The services sector accounted for two-thirds of economic growth in emerging market and developing economies (EMDEs) over the past three decades. In 2019, it accounted for more than half of GDP and employment in EMDEs. The sector consists of a wide range of activities, ranging from high-skilled offshorable services, such as information and communications technology (ICT) and professional services, to low-skilled “contact” services, such as retail and hospitality. The pandemic disrupted many low-skilled contact services that typically require face-to-face interactions between providers and consumers. High-skilled offshorable services were the least affected owing to the use of digital technology that enabled remote delivery. Increased digitalization has improved prospects for scale economies and innovation in the services sector that were previously constrained by the need for physical proximity and the lack of opportunities to augment labor with capital. Policies to support the diffusion of digital technologies could therefore further raise the growth potential of the services sector. Policies to improve market access for, and skills in, ICT and professional services could ease important constraints on growth opportunities in these high-skilled offshorable services that have best withstood the pandemic. The same holds true for policies, including regulatory reforms, that promote investment in low-skilled contact services, such as transportation, which have important linkages with the wider economy.

Introduction

The services sector is large and has been the main source of global economic growth over the past three decades. Between 1995 and 2019, services accounted for 66 percent of global output growth and 73 percent of global employment growth and for 63 percent of global output levels and 57 percent of global employment levels in 2019. While the services sector represented a somewhat smaller part of economic activity in emerging market and developing economies (EMDEs) than in advanced economies (AEs), the difference was small. Even in EMDEs, services made up for 60 percent of output and 52 percent of employment in 2019.

The services sector is diverse. First, it includes high-skilled offshorable services (information and communications technologies, finance, and professional services) that have been internationally traded much like goods since the ICT revolution in the 1990s. Second, it includes generally low-skilled contact services (transportation, hospitality, retail, personal services, arts, entertainment and recreation, and administrative and support) that have typically required physical proximity between providers and

Note: This chapter was prepared by Gaurav Nayyar and Elwyn Davies.
consumers. Many services from both these categories provide important inputs for non-service sector activity. For example, transportation and logistics services form the infrastructure for international trade in agricultural commodities and manufactured goods, while ICT services are increasingly central to data-intensive production processes. Third, there is a group of social services (education and health) that are largely publicly provided and therefore not a focus of this chapter.

The pandemic has dealt uneven blows to services activity. Low-skilled contact services, such as transportation and hospitality, were hit particularly hard by social distancing regulations and precautions. But high-skilled offshorable services, such as ICT and professional services, were much less affected owing to their amenability to home-based work.

The increased digitalization that has been implemented by firms to cushion the impact of the pandemic’s disruptions can be leveraged to boost growth in the services sector. Baumol (1967) and Hill (1977) argue that the potential for services-led growth is limited because services typically require a simultaneity of production and consumption that precludes economies of scale. In other words, the need for face-to-face interactions between service providers and consumers inhibits opportunities to serve demand beyond the local market. They also point out that services have less scope for capital-deepening and innovation than in manufacturing. Increased digitalization, however, enables greater scale and innovation in the services sector. The resulting productivity benefits, in turn, can boost overall economic growth owing to the important linkages between the services sector and other parts of the economy.

Against this backdrop, this chapter addresses the following questions:

• How has the services sector shaped global economic growth over the past three decades?

• How has the services sector been affected by the pandemic?

• How can digitalization enhance the services sector’s growth as countries recover from the pandemic?

• Which policies can help harness the services sector’s growth potential?

It presents several novel findings. First, although the services sector has led economic growth over the past three decades in both advanced economies and EMDEs, there are significant differences in the composition of services sector growth between the two groups. While the contribution of low-skilled contact services to GDP growth is similar between the two groups, that of high-skilled offshorable services increases with per capita income levels. Thus, high-skilled offshorable services account for around one-third of GDP growth in AEs compared with 15 percent in EMDEs, and for one-half of employment growth in AEs compared with 11 percent in EMDEs. This matters because
the growth of low-skilled contact services has been characterized by lower dependence on (a) export growth relative to domestic demand growth, and (b) total factor productivity growth relative to the growth of labor and capital inputs.

Second, the impact of the pandemic on the growth of the services sector has been uneven. Low-skilled contact services reliant on face-to-face interactions with consumers, such as accommodation, food, and transportation services, have been among the most adversely affected sectors, even though there are now signs of recovery. But high-skilled offshorable services, which tend to be amenable to remote work though digital delivery, such as ICT and professional services, were among the sectors least adversely affected, and some—especially ICT services—have even seen growth of output and investment.

Third, the increase in digitalization during the pandemic augurs well for growth prospects in the services sector. Among high-skilled offshorable services, there is a new momentum; the share of digitally deliverable ICT and professional services in total services exports of EMDEs increased to 50 percent in 2020 from 40 percent in 2019. Among low-skilled contact services, streaming platforms such as Netflix and YouTube have increasingly enabled providers of arts and entertainment services to export their creative content to international markets at low cost. Even where physical proximity remains important, intangible capital associated with digitalization has increased opportunities for scale economies. For example, e-commerce platforms have enabled retailers and restaurants to reach customers beyond their local neighborhoods. Additionally, ICT and management practices have facilitated the standardization of production across many establishments.

Fourth, appropriate policy interventions can better enable countries to leverage the potential of the services sector to drive economic growth. Policies to support the diffusion of digital technologies in EMDEs, for example, can bring particularly high returns because of the lack of digitalization in the services sector: the share of firms using email to communicate with clients was less than one-third in several EMDEs in as recently as 2018. Investing in ICT infrastructure, updating regulatory frameworks (including in relation to data), and strengthening management capabilities and worker skills can all boost the adoption of digital technologies. Countries can also promote the expansion of high-skilled offshorable services by reducing barriers to international trade and taking measure to improve skills. Last, but not least, countries can support investment and implement regulatory reforms that foster the revival of low-skilled contact services, such as transportation, that can be large employers and important enablers of growth in the wider economy.

This chapter makes several contributions to the literature. First, it presents stylized facts about the role of the services sector in overall economic growth over the past three decades. This draws on and complements a growing literature on structural change and productivity growth in EMDEs that highlights the changing contributions of the manufacturing and services sectors (Fan, Peters, and Zilibotti 2021; Kinfemichael and Mahbub Morshed 2019; McMillan and Rodrik 2011; Nayyar, Hallward-Driemeier, and
The main innovations here are the growth decompositions: services subsectors are explored; the demand-side contributions of domestic demand, exports, and government consumption are compared; and the supply side contributions of the growth of factor inputs and total factor productivity are examined.

Second, it analyzes how the pandemic has affected prospects for services-led growth by tracing patterns of recovery and assessing future growth opportunities linked to the acceleration of digitalization. By making a systematic assessment by services subsector, this builds on a spate of recent studies that examine the effects of the pandemic on growth and distribution (Apedo-Amah et al. 2020; Beraja and Wolf 2021; Chetty et al. 2020) as well as the literature on how the digital economy is expanding opportunities to boost productivity.

Third, it discusses policy options and priorities for leveraging the services sector’s potential for boosting economic growth after the pandemic. This adds to the policy discussion in Nayyar, Hallward-Driemeier and Davies (2021) by focusing on developments since the pandemic. Policies considered include the reform of regulatory barriers and the promotion of skill development for both high-skilled offshorable and low-skilled contact services.

The remainder of the chapter is organized as follows. Section 2 quantifies how the services sector has shaped economic growth over the past three decades. Section 3 analyzes how the pandemic has affected the services sector’s growth. Section 4 examines the potential of digitalization to increase growth in the services sector. Section 5 identifies policy priorities to leverage this potential to drive stronger overall economic growth. Section 6 presents conclusions.

How has the services sector shaped economic growth?

