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The future of trade lies in services: key trends

Key points

- Structural shifts in the world economy brought on by rapid technological developments have placed services and services trade at the heart of economic transformation. These shifts challenge long-held perceptions of services as a less desirable path to economic growth and development. The services sector today generates more jobs (50 per cent share of employment worldwide) and output (67 per cent share of global GDP) than agriculture and industry combined – and is increasingly doing so in economies at earlier stages of development. Services trade and related policies are key to harnessing the promise of services-led development.
- Fuelled by advances in information and communications technologies (ICT), global commercial services exports almost tripled between 2005 and 2022, a period that saw marked changes in the composition of services trade, with exports of digitally delivered services increasing almost four-fold. During this period, developing economies accounted for an increasing share of less traditional services exports. The expansion of developing economy exports is increasingly tied to services supplied across borders through digital means.
- Expanding services trade is also delivering major gains in inclusiveness for female and young workers and entrepreneurs, as well as for micro, small and medium-sized enterprises.
- Beyond their rising importance as final exports, services also play a critical trade facilitating role in the functioning of regional and global value chains, with trade in intermediate services (i.e. inputs in the production of other goods and services) valued at US\$ 3.95 trillion – more than double that of final services exports.
- Highlighting what has come to be called the ‘servicification’ of the world economy, services account today for 50 per cent of global trade in value-added terms, compared to 16 per cent for agriculture and 34 per cent for industry. The share of services content in total exports has increased the most in non-OECD members since 2005, recalling the significant development dividends at play in the sector.
- While services trade was hit hard by the COVID-19 pandemic, digitally delivered services have led the recovery in global services trade and proved fundamental to heightened economic resilience. Still, despite the continued rise of cross-border supply, services supplied through a commercial presence continue to predominate, recalling the central importance of facilitating investment and improving business climates, including through binding commitments in trade agreements.

1. The worldwide shift towards services

The contribution of services in economies worldwide has increased markedly over time. The services sector's share of global GDP increased from 53 per cent to 67 per cent between 1970 and 2021. The increasing contribution of services to GDP has occurred in economies at different levels of development and has been accompanied by a marked decline in the relative share of agriculture (see Figure 2).

The shift towards services has been pronounced in developing economies. In much of the developing world, growth in services output has outpaced growth in industry and agriculture. On the basis of World Bank income groups, the shift towards services has been most prominent for upper middle-income and high-income economies, whose shares of services of GDP grew from 40 per cent to 56 per cent and from

59 per cent to 75 per cent, respectively, between 1970 and 2021.

The GDP share of services in low-income economies also increased over this period, from 36 per cent to 42 per cent. This growth, however, was less pronounced than in the rest of the developing economies, and was largely due to the more significant role agriculture plays in the world's poorest countries.

Services sector's share of global GDP

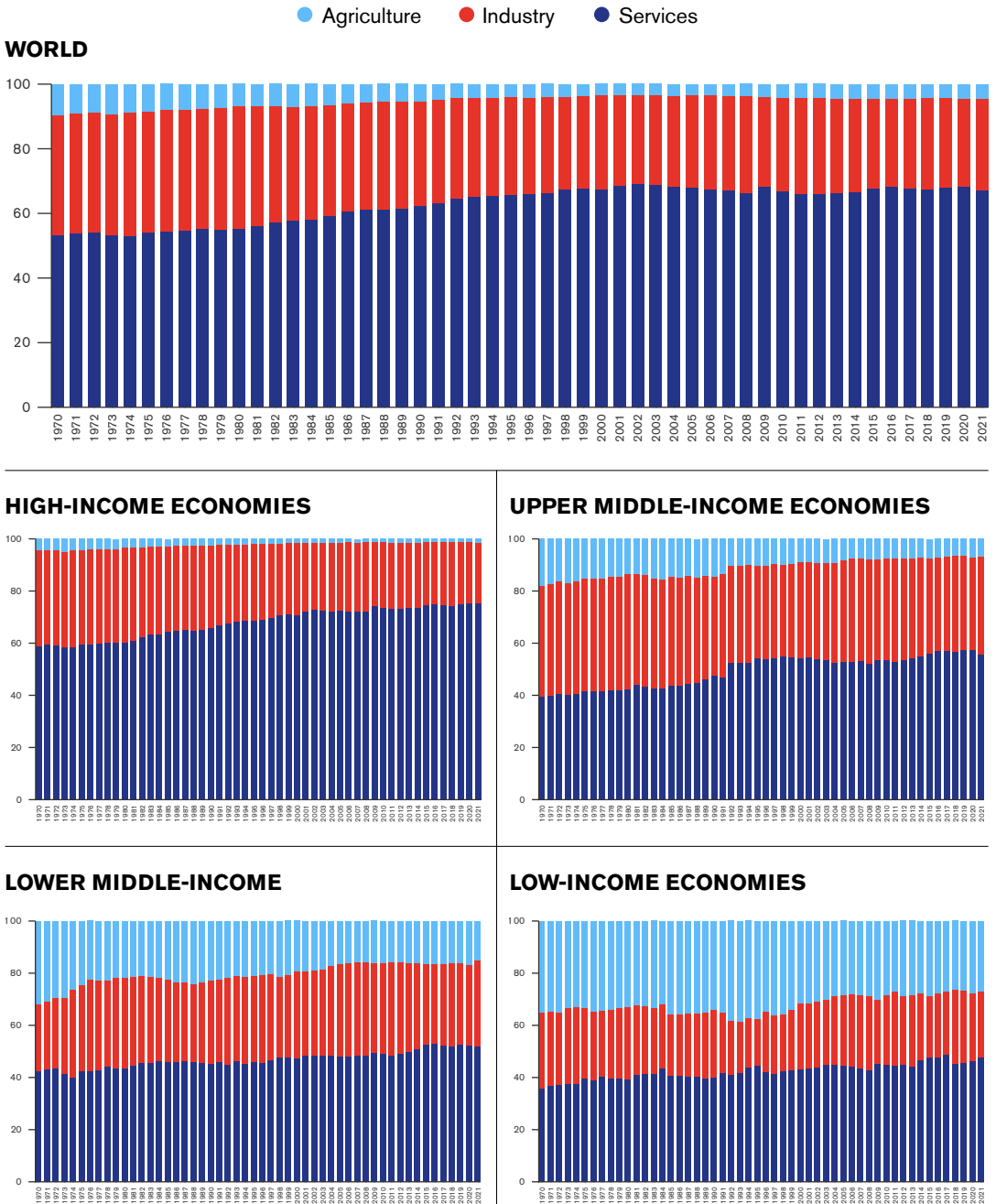


Growth in services output has outpaced growth in industry and agriculture.

Figure 2.

Share of GDP by sector, world and World Bank income groups, 1970-2021

(As a share of the respective GDP, in per cent)



Source: UNCTADstat database, available at <https://unctadstat.unctad.org/wds>. Estimates for 2021 based on the World Bank's World Development Indicators database, available at <https://databank.worldbank.org/source/world-development-indicators>.

Services today generate 75 per cent of GDP and of employment in most developed economies. In both developing and developed economies, services now account for a greater share of GDP than either agriculture or industry. While the share of agriculture in GDP has long been in decline globally, the relative contribution of industry has also been declining in many economies. Economies at all levels of development are generally specializing less in industrial activity – the manufacturing sector also employs fewer workers following the rapid spread of labour-saving technologies.¹

Not surprisingly, the point at which industry peaks in terms of output and employment is occurring at earlier stages of economic development in a number of economies, prompting concerns of “premature de-industrialization”.²

In a similar fashion, the services sector is driving labour market outcomes – and today generates more jobs than any other sector and at earlier stages of development.³

Data from the International Labour Organization (ILO) show that services and agriculture each accounted for 40 per cent of total global employment in 2000.⁴ By 2021, however, 50 per cent of the world’s workforce was employed in services, but the share of agriculture had dropped to only 27 per cent.

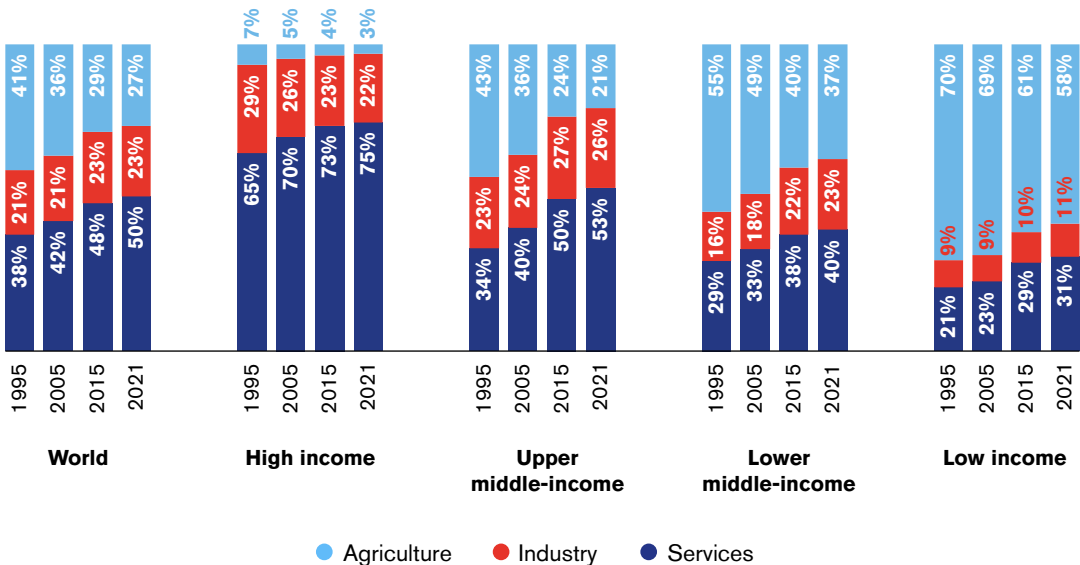
The services sector has grown to become the main source of employment in both high-income economies (75 per cent of total employment in 2021) and also upper middle-income economies (53 per cent; see Figure 3). Meanwhile, agriculture still accounts for the highest proportion of employment in low-income economies, at 58 per cent.

Yet, services-sector employment grew significantly in low-income economies, from 21 per cent in 1995 to 31 per cent in 2021. Figure 3 shows that, similar to the trend in the share of GDP, the share of services in total employment has grown significantly across all income groups since 1995.

Figure 3.

Share of employment by sector, world and World Bank income groups, 1995-2021

(As a share of total employment, in per cent)



Source: ILO World Employment and Social Outlook (WESO) Data Finder, available at <https://www.ilo.org/wesodata>.

(a) The inclusive dimension of services: women's empowerment, youth and MSMEs

Women's empowerment

Services have a positive gender dimension and play an important role in women's empowerment. In 2021, 59 per cent of employed women globally worked in the services sector, compared to only 44 per cent in 2000 (see Figure 4). In contrast, services accounted for 45 per cent of total male employment in 2021.

