

2020 POLICY NOTE ON LATIN AMERICA

LEVERAGING
THE IMPACT OF
NEW TECHNOLOGIES



INVESTMENT
SMART CITIES DIGITALISATION
INFRASTRUCTURE INNOVATION
SUSTAINABILITY NEW TECHNOLOGIES
REGIONAL INTEGRATION MARKETS
SKILLS REGULATIONS TRADE
PRODUCTIVITY
INDUSTRIALISATION
COMPETITIVENESS

Leveraging the impact of new technologies in Latin America

This Policy Notes provides insights from the private sector on how to harness new technologies and digitalisation for enhancing productivity, innovation and sustainable growth in Latin America and the Caribbean (LAC). The analysis builds on discussions from the meeting “Leveraging the impact of new technologies in Latin America”, organised by the OECD Development Centre’s Emerging Markets Network (EMnet) in Paris on 23-24 May 2019, as well as desk research and bilateral conversations with multinationals operating in the region. Regional GDP in LAC was initially expected to grow by 2.6% in 2020, but with the onslaught of the crisis, forecasts now predict a recession with growth at -4.6%.

Key messages include:

- Growth in LAC was decelerating in 2019, rendering the economy vulnerable to external shocks in a region facing social discontent, growing poverty and risks of a recession.
- Structural challenges weigh down on growth, although effective public policies can address these challenges and help offset the causes of social discontent.
- Strengthening investment in knowledge and innovation can reduce the cost of new mobile and digital technologies, boost productivity and allow Latin America to overcome a lack of competitiveness compared to other regions.
- Technological solutions and innovations are also helping reduce informality and promote social inclusion, by increasing access to new technologies, reducing the digital divide and bringing Internet connectivity to rural areas.
- The gap between supply and demand of skills in LAC remains one of the widest globally. Consequently, firms are now starting to upskill their own workforce.
- Companies stress that further regulatory reforms focused on transparency, anti-corruption, data privacy and taxation are needed to improve the investment climate, develop digital infrastructure, and generate trust in the digital ecosystem. Chile has incorporated such policies in its trade negotiations, in an effort to build trust in the digital economy beyond its national borders.
- Digitalisation can improve public transparency and efficiency, providing rapid access to information, expanding government services and reducing bureaucracy. Sixteen LAC countries have adopted an Open Government Declaration promoting transparency, fighting corruption and empowering citizens.

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EMnet gathers top executives (chief executive officers, vice-presidents, managing directors, chief financial officers, heads of strategy, chief economists) of multinational companies from diverse sectors, willing to engage in debates with high-level policy makers, including heads of state and ministers, and OECD experts.

EMnet events are closed to the public and media and operate under Chatham House rule to encourage open and dynamic discussions on doing business in Africa, Asia and Latin America. To learn more about EMnet, please consult www.oecd.org/dev/oecdemnet.htm.

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The analysis in this Policy Note is based on discussions held at the EMnet meeting on 23-24 May 2019 at the OECD headquarters and Station F in Paris, bilateral discussions with EMnet members and contacts, as well as desk research.

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ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
B2C	Business-to-Consumer
BCR	Binding Corporate Rules
BEPS	Base Erosion and Profit Shifting
CAF	<i>Corporación Andina de Fomento</i> (Development Bank of Latin America)
CEO	Chief Executive Officer
CFO	Chief Financial Officer
DDI	Data-Driven Innovation
ECB	European Central Bank
ECLAC	Economic Commission for Latin America and the Caribbean
EMnet	Emerging Markets Network
EU	European Union
FDI	Foreign Direct Investment
Fintech	Financial technology
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GSMA	Global System for Mobile Communications Association
GST	Goods and Services Tax
GVC	Global Value Chain
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
ILO	International Labour Organization
IMF	International Monetary Fund
IoT	Internet of Things
IXP	Internet Exchange Point
IT	Information Technology
LAC	Latin America and the Caribbean
LCR	Latin America and the Caribbean Region