A general feature of economic development is structural change in national economies. The pioneering work of Fisher (1935), Clark (1940), Chenery (1960), and Kuznets (1971) observed a common pattern of change in the relative sizes of the agricultural, industrial (or manufacturing), and services sectors among the industrialized or advanced economies in the course of their development. In the early stages of development, the agriculture sector’s share in both output and employment was dominant. Subsequently, as industrialization proceeded, the agriculture sector’s share fell off, and the industrial (or manufacturing) sector’s share rose. Once countries industrialized and reached an advanced stage of economic development, the industrial sector’s share also declined, and the services sector’s share increased. Interestingly, growth in EMDEs over the past three decades has not conformed to this pattern. In spite of the relatively early stages of development of most of these economies, the services sector has offset much of the decline in the share of the agricultural sector in both GDP and employment.

However, there are important differences across services subsectors. Three categories may be distinguished. First, ICT, finance, and business services comprise a group of
high-skilled offshorable services. Second, there is a group of low-skilled contact services that are not offshorable. However, some are traded internationally through either their linkages with goods (cargo transportation and wholesale trade) or tourism-related travel (accommodation and food). Education and health services (social services) comprise a third group. High-skilled offshorable and low-skilled contact services differ in two particularly important economic respects. First, growth in the output of low-skilled contact services has generally been characterized by lower dependence on export growth, as opposed to domestic demand growth, than high-skilled offshorable services. Second, growth in the output of low-skilled contact services has generally been based less on growth of total factor productivity, as opposed to growth of physical capital and labor inputs, than high-skilled offshorable services.\(^1\) High-skilled offshorable services have expanded less in EMDEs than in AEs.

**Services and structural transformation**

Between 1991 and 2019, the services sector’s share of total employment in EMDEs increased from 39 to 51 percent, offsetting almost the entire decline in agriculture’s share, with little change in the share of industry (figure 7.1.A). Similarly, the services sector’s share of GDP rose from 47 percent to 58 percent, offsetting a substantial decline in the share of agriculture together with a smaller decline in the share of industry (figure 7.1.B). These rising shares of the services sector in employment and GDP reflect its central role in driving economic growth in EMDEs over the past three decades. Thus, the services sector accounted for more than half of both employment growth (figure 7.1.C) and value-added growth (figure 7.1.D) and between 1991 and 2018 across EMDEs.

In the past, the increasing share of the services sector in employment and GDP in industrialized countries was attributed, at least in part, to rising relative prices of services that resulted from lower productivity growth than in industry (Baumol 1967). Labor productivity in the services sector could not be readily increased, either through innovation and capital accumulation, owing to the “intrinsic role of labor,” or through economies of scale, because the intensity of face-to-face interactions constrained service providers from reaching consumers beyond the local market.

This past characterization of the services sector is less relevant for EMDEs today. Labor productivity growth in the services sector between 1995 and 2018 was similar to, or higher than, in the industrial sector in four of the six EMDE regions—Latin America and the Caribbean (LAC), the Middle East and North Africa (MNA), South Asia (SAR), and Sub-Saharan Africa (SSA; figure 7.1.E). Only in the East Asia and Pacific (EAP) and Eastern Europe and Central Asia (ECA) regions—where export-led manufacturing has been the cornerstone of economic growth—did the growth of labor productivity in industry exceed that in services, as was the case in the advanced economies.

\(^1\) The relatively large contributions of export growth and total factor productivity growth to the growth in the output of high-skilled offshorable services have, nevertheless, been smaller than their contributions to the growth of manufacturing output.
CHAPTER 7
FALLING LONG-TERM GROWTH PROSPECTS

FIGURE 7.1 The services sector and structural transformation

In recent decades, the services sector’s share in output and employment has increased and the sector has made larger contributions to both employment and output growth than agriculture or industry in both advanced economies and EMDEs. Labor productivity growth in services has been at least similar to that in industry in four out of the six EMDE regions. The contribution of the services sector to overall labor productivity growth has occurred both through productivity growth within the sector and through the shift of labor to services from the lower-productivity agricultural sector.

A. Share of individual sectors in employment

B. Share of individual sectors in value added

C. Contributions of individual sectors to employment growth, 1995-2019

D. Contributions of individual sectors to value added growth, 1995-2019

E. Labor productivity growth in services compared to manufacturing, 1995-2018

F. Contributions of individual sectors to labor productivity growth, 1995-2018

Sources: Nayyar, Hallward-Driemeier, and Davies (2021); World Bank.
Note: EMDEs = emerging market and developing economies; LICs = low-income countries.
A. Sample includes 35 advanced economies, 143 EMDEs, and 26 LICs. Data up to 2019.
B. Sample includes 31 advanced economies, 140 EMDEs, and 23 LICs. Data up to 2020.
C.D. Sample includes 30 advanced economies, 116 EMDEs, and 21 LICs. Bars represent an individual sector’s contribution to growth, averaged over 1995-2019.
E.F. AEs = advanced economies; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MNA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.
E. Average compounded annual growth rates in labor productivity (value added per worker) across each region between 1995-2018.
F. Bars represent labor productivity growth attributed to each sector as well as movement between sectors for the period 1995-2018.
Furthermore, between 1995 and 2018, labor productivity growth in services in all EMDE regions except MENA exceeded that in advanced economies, implying narrowing productivity gaps. This provides encouraging evidence that services growth has been contributing to EMDEs’ catch-up with per capita incomes in advanced economies. It is also consistent with evidence of unconditional convergence of productivity across countries: countries starting from lower labor productivity in the services sector experienced faster productivity growth between 1975 and 2012 than those with higher initial labor productivity in that sector (Enache, Ghani, and O’Connell 2016; Kinfemichael and Mahbub Morshed 2019).

These trends in labor productivity growth, combined with the changing sectoral shares of employment, underlie the contribution of the services sector to overall labor productivity growth. This growth reflects both within-sector gains in productivity, as well as between-sector gains as the labor force shifts from low- to high-productivity sectors. Thus, productivity growth within the services sector contributed more than productivity growth within industry to aggregate productivity growth in all EMDE regions other than EAP in the past three decades. Furthermore, although the relative contribution of the between-sector component did not exceed one-third in any region, in each case the bulk of it came from the increasing share of services in total employment (figure 7.1.F).

Increased productivity-enhancing growth opportunities in the services sector include new opportunities for larger-scale production, innovation (including through mechanization), and spillovers through linkages with other sectors—characteristics typically associated with manufacturing-led growth. For example, digital electronic content has made ICT services more storable, codifiable, and transferable and therefore more scalable. Similarly, innovation through research and development (R&D) since the 1990s has been largely concentrated in ICT multinationals owing to software patents (Branstetter, Glennon, and Jensen 2018). ICT services have also increasingly benefited other sectors as data analytics have improved the quality and efficiency of production processes.

The heterogeneity of the services sector

The services sector comprises a wide range of economic activities.² They can be grouped on the levels of skills that they involve and their amenability to be offshored and internationally traded. Three groups may be distinguished: high-skilled offshorable services, low-skilled contact services, and social services.

The first group, high-skilled offshorable services, comprises ICT, finance, and professional, scientific, and technical services that employ a smaller share of workers in

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² Under the United Nations (UN) International Standard Industrial Classification of All Economic Activities (ISIC), the broad categories of services include, among others, wholesale and retail trade; accommodation and food; transportation and warehousing; information and communications technology (ICT) services; financial services; real estate; professional, scientific, and technical services; public administration and defense; education and research; health services; arts, entertainment, and recreational services; administrative and support services; and other social, community, and personal services (United Nations 2008). Mining; utilities such as electricity, gas, and water; and construction are typically classified within “industry,” together with manufacturing.
Service sub-sectors differ in the amount of physical capital they use, their skill intensity, the degree they are connected to other sectors, the extent they are traded internationally, and how offshorable they are.

A. Offshorability and skill intensity in the United States

Offshorability is measured by the share of worker tasks in the United States that (a) do not involve face-to-face contact with people other than coworkers; (b) can be done without being physically present; and (c) will not experience a decline in quality if they can be delivered remotely. It reflects the possibility for tasks to be offshored from the United States to emerging and developing countries where labor costs are lower. Skill intensity is measured by the inverse of the share of workers in manual-task-intensive occupations among 23 major occupational groups in the U.S. Department of Labor’s Occupational Information Network (O*NET) database in 2018. The use of data from the United States provides a lower bound; if a sector’s jobs are predominantly filled by unskilled workers in the United States, they are almost certainly likely to be intensive in emerging and developing countries.