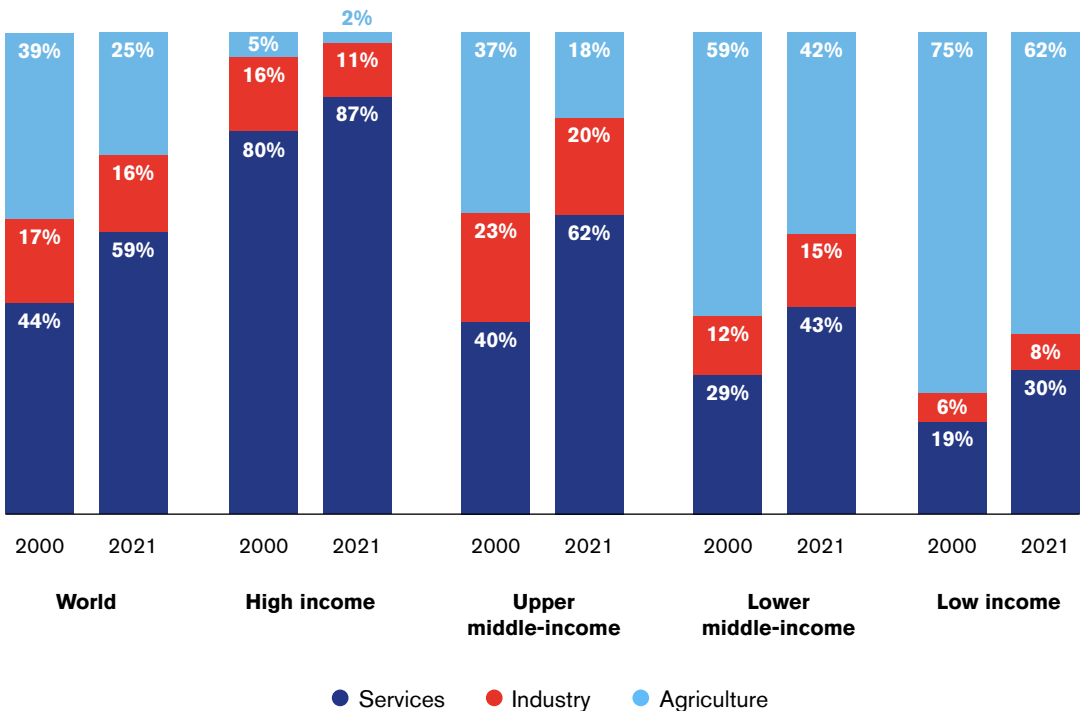
The share of women employed in the services sector has increased in all economies since 2000. Services now account for 87 per cent of total female employment in high-income

countries (up from 80 per cent in 2000), 62 per cent in upper middle-income countries (up from 40 per cent), 43 per cent in lower middle-income countries (up from 29 per cent), and 30 per cent in low-income countries (up from 19 per cent).

Women-led firms have more success in the services sector – in particular for services delivered remotely over digital platforms (Sauvé, 2020). This suggests that some gender-specific barriers to female entrepreneurship may prove less onerous than in industry, not least in light of the smaller average size and less capital-intensive nature of service exporting firms.

Figure 4.

Share of female employment by sector, world and World Bank income groups, 2000 and 2021
(As a share of total female employment, in per cent)



Source: ILO World Employment and Social Outlook (WESO) Data Finder, available at <https://www.ilo.org/wesodata>.



In 2021, three in every five employed women worked in the services sector.

Among firms that export, the proportion of enterprises owned by women in the services sector is significantly greater than in industry, even though the proportion of exporting firms that are led by men is higher in both sectors.

Youth

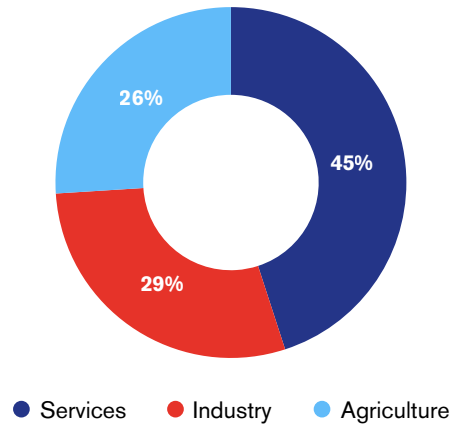
The services sector has also become an increasingly important source of employment for younger workers and entrepreneurs in developing economies. Across a range of economies, the services sector accounted for 45 per cent of youth employment in 2021 (see Figure 5). For example, in Albania, the service sector's share of youth employment grew from 35 per cent in 2010 to 56 per cent in 2020. In Guatemala, such a share rose from 45 per cent to 54 per cent over the same period. Among exporting firms, the proportion that are led by youth is once again much greater in services than in industry and for much the same reasons found to apply to female-owned or led firms (ITC, 2022).

Micro, small and medium-sized enterprises

Further underscoring its contribution to economic and social inclusion, the services sector accounts for the largest number of firms, particularly micro, small and medium-sized enterprises (MSMEs). The International Trade Centre (ITC, 2022) estimates that nine out of ten services enterprises globally employ fewer than 100 employees.

“Across a range of economies, the services sector accounted for 45% of youth employment in 2021.”

Figure 5.
Youth employment in selected developing economies, 2021



Source: ILO YouthSTATS database, available at <https://ilostat.ilo.org/resources/concepts-and-definitions/description-youth-labour-market-statistics>.
Note: Data on 32 developing economies for 2021 or the most recent year available. Youth here refers to people aged between 15 and 29.



2. Services-led pathways to growth and development

Many services have long been portrayed as non-tradable activities characterized by low productivity and wages, responding primarily to domestic demand and offering less desirable growth and development paths relative to manufacturing.⁵ The economic development gains associated with the export-oriented, manufacturing-led development, in East Asia reinforced the belief that the pathway to sustained growth for lower-income economies necessarily lay with manufacturing.

However, the trajectory of the structural transformation seen in recent decades in developing economies has challenged these long-held perceptions of services pessimism (see Nayyar *et al.*, 2021). The structural changes have vastly expanded job opportunities and reduced cross-sectoral productivity gaps both within and across economies. Services are today seen as central determinants of productivity, competitiveness and rising living standards.

The ability to supply, access and export efficient, affordable and innovative services has become central to the realization of development strategies.

As services become easier to trade across borders, more technologically intensive and subject to growing economies of scale, the idea that productivity gains stem chiefly from manufacturing and that expansion of the services sector can only come at the expense of overall growth has lost considerable ground (see Nayyar and Cruz, 2019). The gains observed in services-sector productivity reflect the fact that a growing number of services sectors display features similar to those driving productivity growth in manufacturing – not least as a result of the opportunities offered by ICT. Digitalization favours economies of scale as the range of services become more easily storable and tradable, lessening the need for simultaneity in production and consumption and vastly expanding the range of markets that can be reached through remote means.

A growing body of evidence has in recent years documented how services offer a growth path that complements activity in agriculture and

industry sectors. The growing contribution of services to economic transformation is attributed, among other factors, to their increasing tradability and to the greater contestability of services markets.⁶

The internationalization of services affords greater opportunities to specialize, exploit comparative advantages and export. However, the improved services sector performance associated with heightened market contestability, much of it pursued via unilateral pro-competitive reforms, has also been found to boost productivity in non-services sectors of the economy.⁷

Two other growth-inducing features of manufacturing were its innovation dynamics, through capital accumulation impacting labour productivity, and the spillover effects associated with cross-sectoral linkages. Both are attributes that are increasingly seen to operate in services. ICT applications across a range of services, from transport and logistics to professional services, have seen sustained product and process innovation fuel important gains in labour productivity (Nayyar *et al.*, 2021).

Services are also increasingly linked to other sectors, expanding productivity by creating economy-wide spillovers. This is illustrated by the central intermediation role services perform as inputs in the production and export of goods and other services.

Still, while labour productivity in services has grown and reduced the gap with manufacturing, significant cross-sectoral and cross-country variance remains. The extent to which sectors share features associated with economies of scale, trade intensity, spillovers and innovation varies greatly. Some services sectors, such as financial and ICT services, have higher total factor productivity than manufacturing in low- and middle-income economies; while others, such as hospitality, have lower productivity than manufacturing.

In leveraging services for gains in employment and productivity, recent work at the World Bank has drawn attention to the critical importance of four major policy areas (Nayyar *et al.*, 2021):

- expanding services trade;
- fostering technology adoption;
- training workers to upgrade skills;
- targeting services that provide benefits to the wider economy for public support.

How to harness gains in economic development by expanding services trade is to be seen in this

broader context, where structural shifts towards services provide trade opportunities – but simultaneously – also where government policies on services trade are key to spurring services-led growth and development by helping to foster economy-wide gains in efficiency and competitiveness.

3. Increasing importance of services in world trade

The global shift towards services has a trade corollary. Services now account for a significant share of world trade and investment, as reflected in balance of payments (BOP)

statistics. However, their greater – and arguably more important – influence stems from the central role services play in cross-border production networks.

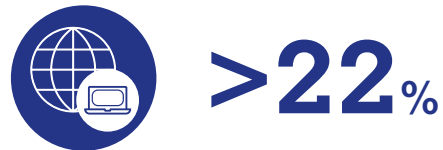
(a) Trade in commercial services forms a large and growing share of world trade

Services had long been the most dynamic component of world trade prior to the COVID-19 pandemic. Measured on a BOP basis, trade in commercial services⁹ expanded at a faster pace than trade in goods between 2011 and 2019.⁹ The share of commercial services in global trade flows stood at over 22 per cent in 2022, down from 25 per cent in 2019, prior to the COVID-19 pandemic.

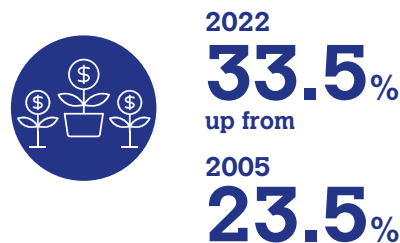
Since 2005, global commercial service exports have increased by almost 170 per cent (see Figure 6). The growth rate of commercial services exports has been stronger in developing economies and least-developed economies (see Figure 7). Between 2005 and 2022, commercial services exports from least-developed economies grew well over 300 per cent, while those of other developing economies grew more than 250 per cent.

As a result, the share of developing economies in global commercial services exports has increased markedly – from 23.5 per cent in 2005 to 33.5 per cent in 2022. Despite its impressive growth, however, the relative share of services exports for least-developed economies remains limited, at less than 1 per cent of global exports – a level that has further regressed following the COVID-19 pandemic.

Share of commercial services in global trade in 2022



Developing economies' share of global commercial services exports



Growth in commercial services exports, 2005-2022

Least-developed economies

Developing economies

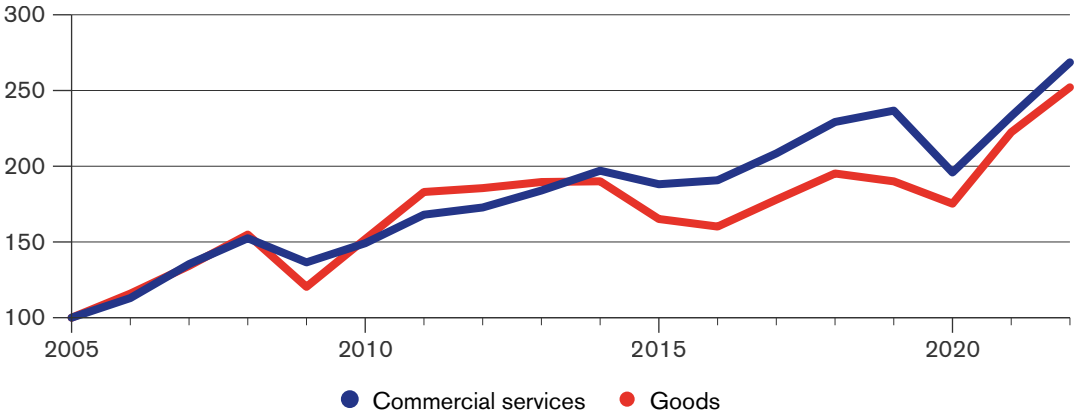
> 300% > 250%

From 2005 to 2022, the share of global commercial services exports of Africa, Europe, Latin America and the Caribbean, and North America all declined, while those of Asia (from 19.5 per cent to 24.2 per cent) and the Middle East (2.5 per cent to 5.4 per cent) increased. China and India doubled their share of global commercial services exports from 2005 to 2022, from 3.0 per cent to 5.4 per cent, and from 2.0 per cent to 4.4 per cent, respectively. With regard to global commercial services imports, the

shares of Asia, Latin America and the Caribbean, and the Middle East increased, while those of Africa, Europe and North America declined.

