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

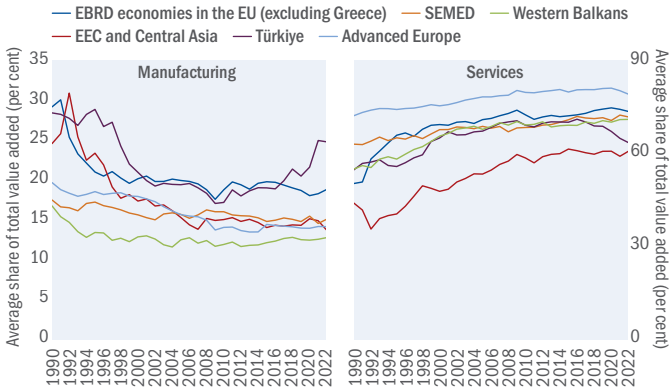
Economic growth and structural change are closely related. At lower levels of development, gaps between the productivity levels in the various sectors of the economy tend to be large. In other words, capital and labour can become stuck in low-productivity sectors, slowing down economic development. The 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).

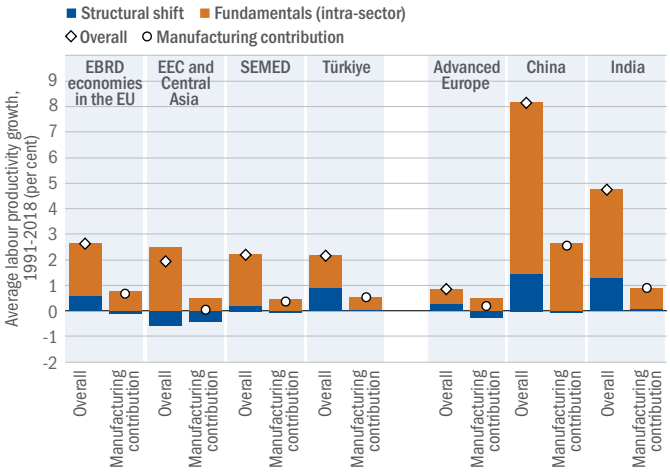
Average labour productivity growth in the EBRD regions between 1991 and 2018 was weaker than in China and India, reflecting the EBRD economies' different starting points and thus the smaller remaining gaps in labour productivity. Most of the overall growth in labour productivity was driven by intra-sector 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.

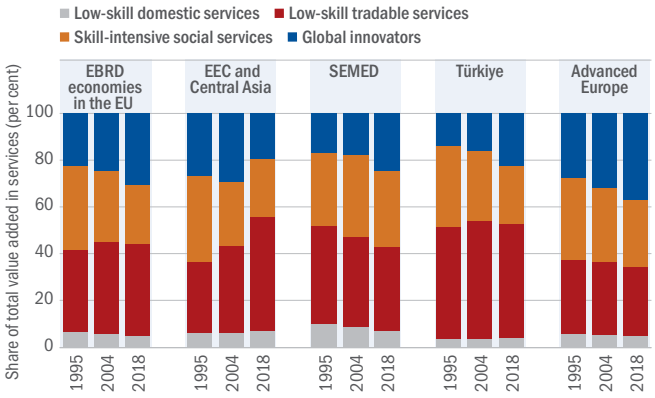
Global innovator services play a key role

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%

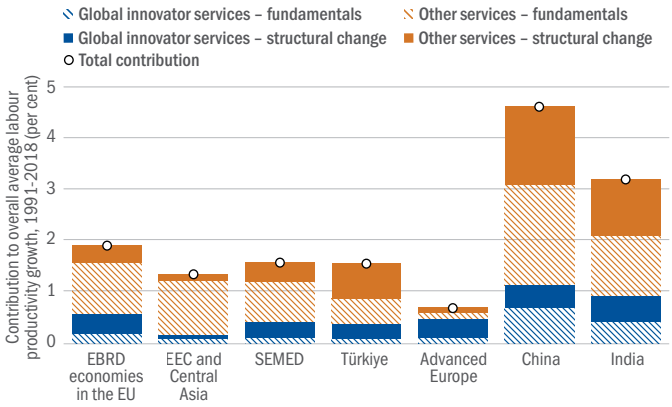
of all value added in services, compared with about

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.