B. Inter-sectoral linkages in the European Union

Share of sales to other domestic sectors in output in European Union countries in 2015. This shows the upside potential for linkages between sectors since advanced economies have more diversified production structures. Data from OECD Trade in Value Added database.

C. Intensity of exports in the United States

Share of value added exported in the United States in 2015. This shows the upside potential for scale since advanced economies have more sophisticated services sectors that are more likely to be traded internationally. Data from OECD Trade in Value Added database.

D. Trade by mode of supply

Share of global trade in services by four modes of supply in 2017. Commercial presence refers to foreign direct investment. Data from the World Trade Organization’s Trade in Services by Mode of Supply (TiSMoS) database.

Sources: Blinder and Krueger (2013); Organisation for Economic Co-operation and Development; U.S. Department of Labor; World Trade Organization.

Note: The services sub-sectors above are divided by skill intensity and whether the tasks can be done remotely or offshored.

ICT = information and communications technology.

A. Offshorability is measured by the share of worker tasks in the United States that (a) do not involve face-to-face contact with people other than coworkers; (b) can be done without being physically present; and (c) will not experience a decline in quality if they can be delivered remotely. It reflects the possibility for tasks to be offshored from the United States to emerging and developing countries where labor costs are lower. Skill intensity is measured by the inverse of the share of workers in manual-task-intensive occupations among 23 major occupational groups in the U.S. Department of Labor’s Occupational Information Network (O*NET) database in 2018. The use of data from the United States provides a lower bound; if a sector’s jobs are predominantly filled by unskilled workers in the United States, they are almost certainly likely to be intensive in emerging and developing countries.

B. Share of sales to other domestic sectors in output in European Union countries in 2015. This shows the upside potential for linkages between sectors since advanced economies have more diversified production structures. Data from OECD Trade in Value Added database.

C. Share of value added exported in the United States in 2015. This shows the upside potential for scale since advanced economies have more sophisticated services sectors that are more likely to be traded internationally. Data from OECD Trade in Value Added database.

D. Share of global trade in services by four modes of supply in 2017. Commercial presence refers to foreign direct investment. Data from the World Trade Organization’s Trade in Services by Mode of Supply (TiSMoS) database.

manual task-intensive occupations and that involve tasks more amenable to offshoring (figure 7.2.A). These services are more offshorable because they rely less on face-to-face interactions with customers and suffer less from losses in quality when delivered remotely. They are also often used as intermediate inputs by other firms in the domestic economy, creating opportunities for domestic as well as international trade. For instance, three-fourths of the output of professional services constituted intermediate inputs in other sectors (figure 7.2.B).
The second group, low-skilled contact services, relies more on manual labor and are less amenable to offshoring. This group includes transportation; hospitality; wholesale trade; arts, entertainment, and recreation; retail trade; administrative and support services; and personal services. Some of these services—notably transportation, hospitality, and wholesale trade—are highly traded internationally (figure 7.2.C). Transportation services and wholesale trade are often intermediate inputs into internationally traded goods. In contrast, hospitality services—accommodation and food provision—are mostly traded through “consumption abroad” owing to tourism-related travel (figure 7.2.D).

The third group, social services, consists of education and health services that are both relatively skill-intensive and less amenable to offshoring. This group of services is outside the focus of this chapter since they are largely provided by the public sector.

Low-skilled contact services accounted for about one-third of GDP growth between 1990 and 2019 in each major country group—AEs, EMDEs, and low-income countries (LICs). The contribution of social services to overall GDP growth over the past three decades, at about 15 percent, was also similar in each of these groups. However, the contribution of high-skilled offshorable services to GDP growth increased with levels of per capita income, ranging from 10 percent in LICs to 15 percent in EMDEs and almost 30 percent in advanced economies (figure 7.3.A).

The contribution of high-skilled offshorable services to employment growth between 1990 and 2019 was also larger at higher levels of per capita income, ranging from 4 percent in LICs to 11 percent in EMDEs and more than 50 percent in AEs. In contrast, the contribution to employment growth of low-skilled services, at around 40 percent, was similar across LICs, EMDEs, and AEs (figure 7.3.B).

The nature of services-led growth

The contribution of demand-side factors

The output of a sector caters to either intermediate demand from other sectors in the domestic economy or to final demand that comprises domestic private consumption and investment, government expenditure, and exports. Among the components of final demand, domestic private demand plays the largest role in many low-skilled contact services, accounting for one-half of output in retail trade and three-fourths of output in hospitality services (figure 7.3.C). International trade in these services has typically been constrained by the need for physical proximity between service providers and consumers (Hill 1977). Among low-skilled contact services, exports play a larger role in transportation and wholesale trade, where they are linked to trade in goods.

The share of exports in final demand is also quite large for some high-skilled offshorable services, such as professional services and ICT, where digital electronic content has made them more storable, codifiable, and transferable. Because the constraint of physical proximity between consumers and providers has become less binding, professional services now have trade costs comparable to those in manufacturing industries (Gervais
High-skilled offshorable services and low-skilled contact services have both made key contributions to the growth of value added and employment in advanced economies, while low-skilled services have played a larger role in EMDEs. High-skilled offshorable services tend to be more closely linked to other sectors through input sales, more export-oriented, and more productive. Their growth is also more closely linked to improvements in productivity.

A. Sectoral contributions to value added growth

B. Sectoral contributions to employment growth

C. Shares of intermediate and final demand

D. Contributions of growth of labor, capital, and TFP to output growth in advanced economies

E. Labor productivity compared to manufacturing

F. Total factor productivity compared to manufacturing

Sources: European Commission; Groningen Growth and Development Center (GGDC); Nayyar, Hallward-Driemeier, and Davies (2021); World Input-Output Database (WIOD).

Note: EMDEs = emerging market and developing economies; LICs = low-income countries; TFP = total factor productivity.

A. Bars represent the average contribution of individual sectors to value added growth between 1990-2018. Sample from GGDC’s Economic Transformation Database includes 6 advanced economies, 39 EMDEs, and 6 LICs.

B. Bars represent the average contribution of individual sectors to employment growth between 1990-2018. Sample from GGDC’s Economic Transformation Database includes 6 advanced economies, 39 EMDEs, and 6 LICs.

C. Intermediate consumption measures sales to other sectors, based on WIOD data from 42 countries in 2014.

D. Based on the European Union KLEMS database due to constraints on data availability in EMDEs.

E.F. Productivity in the manufacturing sector in the same country is normalized to 1 (red line). Data are from 56 countries, including 35 EMDEs, for the latest available year between 2010-17.
and Jensen 2019). Yet, even for these services, the share of exports in final demand is considerably lower than for manufactured goods. This may be attributable to a range of policy impediments that have constrained services trade. Government consumption matters most in education and health services, which are often publicly provided.

Intermediate domestic demand—sales to producers in other sectors of the domestic economy—matters greatly for many services, accounting for more than half the output of both high-skilled offshorable services and some low-skilled contact services, such as transportation, wholesale, and administrative and support services (figure 7.3.C). These links with other goods-producing (tradable) sectors also mean that services might be exported indirectly.

Value added by services accounted for 43 percent of world exports in 2009, up from 31 percent in 1980. In fact, more than two-thirds of the growth in services value-added in exports between 1995 and 2011 was due to an increase in services embodied in other exports rather than services exported directly (Heuser and Mattoo 2017). This suggests that services such as transportation, telecommunications, finance, and business services have increasingly been used as intermediate inputs in the production and export of goods. In France, Germany, Italy, the United Kingdom, and the United States, services contribute more than half the total value-added embodied as inputs in exports. Even in China, often viewed as predominantly an exporter of manufactured goods, more than a third of the value-added in its exports comes from services (World Bank 2020). Furthermore, there is evidence that services embodied as inputs improve the productivity of downstream manufacturing (Arnold et al. 2015). These forward linkages highlight the important enabling role that many services play.