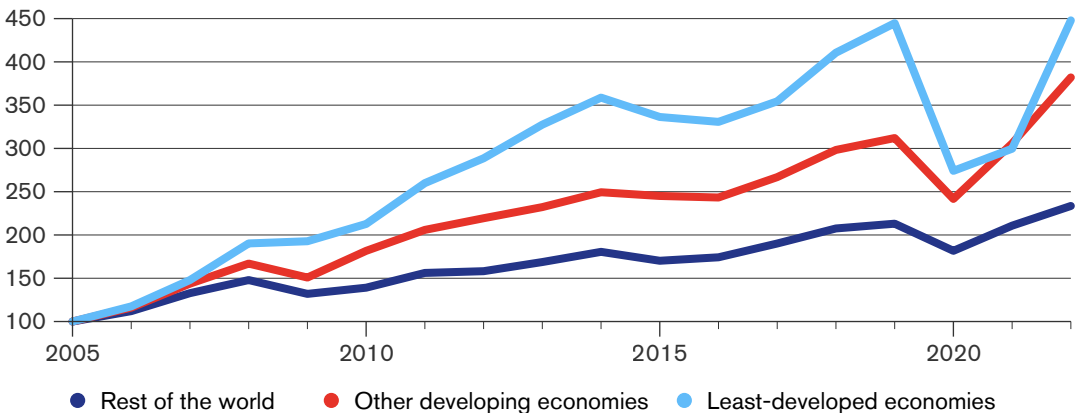
The expansion of trade in commercial services was fuelled by advances in ICT, perhaps best exemplified by the global expansion of the Internet, which has boosted opportunities for the remote supply of services (including across borders), such as professional, business, audiovisual, education, distribution, financial and health-related services.

Figure 6.
Growth in world exports of goods and commercial services, 2005-2022
 (Index 2005 = 100)



Source: WTO Stats, available at <https://stats.wto.org>, and WTO estimates.

Figure 7.
Growth in exports of commercial services, by groups of economies, 2005-2022
 (Index 2005 = 100)



Source: WTO Stats, available at <https://stats.wto.org>, and WTO estimates.

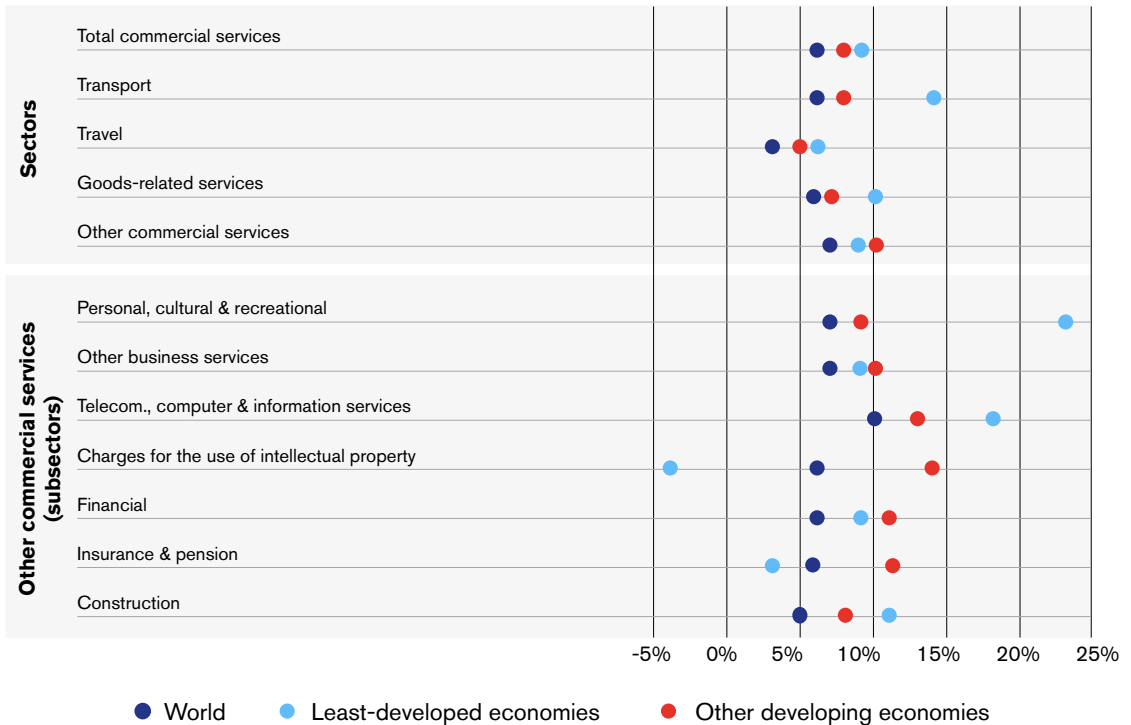
Growth of exports of 'other commercial services'

Trade has grown more rapidly in less traditional sectors such as ICT services when compared to transport, travel and goods-related services (see Figure 8). BOP statistics reveal that these 'other commercial services'¹⁰, which include many digitally delivered services, have expanded at a much faster rate between 2005 and 2022 than more traditional sectors such as transport (6 per cent) and travel (3 per cent), which were greatly affected by the COVID-19 pandemic. Within 'other commercial services', telecommunications, computer and information services had the fastest annual growth from 2005 to 2022 (10 per cent), followed by

personal, cultural and recreational services (7 per cent) and other business services (7 per cent).

Figure 8 also contrasts the services trade growth across different economies and underscores that the expansion of developing economy exports is increasingly tied to less traditional services that can be more readily supplied across borders through digital means. Least-developed economies experienced strong growth in more traditional sectors such as transport (14 per cent) and construction services (11 per cent), as well as in personal, cultural and recreational services (23 per cent) and telecommunications, computer and information services (18 per cent).

Figure 8.
Average annual growth rate of exports in selected services sectors, by groups of economies, 2005-2022



Source: WTO Stats, available at <https://stats.wto.org>, and WTO estimates.



The growth of developing economy exports is increasingly in services supplied digitally.

Growth in computer services exports between 2019 and 2022

Bangladesh

+124%

Pakistan

+118%



The growth of sectors such as telecommunications, computer and information services have been particularly strong in developing economies in recent years. For instance, computer services exports in Pakistan grew by 118 per cent and increased by 124 per cent in Bangladesh between 2019 and 2022. The experience of India and the Philippines as global leaders of trade in computer services and in business process outsourcing services illustrates the growth potential of trade in non-traditional services, as well as the benefits for female employment (see Box 1).

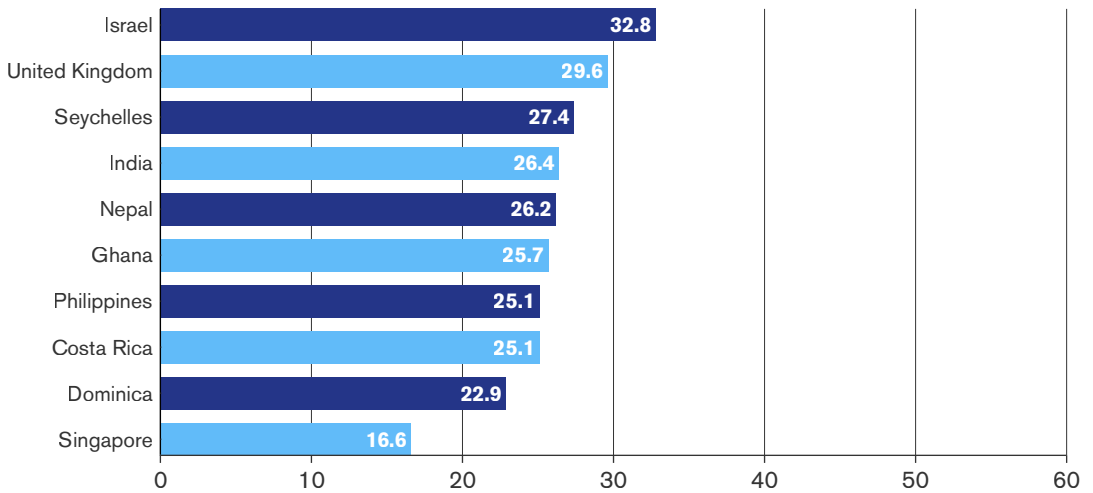
Export growth in less traditional services has helped to diversify the export baskets of many developing economies. Figure 9 shows that, for a number of developing economies, ICT, finance and other business services, which are predominantly exported digitally, accounted for over 15 per cent of total exports of goods and services in 2022 as well as before the

COVID-19 pandemic in 2019. Those services featured prominently in the total exports of developing economies before, as well as during, the pandemic (7 per cent of total exports of goods and services in 2022), which, in certain cases, transformed export profiles, notably by lessening the share of tourism-related services.

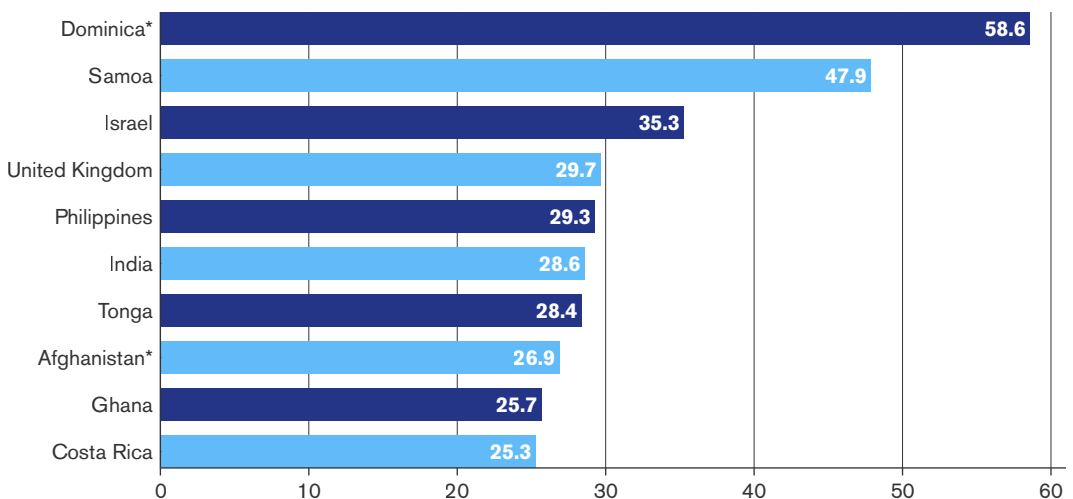
Figure 9.

Share of telecommunication, computer and information services, other business services, and finance, 2019 and 2022 (Top 10 WTO members, in per cent)

2019



2022



Source: WTO Stats, available at <https://stats.wto.org>, and WTO estimates.

Note: European Union counted as one. *Data from 2021.

Box 1. Computer services and business process outsourcing: India and the Philippines

India is deeply integrated into the global value chains (GVCs) of the software industry. Starting in the 1990s, it became a leading destination for multinational corporations to outsource their labour-intensive software and business process outsourcing (BPO) services. The export of computer-related services has significantly contributed to India's economic growth.