Mercosur	<i>Mercado Común del Sur</i> (Southern Common Market)
MSME	Micro, Small and Medium-sized Enterprises
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
RAN	Radio Access Network
R&D	Research and Development
SME	Small and Medium-sized Enterprise
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States
USD	United States dollar
USF	Universal Service Fund
VAT	Value Added Tax
WTO	World Trade Organization

LATIN AMERICA'S ECONOMIC AND BUSINESS OVERVIEW

Latin America and the Caribbean (LAC)'s economies have lost growth momentum as countries grappled with deteriorating conditions. Economic growth has been weak over the last 5 years, while several countries have recently faced a complicated domestic environment – including political upheaval – and the external context has become less favourable, owing to the region's exposure to world commodity prices, global interest rate developments and global trade dynamics (IMF, 2020; OECD et al., forthcoming). More investment is needed to improve competitiveness and productivity, while several structural challenges need to be addressed. Some global trends, digitalisation in particular, hold the potential to increase productivity, which can boost growth and create new opportunities for business.

This economic and business overview chapter brings together analysis and insights about LAC's economic growth, financial inflows, international and regional trade as well as megatrends that have affected the continent. Regional gross domestic product (GDP) was initially expected to grow by 2.6% in 2020, but with the onslaught of the crisis, forecasts now predict a recession with growth at -4.6% (AUC/OECD, 2019; World Bank, 2020). This chapter covers the period before 2020, and neither it nor the data cited in it take into account the effects of the Coronavirus (COVID-19) crisis. The virus is resulting in significant economic disruption from quarantines, restrictions on travel, factory closures and a sharp decline in many service sector activities. As a result, the world economy is expected to be in its most precarious position since the financial crisis and experiencing a sharp slowdown (OECD, 2020a). See also Box 1 below.

Box 1. The Coronavirus crisis in Latin America

The Coronavirus (COVID-19) crisis is resulting in significant economic disruption from reduced global demand, quarantines and travel restrictions, and a sharp decline in many service sector activities in Latin America. The world economy is expected to be in its most precarious position since the financial crisis and experiencing a sharp slowdown, with important ramifications for LAC (OECD, 2020a).

The COVID-19 crisis is further aggravating a situation of subdued growth in LAC, which was already characterised by deep social discontent and growing poverty, and risks pushing the region into recession (Bonaglia and Nieto-Parra, 2020). It is causing a disruption in global supply chains, a decline in commodity prices and a contraction in tourism, which can severely damage economic prospects by bringing activity to a halt. In Latin America, some 125 million people still lack access to basic health-care services, and without ambitious policy responses the burden of the Coronavirus crisis could disproportionately fall on to vulnerable and poor households (PAHO/WHO, n.d.).

Box 1. The Coronavirus crisis in Latin America (cont.)

With the People's Republic of China (hereafter: 'China'), Europe and the United States as the most important trading partners, slowing international demand will have a strong impact on exports. Falling commodity prices in case of a global downturn further exacerbate the crisis in several oil-producing Latin American nations such as Mexico and Venezuela, and can also hit other resource-rich countries such as Chile and Peru. The Caribbean will be hit by the expected drop in tourism.

On the financial side, sovereign downgrades make it harder to borrow or to honour foreign currency debt, with which some countries in the region were already struggling. Reduced appetite for emerging market debt or equity results in large outflows. Central America and Mexico will also feel that a slowdown in the United States will result in less trade and investment. Two major sources of foreign exchange, remittances and tourism (particularly relevant for the Caribbean), are also heavily affected (Pezzini, 2020).

Around 58% of workers in Latin America are informally employed, and most of them have no social safety net. Because of the virus, many companies may go bankrupt, in particular micro-, small and medium-sized enterprises, which represent 99% of total firms and account for almost 60% of employment in the region. The impact on jobs could be colossal, particularly for the vulnerable middle class just above the poverty level (OECD, forthcoming). Social assistance programmes covering poor households typically do not reach more than 40% of vulnerable households. First estimates from ECLAC stress that poverty in Latin America could go from 185 million to 220 million people in 2020 (CEPAL, 2020).

For the latest information on impacts and consequences of the COVID-19 pandemic, please visit www.oecd.org/coronavirus.