The contribution of supply-side factors

The growth of output can be decomposed into the contributions of the growth of factor inputs, such as capital and labor, and the contribution of the growth in the productivity of these factors, known as total factor productivity (TFP). Estimates based on data for 15 EU countries indicate that growth of factor inputs, particularly labor, accounts for most of the growth of output of most services subsectors between 1991 and 2018 (figure 7.3.D). The low, even negative, contribution of TFP growth may reflect, at least in part, Baumol’s “cost disease” hypothesis. Baumol (1967) argued that the productivity of many services sector activities cannot be readily increased through innovation because of their inherently labor-intensive nature. With technological progress in other sectors, the prices of manufactured and agricultural products would tend to fall relative to the price of services, leading to an increasing share of services in total output.3

However, high-skilled offshorable services have contradicted Baumol’s hypothesis with higher labor productivity than in manufacturing. Labor productivity in financial services is 3.5 times higher than in manufacturing in EMDEs (and about 2.5 times higher in

3The challenges of measuring outputs and inputs in the services sector also raise concerns about the mismeasurement of productivity (Nayyar, Hallward-Driemeier, and Davies 2021).
AEs), while labor productivity in ICT services is about 2 times higher in EMDEs (and 1.3 times in AEs) (figure 7.3.E). Labor productivity in professional services is below that of manufacturing, but TFP—which corrects for differences in physical capital—is slightly higher than in manufacturing (figure 7.3.F). Low-skilled contact services tend to have lower labor productivity and TFP than manufacturing.

However, productivity gains still occur in low-skilled contact services. Fan, Peters, and Zilibotti (2021) show that the growth of such contact services—employing large numbers of low-skilled labor—in India over the past three decades has been characterized by productivity gains. Furthermore, firm-level data from Côte d’Ivoire, North Macedonia, Moldova, and Vietnam show that productivity growth in firms across several low-skilled contact services during their initial years often exceed productivity growth in manufacturing firms (Aterido et al. 2021).

The relatively large contribution of capital accumulation to output growth in the services sector reflects increasing investments, including through foreign domestic investment (FDI). For example, outward FDI from the U.S. in high-skilled offshorable services outpaced that in manufacturing between 2011 and 2020 (figure 7.4.A). Furthermore, employment in U.S. foreign affiliates (outward FDI) has increased across all services

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4 Foreign direct investment is the most prevalent “mode” of trade in services (“mode 3” under the General Agreement on Trade in Services [GATS] framework).
C H A P T E R  7


How has the COVID-19 pandemic affected the services sector’s growth?

In previous recessions, the services sector was resilient despite sharply contracting manufacturing activity (figure 7.5.A). However, this resilience was missing during the pandemic (figure 7.5.B). In fact, the economic contraction following the COVID-19 pandemic was particularly salient for the services sector (Apedo-Amah et al. 2020; Chetty et al. 2020; OECD 2021; World Bank 2022).

Unlike in previous downturns, the consumption of durable goods was resilient, but the consumption of many services declined owing to lockdown measures and increased caution by consumers (Tauber and Van Zandweghe 2021). This unusual shift in consumption patterns may carry implications for the ongoing recovery: whereas reduced spending on durables in earlier downturns might just have represented postponed spending, consumers are less likely to catch up on reduced services spending (Beraja and Wolf 2021).

However, the impact of the pandemic on the services sector has not been uniform across either subsectors or countries. The effects have been particularly severe on many services in the low-skilled contact services group, especially those most reliant on face-to-face interactions, such as accommodation, food, and transportation services. But the high-skilled offshorable services group, consisting of ICT, professional and financial services, has generally withstood the pandemic as well as, if not better than, manufacturing,
largely because digitalization has helped to make these services amenable to remote delivery and home-based work. Even among some low-skilled contact services, the pandemic has accelerated digitalization, including in countries where the use of digital technologies was low.

Patterns of impact and recovery

Differences across services subsectors

Overall, the impact of the pandemic on output was somewhat larger in the services sector than the manufacturing sector. In 2020, the growth rate of the services sector was lower than that of manufacturing in more than half (87) of the 157 countries with available sectoral value-added data (World Bank 2021). In 136 countries, value-added of the services sector fell in 2020, compared with 116 countries where there was a decline in manufacturing (figure 7.6.A).

However, the overall impact of the pandemic conceals considerable heterogeneity among the various services groups. In the low-skilled contact services group, hospitality (accommodation and food services) and transportation services were the most negatively affected. Gross value added in these sectors declined by 40 and 21 percent, respectively, in the year to April 2020 in a representative group of EMDEs with available national accounts data (figure 7.6.B). Estimates based on data from firm surveys similarly indicate that the largest negative impacts on sales in 2020 and 2021 occurred in accommodation, food services, and transportation (figure 7.6.C), together with “other” services (including personal services). Negative impacts in these sectors continued through 2021 in EMDEs (figure 7.6.D), but some recovery became visible in advanced economies (figure 7.6.E). The concentrated impact of the pandemic contrasts with the more even effects of the global financial crisis and associated recession across services subsectors.

Similar patterns can also be seen in FDI inflows into EMDEs (figure 7.6.F). For most services subsectors, announced greenfield FDI was lower in 2020 and 2021 than pre-pandemic levels, with the largest declines being in hospitality and “other” services (including personal services). High-skilled offshorable services performed slightly better, although both professional services and financial services saw significant declines. ICT services was the only group that saw an increase in greenfield FDI—of one-third between 2019 and 2021.

The intensity of face-to-face interactions and amenability to remote work

The importance of physical proximity in delivering services in different sub-sectors is correlated with the pandemic’s adverse impact on sales. Such low-skilled contact services

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5 In classifications of economic activities, personal services are often grouped under “other services” (under ISIC Rev 4, this corresponds to section S).

6 For example, in the United States, in the first quarter of 2009, subsectoral impacts in the services sector ranged between -11 percent (for retail and wholesale) and -6 percent (for ICT). In the first quarter of 2020, U.S. services subsectoral impacts ranged from -47 percent (for hospitality) and +1 percent (for ICT).
FIGURE 7.6 The impact of COVID-19 across sectors

National accounts data and firm-level surveys indicate that the effects of COVID-19 on output were negative in both services and manufacturing, and larger in services in about half of all countries. But they varied significantly among services sub-sectors. Hospitality and transportation were the most negatively affected in both EMDEs and advanced economies. Most services sub-sectors also saw reductions in FDI, with the exception of ICT, which saw growth in value added and investment, as well as FDI, during the pandemic.

Sources: Financial Times fDi Markets; Haver Analytics; UN World Tourism Organization; World Bank.

Note: ICT = information and communications technology.
A. Vertical axis reports percent change in services value added, whereas horizontal axis presents percent change in manufacturing value added for each individual country in the scatterplot.
B. “Public A, E, & H” refers to public administration, education, and health.
C. The change in sales reported by firms are conditional values based on a regression of the change in sales on sector, size, month of interview, and age. Sample from the World Bank Business Pulse Survey and Enterprise Surveys includes 47 countries (countries with data for three waves). Weights have been applied such that every country carries an equal weight.
F. Greenfield FDI from the fDi Markets database represents the value of new announcements, relative to 2019.
as hospitality took the biggest hit, reflecting their high dependence on face-to-face interactions and the limited possibilities for remote or home-based work. In many countries, hospitality is also highly dependent on tourism-related international travel, which declined significantly; the UN World Tourism Organization estimates a decline of 97 percent at the height of the pandemic (figure 7.7.A).

In contrast, the ICT sub-sector—part of the high-skilled offshorable services group—was the least adversely affected, being more amenable to home-based work. In EMDEs, output of ICT services grew by 20-25 percent in 2020, while other sub-sectors contracted or stagnated. Among EMDEs with available data, Ghana and Türkiye have seen the largest expansion of ICT services (figure 7.7.B). As mentioned earlier, ICT is also the only services sub-sector that has seen positive investment growth, with FDI in ICT in EMDEs growing by a third between 2020 and 2022.