Similarly, the Philippines has become a global leader in BPO and is now considered the call centre capital of the world. The country specializes in outsourcing customer services and back-office services, such as call centre activities, computer-related services, medical transcription and animated films and cartoon productions, mainly to overseas corporations.

Job creation

Services value chains are a major contributor to economic growth and sources of foreign exchange for both countries. In India, no other industry has generated as many well-paid jobs over the past decade as the IT industry.

Similarly, the IT and business process management sector in the Philippines is the largest employment generator. In 2021, it created 1.23 million direct jobs and 4.08 million indirect jobs and generated US\$ 24.7 billion in revenues.

Women's empowerment

The contribution of BPO services goes beyond growth and employment. They also make important contributions to skills upgrading, higher education attainment and social inclusion – boosting the participation of women in the workforce.

In the Philippines, approximately 54 per cent of the BPO sector's workforce are women. Call centres are the largest employers in the BPO sector and the majority of the workforce are also women (55 per cent). In India, 34 per cent of the IT workforce are women. Female workforce participation in the BPO industry is much higher than the national average, which is 46 per cent in the Philippines and 21 per cent in India.

Government intervention

The two countries' boom in BPO services exports is mostly due to comparative advantages and the implementation of government initiatives and policies that created an enabling environment for BPO companies. Both India and the Philippines have a large, young workforce with strong English language capabilities and familiarity with digital and distance communication – mainly facilitated by the mass emigration Indian and Filipino workers.

The Indian diaspora played an important role in shaping policies in the IT sector in India. The government, for example, created bilateral programmes for expatriates to connect with the IT sector in India through several channels to promote knowledge transfers, consultancies, the creation of alumni networks for government-funded institutions in the sector, honorary fellowships at Indian universities, and government advisory panels with the participation of non-resident Indian IT professionals.

Government interventions played an important role in helping develop the sector and attracting foreign investment. For instance, liberalization of the telecommunication sector in the 1990s in both countries helped foster the digital infrastructure needed for the BPO sector industry to flourish.

In addition, both countries implemented intellectual property rights legislation and cybercrime regulations. Government incentives in the form of duty-free imports for equipment and supplies, tax exemptions, 100 per cent foreign ownership, and industrial parks, as well as reforms that facilitated business operations, such as one-stop-shop services for business registration, all contributed to strengthening both countries' comparative advantage in the sector.

Future investment

To keep pace with rapidly changing technology and still remain competitive and progress up the value chain, India and the Philippines will need to continually upskill and reskill their workforces and invest in the development of their domestic services sectors – particularly in terms of R&D. An important concern for both countries is that their participation

in services GVCs arguably still involves a too high share of largely routine low value-adding tasks.

BPO firms in the Philippines are now integrating cloud technology and robotic automation into processes and applications, which is helping to increase productivity and business model sophistication.

These investments are supporting BPO firms in the Philippines to move towards more specialized and knowledge-based BPOs to cover fraud analytics, data integration, project management, R&D, mergers and acquisitions valuation and product profitability analyses.

Source: Nano and Stolzenburg (2021).



India and the Philippines have become global leaders in computer services and business process outsourcing.

Structure of commercial services trade

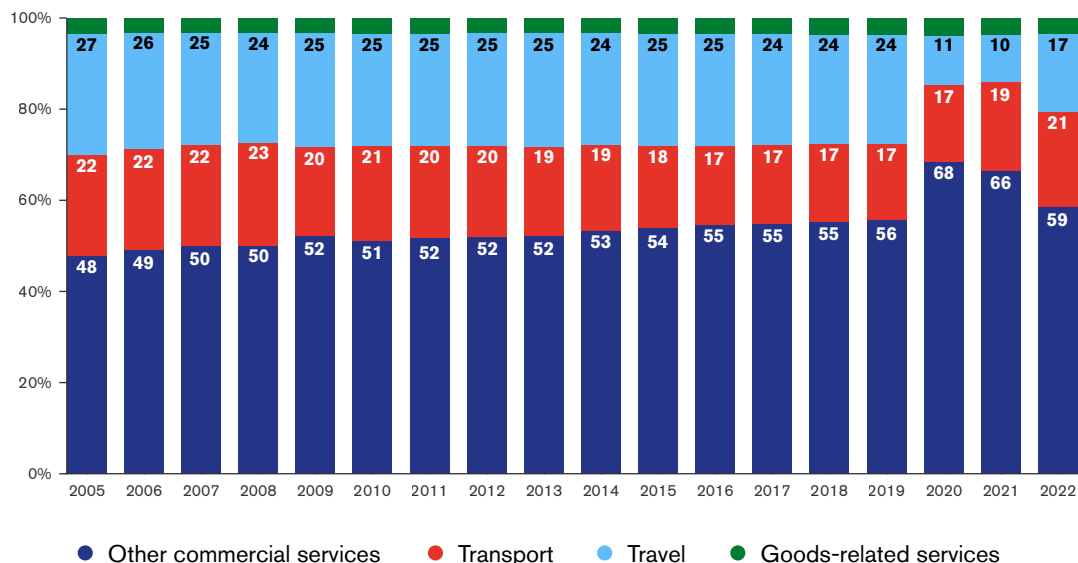
Reflecting differing cross-sectoral trajectories, the structure of trade in commercial services has changed significantly at the global level since the COVID-19 pandemic. The share of travel and transport services in world services trade has declined markedly, while that of services that can be more readily supplied electronically has increased. Indeed, the share of 'other commercial services' in global commercial services exports increased steadily from 48 per cent in 2005 to 56 per cent in 2019, and then rose to 66 per cent in 2021, falling back to 59 per cent in 2022, reflecting a COVID-induced boost and the relative contraction of other sectors due to pandemic-related restrictions (see Figure 10). Meanwhile, the aggregate share of travel, transport and goods-related services dropped from 52 per cent to 41 per cent between 2005 and 2022.

For developing and least-developed economies, changes in the composition of services trade

have been more pronounced. The share of 'other commercial services' in their total commercial services exports rose from 34 per cent to 48 per cent between 2005 and 2022. While the pandemic had a strong impact on the structure of world trade, particularly in light of the steep decline in travel-related receipts, the relative expansion of 'other commercial services' at the expense of more traditional sectors had already started beforehand.

Subsectors which have seen the strongest growth in their relative importance for developing economy exports include the telecommunications, computer and information services subsector (from 7 per cent of total developing country exports of commercial services in 2005 to 14 per cent in 2022), other business services (from 19 per cent to 23 per cent), and insurance and pension services (from 1.4 per cent to 2.6 per cent). In contrast, the share of transport and travel decreased from 62 per cent to 49 per cent between 2005 and 2022, and the pandemic further encouraged this shift.

Figure 10.
Structure of global exports of commercial services, 2005-2022



Source: WTO Stats, available at <https://stats.wto.org>.

Note: Goods-related services cover the BOP categories of 'manufacturing services on physical inputs owned by others' and 'maintenance and repair services not included elsewhere'.

Share of 'other commercial services' exports in developing economies



As a share of total commercial services exports.

The composition of services trade has changed across all regions, producing broad-based development gains. The share of 'other commercial services' in total commercial services exports increased in all regions between 2005 and 2022, most notably in Africa (from 21 per cent to 27 per cent), Asia (39 per cent to 61 per cent), as well as in Latin America and the Caribbean (29 per cent to 39 per cent).

The share of 'other commercial services' in total imports of commercial services also increased

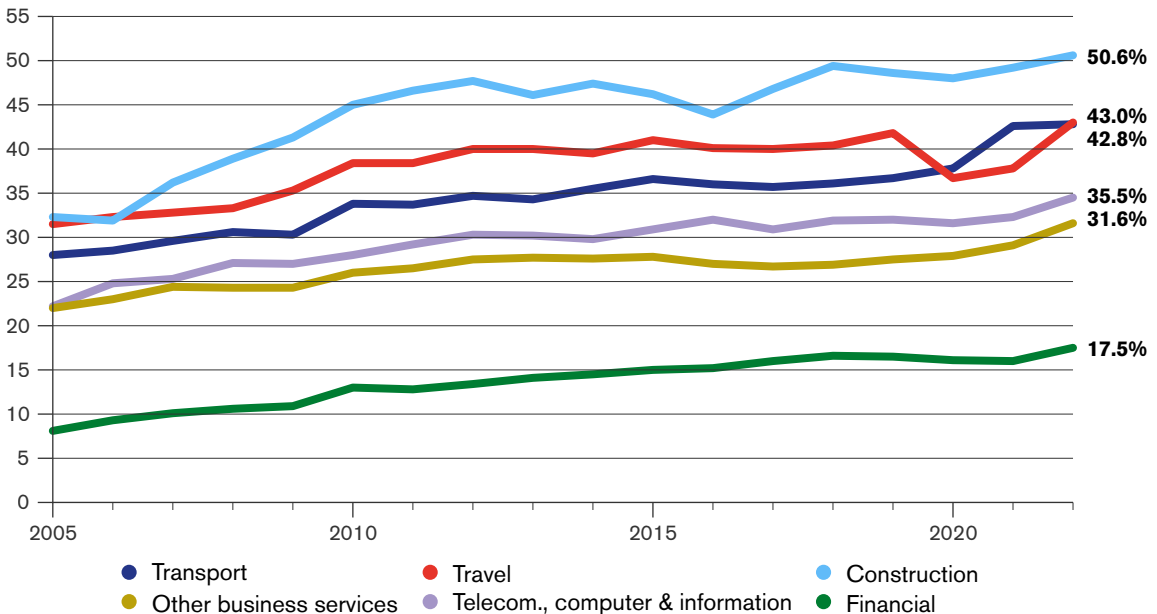
over the same period in each of the above regions – except for Africa, where it declined from 40 per cent to 37 per cent. As a result, the sector accounts for a smaller share of Africa's total services imports than is the case in other regions.¹¹

The qualitative changes at play should not be underestimated. Not only do less traditional services account for a growing share of developing economies' services exports, but these economies also account for increasing shares of world exports in these sectors (see Figure 11). This is so even as their share of world trade in traditional services still remains relatively more important (with 49 per cent of world exports for transport and 45 per cent for travel in 2022).

Developing economies' share of world exports of 'other commercial services' grew from 17 per cent to 28 per cent between 2005 and 2022. Their share of world exports of business and computer services also increased noticeably.¹²

Figure 11.
Developing economies' share of global commercial services exports, by selected main sectors, 2005-2022

(As a share of global exports for each sector, in per cent)



Source: WTO estimates.

Note: Developing economies here include least-developed ones.

Digitally delivered services exports, 2022

US\$ **3.82** trillion



54% share of global services exports

Digitally delivered services

The rapid expansion of services trade, especially of less traditional services, mirrors the strong recent growth of digitally delivered services. Services are central to digital trade – not only because a broad range of services can now be supplied online, but also because they provide the basic enabling infrastructure for digital supply, digital transactions and e-commerce more generally.

