

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers

Labor productivity growth in Latin America and the Caribbean (LAC) slowed to near zero during 2013-18, among the lowest of the six emerging market and developing economy (EMDE) regions. This rate is well below the 1.7 percent average during the pre-crisis period (2003-08) and a return to the average during the preceding four decades. In two-fifths of LAC economies, productivity growth was negative during 2013-18. Sluggish productivity growth during 2013-18 mainly reflects negative total factor productivity (TFP) growth in some large LAC economies, as the commodity price slump and intensifying market distortions allowed unproductive firms to continue operating. Despite anemic productivity growth, the level of productivity remains higher than the EMDE average, albeit still less than one-quarter of the level in advanced economies. Many countries in the region would benefit from reforms to improve competition and innovation, deepen trade linkages, improve the quality of education, reduce labor market inefficiencies, strengthen institutional quality, and increase the volume and efficiency of infrastructure investment.

Introduction

For decades, productivity growth in Latin America and the Caribbean (LAC) has been anemic (Fernández-Arias and Rodríguez-Apolinar 2016). After a brief pre-crisis burst, productivity growth fizzled out again after the global financial crisis. Relative to a pre-crisis (2003-08) average of 1.7 percent, productivity growth in the region dropped to 0.4 percent during 2013-18—a slowdown broadly in line with the emerging market and developing economy (EMDE) average but from lower starting rates (Figure 2.3.1.1.A). Although the level of productivity in LAC is still higher than in most other EMDE regions, sluggish productivity growth in the post-crisis period has slowed the region's progress toward the level of productivity in advanced economies (Figure 2.3.1.1.B). The productivity slowdown during 2013-18 was broad based, affecting three-fifths of LAC countries (Figure 2.3.1.1.C).

Within LAC, productivity growth has been heterogeneous across the three geographical subregions. South America, which was hard hit by the 2011-16 commodity price slide, political uncertainty, and challenging macroeconomic conditions in the largest economies, had the lowest productivity growth during 2013-18, at an average of just 0.1 percent per year, and the Caribbean had the highest, at 2.5 percent. Productivity growth in the Mexico and Central America subregion was 1.2 percent during 2013-18, higher than in 2003-08, although this occurred in the context of weak long-term productivity growth in Mexico.

Against this backdrop, this Box addresses the following questions:

- How has productivity growth evolved in the region?
- What factors have been associated with productivity growth in the region?

- What policy options are available to boost productivity growth?

This Box defines productivity as labor productivity, represented by real GDP per person employed (at 2010 prices and exchange rates). This definition deviates from some previous work on productivity in the region, which focused on total factor productivity (TFP). Labor productivity data used in this Box are available for nine EMDEs in South America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, and Uruguay), seven EMDEs in North and Central America (Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama), and nine EMDEs in the Caribbean (Barbados, Belize, the Dominican Republic, Guyana, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines, and Suriname). Data availability further restricts the sample in the two decomposition exercises below.