In general, firms engaged in service activities dependent on face-to-face interactions between providers and consumers, such as hospitality, experienced the largest decline in sales (figure 7.7.C). Similarly, firms engaged in activities that are more amenable to home-based work typically experienced smaller declines in sales. This applies to ICT, financial services, and professional services—all high-skilled offshorable services (figure 7.7.D).

The transportation sector, which is moderately dependent on face-to-face interactions between providers and consumers and among the least amenable to home-based work, has been adversely impacted too. This holds not only for passenger transportation services, but also for freight transport, which has been affected not only by border closures but also by impacts upstream in the manufacturing sector, which led to reductions in the capacity of freight transportation. Given the important linkages between freight transportation and goods-producing sectors, this has contributed to prolonged supply chain disruptions.

Since 2020, hospitality and transportation services have experienced partial recoveries, attributable, at least in part, to the phasing out of government restrictions on in-person gatherings and travel. Yet continuing restrictions and social distancing precautions mean that full recovery has some distance to cover. For example, at end-2021, international tourist arrivals were still two-thirds lower than before the pandemic. Furthermore, recovery has been slower in EMDEs than in advanced economies. Thus, while hospitality services in the U.S. in the third quarter of 2021 were about 8 percent lower than in the same quarter of 2020, they were close to 40 percent lower in a group of EMDEs with available data.

The advent and growth of digitalization

The adoption of digital technologies has increased during the pandemic. The World Bank COVID-19 Business Pulse and Enterprise Surveys show that nearly 44 percent of businesses globally started or increased their use of digital technologies and that 29

7 Except for takeaway and home delivery services, physical proximity has remained central to their provision.
FIGURE 7.7 COVID-19 and the performance of services sub-sectors

There are large differences between sectors in how they fared through the pandemic. ICT services, for example, have grown in many EMDEs, while tourism-related sectors declined. The need for face-to-face interactions and the possibility for remote delivery explains part of these differences. Sectors relying on face-to-face interactions in the delivery of services fared worse during the pandemic, while those amenable to home-based work—even if traditionally relying on face-to-face interactions (for example, financial services)—fared better.

A. Global tourist arrivals

![Graph showing percent change in tourist arrivals compared to same month in 2019.]

B. Value-added of the ICT sector

![Graph showing index of value-added in the ICT sector.]

C. Face-to-face index and change in sales

![Graph showing percent change in sales across different sectors.]

D. Home-based work index and change in sales

![Graph showing percent change in sales across different sectors.]

Sources: Avdiu and Nayyar (2020); Dingel and Neiman (2020); Haver Analytics; World Tourism Organization; World Bank.

A. Change in tourist arrivals compared to same month in 2019.
B. Year-on-year change in firms’ sales between 2019 and 2020, drawn from the first wave of high-frequency data from World Bank Business Pulse and Enterprise Surveys in 47 countries conducted between March and September 2020. The face-to-face index and home-based work index are, respectively, based on Avdiu and Nayyar (2020) and Dingel and Neiman (2020).

percent invested in digital technologies during the initial months of the pandemic (Apedo-Amah et al. 2020). Even as restrictions were relaxed and firms experienced fewer adverse impacts from the pandemic, increases in the use of digital technologies as reported by firms were sustained (figures 7.8.A and 7.8.B).

The adoption of digital technologies was higher in services than in manufacturing, agriculture, mining, construction, and utilities. In these non-service sectors, only roughly one-third of firms reported an increase in the use of these technologies. There are also differences across services subsectors. The high-skilled offshorable services reported the largest proportions of firms increasing the use of digital technologies, including financial services (61 percent in late 2021) and ICT services (60 percent in late 2021).8

8The patterns across sectors are similar when looking at firms’ investment in digital technologies. The frequency of such investment ranged from around 40 percent of firms in ICT and financial services; 25 percent in wholesale and retail trade, food preparation, and accommodation services; and 20 percent in agriculture, mining, construction, manufacturing, and transportation.
There has also been an increased use of digital technologies in some low-skilled contact services. The share of firms starting or increasing the use of digital technologies in accommodation, food services, and retail trade—services that are among the most dependent on face-to-face interactions—was 35-45 percent in the most recent (late 2021) survey round. In fact, these services have seen the largest accelerations in digitalization during the pandemic. Thus, the change in the frequency of firms increasing the use of digital technologies between the first and second waves of the survey, at 14 percentage points, was highest in food preparation and accommodation services among all industries. Similar patterns can be seen in data for increases in investment in digital technologies. This digitalization reflects adjustments in business models. For example, digital platforms enabled restaurants to offer their food services outside their premises through home-delivery and takeaway meals.9

In sum, high-skilled offshorable services, where digital technologies allow remote delivery, have been less adversely affected by the pandemic than low-skilled contact services that are more reliant on face-to-face interactions with customers and have little scope for remote delivery. Among the former group, ICT services have actually experienced positive growth. However, even firms in low-skilled contact services increased their use of, and investment in, digital technologies at a faster pace than firms in manufacturing and agriculture. Furthermore, firms report that they continued to increase digitalization even after pandemic-related restrictions were relaxed.

9 For example, in the U.S., food delivery apps reported that their revenues more than doubled in 2020 (Sumagaysay 2020).
How can digitalization transform opportunities for future services sector growth?

The acceleration of digitalization during the pandemic augurs well for growth prospects in the services sector. In particular, it has shown how digitalization can expand opportunities for scale economies and innovation that were previously hampered by dependence on face-to-face interactions between providers and consumers and by limits to combining labor with physical capital. Even before the pandemic, increased digitalization had expanded these opportunities, albeit mostly for high-skilled offshorable services and a limited number of countries. The recent acceleration raises the question of how much potential there may be for the benefits of digitalization to spread more widely in the services sector.

Digitalization and exporting opportunities in the services sector

**High-skilled offshorable services**

The ICT revolution has, since the 1990s, enabled the offshoring of ICT and professional services to lower-cost destinations. Much like global value chains for manufactured goods, the production of these services is fragmented across countries, such as when preliminary architectural designs and tax returns are put together in one country and finalized and delivered to customers in another (World Bank 2020). This labor cost arbitrage is reflected in the inverse relationship between the share of cross-border delivery (mode 1 trade) in total exports of ICT and professional services and per capita GDP. Service providers in EMDEs with English-language skills, such as India, the Philippines, and Ghana have particularly benefited (figure 7.9A).

The rapid expansion of bandwidth with the fifth-generation technology standard (5G) for broadband cellular networks is expected to further increase the quality of data streaming. And new collaborative digital platforms such as Skype for Business, Slack, Trello, and Basecamp have enhanced the remote (digital) delivery of global innovator services. These digital platforms are associated with a new form of online outsourcing for office and other professional services, whereby low search costs enable clients to contract third-party individuals as freelancers. Developing economies have the edge in exporting these services through digital platforms (Baldwin and Dingel 2021).

Based on data from five of the largest English-language online outsourcing platforms between June 2017 and October 2020, the Oxford Internet Institute’s iLabour Project estimates that much of the global demand for online outsourcing came from high-income countries while two-thirds of all online freelancers were in EMDEs. Approximately one-quarter of freelancers are based in India and another quarter in Bangladesh and Pakistan. In per capita terms, the big suppliers are Bangladesh, Pakistan, India, and Ghana.

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10 Freund and Weinhold (2002) provided the earliest assessment of the relationship between digital technologies and trade in services, finding that the growth in U.S. service exports and imports increased by 1.1 percentage points as internet penetration in a partner country increased by 10 percent.
**FIGURE 7.9 Digitalization and services exports**

*EMDEs have leveraged offshore ICT and professional services to diversify their export baskets. Many are also among the top 20 countries in terms of the number of online freelancers per capita, which reflects a new form of online outsourcing for computer programming and other professional services through digital platforms. The share of these digitally deliverable services expanded relative to other services during the pandemic. Even for travel-related services, where in-person delivery remains important, digital technologies have boosted tourist arrivals.*

**A. Share of cross-border delivery in exports of high-skilled offshorable services versus per capita income, 2017**

**B. Largest number of online freelancers per capita, top economies, 2021**

**C. Share of digitally deliverable services in total services exports**

**D. Index of internet use for B2C transactions and international tourist arrivals, 2017**

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Sri Lanka, and several countries in Eastern Europe (figure 7.9B). Suppliers in Eastern Europe likely benefit from their integration with the European Union market, while those in South Asia leverage their advantage of English being the preferred language for business transactions. This pool of online freelancers is likely to widen geographically as the importance of knowledge of the English language diminishes with the diffusion of AI-enabled machine translation (Baldwin 2019; Brynjolfsson, Hui, and Liu 2019).