According to the latest WTO (2023) estimates, global exports of digitally delivered services more than tripled since 2005, growing 8.1 per cent per year on average during 2005-2022, outpacing the growth in exports of both goods

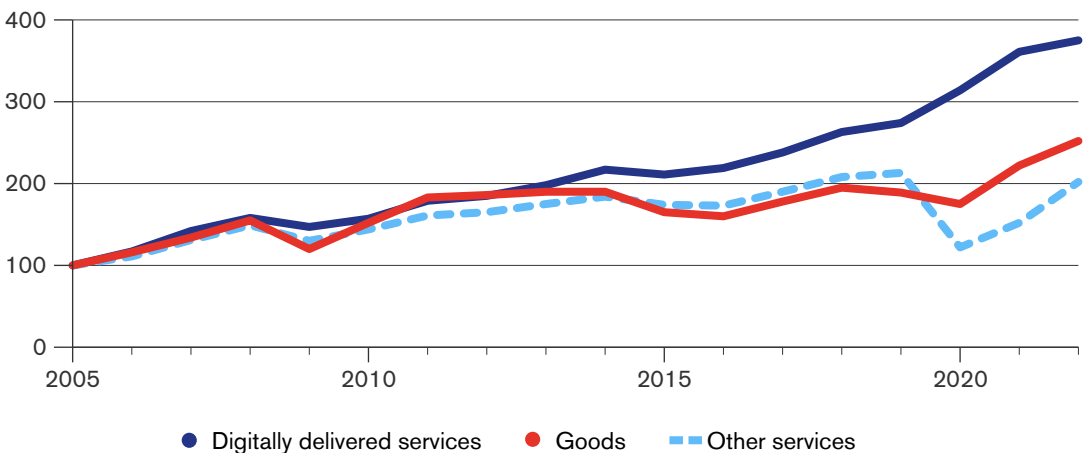
(5.6 per cent) and other services (4.2 per cent) (see Figure 12). While tourism and other services requiring cross-border mobility of people fell in this period, digitally delivered services exports continued to rise, reaching US\$ 3.82 trillion in 2022, and representing a 54 per cent share of total global services exports.

Boosted during the pandemic by remote working, learning and entertaining, the year-on-year growth of digitally delivered services exports was 14 per cent in 2020 and 15 per cent in 2021. Digitally delivered services exports in 2022 were recorded 37 per cent above 2019.

Figure 12.

Growth of digitally delivered services exports, 2005-2022

(Index 2005 = 100)



Source: WTO estimates (WTO, 2023).

Note: 'Digitally delivered services' comprise mode 1 exports of the following BOP categories: financial services, insurance and pension services, charges for the use of intellectual property not included elsewhere, telecommunication, computer and information services, and selected categories in business services and personal, cultural and recreational services.

Digitally delivered services exports under mode 1 (cross-border supply) have grown rapidly across all regions in recent years (see Box 2 for information on modes of supply). Europe accounts for more than half of global exports of digitally delivered services. Asia's exports have been rising faster than the rest of the world.

In 2022, almost 25 per cent of digitally delivered services originated from Asia and 19 per cent from North America. Latin America and the Caribbean as well as the Middle East saw an acceleration in growth in 2022. However, growth

in Africa and in least-developed economies continued to lag, with Africa holding less than a 1 per cent share of digitally delivered services exports in 2022.

The expansion of services trade in developing economies also encompasses health and education services. While trade in these sectors has offered important export growth opportunities – including, but not exclusively, as a result of digitalization – it has also helped advance a range of non-trade objectives, discussed in Boxes 3 and 4.

Box 2. Services trade: four modes of supply

The WTO's General Agreement on Trade in Services (GATS) categorizes services trade according to four modes of supply.

MODE 1: cross-border supply

Services are supplied from the territory of one WTO member into the territory of any other member (e.g. through the Internet).

MODE 3: commercial presence

Services are delivered by a supplier of one member through its commercial presence in the territory of any other member (e.g. establishing a subsidiary in a foreign country to serve the local market).

MODE 2: consumption abroad

Services are provided in the territory of one member to a consumer of any other member (e.g. tourism).

MODE 4: presence of natural persons

A supplier of one member provides services through the presence of natural persons in the territory of another member (e.g. consultants).



Box 3. Developing export-oriented medical services

Trade in medical services through all four modes of supply was estimated at US\$78.6 billion in 2019. It has been an important element in the fight against the COVID-19 pandemic. However, pandemic-related restrictions resulted in a contraction of trade in medical services by 9 per cent.

Trade in medical services holds the potential to improve the accessibility and quality of domestic healthcare in both exporting and importing countries.

For instance, trade in health services can help developing countries address their physical and human capital deficiencies in the healthcare industry. However, the impact of trade on health systems will depend on a number of factors, including the structure of the domestic health system and the formulation of accompanying regulations and policies.



Trade in medical services was
US\$ 78.6 billion in 2019.

Mode 1: telemedicine

Telemedicine has been growing in recent years, with the COVID-19 pandemic rapidly accelerating this trend. Telemedicine can bring many benefits for developing countries, especially in terms of alleviating human and infrastructure constraints in remote and underserved areas and expanding access to quality medical services. The availability of telemedicine services is heavily reliant on the quality of internet connectivity and telecommunications infrastructure. Prospects for cross-border telemedicine may be also hampered by the absence of strong legislative frameworks for telemedicine, digital trade and data protection.

Mode 2: medical tourism

Medical and wellness tourism has expanded significantly in recent decades, propelled by improved telecommunications and transport services. Countries such as Brazil, Cuba, India, Jordan, Malaysia, the Republic of Korea, Singapore, Thailand and the United Arab Emirates have become major medical hubs, receiving foreign patients from both developed and developing countries. For example, India has become a popular destination for medical travel, and hosted around 3.5 million foreign patients from 2009 to 2019. Foreign patients from developed countries such as the United Kingdom and the United States, as well as from developing countries such as Bangladesh, Nepal and Sri Lanka, go to India in search of less costly, high-quality treatment.

Thailand is another popular destination for medical tourism. It has developed a large medical tourism sector geared towards foreign patients, with 61 hospitals bearing the Gold Seal of Approval from the Joint Commission International, an organization which assesses hospital standards around the world. In 2019, Thailand received 172,265 international medical tourists, according to estimates by its National Statistical Office. In order to mitigate the internal brain drain risk caused by the expansion of an industry geared towards attracting international tourists, doctors and nurses

are required to serve three years in the public system, including in rural areas, prior to working in private hospitals, in return for public funding of their education. The government has also increased the salaries of physicians, nurses and dentists in all community hospitals to encourage these professionals to stay in the public health sector and maintain the quality of public healthcare services.

Mode 3: foreign commercial presence

Foreign investment in the health services sector has the potential to bring medical technologies and innovation through improved access to, and the transfer and the upgrading of, medical technologies, know-how and other strategic assets, while also helping to eliminate pre-existing shortages. This is particularly attractive for developing countries with health infrastructures in need of improvement, as it lowers the pressure imposed on limited public finances while improving access to medical services. Increased capacity can also make available inexistent or scarce health services (e.g. specialized treatments), helping to reduce the need to import such services.

Foreign investment in health services creates spillovers reaching far beyond the health sector, including indirect effects on growth, income and employment as well as in other sectors such as construction, transport, telecommunications and a host of business services. Foreign firms often have better access to technologies and strategic assets, often outperforming domestic institutions but also helping improve quality and competition between health services providers.

In India, HLL Lifecare Limited (a state-owned enterprise) and the Acumen Fund (a non-profit impact investment fund based in the United States) created a joint venture to provide high quality and more affordable (30-50 per cent cheaper) maternity hospital care to low-income and underserved communities in India. The joint venture has expanded to nine hospitals since 2008, becoming the largest chain of maternity hospitals in southern India and providing services to more than 300,000 patients.

Source: Gillson and Muramatsu (2020) and World Bank and WTO (2022).

Note: For background information on the development of trade in health services in developing countries, see Cattaneo (2009).

Box 4. Digital trade partnerships in health and education services in Africa

Pan-African e-Network Project

Digital services trade plays an important role in facilitating access to health and education. The Pan-African e-Network Project – launched and funded by the Government of India in partnership with the African Union – has become one of the largest telemedicine and online education projects in Africa. The project's aim is to connect major universities and centres of excellence in Africa and India, extending quality higher education opportunities for thousands of African students.

The project also aims to connect major African hospitals to highly specialized hospitals in India for medical training, online medical consultations and other medical services. The project would connect 53 learning centres, 53 remote hospitals, five regional universities and five regional hospitals in Africa to 12 highly specialized hospitals and seven leading Indian universities.

The project is now in its second phase, and 47 African states have already joined the initiative. As part of this phase, the Government of India launched the e-VidyaBharati (tele-education) and e-ArogyaBharati (telemedicine) Network Project (e-VBAB) in October 2019. The project now features an online education portal (www.ilearn.gov.in), providing students and professionals in Africa with access to over 500 courses in a variety of fields, such as engineering, science, pedagogy, mathematics and humanities.

The portal also offers 15,000 scholarships to African students to further their education through undergraduate and postgraduate courses from leading private universities in India. In the medical field, the project offers telemedicine for patients and continuing medical education for African doctors and paramedics.

African Digital Health Library

Another digital health services partnerships in Africa is the initiative between the University of Florida and an online medical library in Zambia. The aim is to disseminate medical information to doctors in Southern Africa.

Africa Teledermatology Project

The Africa Teledermatology Project provides support to dermatology professionals and patients in Africa through a range of services such as:

- online consultation services;
- discussions pertaining to diagnosis and management of patients with skin diseases;
- links to education resources;
- access to a dermatologic curriculum designed specifically for African sites.

African states participating in this project include Botswana, Burkina Faso, Eswatini, Lesotho, Malawi and Uganda, and is funded by the American Academy of Dermatology, the Austrian Academy of Sciences and the Commission for Development Studies.

Virtual University of Uganda

Several other online educational initiatives are underway. The Virtual University of Uganda is the first online university in the country to be licensed by the Uganda National Council for Higher Education. The university offers online education and provides students access to an e-library, which contains more than 50 million open-access items, including resources from internationally renowned universities such as the Massachusetts Institute of Technology and Johns Hopkins University.

The university recruits local and international staff and students. Its foreign student body features students from Burundi, the Democratic Republic of the Congo, Rwanda, Somalia and South Sudan.

Source: Africa Teledermatology Project, the Government of India, and iLearn.