Economic growth remains subdued and vulnerable to external developments

Growth in LAC remains relatively weak compared to other emerging regions and remains insufficient to close the gap with advanced economies. After a decline in 2018, GDP was initially on track to increase in 2019 as commodity prices and domestic consumption stabilised (OECD et al., 2019). However, a slack in domestic demand, weak external demand and fragile international financial markets caused economic stagnation: growth in 2019 was set to grow at a mere 0.1% (IMF, 2020). Growth projections by the United Nations Economic Commission for Latin America showed Brazil to grow by 1%, Mexico by 0%, Colombia by 3% and Argentina by -3%, representing downward revisions from earlier Outlooks (ECLAC, 2019a; OECD et al., 2019). Argentina and Ecuador have experienced sudden stops on capital flows, pushing both countries into recession. A number of other countries in the region, including the Plurinational State of Bolivia (hereafter: Bolivia), Colombia, Chile and Ecuador – have experienced social unrest (IMF, 2020). Political tensions are also strongly dragging down growth in the Bolivarian Republic of Venezuela (hereafter: Venezuela), with the country experiencing strong recessions in 2018 and 2019 (OECD et al., 2019).

Structural challenges and social discontent weigh on growth

Structural challenges in many Latin American economies have caused growing social discontent (Nieto-Parra, Pezzini and Vázquez, 2019). These challenges or “development traps” negatively impact citizens’ well-being, fuelling a vicious cycle that limits the capacity towards greater development (OECD et al., 2019). Public institutions are failing to respond to citizens’ increasing demands, for example in the provision of public health care (public satisfaction dropping from 57%

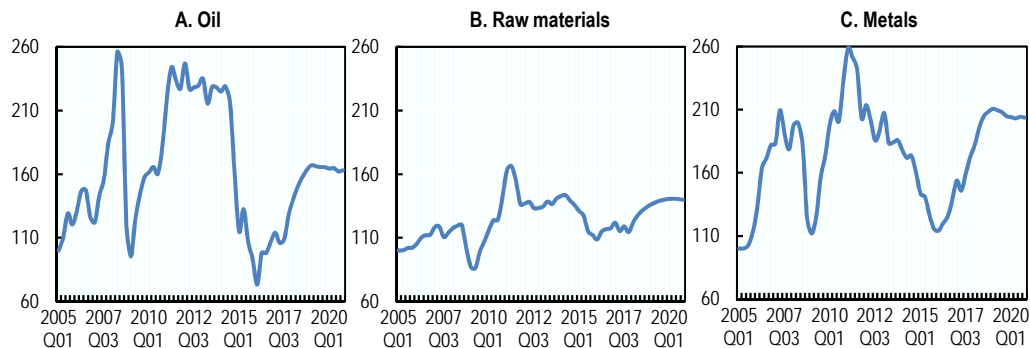
to 40% in Latin America from 2006 to 2018, well below the OECD average of around 70%), while figures show that only 25% of Latin Americans have confidence in their government, undermining the social contract between citizens and the state (Nieto-Parra, Pezzini and Vázquez, 2019). Other structural challenges can be found in a high level of informality and social vulnerability, threatening middle class purchasing power. The “vulnerable middle class” represents around 40% of the population (OECD et al., 2019). Another structural change is the make-up of the economy: resources are often concentrated in extractives or micro, small and medium-sized enterprises (MSMEs) with low value added, low productivity or a low productivity growth potential (Cerutti, Nieto-Parra and Orozco, 2019).

Commodity prices recovery underpin growth

LAC exports, reflecting the general composition of the economies as described above, are often concentrated in primary goods and low-technology manufacturing. This means GDP growth and commodity prices are strongly correlated. The major exception is Mexico, which has benefitted from its participation in the North American Free Trade Agreement, or NAFTA (OECD et al., 2019).

Global commodity prices increased in 2018, but weaker global demand weighed on these markets in 2019 - see Figure 1 below (OECD et al., 2019). Higher copper prices boosted foreign direct investment (FDI) into Chile up 4% to USD 7.2 billion in 2018 (UNCTAD, 2019a). Inbound FDI to Ecuador more than doubled to USD 1.4 billion in 2018, owing to investment in new copper and gold mines (UNCTAD, 2019a).