The share of these digitally deliverable services in total services exports increased steadily between 2005 and 2019 in both EMDEs and advanced economies. Their robustness
during COVID-19 pandemic is indicated by the fact that this average share in EMDEs increased from 40 to more than 50 percent in 2020 alone (figure 7.9C).

**Low-skilled contact services**

Among low-skilled contact services, streaming platforms such as Netflix and YouTube have enabled providers of arts, entertainment, and recreation services from EMDEs to export their creative content to international markets at low cost. And COVID-19 has provided an impetus for performing artists to devise new ways of sharing their talents with audiences virtually. Even in low-skilled contact services where in-person delivery has remained important, digital tools have boosted export opportunities. Digital platforms that reduce the costs of searching for, matching, tracking, and verifying information (Goldfarb and Tucker 2019) are particularly relevant here. The digital platforms that are increasingly used by travelers and businesses to transact accommodation and transportation services are good examples. These digital tools may help less traditional destinations overcome information obstacles and reduce travel costs, and thereby attract more visitors. Indeed, countries with higher business-to-consumer (B2C) internet use have also had higher levels of international tourist arrivals (figure 7.9D). Analyzing population-wide internet use in origin countries and business-to-consumer (B2C) internet use in destination countries, Lopez-Cordova (2020) finds that digital platforms have boosted the demand for international tourism services in Africa.

**Digitalization and innovation in the services sector**

**High-skilled offshorable services**

In the case of high-skilled offshorable services, innovation has occurred largely through the accumulation of ICT capital—computer equipment, telecom equipment, computer software, and database assets. Since the 1990s, among OECD countries, the share of tangible ICT capital in total capital increased the most in financial and professional services (figure 7.10.A).

The diffusion of digital technologies has also been associated with accumulation of intangible capital—not only computer-related software and data, but intellectual property acquired through R&D and design, and company competencies such as branding, firm-specific training, and business process engineering. Here too, at least in the United States, the largest shares of intangible capital in firms’ investment have been in ICT, finance, and professional services (figure 7.10.B). The accumulation of intangible capital in these high-skilled offshorable services is likely to increase further given that AI-driven machine learning (ML) algorithms have dramatically increased predictive power in many cognitive tasks such as problem solving, speech recognition, and image recognition (Nayyar, Hallward-Driemeier, and Davies 2021).

**Low-skilled contact services**

The share of intangible capital in investment is also higher than in manufacturing in several low-skilled contact services, such as commerce and hospitality. For example, in
OECD countries in 2018, the share of businesses with a website allowing online ordering was highest in hospitality and retail trade, and almost all services subsectors had higher rates than in manufacturing (figure 7.11.A). The increasing sophistication of ICT, such as through the advent of AI and ML, is likely to spawn complementary investments in intangible capital (Brynjolfsson, Rock, and Syverson 2021). While ICT services stand out as having the largest share of firms using ML algorithms, the diffusion of these technologies is as widespread across many low-skilled services as in manufacturing, if not more so (figure 7.11.B).

There are similar opportunities for organizational and marketing innovation among low-skilled services through new or improved company competencies that accompany digitalization. For example, the share of firms that introduced new methods for product placement (figure 7.11.C) or new methods for organizing external relations (figure 7.11.D) were higher in most services subsectors than in manufacturing, and not very different in low-skill services from high-skilled offshorable services.

Increased digitalization and related investments in intangible capital bring opportunities for innovation and productivity gains in low-skilled contact services in three main ways. First, they enable improvements in the efficiency of internal business processes, such as inventory management, accounting practices, marketing, and payments. For example, big data analytics can increase the efficiency of transportation services by making possible the tracking of shipments in real time, while improved and expanded navigation systems may help route trucks more efficiently on the basis of current road and traffic conditions (World Bank 2020). Second, ICT-related investments can substitute for missing and scarce skills. For example, ICT apps enable Uber drivers to function with
limited geographical knowledge and numeracy skills. Third, the expansion of company competencies associated with digital technologies, such as marketing and branding, facilitates the scaling up of low-skilled contact services that are less amenable to remote delivery. For example, restaurant chains have invested in ICT and management practices that help determine optimal staffing, daily food purchases, and new menu items for each restaurant. This standardization of production over many establishments has enabled restaurants and retail stores to scale up by replicating the same production process in multiple locations near consumers (Hsieh and Rossi-Hansberg 2020).

The adoption of basic ICT in the services sector remains low across EMDEs

Despite the diffusion of digital technologies, the use of basic ICT such as computers and email, which is positively associated with countries’ per capita incomes, is far from
widespread in EMDEs. In many EMDEs, less than one-third of firms used email to communicate with clients as recently as 2018 (figure 7.12.A). The share of firms using a website was even lower (figure 7.12.B).

The positive relationship between the share of firms using email and countries’ per capita incomes is much stronger in low-skill contact services (where it is similar to that of the manufacturing sector) than in high-skilled offshorable services (figure 7.12.C). Firms in retail and hospitality services in EMDEs still rely mostly on manual processes for a range of business functions. For example, in Senegal, 60 percent of such firms use manual costing most frequently for pricing, 80 percent use manual selection most frequently for merchandising, and 62 percent use handwritten records for inventory management (Cirera et al. 2020a). In Senegal, the sophistication of the most widely used technologies across a range of business functions, including business administration, marketing, and inventory management, is similar for firms in retail trade and firms in apparel manufacturing (Cirera et al. 2020b). The share of firms having their own website is also positively related to countries’ per capita incomes, with the relationship being more similar across sectors (figure 7.12.D).

**What policies can best harness the services sector’s growth potential after the pandemic?**

To build on the momentum of digitalization in the services sector, and for the services sector’s growth potential to be fully harnessed, policies can play a useful role. First, policies can be used to support the adoption of digital technologies across the services sector, including through promoting investment in ICT infrastructure, reforming regulatory frameworks, and strengthening firms’ capabilities. The role that policies can play is especially important for EMDEs and smaller firms because the greater intensity of digitalization among advanced economies and larger firms during the pandemic has widened the digital divide between countries and firms (Cirera, Comin, and Cruz 2022).

Second, policies can help promote the revival of some low-skilled contact services that have been hardest hit by the pandemic. The revival of travel-related transportation and hospitality is likely to benefit from the expansion of pandemic-related health services. Supporting infrastructure investments and regulatory reforms in transportation and related distribution services can further help recovery and lay the ground to minimize supply chain disruptions in the future. Third, policies can be designed to promote the further growth of high-skilled offshorable services that have shown greater resilience to the pandemic, by removing barriers to market access and improving the skills of the workforce.

**Supporting the adoption of digital technologies**

The use of digital technologies contributed to the resilience of firms in the pandemic. Firms with higher levels of technological sophistication pre-pandemic saw larger increases in sales and were also more likely to increase the use of digital technologies
FALLING LONG-TERM GROWTH PROSPECTS

CHAPTER 7

FIGURE 7.12 Diffusion of ICT among services firms

Email and website usage among services firms is more widespread in countries with higher per capita incomes. In the case of email use, its relationship with per capita income is weaker for firms in high-skilled offshorable services than for firms in either low-skilled contact services or manufacturing.

A. Share of firms using email, by country

B. Share of firms using their own website, by country

C. Share of firms using email, by sector

D. Share of firms using their own website, by sector

Note: Calculations based on World Bank Enterprise Survey data and World Development Indicators. GDP per capita is in natural logarithms.
A.B. The question on whether firms use email or their own website was not asked in most high-income countries included in the Enterprise Surveys. Data are for latest available year, ranging from 2006 to 2018. Each dot represents a country. The red line represents a trendline (a kernel-weighted local polynomial regression) of the data points shown.
C.D. The lines represent trendlines (a kernel-weighted local polynomial regression) of the share of firms in a country using email or websites for three sector groups. Individual country data points are omitted for visual reasons.