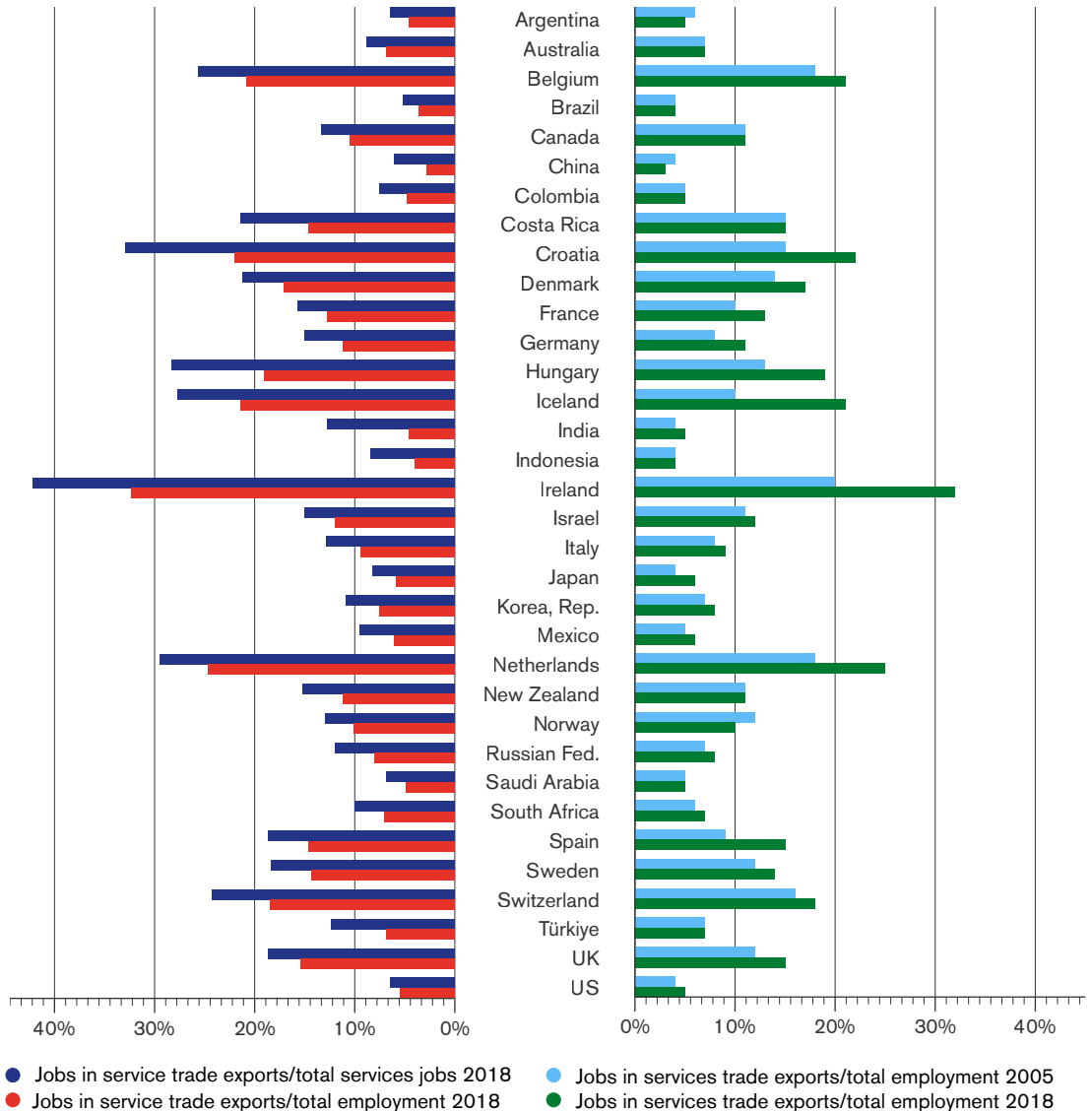
Note: For background information on the development of trade in health services in developing countries, see Dihel and Goswami (2016).

(b) Expansion of jobs linked to services exports

The growth of cross-border services trade has resulted in an increasing number of jobs linked to services exports, including in developing economies. These jobs represent a large and rising share of many countries' total services jobs and, in some countries, of total employment. In India, South Africa and Türkiye, jobs directly linked to cross-border services exports account

for more than 10 per cent of total services sector jobs. Figure 13 highlights that, for some countries, cross-border services exports account for over 20 per cent of total jobs (e.g. Ireland, Netherlands, Costa Rica). The share of jobs linked to services exports has, overall, tended to increase, outpacing the growth of total jobs in developed and developing economies alike.

Figure 13.
Proportion of jobs linked to cross-border exports of services (2005 and 2018)



Source: OECD Trade in Employment (TiE) Database, available at https://stats.oecd.org/Index.aspx?DataSetCode=TIM_2021#.

(c) Key role of micro, small and medium-sized enterprises in services trade

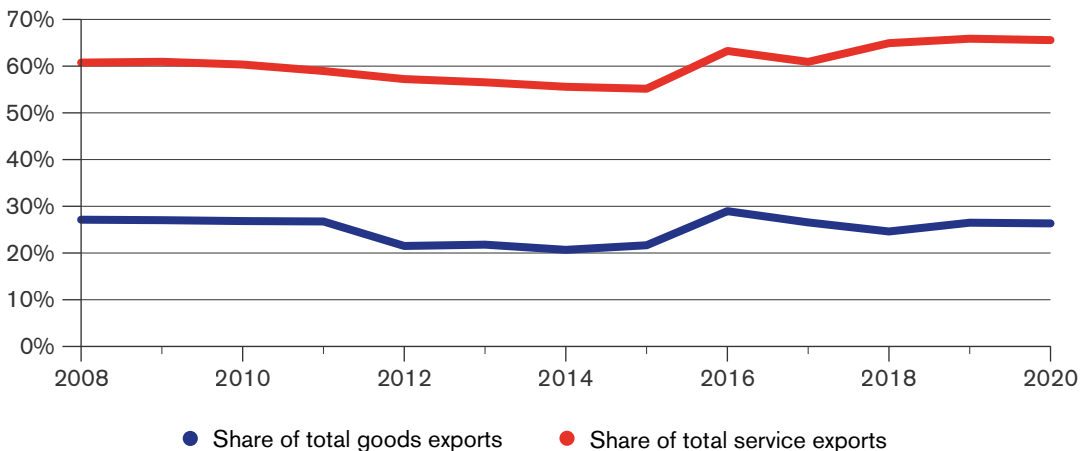
MSMEs play a key role in services trade and account for the greater share of total cross-border services exports (67 per cent) in a range of developed and developing economies (see Figure 14). The WTO (2019) finds that a rise in services trade is less likely to be biased towards larger firms than is observed for manufacturing trade. Indeed, when total global exports are considered (i.e. goods and services), large enterprises account for the greater part of exports, with the contribution of MSMEs dropping to 38 per cent.

A study by the ITC (2022) finds that the gap in export propensity between small and large enterprises is much less pronounced in services than in manufacturing – 28 per cent of MSMEs in manufacturing export, compared to 77 per cent of firms with at least 100 workers. This 49 percentage point gap is more than twice as large as the 22 percentage point gap in services, where 16 per cent of MSMEs export compared to 38 per cent of large companies.

At the WTO, work carried out within the Informal Group on Micro, Small and Medium-sized Enterprises aims at enhancing the participation of smaller firms in services trade and the inclusion of developing economies in the international trading system (see Box 5).

“The WTO’s Informal Group on Micro, Small and Medium-sized Enterprises aims to enhance the participation of smaller firms in services trade and the inclusion of developing economies in the international trading system.”

Figure 14.
Average share of goods and services exports by MSMEs, selected economies, 2008-2020



Source: OECD Trade by Enterprise Characteristics (TEC) database, available at <https://www.oecd.org/sdd/its/trade-by-enterprise-characteristics.htm>.

Note: MSMEs are here defined as firms with fewer than 250 employees. Selected economies comprise 34 OECD members and 7 non-OECD members.

Box 5. WTO's Informal Working Group on Micro, Small and Medium-sized Enterprises

The Informal Working Group on Micro, Small and Medium-sized Enterprises* was established at the end of 2017 and includes 98 WTO members from all regions and levels of development, including four least-developed countries (Afghanistan, The Gambia, Lao People's Democratic Republic, Myanmar).

Today, 95 per cent of companies across the globe are MSMEs, accounting for 60 per cent of the world's total employment. However, MSMEs face a number of obstacles when seeking to participate in international trade. The Group aims to support the internationalization of small firms through soft law and the development of concrete tools.

In December 2020, the Group finalized a package of six recommendations and declarations relating to:

- transparency;
- access to information;
- trade facilitation;
- MSME participation in regulatory developments;
- access to finance;
- cross-border payments.

In December 2021, it launched the Trade4MSMEs platform (<https://trade4msmes.org>). The platform aims to support MSMEs and policymakers by bringing trade-related information together in one place and linking to reliable information resources for would-be traders or officials looking to increase their trade policy inclusivity. It features a series of short guides on international trade to assist MSMEs and policymakers.

* See https://www.wto.org/english/tratop_e/msmes_e/msmes_e.htm.

(d) Transformative impacts of the COVID-19 pandemic

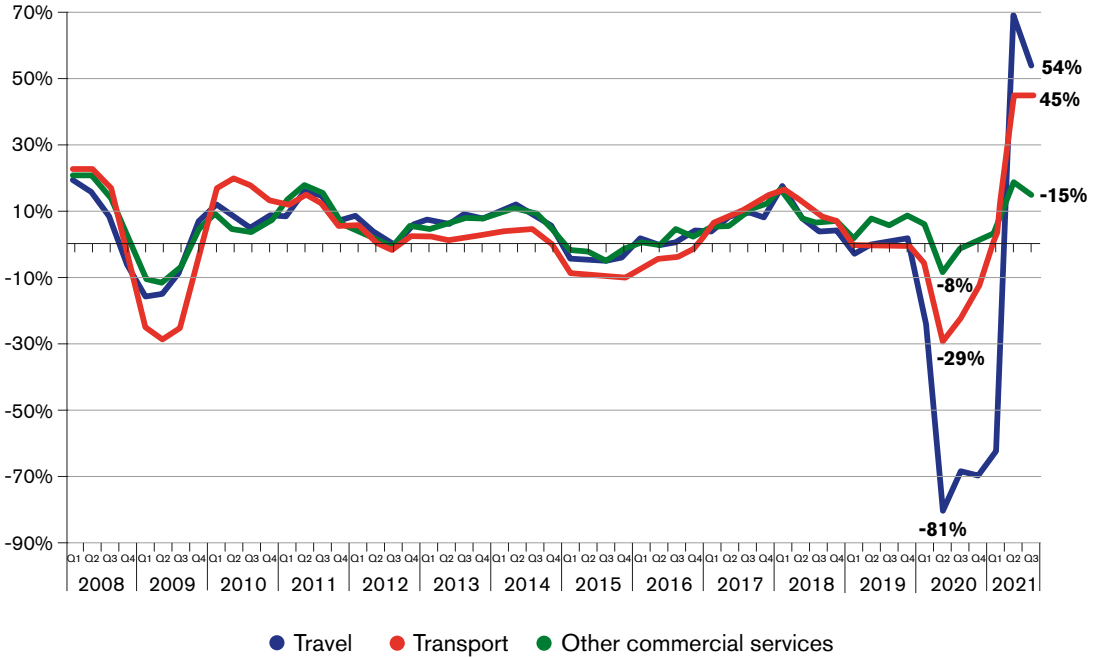
The COVID-19 pandemic caused a steep collapse in cross-border services trade, which further reinforced and accelerated the structural changes already underway, boosting the relative importance of services that can be more readily supplied digitally (see Figure 15). The drop in services exports in 2020-2021 was significant across all regions, and deeper than for the trade in goods. It was led by declines in travel receipts, first and foremost, but also by a marked contraction in transport services.

Not surprisingly, trade under modes 2 (consumption abroad) and 4 (movement of natural persons) was most impacted, owing to health-motivated mobility restrictions (WTO, 2020a). Digitally deliverable services were less affected by the trade downturn at the height of the pandemic and played a critical mitigating role, as ICT services allowed economic activities to be sustained, such as through online retailing, in addition to enabling teleworking and online schooling.

The pandemic also provided an opportunity to accelerate the adoption of IT solutions and to expand the scale of remotely supplied services.

Beyond their lead role in pandemic mitigation, digitally delivered services also led the first phases of recovery in global services trade. As services trade posted a 28 per cent year-on-year increase in the third quarter of 2021, digitally deliverable services such as computer, financial and business services were the main drivers of trade growth alongside transport boosted by surging shipping rates. There was rapid growth in computer services exports in both developed and developing economies (e.g. Bangladesh, Ireland, Mauritius, Ukraine). Pakistan's ICT services exports also boomed during the pandemic (see Box 6).

Figure 15.
Year-on-year change in global trade in commercial services, by sector



Source: On the basis of estimates from the ITC, the United Nations Conference on Trade and Development and the WTO.
 Note: Average of global exports and imports.