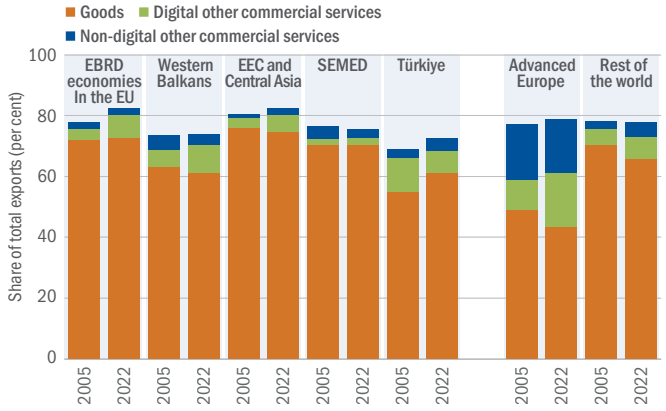
Skill-intensive social services encompass education and healthcare services. These also have a comparatively high percentage of skilled workers and are tradeable (albeit to a more limited extent): they can be exported through FDI, enrolment of foreign students or "medical tourism". In the EBRD regions, 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.

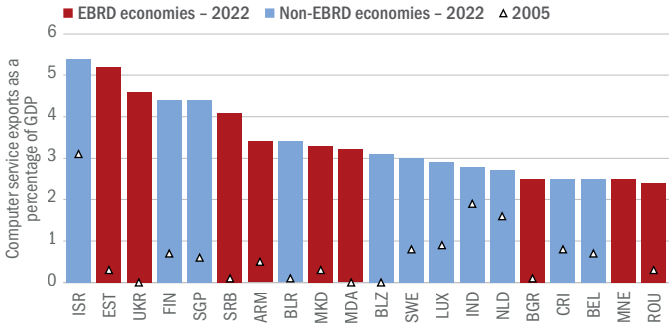
Within exports of other commercial services, the average share of digitally enabled global innovator services is, if anything, higher in the EBRD regions than in advanced Europe (with the exception of the SEMED region). Since 2020, exports of these services have also been growing faster than goods exports 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).

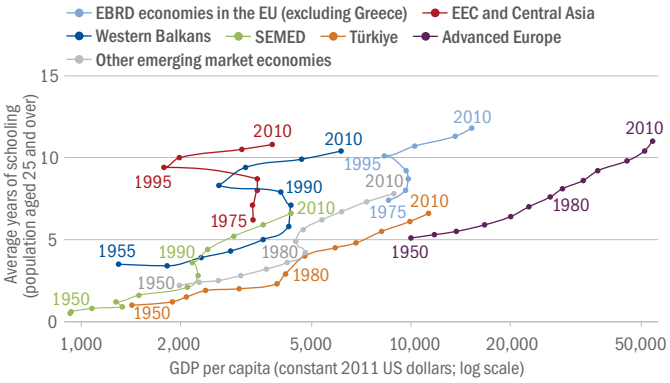
CHART 2.6. Several economies in the EBRD regions were among the world's top 20 exporters of computer services as a share of GDP in 2022



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

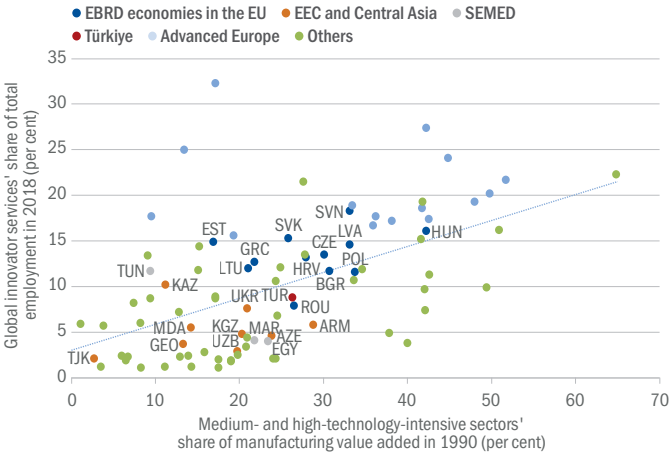
Compared with countries at a similar level of development, most EBRD regions have had relatively well-educated populations since at least the early 1990s (see Chart 2.7). This, too, is a legacy of communist systems, which emphasised education and skills as public goods serving the needs of society rather 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).