Evolution of regional productivity

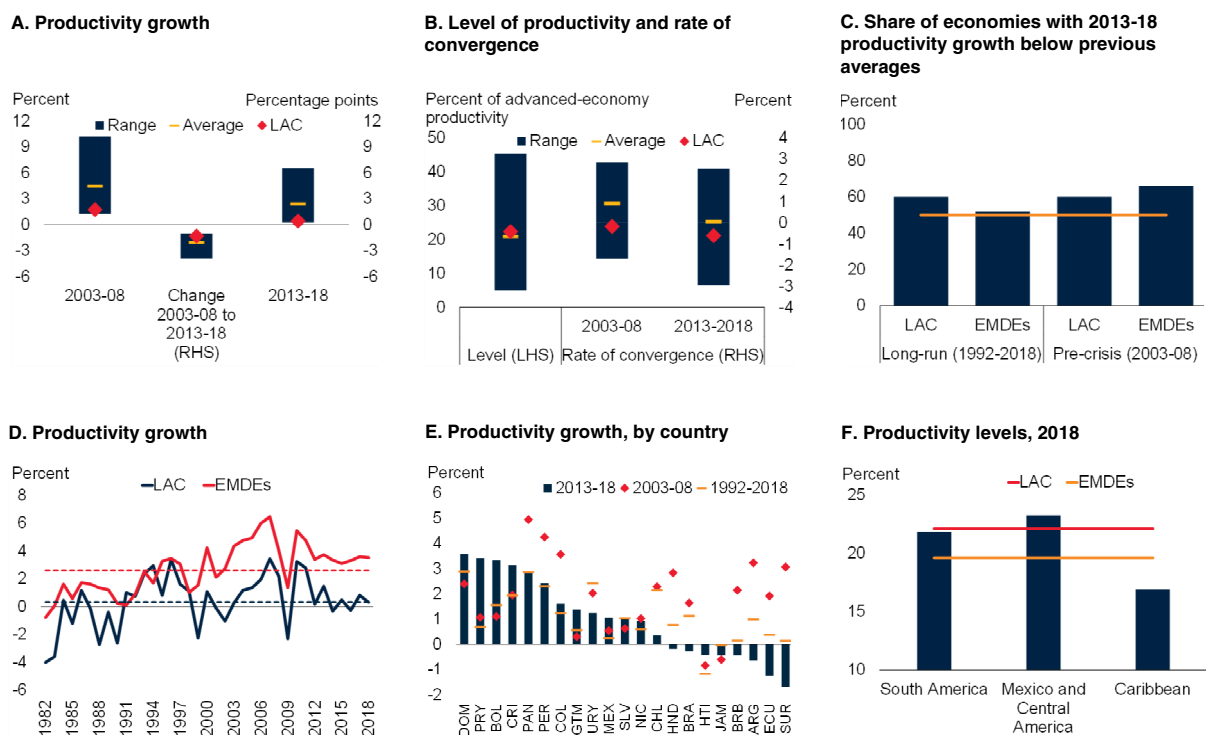
Post-crisis productivity growth slowdown to near zero. Like other EMDE regions, productivity growth in LAC has slowed since the global financial crisis. At 0.4 percent during 2013-18, the post-crisis average returned productivity growth to its long-term average of near zero (0.3 percent; Figure 2.3.1.1.D). This rate is well below average post-crisis productivity growth in EMDEs (2.6 percent). Negative productivity growth occurred 9 of 25 countries, nearly all of which are in South America and the Caribbean, in 2013-18. In most cases, productivity growth was also lower than both the pre-crisis and long-term averages, as major economies in the region struggled with poor business climates, political tensions, regulatory burdens, and plunging commodity prices. Over the course of the past four decades, troughs in productivity growth have broadly coincided with major adverse economic events, including a series of severe debt crises in the 1980s that spawned the region's "lost decade," the global financial crisis, and periodic commodity price slumps. A brief pre-crisis burst in productivity growth to 1.7 percent

Note: This box was prepared by Dana Vorisek, building upon analysis in Chapter 3. Research assistance was provided by Vanessa Arellano Banoni and Shijie Shi.

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)

FIGURE 2.3.1.1 Evolution of labor productivity growth in LAC

Productivity growth in LAC fell from 1.7 percent in 2003-08 to 0.4 percent in 2013-18. The level of productivity in LAC is still higher than that in other EMDE regions, yet sluggish productivity growth in the post-crisis period has resulted in the region's losing ground in converging toward the level of productivity in advanced economies. Despite weak aggregate productivity growth in the region, some countries, including Bolivia, Costa Rica, the Dominican Republic, and Paraguay, achieved productivity growth in line with the EMDE average during 2013-18.



Source: Conference Board; Penn World Tables; World Bank (World Development Indicators).
 A.-E. Productivity is defined as labor productivity (real GDP per person employed). Country group aggregates for a given year are calculated using constant 2010 U.S. dollar GDP weights. Data for multiyear spans shows simple averages of the annual data. Sample includes 25 LAC countries and 127 EMDEs.
 A. Blue bars show the range of average productivity across the six EMDE regions: East Asia Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), the Middle East and North Africa (MENA), South Asia (SAR), and Sub-Saharan Africa (SSA). Orange dashes show the average of the six regional aggregates.
 B. Rate of convergence is calculated as the difference in productivity growth rates over the log difference in productivity levels between LAC and advanced economies (AEs). Blue bars and orange dashes show the range and average of the six EMDE regional aggregates. "Level" of productivity refers to the GDP-weighted average of regional productivity as a share of the average advanced economy during 2013-18.
 C. Orange line represents a 50 percent threshold.
 D. Dotted lines show 1981-2018 averages.
 E. Data for multiyear spans shows simple averages of the annual data. DOM = the Dominican Republic, PRY = Paraguay, BOL = Bolivia, CRI = Costa Rica, PAN = Panama, PER = Peru, COL = Colombia, GTM = Guatemala, URY = Uruguay, MEX = Mexico, SLV = El Salvador, NIC = Nicaragua, CHL = Chile, HND = Honduras, BRA = Brazil, HTI = Haiti, JAM = Jamaica, BRB = Barbados, ARG = Argentina, ECU = Ecuador, and SUR = Suriname.
 F. Productivity is measured in 2010 U.S. dollars. Country group aggregates are calculated using 2010 U.S. dollar GDP weights. Sample includes 25 LAC economies (9 in South America, 7 in Mexico and Central America, and 9 in the Caribbean) and 127 EMDEs.
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during 2003-08 comprised LAC's second-longest period of positive productivity growth since 1980.