Figure 1. Commodity prices



Note: 2005=100. Own projections based on Global Vector Autoregressive.

Source: OECD et al. (2019), *Latin American Economic Outlook 2019: Development in Transition*, <https://doi.org/10.1787/q2g9ff18-en>.

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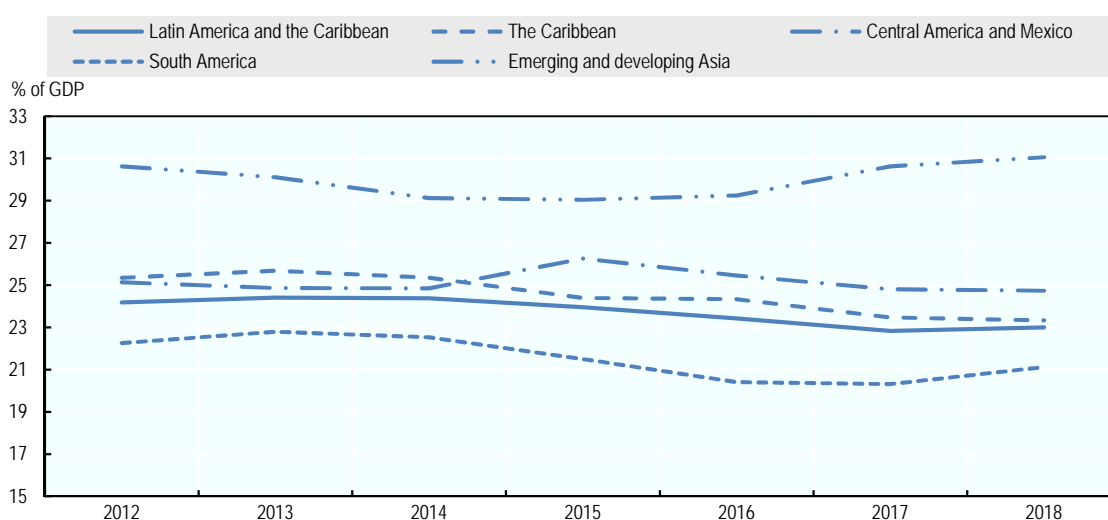
Investments in LAC do not show a uniform picture across the region

FDI inflows to the LAC region declined in 2018, driven by a drop of 9.4% in Brazil and 20.4% in Colombia (UNCTAD, 2019a). Regional inflows are expected to drop further to USD 140 billion in 2019, down from USD 147 billion in 2018 (UNCTAD, 2019a). Brazil and Mexico remained 2 of the world's top 20 host economies for FDI, with USD 61 billion and USD 32 billion of inflows in 2018 (UNCTAD, 2019a). LAC's largest sources of outbound FDI in 2018 were Mexico, Colombia and Chile, while the largest sources of FDI in the region in 2017 were the United States (US), the Netherlands and Spain (UNCTAD, 2019a). Intra-regional investment comprised 11% of bilateral inward stock in 2017, a lower percentage than every world region except Africa and transition economies (UNCTAD, 2019a).

Overall investment rose in LAC in 2018, recovering slightly from a 3-year decline (IMF, 2018). Growth and investment are heterogeneous across the region, with Bolivia, Chile, Colombia and Peru experiencing strong consumption and investment, while Argentina is facing a recession and currency crisis, as its central bank imposed currency controls in 2019 after annual FDI outflows increased by 65% (OECD et al., 2019; Central Bank of Argentina, 2019; UNCTAD, 2019a). Venezuela experienced a severe recession on the back of hyperinflation and political unrest.

Investment as a percentage of GDP is some 10 percentage points lower in Latin America than in Emerging Asia and developing Asia,¹ although with strong variation in the different sub-regions, as illustrated in Figure 2 (OECD et al., 2019).

Figure 2. Total investment as a percentage of GDP



Note: Simple averages. Excludes Venezuela. Forecast for 2018.

Source: IMF (2018), *World Economic Outlook*, www.imf.org/external/pubs/ft/weo/2018/02/weodata/index.aspx, as cited in OECD et al. (2019), *Latin American Economic Outlook 2019: Development in Transition*, <https://doi.org/10.1787/g2q9ff18-en>.