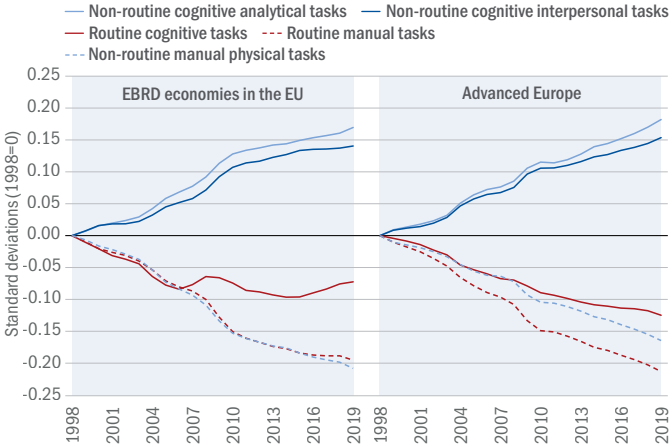
CHART 2.8. Global innovator services tend to have a higher share of total employment in countries where medium- and high-technology-intensive manufacturing sectors had a higher share of manufacturing value added in 1990



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.

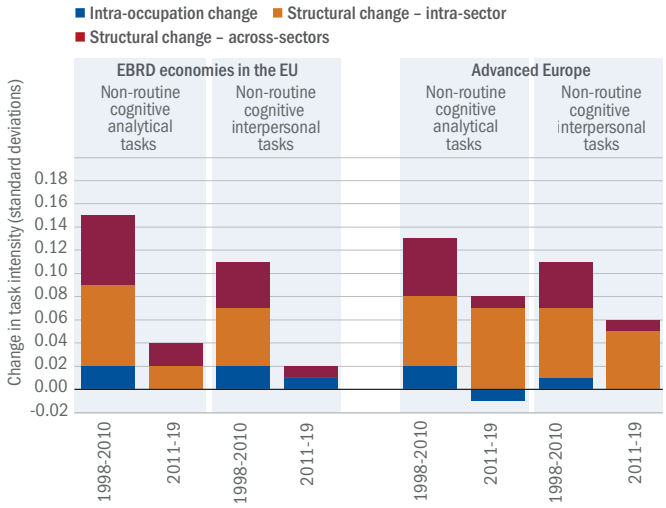
Educational upgrading and structural change also have implications for the types of task for which there is demand in the local labour market. Analysis drawing on individual-level data from the EU Labour Force Survey (LFS) and the O*NET-SOC occupational taxonomy shows that since 1998, the importance 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?

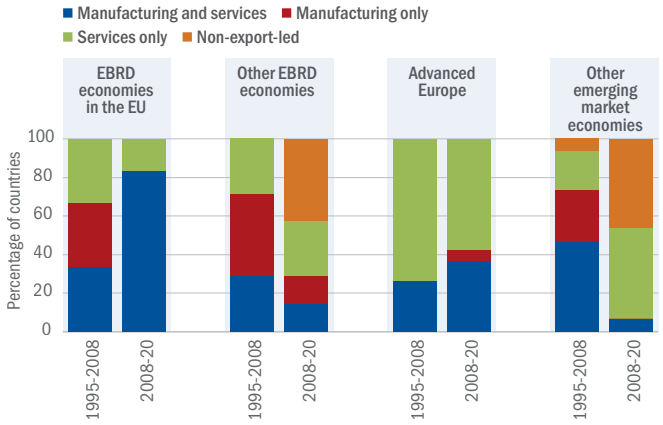
The increase in the geographical concentration of manufacturing production and the slowdown in the growth of manufacturing exports since 2008 raises the question of whether manufacturing export-led growth is still possible. Growth can be thought of as export-led if the domestic value added that is embodied 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).