Within-region heterogeneity of labor productivity growth. Notwithstanding weak labor productivity growth at the aggregate level in LAC during 2013-18, there was considerable heterogeneity across countries. Bolivia, Costa Rica, the Dominican Republic, and Paraguay featured the

highest labor productivity growth in the region, measuring well above pre-crisis and long-term averages (Figure 2.3.1.1.E). The improvement in the Dominican Republic reflects greater contribution from capital deepening and higher TFP growth; this arose from increased foreign direct investment (FDI) inflows, which were encouraged by the reforms that opened most sectors to foreign

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)

investment and by tax incentives for foreign investment (World Bank 2018i). Bolivia and Paraguay benefited from population migration from rural to urban areas, which coincided with a shrinking share of agriculture as a share of employment (IMF 2016b; World Bank 2018j). In Costa Rica, the rise in productivity growth was broad-based across sectors, supported by continued policy reforms and positive spillovers from FDI inflows (OECD 2018a). In four of the six LAC economies with the highest productivity growth during 2013-18 (Bolivia, the Dominican Republic, Panama, and Peru), productivity growth benefited from the steepest declines in the share of informal activity in the region during the decade to 2016 (World Bank 2019f).

High productivity levels relative to EMDEs but slowing convergence with advanced economies. Despite low productivity growth in the region over an extended period, the level of productivity in LAC (22 percent of the advanced-economy average) is above the EMDE average (19 percent of the advanced-economy average; Figure 2.3.1.1.F). High productivity levels in LAC are a legacy of the mid-20th century. Since the 1980s, labor productivity in LAC relative to the level in advanced economies has fallen (Ferreira, de Abreu Pessôa, and Veloso 2013; Fernández-Arias and Rodríguez-Apolinar 2016). The pre-crisis rise in productivity growth halted this divergence only briefly. This is in stark contrast to the narrowing labor productivity gap between the broader group of EMDEs and advanced economies since the 1990s.

Sources of regional productivity growth

Labor productivity can be decomposed into three sources—human capital accumulation, physical capital accumulation, and TFP, or the efficiency with which labor and capital are used during production. The post-crisis productivity growth slowdown predominantly reflected a return to negative TFP growth rates, as had prevailed in LAC during the 1990s (Figure 2.3.1.2.A; Busso, Madrigal, Pagés 2013). However, the post-crisis (2013-18) average disguises a steep slowdown in investment growth during 2016-18, as Brazil struggled to exit a deep recession, the effects of the commodity price slump rippled through the region's many commodity-reliant economies, and numerous economies experienced bouts of policy uncertainty.

- *South America.* The post-crisis labor productivity slowdown was most pronounced in South America, which was deeply impacted by the commodity price slump and country-specific constraints in large

economies (Figure 2.3.1.2.B). TFP growth in South America was continually negative during 2013-18, in part reflecting growing directed credit in Brazil (Dutz 2018; Calice, Ribiero, and Byskov 2018). It also reflected intensifying economic distortions (such as trade restrictions and price controls) in Argentina during the early part of the period, which allowed unproductive firms to survive.

- *Mexico and Central America.* In Mexico and Central America, the early impacts of the global financial crisis in 2007 and 2008 weighed on TFP in Mexico during 2003-08. Although post-crisis TFP growth was subdued, and capital deepening weakened during this period in the context of the repeated bouts of policy uncertainty, the removal of the crisis effects in Mexico allowed higher productivity growth in the subregion during 2013-18.
- *The Caribbean.* In the Caribbean, TFP growth accelerated during the post-crisis period, largely reflecting capital deepening in the largest economy in the subregion, the Dominican Republic.