Rapid growth in computer services exports between 2019 and 2022

Bangladesh +124%	Ireland +56%
Mauritius +46%	Ukraine +76%
United States +27%	

Greater digital connectivity proved fundamental for resilience during the COVID-19 pandemic. The Asian Development Bank (2021a) finds that countries with better ICT infrastructure recorded lower drops in economic activity. At the same time, the pandemic produced a connectivity boost, bringing an estimated additional 782 million people online between 2019 and 2021 (ITU, 2021a), forming new digital habits and spurring investments in the digital economy.

However, the pandemic also exposed significant digital divides, both within and across countries, revealing how shortcomings in digital connectivity could exacerbate social inequalities (see WTO, 2022a).

Box 6. The ICT boom in Pakistan

Since the onset of the COVID-19 pandemic, the ICT services exports of Pakistan experienced sustained growth. With social-distancing measures and border closures in place, the demand for digital services surged, propelling ICT services as the top contributor to the economy among all service subsectors. Exports increased in almost all subsectors: software consultancy, call centres and telecommunication services.

Even before the COVID-19 pandemic, Pakistan's technology ecosystem was buoyant, with a growing number of new startups, support organizations and angel investors. Both the public and private sectors play an important role in supporting the boom in the tech startup ecosystem, with several accelerator and innovation incubator programmes in place, such as Invest2Innovate and Nest I/O, which have supported over 19 startups.

Facebook partnered with the government to launch its first innovation laboratory in April 2019, and Google regularly organizes events in Pakistan's major

cities. In 2019, Pakistan had the second highest number of tech hubs in South Asia – at 35 – behind only India, with over 250.

Human and physical capital are supporting the growth of the country's ICT ecosystem. More than 20,000 engineers and IT professionals graduate in Pakistan each year, mostly of whom can speak English. There is also a growing number of high-quality freelance professionals in the sector.

Pakistan has a good digital infrastructure with improved telecommunication services, Internet access, and 14 IT parks available. Such attributes form important drivers of Pakistan's business process outsourcing industry.

According to the Pakistan Software Houses Association, 53.8 per cent of the ICT sector's revenue in 2019 came from exports – mostly to the United States (52.1 per cent), the United Arab Emirates (8.8 per cent) and the United Kingdom (7.0 per cent).

Source: Saez *et al.* (2020).



(e) Trade by mode of supply and the contribution of services supplied through a commercial presence

While BOP statistics capture the growing importance of cross-border trade in services in modes 1, 2 and 4, they still significantly underestimate global services trade as defined in GATS. Most notably, BOP data generally do not cover the supply of services by foreign-owned companies (mode 3), by far the most economically important mode of service supply.¹³

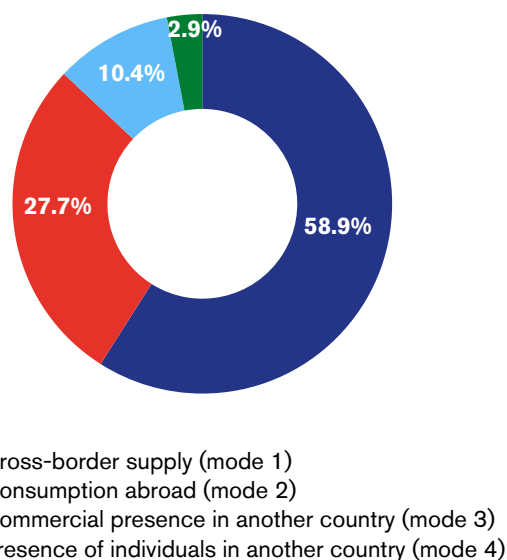
When services sold through a foreign supplier's commercial presence are taken into account, the services share of world trade is around 20 percentage points higher than traditionally estimated, representing 43 per cent of total trade in goods and services.¹⁴ Figure 16 shows the relative share of each of the four modes of service supply in global services trade. With a value of US\$ 7.8 trillion, sales through the establishment of foreign-affiliates worldwide (mode 3) dwarf other modes, accounting for 58.9 per cent of global services trade.¹⁵ This is more than twice the second most important mode – cross-border supply (mode 1, including through electronic means), which accounted for 27.7 per cent of the total services trade at latest count. The 2.9 per cent share of trade involving the temporary movement of service suppliers reflects the restrictive policy stance governing mode 4 trade.

When measuring trade in services under the four modes of supply,¹⁶ the share of developing economies (excluding least-developed) in global services trade increased by 10 percentage points since 2005, from 14.7 per cent to 25.2 per cent at the latest count. While the share of least-developed economy exports also increased, it only accounted for 0.3 per cent of global services exports and 0.9 per cent of imports. With respect to least-developed economies, their services exports have been rising by an annual average of almost 11 per cent since 2005, albeit from a very low base, with growth led by tourism boosted by greater intra-regional arrivals prior to the pandemic.

The developing economies' impressive trade performance under this expanded measure of trade in services is largely due to four economies that rank as leading services exporters and importers (China; Hong Kong, China; Singapore; India). A large part of their combined exports occurs through mode 3. For other developing economies, cross-border supply remains the predominant mode of services exports, slightly ahead of commercial presence (WTO, 2019).

TiSMoS underscores that mode 4 accounts for a similarly small share of services exports for different groups of WTO members – developing and developed economies, as well as least developed. Mode 4 is nevertheless relatively more important for certain sectors. On the basis of the TiSMoS dataset, 9.8 per cent of global exports of 'other business services' were supplied under mode 4 in 2017.

Figure 16.
World trade in commercial services by mode of supply (2017)



Source: Trade in Services data by Mode of Supply (TiSMoS), WTO Secretariat.

(f) The role of services in supply chains

Frequently dubbed as the “glue” that enables cross-border production networks, services have played a critical role in enabling the emergence of global and regional value chains. The deployment of these chains has been made possible by improvements in the efficiency, quality and costs of services that enable the coordination of geographically dispersed yet interlinked production processes – from transport and logistics to communication and business services.¹⁷

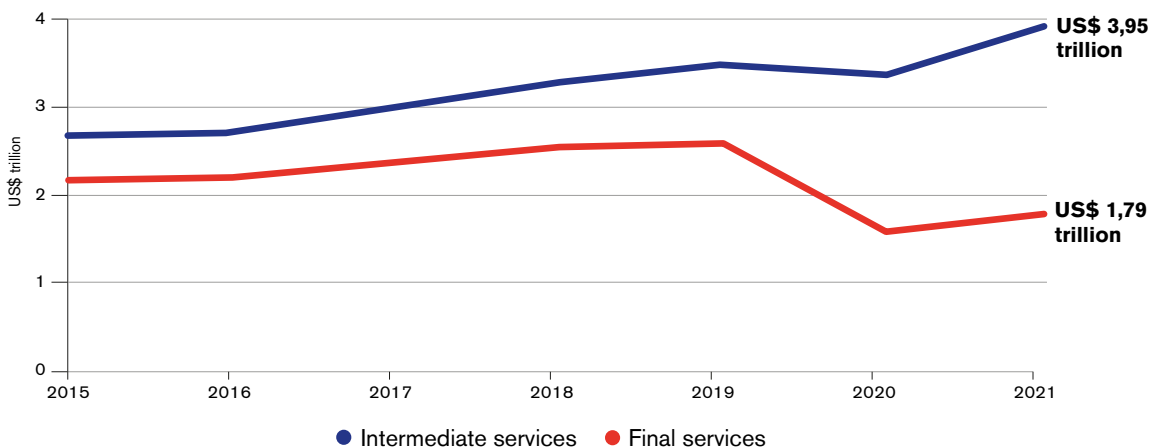
In addition to linking different production stages across borders, services have also become important inputs at all stages in the production process of goods and other services. Services inputs, whether imported or locally produced by foreign or domestically owned enterprises, are increasingly used in the production of manufactured products that are subsequently exported. Services value-added content embodied in exported goods has grown in importance and represents an increasingly significant way for services firms in developing countries to join GVCs and reach international markets. In addition, services increasingly form their own value chains, with fragmentation in the

supply of different inputs in different stages and locations (Nano and Stolzenburg, 2021).

The critical role of services as inputs and in supply chains is reflected in the fact that over two-thirds (69 per cent) of global services trade (on a BOP basis) consists of trade in intermediates, compared to trade in services for final consumption (see Figure 17). The COVID-19 pandemic and the resulting drop in tourism services has increased the relative importance of intermediate services. However, even before the pandemic, trade in intermediate services accounted for over 57 per cent of global services trade, a higher proportion than trade in intermediates plays in manufacturing.

The role of services in global value chains is also highlighted through data that capture the value added by a country in the production of any good or service that is then exported. Measuring trade in value-added terms reveals that the role of services in world trade is far more significant than implied by gross flows. Indeed, services value-added accounted for 50 per cent of the value of world trade in goods

Figure 17.
Trade in intermediate and final services, 2015-2021



Source: WTO estimates (based on the conversion table EBOPS 2010-CPC 2.1-BEC Rev.5).

Note: Trade as average of exports and imports.

and services in 2018, compared to 16 per cent for agriculture and 34 per cent for industry (see Figure 18).¹⁸ In comparison, the share of services value-added stood at 30 per cent in 1980 and at 45 per cent in 2005 (Heuser and Mattoo, 2017).

The rising share of services inputs in total trade also reflects major structural changes in the fabric of economic activity, with production processes making increasing use of services and manufacturing components. In this so-called servicification of industrial production, manufacturing firms increasingly rely on services, procure services inputs – from home and abroad – and also supply services themselves (e.g. transport, R&D, IT, professional services, repair and maintenance and other after-sales services) (WTO, 2020a).

Services value-added represents a large and increasing share of total exports, reaching 54 per

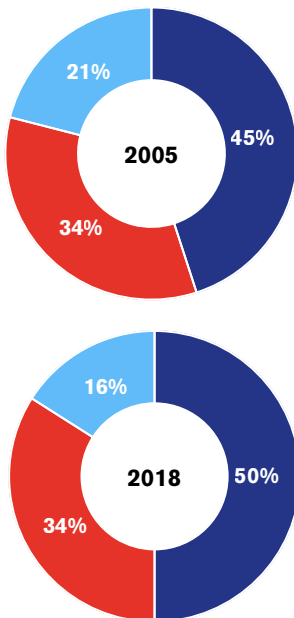
cent on average for OECD members, and 41 per cent for non-OECD members in 2018 (see Figure 19). However, the share of services content in total exports increased the most in non-OECD members since 2005.

Services value-added accounted for over 51 per cent of India's total exports in 2018. In the same year, it reached a higher share than the non-OECD average for countries such as the Philippines (50 per cent), Brazil (45 per cent) and Morocco (45 per cent).