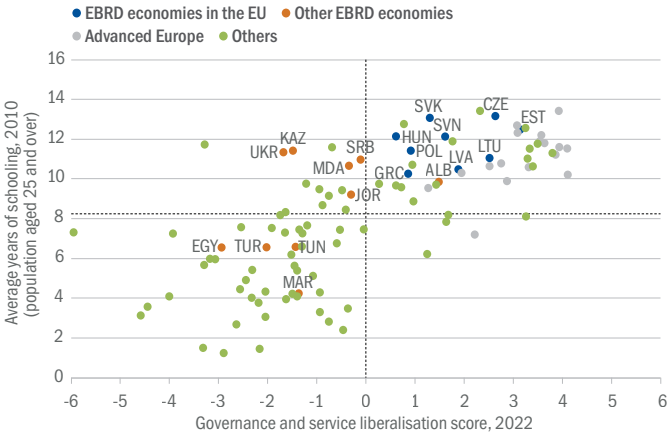
CHART 2.11. Growth is often still export-led, but it is now more likely to be led by exports of services



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

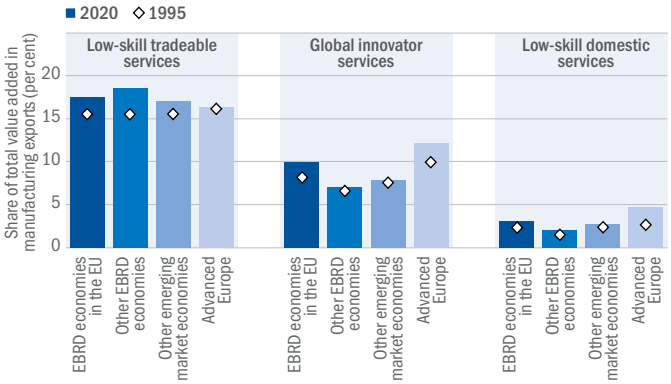
Not only is manufacturing export-led growth being replaced by service export-led growth, manufacturing is also – as a result of the fragmentation of production in global value chains (GVCs) – becoming increasingly reliant on services, whether as intermediate inputs, as activities within firms or as services 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.

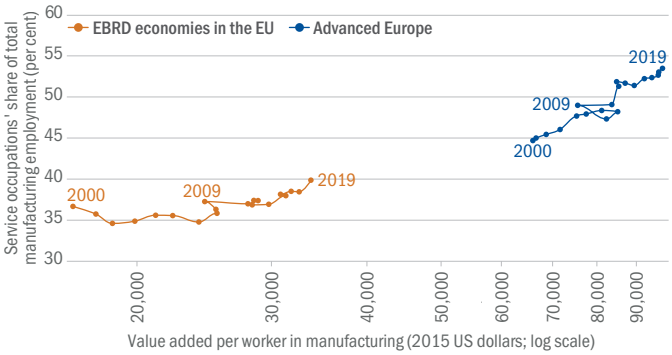
Note: Shares are calculated as unweighted averages of country-level values. The shares of skill-intensive social services (not shown) are small. See the notes on Chart 2.11 for definitions of the various regions.

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.

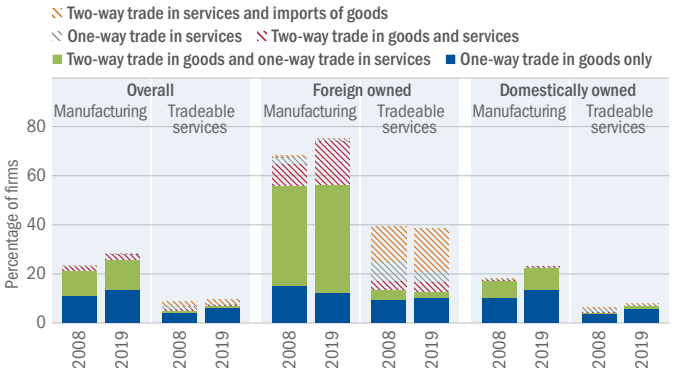
Firm-level data from Hungary can thus provide useful insights into the "servicification" of the manufacturing sector, as well as trade in services more broadly.[35] Goods and services are traded across borders by manufacturing firms and tradeable service firms alike,[36] but the percentage of firms that 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%