Post-crisis productivity growth slowdown across sectors. As in the average EMDE, manufacturing made the largest sectoral contribution to productivity growth in LAC during the 1990s and the pre-crisis period. Relative to the pre-crisis period, the post-crisis period in LAC was marked by a broad-based slowdown in productivity growth across sectors, particularly in manufacturing, trade, and finance.

Stalling within-sector labor productivity growth. For countries with available sectoral data, the within-sector contribution to productivity growth has historically been greater than the between-sector contribution from labor reallocation from low-productivity to higher-productivity sectors (Figure 2.3.1.3.A). This is consistent with other studies of the region (Brown et al. 2016; Diao, McMillan, and Rodrik 2017). During the 1990s, a substantial part of labor productivity growth was due to within-sector growth as LAC countries liberalized trade policy in the second half of the 1980s and the early 1990s (Rodrik 2016a). The 1990s and early 2000s were a period of significant change in LAC's manufacturing industry. Faced with increasing foreign competition as the result of globalization, domestic manufacturing firms implemented more efficient processes that required less labor, and uncompetitive firms ceased operating. As workers were displaced from manufacturing, they shifted toward lower-productivity services and informal activities (Pagés-Serra 2010; McMillan, Rodrik, and Verduzco-Gallo 2014). In Argentina and Brazil, two

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)

of the largest economies in the region, labor shifted in the 1990s from manufacturing into less-productive non-tradable sectors, such as personal services and wholesale and retail trade, limiting between-sector productivity growth. Of the six LAC countries with available sectoral data, only Costa Rica and Mexico have consistently experienced positive between-sector productivity growth, and even in those cases the within-sector contribution has been smaller than the between-sector contribution.

As the manufacturing sector in LAC transformed during the 1990s and early 2000s, the agricultural sector became more productive relative to other sectors, with a shrinking share of agricultural employment accounting for a stable share of output between 1995 and 2008 (Figures 2.3.1.3.B and 2.3.1.3.C). The government sector, however, became less productive, accounting for a growing share of employment and the same share of output.

Since 2013, between-sector productivity gains have stalled in several large economies (Argentina, Brazil, Colombia). Within-sector productivity growth has collapsed to near zero as multiple structural constraints (e.g., inefficient provision of credit in Brazil and trade restrictions and price controls in Argentina) were compounded by an inability to adjust to adverse events, including unfavorable policy choices, a commodity price collapse, and financial stress episodes.

Sectoral productivity levels in LAC relative to EMDEs. In most sectors, and particularly in mining, productivity levels in LAC are higher than the EMDE average. However, LAC lags notably in trade and finance. Removing productivity barriers in these sectors would benefit aggregate regional productivity.

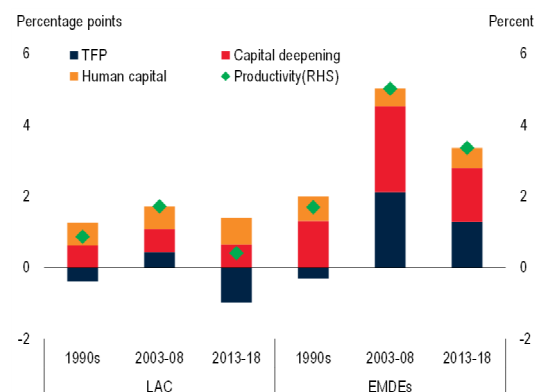
Key drivers of productivity. LAC has long lagged other EMDE regions in several key drivers of productivity—investment, innovation, and trade—and performs only about average in other drivers (Figure 2.3.1.4.A). Over time, the drivers of productivity in LAC have improved but the improvement has not kept pace with that in EMDEs (Figure 2.3.1.4.B). Cyclical factors, such as weak investment in large economies in the region and gyrations in global commodity price trends, are also linked to weak productivity growth in LAC. Investment growth has weakened substantially in the post-crisis period (Figure 2.3.1.4.C).