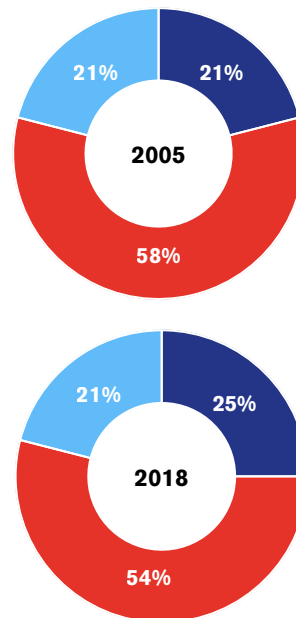
Figure 19 also shows that services value-added accounted, on average, for 31 per cent of manufacturing exports for OECD members, and only slightly less for non-OECD members, at 29 per cent. This significant share underscores the importance of efficient and quality services for the productivity of manufacturing activities and their international competitiveness and export

Figure 18.
Structure of world trade, 2005 and 2018

IN VALUE-ADDED TERMS



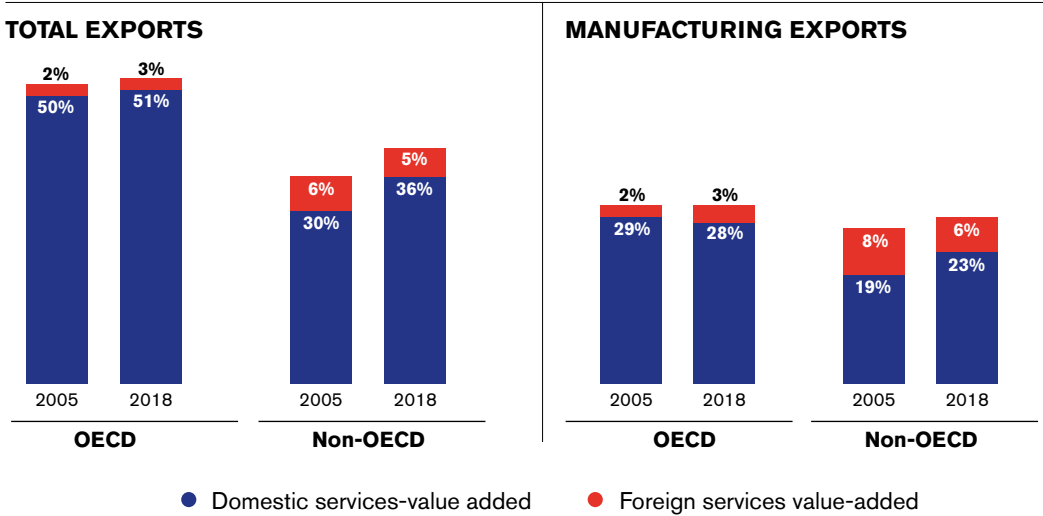
IN GROSS TERMS



● Agriculture ● Industry ● Services

Figure 19.

Services value-added in total exports and in manufacturing exports, domestic and foreign, 2005 and 2018

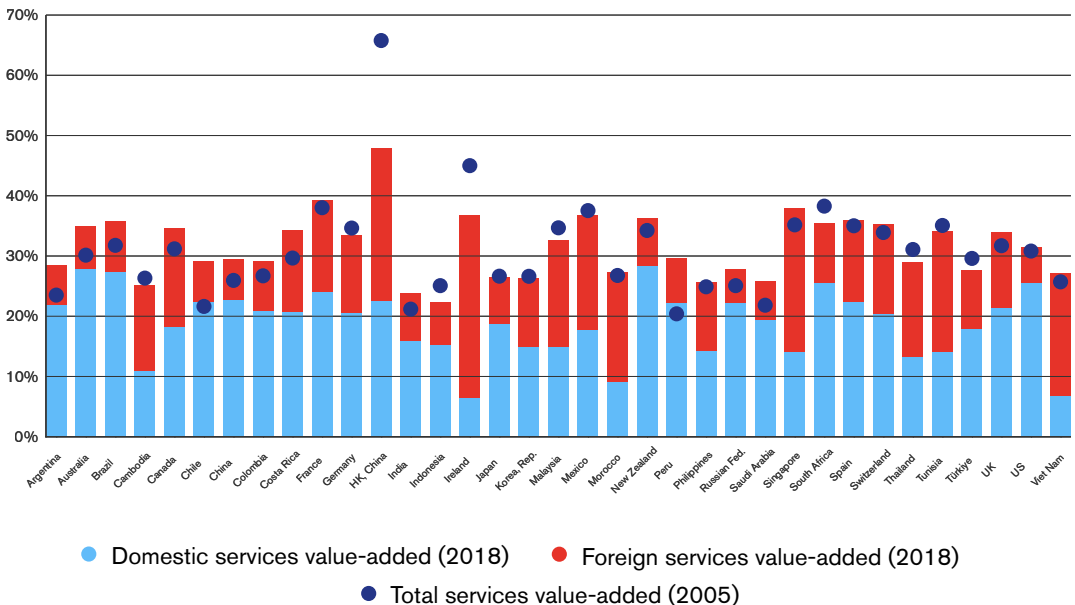


Source: Trade in Value Added (TiVA) database, OECD.

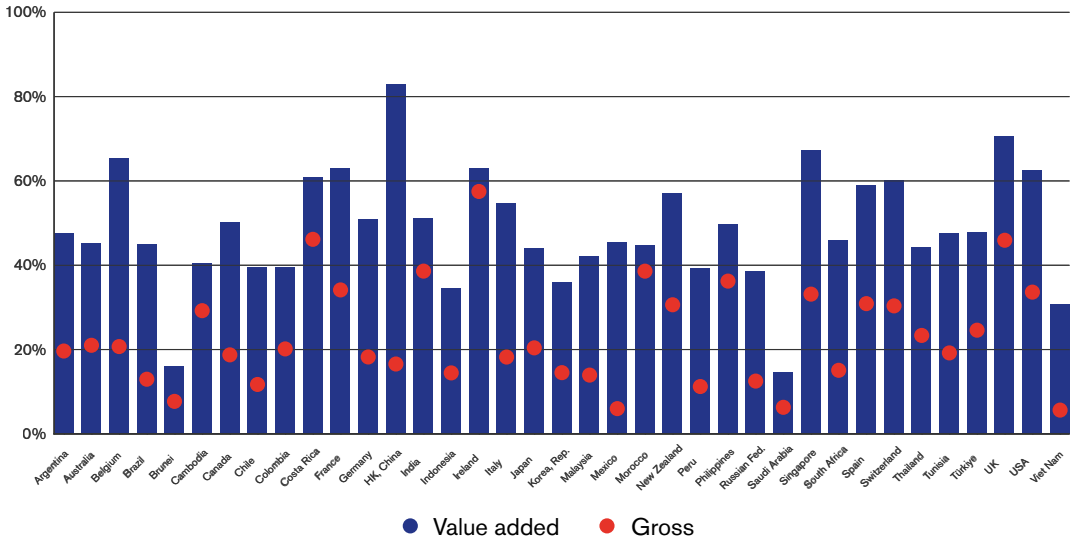
Note: This includes data from 38 OECD and 28 non-OECD economies. OECD and non-OECD aggregates include intra-trade flows as domestic ones.

Figure 20.

Share of services value added in manufacturing exports, selected economies, 2005 and 2018



Source: OECD Trade in Value Added (TiVA) Database.

Figure 21.**Share of services in total exports, in gross and value-added terms, selected economies, 2018**

Source: OECD Trade in Value Added (TiVA) Database.

potential. The cost and quality of the underlying services affect the performance of the economy as a whole and are essential for connectivity and the competitiveness of goods exports.

Looking at selected economies, Figure 20 shows that services value-added represented between 25 per cent to 40 per cent of the content of manufacturing exports for a wide range of economies at different levels of development, and that in many cases a significant proportion was foreign services value-added. The share of total services value added was relatively high for a number of developing economies, including Brazil (36 per cent), Chile (29 per cent), Mexico (37 per cent), South Africa (35 per cent) and Turkey (28 per cent). For the majority of economies covered in Figure 20, the share of services value-added in manufacturing exports increased between 2005 and 2018, in particular for Peru and Chile.

The OECD TiVA database reveals not only the key role of services in manufacturing competitiveness and exports, but also the contribution of imported services to such exports. For a number of economies, such as Belgium, Ireland and Morocco, the foreign share of services value-added is greater than the domestic one.

Figure 21 underscores that even in economies where services represented a small proportion of total exports in gross terms, services value-added often accounted for a significantly larger share of total exports. For example, services accounted for 6 per cent of Mexico's total exports in gross terms in 2018, but the proportion jumped to 45 per cent in value-added terms. Similarly for Argentina, services as a share of total exports went from 20 per cent to 48 per cent. Hong Kong, China showed the strongest share of services value-added in total exports at 83 per cent.

Looking at trade in value-added terms shows that economies at different levels of development may enjoy comparative advantages in some services even if, in gross terms, they tend to export more goods than services.¹⁹

Endnotes

- 1 The many reasons for the declining importance of manufacturing for most economies include the fact that manufacturing activities have become more technology, skill and capital intensive and create fewer jobs (Ghani and O'Connell, 2014), and demand for services has changed in step with rising incomes and demographic shifts.
- 2 For background information, see Amirapu and Subramanian (2015) and Rodrik (2015). Similar concerns are expressed about the impact widespread adoption of artificial intelligence and machine learning technologies will have on employment in services (see Baldwin, 2019).
- 3 For background information, see Ghani and O'Connell (2014).
- 4 See the ILO World Employment and Social Outlook (WESO) Data Finder, available at <https://www.ilo.org/wesodata>.
- 5 For an historical context, see Baumol (1967) and Kaldor (1966).
- 6 For background information, see Cali *et al.* (2008), Eichengreen and Gupta (2013), Jensen and Kletzer (2005), Jones and Kierzkowski (1988), Riddle (1986) and Schettkat and Yocarini (2006).
- 7 For background information, see Hoekman and Shepherd (2017) and Nordås and Kim (2013).
- 8 Trade in commercial services in the BOP is total services trade minus exports/imports of government services not included elsewhere.
- 9 BOP statistics generally do not cover trade in services through commercial presence (mode 3). For more information on the modes of supply, see Box 2.
- 10 Other commercial services are total commercial services less the categories of travel, transport and goods-related services. Other commercial services include construction, financial services, insurance and pension services, telecommunications, computer and information services, charges for the use of intellectual property not included elsewhere, other business services, and personal, cultural and recreational services.
- 11 For example, other commercial services amounted to 40.4 per cent of total commercial services imports in the Middle East in 2022, compared to 35.8 per cent in 2005. In the case of Latin America and the Caribbean, the share of other commercial services imports went from 38.3 per cent in 2005 to 42.3 per cent in 2022.
- 12 From a regional perspective, the share of global exports of other commercial services from Asia and the Middle East increased between 2005 and 2022 (from 16.0 per cent to 23.5 per cent and from 2.0 per cent to 3.3 per cent, respectively). The shares of Europe and North America declined between 2005 and 2022 and those of other regions remained broadly unchanged.
- 13 Since a foreign-owned affiliate is resident in the host country, its services sold in the country are not recorded in BOP statistics, which are only concerned with transactions between residents and non-residents.
- 14 The WTO's Trade in Services data by Mode of Supply (TiSMoS) provides an aggregate picture of services trade covering the four modes of supply as defined in GATS. It covers 200 individual economies for the period 2005-2017.
- 15 Financial services and distribution services together account for around half of this value.
- 16 TiSMoS available at https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm#TISMOS.
- 17 For further information, see Diaz-Mora *et al.* (2018), Heuser and Mattoo (2017), Low and Pasadilla (2015) and World Bank (2020a).
- 18 The most recent update of Organisation for Economic Co-operation and Development (OECD) Trade in Value Added (TiVA) statistics was released in 2021, with coverage up to 2018.
- 19 However, TiVA statistics may yet underestimate the share of services in world trade because they do not capture the services value-added provided by manufacturing companies. TiVA statistics capture services bought as inputs by enterprises in other sectors, but manufacturing companies also undertake services activities 'in-house' which are not captured in TiVA statistics as services value-added of manufacturing exports. With data for a sample of countries that are mostly OECD economies, Miroudot and Cadestin (2017a) find that services inputs account for 37 per cent of the value of manufacturing exports, but this share increases to 53 per cent when adding services activities taking place within manufacturing firms.