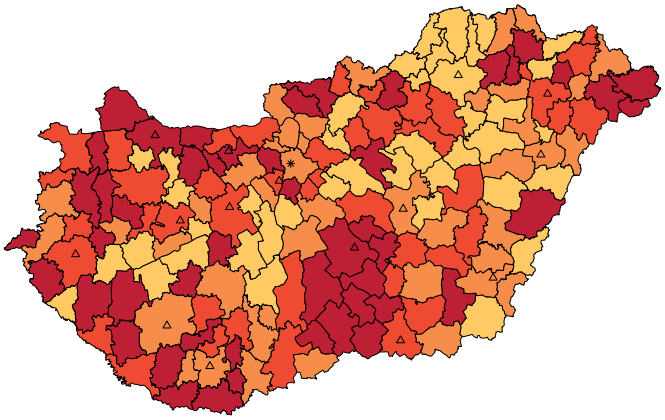
of Hungary's gross exports

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.

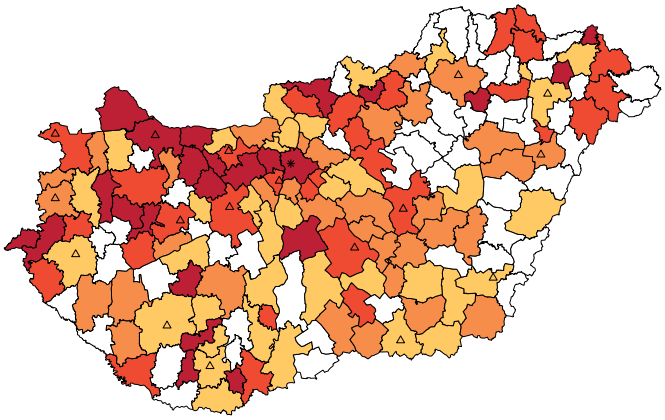
CHART 2.16. Exporters of services are concentrated in large cities

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?

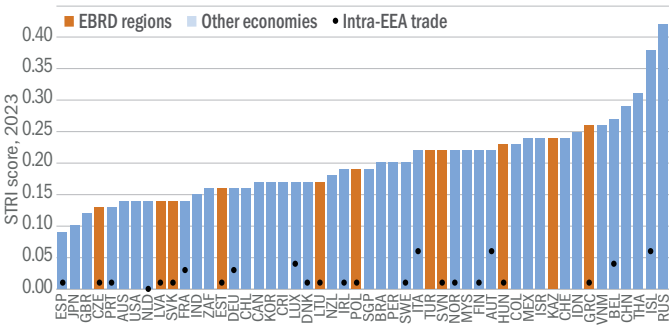
How does structural change happen?

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.

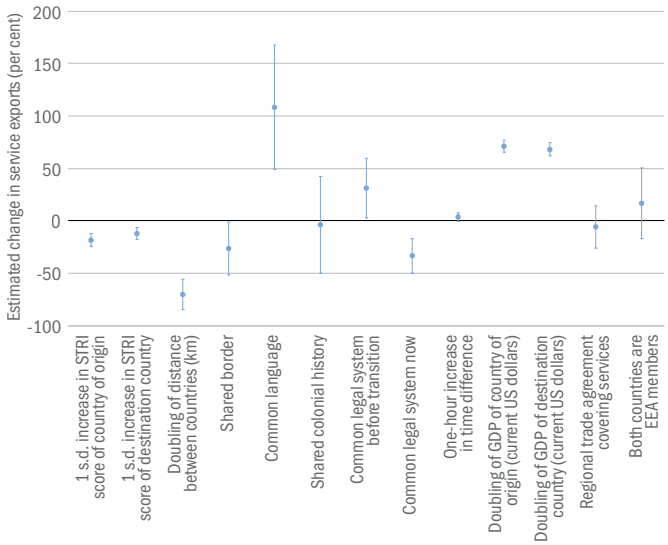
Liberalisation of trade in services

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?