Limited innovation and technology adoption. Innovation, achieved through dedicating resources to research and development (R&D) or introducing new processes or

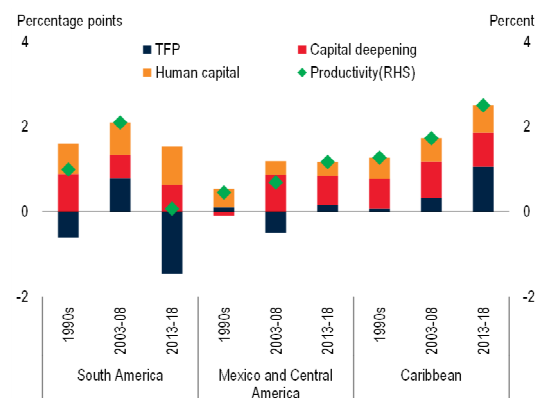
FIGURE 2.3.1.2 Sources of productivity growth in LAC

Sluggish productivity growth in LAC during the post-crisis period predominantly reflected a negative contribution from total factor productivity (TFP). The TFP contraction was especially pronounced in South America. In recent years, capital deepening has made a slowing contribution to productivity growth.

A. Contributions to productivity growth



B. Contributions to productivity growth, by subregion



Source: Barro and Lee (2015); International Monetary Fund; Penn World Tables; United Nations (*Human Development Reports*), Wittgenstein Centre for Demography and Global Human Capital; World Bank.

A-B. Country groups aggregated using constant 2010 U.S. dollar GDP weights.

A. Samples include 25 LAC economies and 92 EMDEs.

B. Samples include 9 economies in South America, 7 economies in Mexico and Central America, and 9 economies in the Caribbean.

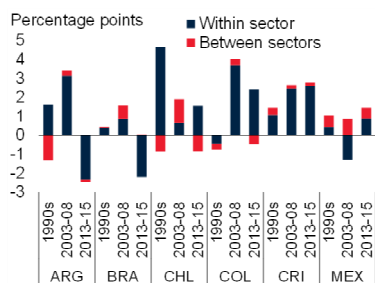
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BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)

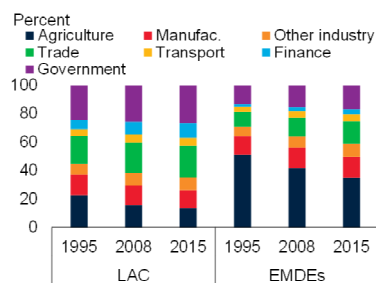
FIGURE 2.3.1.3 Sectoral productivity in LAC

Within-sector productivity growth, the main driver of productivity growth in LAC during the pre-crisis period, was much lower during the post-crisis period in several large economies, while between-sector productivity growth slowed in all economies with available sectoral data.

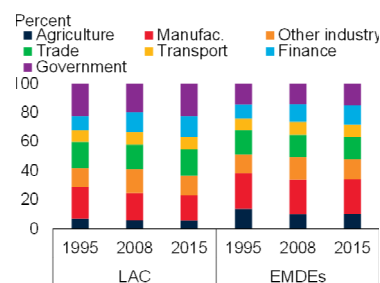
A. Within-sector and between-sector contributions to productivity growth



B. Composition of employment, by sector



C. Composition of GDP, by sector



Source: Groningen Growth Development Center database, Haver Analytics, ILOSTAT, OECD STAN, United Nations, World KLEMS, World Bank.

A. The within-sector productivity contribution shows the initial real value added-weighted productivity growth; the between-sector contribution measures the productivity growth from a cross-sectoral shift of employment. ARG = Argentina, BRA = Brazil, CHL = Chile, COL = Colombia, CRI = Costa Rica, and MEX = Mexico.

B.C. "Other industry" includes construction, mining, and utilities; "finance" includes business services; "government" includes personal services. Samples include 6 LAC economies (Argentina, Brazil, Chile, Colombia, Costa Rica, and Mexico) and 46 EMDEs.

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products, has been a key driver of labor and firm productivity in LAC (Crespi and Zuniga 2011; Grazzi and Jung 2016). Likewise, adoption of new technologies can reduce information costs and facilitate market access, thereby increasing productivity and expanding output in the region (Dutz, Almeida, and Packard 2018). LAC is missing key opportunities to raise productivity through these channels. R&D expenditure as a share of GDP is low in LAC relative to that in comparator EMDEs, as is the likelihood of firms in LAC introducing product innovations (Lederman et al. 2014; Figure 2.3.1.4.D).