StatLink  <https://doi.org/10.1787/888933936349>.

Trading patterns depend on an evolving global context

LAC exports increased by 2.5% in 2018, while imports rose 5.9% (UNCTAD, 2019b). Brazil and Mexico are the region's top exporters and importers of goods and services, followed by Chile and Argentina (World Bank, 2019a). Trading patterns in LAC are heterogeneous; more than 75% of Mexico's exports are to the United States because of its relationship under NAFTA. Meanwhile, Brazil's exports are more diversified, with China, the European Union (EU) and the United States as its top export destinations, comprising 21.8%, 16% and 12.5% of Brazil's exports respectively.

US-China trade tensions

The US-China trade war has boosted a few Latin American export sectors, but overall exports are declining on slightly lower prices for some commodities and reduced global demand. LAC is heterogeneous when it comes to trade relationships, with Mexico and Central America more dependent on US demand and South America generally more dependent on Chinese demand (OECD et al., 2019). Overall, US and Chinese demand for LAC exports has declined amidst the ongoing trade war, and political uncertainty remains high as US-China relations rapidly change (OECD et al., 2019). Some sectors in LAC have benefitted from the drop in US-China trade, however. For example, Brazil's exports to China rose from USD 47 billion in 2017 to USD 64 billion in 2018, driven by a rise in soy and other agricultural exports to China (Brazil Comex Stat, 2018).

The EU-Mercosur trade deal

In June 2019, Mercosur (Argentina, Brazil, Paraguay and Uruguay) and the EU reached an in-principle agreement on a trade deal (European Commission, 2019a) that will enter into force when ratified by all EU Member States and the Mercosur countries. The EU as a bloc is Mercosur's top foreign investor and trading partner, with trade between the 2 regions totalling EUR 88 billion in 2018, and EU investors holding EUR 381 billion in FDI stocks in Mercosur (European Commission, 2019b). The agreement is to increase export standards and reduce barriers to trade and investment in Mercosur, which could have positive spill-over effects for Mercosur's trade globally (European Commission, 2019c).

LEVERAGING THE IMPACT OF NEW TECHNOLOGIES

Technological developments can be leveraged to boost productivity and innovation. Regional hubs see tech start-up ecosystems emerge, while companies are increasingly leveraging the rising demand for e-commerce and adapt to consumers' demand to personalised products. Private investment in new technologies is needed to achieve sustainable growth and development, while investments in infrastructure can bolster productivity and access to services. Reducing barriers to development – notably by mitigating institutional, environmental and social challenges – can allow the private sector to realise the full benefits of digitalisation.

Technology can boost productivity and innovation, reversing an investment slowdown

LAC has seen its investment momentum begin to slow down from 2011 onwards, partly because of lower commodity prices, greater uncertainty and, more recently, tougher financing conditions. The adoption of new technologies can improve productivity and innovation by making processes more efficient and by enabling firms to offer goods and services to customers at a lower price, in addition to creating new types of digital products (Koellinger, 2008). Investments in productive capacity can boost innovation and support overall growth, but research and development (R&D) expenditure in the region lags behind. In LAC economies, the public sector is responsible for the majority (about 60%) of the region's total R&D expenditure, whereas in OECD economies the private sector invests 70% of this total (OECD et al, 2019). Innovation surveys conducted across Latin American countries including Argentina, Chile, Colombia, Costa Rica, Panama and Uruguay found that firms investing in knowledge are better able to make technological advances, innovate and therefore be more productive than other firms (Crespi and Zuniga, 2012). By 2021, at least 40% of Latin America's GDP is expected to be generated by the digital economy (ECLAC, 2018). Disruptive technologies are set to bring digital transformation to companies in Latin America. By 2020, 40% of large enterprises in the region are expected to have fully articulated an organisation-wide digital transformation strategy. Digital technologies are increasingly applied across different sectors in LAC, with 25% of the top global transaction banks, nearly 30% of manufacturers and retailers, and 20% of health-care organisations expected to use blockchain² networks in production by 2021 (ECLAC, 2018). Galvanising investment to boost economic growth requires a shift in investment composition. Currently, investment is often concentrated in the construction sector. This is challenging, because it is not characterised by a high technological content and has the least impact on productivity. Even in the construction sector, investments in machinery and equipment have a higher technological content, and offer greater potential to raise productivity and boost innovation (ECLAC, 2018). The share of machinery and equipment has risen steadily, from 22% of total investment in 1995 to 40% in 2016 (ECLAC, 2018). The adoption of new technological advances by firms leads to increased productivity and economic growth not only for the organisation itself, but also for the economy in general. According to an analysis by the World Bank, an increase of 10 points in fixed broadband penetration could increase GDP growth by 1.38% in developing economies (Minges, 2016). Government policies aim to expand this access. The 2013 telecommunications reform in Mexico, for example, almost halved mobile phone costs and significantly reduced the price of mobile service packages (OECD, 2019a).