(Comin et al. 2022). While new technologies have recently been spreading to EMDEs and LICs faster than in the past, they are adopted by only a small share of firms at the technology frontier (Comin and Mestieri 2018).

Policies that support widespread adoption of the most-basic digital technologies in EMDEs can lay the foundation for firms to leverage software applications, digital platforms, and even more advanced ML algorithms. But policies supporting investment in broadband infrastructure, while necessary, are not sufficient for greater uptake of digital technologies. Also needed are the updating of regulatory frameworks to expand market access, and policies to strengthen worker and management skills (Cirera and Maloney 2017). Precise policy requirements will vary among countries and across different services subsectors. For example, management practices tend to be particularly weak (but with the most potential for improvement) among firms in low-skilled contact
services, while advanced digital skills matter most for high-skilled offshorable services. Updating regulatory frameworks governing digital markets is especially relevant for high-skilled offshorable services where tech giants have increasingly dominated markets.

**Expanding access to digital infrastructure**

Expanding access to the internet is crucial for the services sector. Hjort and Poulsen (2019) show that the arrival of internet cables in Africa predominantly benefited the services sector, spurring the formation of new firms and boosting productivity. Although many countries have been accelerating the rollout of internet access, reliable and affordable access to broadband internet is still not widely available in many EMDEs, and generally much less so than in AEs (figure 7.13.A). Fiber optic cables now reach most countries, but there are big gaps across countries in the provision of “last mile” connectivity. To achieve widespread internet access, public investment may be needed to overcome market failures inherent in the private provision of internet infrastructure (essentially a public good). These failures stem from externalities (including network externalities) and costs that decrease with scale (tending to lead to natural monopolies). Policy interventions can also catalyze complementary private investment by ensuring enough competition between providers, targeting subsidies carefully, and enforcing appropriate performance requirements to ensure coverage in more remote and lower-income locations (World Bank 2021).

**Reforming regulatory frameworks for digital markets**

The incentives and ability to use digital technologies are also affected by the regulation of digital markets. Restrictions on digital trade tend to be more stringent, on average, in EMDEs than in AEs (figure 7.13.B). Competition authorities face new challenges in the regulation of digital trade in the services sector, particularly in high-skilled offshorable services. In this sector, many tech companies own valuable intangible assets (such as software, advertising space, and branding), which derive value from strong network effects and access to data. Ownership of data and the portability of data, especially across international borders, raise issues of privacy and innovation. For example, content providers could restrict the provision of some services to countries where intellectual property rights are inadequately protected (Hallward-Driemeier and Nayyar 2017).

Digital trade in services also poses new challenges for taxation. Traditional tax treaties tend to focus on the question of whether a firm has physical presence in a country. As a result, firms that have “presence without mass” through digital business models can avoid significant taxation, denying governments a growing source of potential revenue. International negotiations are seeking to address this issue, including through possible formulas for minimum tax payments by multinationals that serve markets only virtually (World Bank 2021).

**Upgrading management and worker skills**

Low levels of use of digital technology stem partly from shortcomings in the capabilities of firms, at both management and staff levels. Sound management practices facilitate
FIGURE 7.13 Digital technology enablers

Broadband connectivity in EMDEs has increased considerably over the past decade, but it still lags that in advanced economies (AEs). Beyond access, the use of digital technologies in EMDEs is hampered by relatively high restrictions on international trade in services and digital technology. The capabilities of firms and workers to adopt new technologies, reflected in management practices, tertiary education rates, and digital skills, are also weaker in EMDEs than in AEs.

A. Mobile broadband connections per 100 inhabitants

B. Digital trade restrictiveness index

C. Management practices index

D. Digital skills index

E. Tertiary enrollment rates

F. Services trade restrictiveness index

Sources: European Center of International Political Economy (ECIPE); International Telecommunications Union (ITU); World Bank; Nayyar, Hallward-Driemeier and Davies (2021); World Economic Forum.

Note: EMDEs = emerging market and developing economies. LICs = low-income countries.

A. Sample from the ITU includes 37 advanced economies and 141 EMDEs in 2019.

B. The ECIPE’s Digital Trade Restrictiveness Index provides information on transparency of applied digital trade restrictions across 36 advanced economies and 28 EMDEs in 2017-18.

C. Covers 18 key management practices, across 21 advanced economies, 17 EMDEs, and 3 LICs in 2018 or latest available year.

D. Sample from World Economic Forum includes 34 advanced economies, 71 EMDEs, and 6 LICs in 2019.

E. Sample includes 33 advanced economies, 70 EMDEs, and 7 LICs in 2019.

F. The World Bank’s Services Trade Restrictiveness Index covers five sectors (telecommunications, finance, transportation, retail, and professional services) and key modes of delivery across 22 advanced economies, 67 EMDEs, and 6 LICs in 2008.
worthwhile change in production processes, including the adoption of new technologies, which can often be disruptive. Thus, management practices have played a role in the ways firms have, or have not, adapted to the pandemic. Firms with more structured management practices are more likely to adjust their product mix or to adopt online work arrangements, including in the services sector (Grover and Karplus 2021). Management practices in the services sector are weaker in EMDEs than in AEs (figure 7.13.C). Further, evidence for EMDEs and AEs shows that structured management practices are particularly uncommon among firms in low-skill services, such as retail trade and hospitality (Nayyar, Hallward-Driemeier, and Davies 2021). Governments can support technological innovation and the adoption of structured management practices by addressing information failures at the management level—either through the direct provision of training and other business advisory services or through vouchers and awards (Bloom et al. 2013). 11

Also important for increasing the adoption of digital technology are the skills of a firm’s labor force. Digital skills are weaker in EMDEs than AEs (figure 7.13.D). Many workers report that their lack of ICT skills is a constraint on employment and higher earnings. For example, about 40 percent of workers in Vietnam reported in 2013 that deficient ICT skills prevented them from finding a job or getting a better-paying job (Nayyar, Hallward-Driemeier, and Davies 2021). This is less of a priority in firms providing low-skilled contact services, where basic knowledge of how to use a computer and email is generally sufficient. A skills agenda that is broader than basic IT is needed for workers to embrace technological change, particularly in high-skilled offshorable services. Education, and particularly tertiary education—where enrollment rates are lower in EMDEs than in AEs (figure 7.13.E)—plays an essential role in equipping workers with the cognitive skills needed for complex problem solving, critical thinking, and adaptability. Tertiary education systems can meet these demands by incorporating more general education in technical degree programs and facilitating lifelong learning through adult education programs (World Bank 2019). Public investment in education and training can also be supplemented, at advanced levels, by tuition and training paid for by employers or by households if access to finance is not a barrier.

Promoting the revival of low-skilled contact services

Investing in widespread vaccination rollouts and related healthcare services is particularly important to enable travel-related services, such as accommodation and passenger transportation, to operate safely again at pre-pandemic scale. The uneven recoveries of these services from the pandemic thus far—with stronger recoveries in advanced economies than in EMDEs and LICs—is attributable, at least in part, to differences in the pace of vaccine rollouts (World Bank 2022).

While the low vaccination rates in LICs primarily reflect procurement challenges, efforts to rapidly scale up inoculations are also being hampered by logistical challenges in

11 Not all firms are well-positioned to take advantage of management training. Efforts to provide management training to informal enterprises have shown that only a few have the capabilities to use such training (or tap external consulting services) to raise performance significantly. See, for example, Anderson and McKenzie 2022.
vaccine distribution, including insufficient cold chain capacity (Hall et al. 2021). These need to be addressed. Furthermore, vaccine rollouts will need to be supplemented by testing and access to treatment facilities, especially given the uncertainty about the possible emergence of more transmissible or more lethal variants of the virus that could escape protection from existing vaccines. All this highlights the importance of investing in better health service systems, including through public-private collaboration.