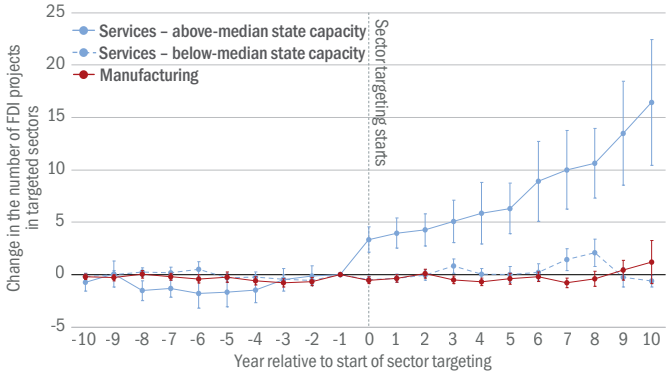
Most countries have investment promotion agencies – government bodies that are tasked with attracting businesses and investment to the country. Most IPAs target specific sectors when attracting FDI, and investment promotion can therefore be viewed as an industrial policy.

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.

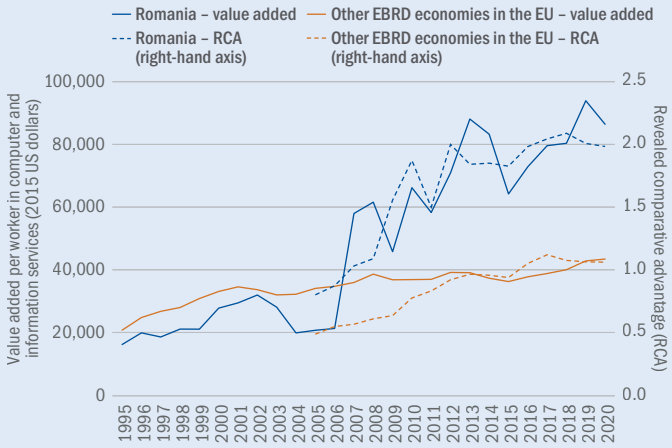
Since 2010, Romania has had the highest labour productivity in computer and information services and the greatest revealed comparative advantage in that sector of any EBRD economy in the EU (see Chart 2.2.1). This advantage stems from two key factors: targeted policy interventions and strong human capital. 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.

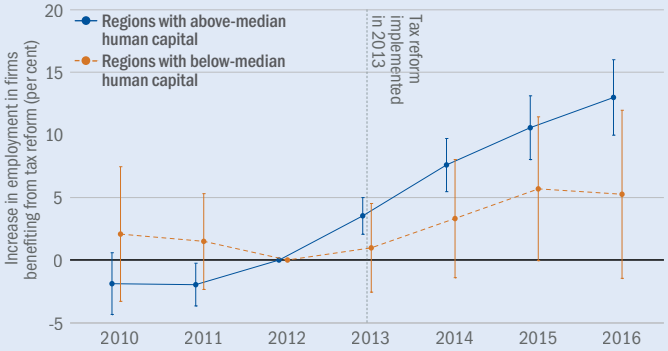
Note: Data for "other EBRD economies in the EU" are unweighted averages of national data and cover Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia. The computer and information service sectors are defined as NACE Rev 2. codes 62 and 63 in EU KLEMS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

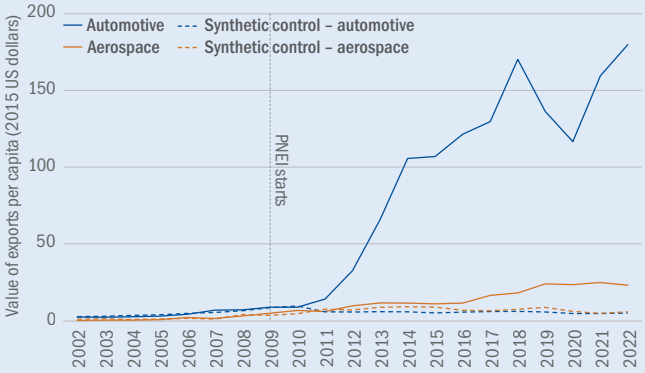
Over the past 15 years, Morocco has implemented a series of industrial strategies aimed at developing globally competitive manufacturing sectors, with a focus on the automotive and aerospace sectors. One of those initiatives was the 2009-15 National Industrial Emergence Plan (PNEI), which sought to create 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).

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