A tech start-up ecosystem is emerging in regional hubs

A tech start-up ecosystem is emerging in regional hubs such as São Paulo, Buenos Aires and Mexico City. Latin America is developing its own tech start-up ecosystem, valued at USD 37 billion in 2018 (IDB, 2017a). There are 123 *Tecnolatinas*³ valued at over USD 25 million, including 9 “unicorns”, or companies valued at more than USD 1 billion each (IDB, 2017a). The majority of start-ups are less than 10 years old, and most are taking advantage of mobile connectivity (IDB, 2017a). SoftBank Group, a Japanese multinational, is launching the SoftBank Innovation Fund: a technology fund focused exclusively on the Latin American market. It is also creating the SoftBank Latin America Local Hub, which is a new operating group that is to collaborate with SoftBank portfolio companies, helping them enter Latin America and navigate local markets. Industries of particular focus for the Fund include e-commerce, digital financial services, health care, mobility and insurance (Bloomberg, 2019).

Companies are increasingly tapping into the rising demand for e-commerce in LAC

In 2017, Latin America had nearly 350 million mobile Internet subscribers. By 2020, the number is projected to increase to 420 million (GSMA, 2017). Brazil was the fourth largest economy by number of Internet users in the world in 2017 while Mexico was the ninth largest (UNCTAD, 2017). The Latin American market size (number of mobile Internet subscribers) is currently larger than that of the United States and is set to rival the EU's by 2020 (UNCTAD, 2017), allowing companies offering Software-as-a-Service⁴ to grow exponentially. The mobile ecosystem in the region provides a large, scalable platform for entrepreneurs and innovators too. Start-ups are optimising this platform and have begun to enter the region's rapidly growing disruptive technology spaces, such as augmented and virtual reality, Artificial Intelligence (AI), robotics and the Internet of Things (IoT). E-commerce in Latin America went from virtually nothing in 1999 to over USD 70 billion in 2015, with many unicorns such as MercadoLibre, Despegar, B2W and OLX active in e-commerce (IDB, 2017a). The increase in the number of on line shoppers in the region can be attributed to declining smartphone prices, increasing availability of subsidies and finance by mobile operators, and the spread of 4G networks across the region (IDG Connect, 2018). Almost 40% of Argentinians shopped on line in 2018, the highest number in the region (Ecommerce Foundation, 2018). In Chile, owing to the country's rapid technological infrastructural development, e-commerce more than doubled in the period 2013-18. In Brazil, middle-class consumers have become aware that prices for consumer goods and customer services policies can be better on line. Thus, they tend to shop more on line while taking advantage of on line discount websites and coupons (Ecommerce Foundation, 2018). However, the propensity of Internet users to shop on line in LAC countries such as Colombia, Paraguay and Peru is still low, with only less than 10% of Internet users purchasing on line (Ecommerce Foundation, 2018).

