ratios. In contrast, Türkiye's financial resilience score has fallen, reflecting lower liquidity ratios, reduced provisioning for NPLs and a decline in the average return on assets in the banking system.

References

A. Carruthers and A. Plekhanov (2023)
"Attitudes, beliefs and reforms: Measurement and stylized facts", EBRD Working Paper No. 283.

EBRD (2019)
Transition Report 2019-20 – Better Governance, Better Economies, London.

EBRD (2024)
Life in Transition IV – Household resilience in a turbulent world, London.

Acknowledgments

The *Transition Report 2024-25* was prepared by the Office of the Chief Economist of the EBRD under the general direction of Beata Javorcik, with contributions from other EBRD departments.

The editors of the report were Ralph De Haas and Alexander Plekhanov.

Oleg Konovalov provided research assistance.

The writing teams for the chapters, boxes and annexes comprised:

Chapter 1

Maxim Chupilkin, Zsóka Kóczán (team leader), Victoria Marino, Alexander Plekhanov and Xiaoyu Yan, with contributions from Chuan-Han Cheng, Nik Milushev and Xuanyi Wang

Box 1.1 was prepared by Zsóka Kóczán and Juan Lucci. Box 1.2 was prepared by Victoria Marino. Box 1.3 was prepared by Zsóka Kóczán and Xiaoyu Yan. Box 1.4 was prepared by Zsóka Kóczán. Box 1.5 was prepared by Zsóka Kóczán and Alexander Plekhanov.

Chapter 2

Pablo García Guzmán, Anton Grahed, Beata Javorcik and Helena Schweiger (team leader), with contributions from Tim Deisemann

Box 2.1 was prepared by Pablo García Guzmán, Anton Grahed and Helena Schweiger. Box 2.2 was prepared by Tim Deisemann and Anton Grahed. Box 2.3 was prepared by Anton Grahed.

Chapter 3

Cevat Giray Aksoy (team leader), Ralph De Haas, Pablo García Guzmán, Francesco Loiacono, Ege Ondeş, Andrés Rodríguez-Pose, Xuanyi Wang and Muhammed Hasan Yılmaz

Box 3.1 was prepared by Pablo García Guzmán. Box 3.2 was prepared by Andrés Rodríguez-Pose. Box 3.3 was prepared by Pablo García Guzmán. Box 3.4 was prepared by Cevat Giray Aksoy and Xuanyi Wang. Box 3.5 was prepared by Anton Grahed and Ege Ondeş. Box 3.6 was prepared by Aleksandr Kazakov and Michael Koetter. Box 3.7 was prepared by Andrés Rodríguez-Pose. Box 3.8 was prepared by Cevat Giray Aksoy and Muhammed Hasan Yılmaz.

Chapter 4

Cevat Giray Aksoy, Tim Deisemann, Francesco Loiacono (team leader), Federica Mascolo and Niharika Satish, with contributions from Xiaoyu Yan

Box 4.1 was prepared by Tim Deisemann. Box 4.2 was prepared by Moritz Hennicke.

Chapter 5

Alexander Plekhanov and Anna Sali, with contributions from sectoral and regional economists and analysts

The online country assessments and the summary of structural reform at tr-ebrd.com were prepared by the regional economists and analysts of the Policy Strategy and Delivery Department and edited by Peter Sanfey.

Editorial, multimedia and production guidance for the report was provided by Poilin Breathnach, Hannah Fenn, Cathy Goudie, Dan Kelly, Richard Porter, Viktorija Quartly, Bryan Whitford and Marjola Xhunga in the EBRD Communications Department, and by Jennifer Freedman and Matthew Hart. The report was designed and print-managed by Blackwood Creative Ltd: www.weareblackwood.com.

The authors and editors of the report would like to thank Nathan Lane, Rocco Macchiavello, Andrés Rodríguez-Pose and Vincent Sterk for their guidance. The report also benefited from comments and suggestions from the EBRD Board of Directors and their authorities, EBRD staff and staff of the European Commission, the European Investment Bank, the International Monetary Fund and the World Bank Group.

Notes

Notes

Abbreviations: For charts in this *Transition Report*, the abbreviations used for each economy follow the ISO 3166-1 three-letter economy codes published by the International Organization for Standardization.

Terms, names, maps and charts used in this report to refer to geographical or other territories, political and economic groupings and units, do not constitute and should not be construed as constituting an express or implied position, endorsement, acceptance or expression of opinion by the European Bank for Reconstruction and Development or its members concerning the status of any country, territory, grouping and unit, or delimitation of its borders, or sovereignty.

A glossary for this report is available at

Printed sustainably in the UK by Pureprint, a CarbonNeutral® company with FSC® chain of custody and an ISO 14001 certified environmental management system recycling over 99 per cent of all dry waste.

The *Transition Report 2024-25* is printed on Galerie Satin, an FSC® certified paper from responsible sources. This ensures that there is an audited chain of custody from the tree in the well-managed forest through to the finished document in the printing factory.

FSC
www.fsc.org
MIX
Paper from responsible sources
FSC® C022913

Five Bank Street
London E14 4BG
United Kingdom
www.ebrd.com

Designed and produced by Blackwood Creative Ltd and the EBRD.

Photography: © EBRD.

Illustrations: © Blackwood Creative Ltd.

1717 Transition Report 2024-25 (E/1,500)

We invest in changing lives

European Bank for Reconstruction
and Development
Five Bank Street
London E14 4BG
United Kingdom

www.ebrd.com
Tel: +44 20 7338 6000

ISBN: 978-1-898802-56-3
ISSN: 1356-3424

Discover more at tr-ebrd.com

Find us on:

@EBRD
ebrdhq
EBRD
ebrd_official
ebrdtv