Evidence suggests that countries most dependent on tourism, such as small island economies, often have among the lowest Global Health Security Index scores (AIIB 2020). Increased digitalization, building on the momentum provided by COVID-19, could improve the performance of health services in such resource-constrained countries by supporting efforts to revamp health provider education; redesign platforms for care delivery; institute strategic purchasing and management strategies; and develop patient-level data systems (Nimako and Kruk 2021).

Apart from addressing vaccination and other health-related issues, investment in infrastructure (including through public-private partnerships) and measures to remove obstacles to competition and associated market distortions can minimize future disruptions in transportation and distribution services. Services trade faces significant regulatory barriers, which are generally higher in EMDEs than in advanced economies (figure 7.13.F). In low-skilled services, such as retail trade, there are both large EMDEs (such as Argentina, India, Indonesia, Malaysia, Thailand, and Vietnam) and advanced economies (such as Belgium, Finland, France, and Greece) among those with the highest trade restrictions, and many have made little progress in reducing them in the past decade (Nayyar, Hallward-Driemeier, and Davies 2021).

The pandemic has highlighted how disruptions in shipping, air transport, trucking, and distribution services at critical trade gateways and hubs can hinder activity in goods-producing sectors (Celasun et al. 2022). In fact, transportation and distribution services are among the sectors with the most intensive forward linkages to producers in other sectors—that is, with the largest shares of value-added forming inputs to economywide production (Nayyar, Hallward-Driemeier, and Davies 2021). Reducing regulatory restrictions in these upstream services can therefore bring cascading benefits to many downstream sectors. In India, for example, the productivity of downstream manufacturing firms increased following the liberalization of transportation services, including through greater foreign direct investment in the 1990s (Arnold et al. 2015).

Promoting the expansion of high-skilled offshorable services

High-skilled offshorable services are more amenable to remote delivery and, as a result, have better withstood the COVID-19 pandemic. These are also the services sectors with the highest total factor productivity, implying that reallocation of resources toward them can raise an economy’s total output. In EMDEs, high-skilled offshorable services are 2.7 times more productive than low-skilled services, which account for two-thirds of total services employment. If the composition of the services sector in LICs matched that in advanced economies, overall services productivity would be 35 percent higher. Policy
interventions that alleviate constraints on the growth of high-skilled offshorable services may therefore be beneficial.

On the demand side, policy measures could support the growth of trade in ICT, finance, and professional services (see chapter 6). These include the easing of trade restrictions. Professional services are among the most protected industries in both EMDEs and AEs (Borchert, Gootiiz, and Mattoo 2014). EMDEs stand to gain from liberalizing import restrictions. By allowing more imports of services, with associated foreign know-how and investment, these economies could raise competitive pressures, productivity, and innovation (Fernandes, Rocha, and Ruta, 2021; World Bank 2020). Furthermore, trade agreements can provide opportunities for reciprocal reductions in barriers to services. Some progress has already been made through bilateral or regional trade agreements; more than 50 percent of all preferential trade agreements filed with the World Trade Organization (WTO) through 2017 covered the services sector (Hofmann, Osnago, and Ruta 2019). At the multilateral level, 67 WTO members recently concluded negotiations on a new set of rules aimed at slashing administrative costs and creating a more transparent operating environment for service providers in foreign markets.

On the supply side, shortages of technical skills are an important barrier to the growth of high-skilled offshorable services. Education, particularly tertiary education, and technical training are key to equipping workers with the necessary advanced skills. Expansion of public-private partnerships could make tertiary education and training programs more responsive to changing industry demands. The use of private providers and incentive contracts (where participant placement is a condition for payment) can help align incentives in improving the effectiveness of training programs. Having private sector actors involved in setting curricula can also help programs reflect the types of skills future employees will need. Links with industry are a feature of many tertiary education systems that are centers of innovation (World Bank 2019).

**Conclusion**

The development community’s attention to the manufacturing export-led model of growth can detract from the fact that the services sector has been the main driver of economic growth in EMDEs over the past three decades. Today, half of all workers in EMDEs are employed in the services sector. However, except for in the high-skilled offshorable services—ICT, finance, and professional services—this services-led growth process has been fueled more by increases in domestic consumption than by exports, and by the growth of factor inputs rather than productivity growth. As a result, scale economies and innovation—which formed the basis for growth in the export-led manufacturing model—have been relatively limited in the services sector, especially in low-skilled contact services that employ a large share of low-skilled labor in EMDEs. This has led to pessimism about the longer-term prospects of services-led growth.

At the onset of the COVID-19 pandemic, social distancing regulations and precautions particularly affected low-skilled contact services—many of which are dependent on face-
to-face interactions between providers and consumers. However, service providers have responded by turning more to digital technologies, including for online sales in low-skill contact services where in-person delivery remains important. Meanwhile digitalization has enabled high-skilled offshorable services to withstand the adverse effects of the pandemic by facilitating remote delivery.

Increased digitalization during the pandemic has provided new momentum to services-led growth and its prospects. For one thing, it has improved opportunities for international trade in services, not only in high-skilled offshorable services, but also, for instance, through streaming platforms that enable the remote delivery of arts, entertainment, and recreation services. For another, it has made possible new and greater efficiency gains: digitalization can allow otherwise labor-intensive services to be combined with ICT and intangible forms of capital, reduce the importance of physical proximity in market transactions, improve business processes, and facilitate scaling up.

The use of even the most basic digital technologies in EMDEs, however, is far from widespread. To harness the potential of the services sector in shaping the recovery from the COVID-19 pandemic and strengthening future economic growth, policy makers in EMDEs need to prioritize the wider diffusion of digitalization. Policies to promote digitalization include supporting investment in digital infrastructure, updating regulatory frameworks, and fostering the development of firms’ capabilities through education and training. The revival of low-skilled contact services, such as transportation and hospitality, will likely benefit from the expansion of vaccination rollouts and related medical services. Promoting infrastructure investment and regulatory reforms in such services as transportation, which shares important links with goods-producing sectors, is also likely to benefit the wider economy. Last, but not least, policies that improve market access and develop relevant skills can support the expansion of high-skilled offshorable services.

The prospect of long-term services-led growth will also depend on climate change considerations as countries aim to transition to net-zero emissions by 2050-60. The impetus for policy makers in EMDEs to enable structural transformation will be even stronger going forward; agriculture is more vulnerable to changes in climate than non-agricultural sectors (Casey 2020) and rising temperatures are associated with lower shares of workers outside agriculture (Liu, Shamdasani, and Taraz 2019).

The intensity of emissions varies by sector. In the United States, services produce less than 5 percent of total greenhouse gas (GHG) emissions directly and their direct GHG emission intensities per dollar of output are much less than those of physical products (Suh 2006). However, large environmental impacts can be traced to consumption by services workers. Together, they account for half of all wages globally, with the highest share of highly paid workers of any sector (Greenford et al. 2020). Simulation models based on shadow carbon prices show a limited impact of the net-zero transition on the shares of manufacturing and services in GDP (Chepeliev et al. 2022). There may also be important differences across services subsectors. On the one hand, travel-related services might contribute more to emissions because of their dependence on transportation. On
the other hand, high-skilled offshorable services might contribute more to emissions through consumption because the workers they employ tend to be more affluent.

The services sector can also play an important role in climate mitigation (reducing greenhouse gas emissions) and adaptation (building resilience to climate change). For instance, financial services can play a fundamental role in mobilizing the resources needed for necessary investments (Grippa, Schmittmann, and Suntheim 2019). Similarly, engineering and environmental consulting services will likely be central to enabling energy efficiency improvements (World Economic Forum 2022). The global environmental consulting services market size is expected to almost double from $56.4 billion in 2021 to $93.6 billion in 2026 (TBRC Business Research 2022).

Future research can explore how climate goals are impacted by structural change driven by the manufacturing and services sectors. Analyzing sectoral differences in vulnerabilities to climate change, intensity of emissions, and contributions to climate mitigation and adaptation could help clarify the contribution of the services sector to sustainable economic growth.
References


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