The Swedish furniture store IKEA, for instance, announced in May 2018 that it planned to sell through on line channels in Chile, Colombia and Peru under a franchise agreement with the Chilean retailer and on line marketplace leader Falabella (Reuters, 2018). MercadoLibre, the region's largest e-commerce platform, is spread across 18 countries and offers 6 e-commerce services selling over a million items per day (MercadoLibre, n.d.). It accounted for 56 million unique visitors in 2018 (Statista, 2019). Avenida, an e-commerce site based in Argentina that sells goods including home products, clothing and electronic devices, delivers 80% of its orders overnight to 11 pick-up locations

in Buenos Aires. These small storefronts are cheaper to run than retail stores, but still allow customers to interact with Avenida's staff, which helps to build trust and brand loyalty (Ecommerce Foundation, 2018).

Businesses use technology to adapt to consumers' needs and personalise experiences

A majority of 88% of Latin American CEOs state that investments made to personalise customer experience have generally delivered on the promise of growth benefits (KPMG, 2018). They also believe these investments are not enough, with only 14% stating they are able to exceed customer expectations for a personalised experience (KPMG, 2018). This can be a risk for their business, particularly in the service industry, where there is a global tech-savvy client base (KPMG, 2018). Companies such as the home-furnishing brand Magazine Luíza in Brazil anticipated these expectations by providing virtual store business models, allowing customers to see and test products in store before ordering on line (Morgan, 2018). Aeroméxico, the Mexican national flag carrier, recently launched new digital services including a new website, check-in kiosks at airports, mobile app and chatbot to make travelling easier and more comfortable (Morgan, 2018). To meet customers' new needs, Grupo Sura, a Colombian multinational company, is creating external alliances through its corporate venture programme. The programme invests in innovation and technology companies with disruptive models, principally in the financial sector (Grupo Sura, n.d.).

Private investment in technology is instrumental to sustainable growth and development

By 2020, nearly 250 million Latin Americans will remain digitally excluded (GSMA, 2017). Despite considerable progress in building out mobile broadband networks, significant barriers remain to full digital inclusion that supports sustainable development, particularly for unserved or underserved population groups which include rural populations, women and low-income citizens (GSMA, 2017). Mobile Internet penetration varies significantly across the region. At 93%, Chile had the highest penetration at the end of 2016, with Argentina closely behind at 90% (GSMA, 2016a). At the other end of the spectrum, the Dominican Republic, Guatemala and Haiti had mobile Internet penetration rates of one-third or less (GSMA, 2016a). Closing these coverage gaps and providing universal mobile broadband access are major goals for governments in the region (GSMA, 2016b). In Colombia, for example, the *Vive Digital plan* focused on developing Internet infrastructure by building 900 Internet centres in villages. It has successfully reduced the digital divide by expanding Internet access, particularly in remote rural areas: in 2017, nearly 10% of Internet users accessed the web from a free public access centre, many of which are located in schools (OECD, 2019b).

Governments and the private sector can work together to solve digital inclusivity challenges

Governments, mobile operators and other companies have a strong interest in expanding access to achieve universal broadband access. Co-operation across the mobile industry can reduce costs, for example by sharing infrastructure in remote areas. Government policy and incentives can further create an enabling environment for extending connectivity (GSMA, 2016b). Governments could consider easing mandatory regulations on coverage and quality of service and allowing more competition in a free and open market to guide mobile operators' investment decisions – alongside other government-led incentives such as financial support and increased spectrum and infrastructure access (TMG, 2014).

Fintech firms can provide increased access to financial services

The development of financial technologies (Fintech) brings new opportunities to increase financial inclusion (OECD et al., 2019). An important trend among Fintech start-ups in Latin America is access to finance for clients who would otherwise be excluded or underserved by the traditional financial service sector, whether they are individuals or small and medium-sized enterprises (SMEs) (IDB, 2017b). In 2016, there were 703 Fintech start-ups in Latin America, with the majority concentrated in Brazil and Mexico (IDB, 2017b). *Tienda Pago*, for instance, is a digital platform that allows small businesses to finance their weekly inventory of consumer goods, creating an ecosystem of mobile cashless payments in the supply chain. The company pays large distributors directly for inventory purchases, often fast-moving consumer goods; it then delivers them to small stores, who re-pay *Tienda Pago* as they generate cash from selling the inventory (Accion, 2018). Currently, *Tienda Pago* operates in Venezuela, Peru and Mexico and has deals with the major distribution companies. The company allows businesses to buy products, increase sales and profit margins, generate more income and create a formal credit history (IDB, 2017b). Furthermore, a growing number of Fintech players use digital tools to enable farmers to access loans. BanQu, for example, is using blockchain technologies in Latin America to build farmers' economic identities through identification details and transactional data that can support credit profiling. BanQu is piloting a small-plot land-mapping initiative aimed at women farmers to improve gender inclusivity. A testimony to the growing relevance of mobile money is the emergence of new rural pilots in Colombia such as Agromovil. This partnership between Movistar, the second largest mobile operator in the country, and the rural bank Banco Agrario aims to extend digital financial services to agricultural producers and the rural population (Tricarico, 2018).