Weak trade linkages. In three large economies in the region (Argentina, Chile, Mexico), deeper participation in global value chains is associated with positive effects on firm productivity (Montalbano, Nenci, and Pietrobelli 2018). Yet nearly all LAC economies trade less (as a share of their GDP) than EMDEs overall, and global value chain participation is lower than in the East Asia and Pacific region and in Europe and Central Asia (Figure 2.3.1.4.E). Even the LAC countries most integrated in global value chains (Chile, Costa Rica, and Mexico) are not among the most integrated EMDEs (OECD 2018b). The opportunity for regional productivity gains through trade is further hindered by the structure of intra- and extraregional trade relationships. Although LAC countries are party to numerous trade agreements, there is little

harmonization of rules of origin and non-tariff measures across agreements, and there is no region-wide trade agreement. These characteristics result in fragmentation of trading priorities and, together with weak diversification of traded goods in many countries, limit the development of intraregional global value chains. Rules of origin imposed under preferential trade agreements in the region are estimated to negate more than 15 percent of the positive trade effect of the agreements, while the costs of non-tariff measures imposed by LAC countries are estimated to equate to a 15 percent tariff for intermediate goods (Cadestin, Gourdon, and Kowalski 2016).

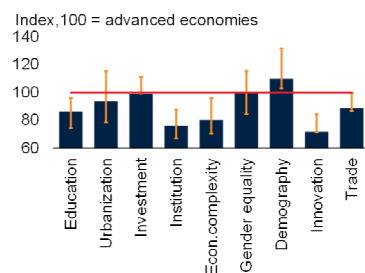
Poor-quality education and labor market constraints. At a median of 9.2 years in 2018, the duration of schooling in LAC compares favorably with 7.7 years in the average EMDE. In addition, the gap between the median years of schooling in LAC and advanced economies narrowed during the past decade, from 3.5 years in 2008 to 2.9 years in 2018. However, learning outcomes in LAC fall short of their potential, as indicated by international standardized test results and high dropout rates at the tertiary level (World Bank 2017b). Moreover, in most LAC countries, education outcomes are highly correlated with socioeconomic conditions, a scenario reinforced by persistently elevated income inequality (World Bank 2018k). Ultimately, skills deficiencies and mismatches and

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)

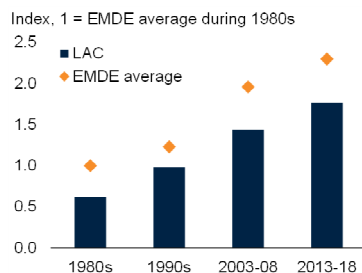
FIGURE 2.3.1.4 Drivers of labor productivity growth in LAC

Multiple structural constraints contribute to low productivity growth in LAC. The region performs particularly poorly relative to other EMDE regions in measures of investment, innovation, and trade. In other drivers, LAC is a mediocre performer relative to other regions. The drivers of productivity growth have become more supportive over time but at a slower pace than the EMDE average.

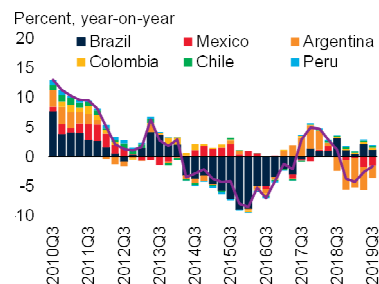
A. Drivers of productivity growth, 2017



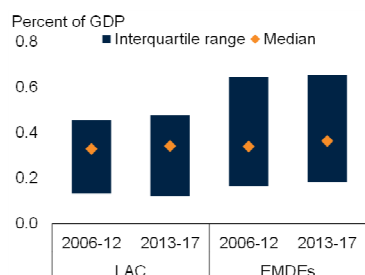
B. Index of productivity drivers



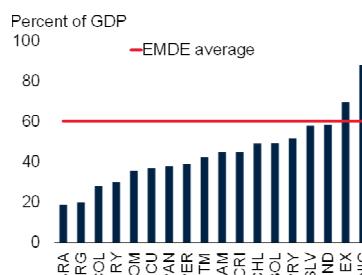
C. Investment growth



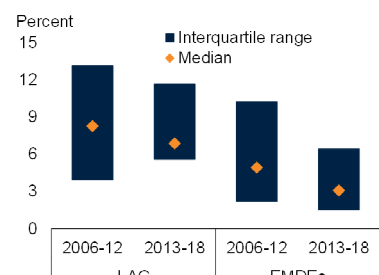
D. R&D spending



E. Trade



F. Firms indicating inadequately educated workers as their biggest obstacle



Source: Freedom House; Haver Analytics; International Country Risk Guide; Organisation for Economic Co-operation and Development; Observatory of Economic Complexity; Penn World Tables; United Nations Educational, Scientific, and Cultural Organization (Institute for Statistics); United Nations Population Prospects; World Integrated Trade Solution; World Bank (Doing Business, Enterprise Surveys, and Global Financial Development Database).

- A. Unweighted average levels of drivers, normalized as average of AEs (index =100) and standard deviation of EMDEs as 10. Blue bars represent average of LAC economies in 2017. Orange whiskers represent range of averages for the six EMDE regions in 2017. Variables are defined as: Education=years of education, Urbanization=share of population living in urban areas, Investment=share of investment to GDP, Institutions=government effectiveness, Economic complexity=Economic Complexity Index of Hidalgo and Hausmann (2009), Gender equality=share of years of schooling for females to males, Demography=share of population under age 14, Innovation=log patents per capita, and Trade=(exports+imports)/GDP. Samples include 17-31 LAC economies, depending on the driver, and 63-150 EMDEs.
- B. For each country, index is a weighted average—weighted by the normalized coefficients shown in Annex 3.3—of the normalized value of each driver of productivity. Drivers include the ICRG rule of law index, patents per capita, non-tropical share of land area, investment in percent of GDP, ratio of female average years of education to male average years, and share of population in urban area, Economic Complexity Index, years of schooling, working-age share of population, and inflation. Regional and EMDE indexes are GDP-weighted averages for single years and simple averages for time periods. Samples includes 17 LAC economies and 77 EMDEs.
- C. Bars show investment-weighted averages. Last observation is 2019Q3. Data for Mexico for Q3 is estimated.
- D. Sample includes 16 economies for LAC and 94 for EMDEs.
- E. Bars show 2015-17 average of exports plus imports as a share of GDP. BRA = Brazil, ARG = Argentina, COL = Colombia, URY = Uruguay, DOM = the Dominican Republic, ECU = Ecuador, PAN = Panama, PER = Peru, GTM = Guatemala, JAM = Jamaica, CRI = Costa Rica, CHL = Chile, BOL = Bolivia, PRY = Paraguay, SLV = El Salvador, HND = Honduras, MEX = Mexico, NIC = Nicaragua. Sample includes 96 EMDEs.
- F. Sample includes 30 LAC economies and 113 EMDEs.

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low-quality education have negative implications for labor productivity and the functioning of labor markets. The incidence of youth who are neither in school nor working is high (de Hoyos, Rogers, and Székely 2016). An estimated half of firms are unable to find local workers with the skills they need, and consequently turn to foreign labor (OECD 2018b). Firm-level survey data for 2013-18

indicate that 7 percent of firms in LAC perceive an inadequately educated workforce as their biggest obstacle, more than double the share in all EMDEs (Figure 2.3.1.4.F). The poor functioning of labor markets due to skills deficiencies are compounded by longstanding regulatory rigidities that prevent efficient allocation and mobility of workers (Kaplan 2009).

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (*continued*)

High informality. The informal sector averages slightly more than one-third of GDP, higher than in all other EMDE regions except Sub-Saharan Africa (World Bank 2019f). In LAC, high informality has been associated with lower aggregate and firm-level productivity (Loayza, Servén, and Sugawara 2010; de Paula and Sheinkman 2011; Chong, Galdo, and Saavedra 2008). In Paraguay, informal firms are not only less productive than formal firms, but have negative spillovers on formal firms' productivity (Vargas 2015).

Policy options

A range of options, targeted to country experiences, can be pursued to boost productivity in LAC and put the region on a path toward closing the productivity gap with advanced economies. Productivity in the region stands to benefit most from policy reforms to boost TFP, rather than to improve factors of production.

Improving factors of production

Increase the volume and efficiency of infrastructure investment. Relative to the pre-crisis period, capital deepening has been the main source of productivity growth in large parts of the region during the post-crisis period. However, it has slowed sharply in the past three years, and large infrastructure gaps remain. Access to water and electricity in LAC is high relative to all EMDEs; however, the region underperforms in transportation and sanitation (Fay et al. 2017). To address this, transportation development is underway in several countries. Colombia, for instance, is implementing 4G, a major public road infrastructure program. In addition, across the region, there is significant capacity to reduce infrastructure gaps by improving infrastructure spending efficiency—in particular, through improvements at the appraisal and evaluation stages of public investment projects and in public procurement systems.

Boosting firm productivity

Pursue well-targeted competition and innovation policies. Reducing barriers to entry for firms and the rigidity of labor regulations, on which LAC performs poorly compared to other EMDE regions and which encourages informal operation, is critical for promoting entrepreneurship and productivity. In Peru, for example, the elimination of subnational barriers to entry is found to have boosted firm productivity (Schiffbauer and Sampi 2019). Boosting low R&D spending and low technology-related innovations can also improve financial inclusion

through development of secure digital payment systems and fintech regulatory frameworks (World Bank 2017c). Improving the speed of uptake of new technologies in LAC, where firms adopt new technologies with a significant lag relative to the United States, would also boost productivity (Eden and Nguyen 2016).

Deepen trade linkages and reduce trade barriers. Trade relationships can boost productivity by facilitating knowledge exchange and innovation for the participating firms (Bown et al. 2017). Significant productivity gains could be made by reducing barriers to trade in LAC. The landmark European Union-Mercosur trade agreement, finalized by negotiators in June 2019 but not yet ratified, holds significant promise for decreasing trade barriers and deepening trade flows between Latin America and Europe. In addition, there have been some recent efforts to reduce trade barriers within the region; for instance, the Pacific Alliance eliminated tariffs among its members (Chile, Colombia, Mexico, and Peru) in May 2016.

Boost quality of education and implement labor market reforms. With the working-age share of the population in the region now at a peak and on track to begin the long-term downward trajectory that East Asia and Pacific and Europe and Central Asia have already begun, the contribution of additional labor to productivity growth in LAC will fall in the years ahead. Advancing human capital through education and skills development will become increasingly important. For many countries in the region, including Brazil, adapting labor markets to shifting economic opportunities in the strongly integrated global economy will require revision of dated labor market regulation (Dutz 2018). For firms, additional use of on-the-job training is an important element of boosting the productivity of their workers, especially in the context of rapidly changing technologies. Implementing programs that engage youth who are neither working nor studying is a critical policy concern in the region (Almeida and Packard 2018). Skills training programs such as Jovenes en Acción in Colombia and ProJoven in Peru have had positive impacts on employment and productivity among the target populations and could be replicated elsewhere (Attanasio et al. 2015; Diaz and Rosas 2016). Apprenticeship programs, which have been successful in several advanced economies, could also be explored. Reducing labor market rigidities (such as restrictions on use of term contracts, restrictions on working hours, use of minimum wages above market equilibrium, and imposition of high costs and penalties for redundancy) can boost productivity.

BOX 2.3.1 Labor productivity in Latin America and the Caribbean: Trends and drivers (continued)*Encouraging sectoral reallocation*

Given that within-sector productivity gains in several large economies in LAC have stalled since the global financial crisis, countries in the region should rekindle efforts to implement policies that reallocate capital and labor towards more productive firms within the sectors. Policies could aim to strengthen competition, including through trade, and reform labor markets to facilitate the movement and productivity of labor. At the same time, the longstanding weakness in the region's between-sector productivity growth in the region calls for policies that reduce misallocation of capital and labor toward sectors with low productivity. In particular, with limited opportunity for further industrialization, LAC countries should target lack of competition in services industries, including transport, finance, trade, and information and communications technology, and ensure that workers have sufficiently strong skills to thrive in occupations being transformed by technology (Araujo, Vostroknutova, and Wacker 2017; World Bank forthcoming).

Creating a business-friendly environment

Implement supportive governance and business climate reforms. Institutional quality is a key driver of

productivity over the long term. For instance, fair contract enforcement, straightforward and transparent legal processes, and contained political risk have all been shown to support productivity gains (Acemoglu et al. 2019; Rodrik 1999; Rodrik, Subramanian, and Trebbi 2004). Relative to other regions, however, LAC is a mediocre performer on measures of governance (Figure 2.3.1.4.A). Moreover, the region's performance has deteriorated during the post-crisis period in measures of government effectiveness, control of corruption, and regulatory quality (Kaufmann, Kraay, and Mastruzzi 2010). Especially when the burden of regulation is high, as it tends to be in LAC, corruption is detrimental for productivity (Amin and Ulku 2019). On measures of doing business, no country in LAC is among the top 50 performers in the world (World Bank 2020). Business environment reforms can also help reduce the size of the informal sector, where productivity is lower than in the formal sector. The process of institutional reforms could be spearheaded through productivity commissions such as those created in Chile, Colombia, and Mexico. Colombia, for example, is implementing a series of structural reforms as part of its Productive Development Policy 2016-2025.