Private investment in hard and digital infrastructure can bolster productivity and access to services

LAC is trapped in persistently low productivity levels across sectors, owing to an export structure concentrated in primary and extractive sectors with low levels of sophistication. This undermines the participation of the region in global value chains (GVCs) and affects further productivity growth (OECD et al., 2019). Investing in hard and digital infrastructure plays a critical role in providing new tools and opportunities to deliver better public and private goods and services. As an example, retailers are tapping into a network of warehouses to do deliveries and accept payments from customers without bank accounts. These distribution networks employ technology to make deliveries more efficient by accounting for inventory, traffic and weather. Digital technology and analytics help companies expand their customer base by supporting collection and payment systems (GSMA, 2017).

Private sector innovation and collaboration can promote sustainable development

Environmental issues such as pollution and loss of natural resources can be tackled by harnessing new technologies. In an example, the *Compañía Minería del Pacífico* (CAP Minería), a 60-year-old Chilean mining and steel company, pioneered sustainability at its iron ore mine Cerro Negro Norte, launched in December 2014. The company incorporated sustainable processes and modern technologies into its operations, allowing the site to recover greater amounts of water, increase its seismic stability and reduce its pollution due to wind and rainwater erosion – among

other benefits. Some companies successfully reconcile their sustainability efforts with profitability. For instance, *Échale a Tu Casa*, a firm specialising in housing projects, addresses the lack of adequate housing for many families at the bottom of the pyramid. By harnessing construction innovations, the company has managed to streamline the self-build process, keep costs down and construction rates up. Already, 30 000 new houses have been built and more than 150 000 existing homes have been improved in Mexico alone. Finally, the mobile operator business community in Brazil launched the WeCare campaign to actively contribute to the UN Sustainable Development Goals. Joint initiatives with local authorities and civil organisations aim to tackle a variety of issues: handset theft, child protection, public safety, recycling of electronic waste and preparedness for natural disasters. More than 48 mobile operators from 14 countries have joined the campaign (GSMA, 2017).

Barriers remain to realising the full potential of new technologies in LAC

LAC faces institutional, environmental and social challenges, which pose a risk to social and economic development. On the environmental front, air pollution, congestion, expanding agriculture and natural-resource extraction are degrading the region's natural capital. Latin America lost almost 90 million hectares of its forests between 1990 and 2010 (Martinelli, 2012). The average number of people affected each year by natural disasters in Latin America has doubled over the past decade (Toba, 2009). The cost of hurricanes in the Caribbean is estimated to reach USD 5 billion a year by 2050 (Toba, 2009). On the social front, the regional unemployment rate remains high at around 8.6% (ILO, 2019). The share of workers in vulnerable employment⁵ has grown, as relatively low investment in new technologies and skills limits the region's capacity to create quality jobs. Although women's participation in the region's labour force stood at 53% in 2016, men's wages still exceed women's by about 20% (ILO 2018). Institutionally, governments collect relatively low levels of tax: the regional average ratio of tax-to-GDP was 22.8% in 2017, compared to an OECD average of 34.2% (OECD, 2019c). Tax morale is low and has decreased in LAC; in 2016, 54% of the population justified not paying taxes (OECD et al., 2019). In 2015, tax evasion in Latin America was estimated at USD 340 billion, representing 6.7% of regional GDP (Business and Sustainable Development Commission, 2017). Corruption also continues to hamper social and economic progress (Business and Sustainable Development Commission (2017). The region scored 44 out of 100 on Transparency International's Corruption Perceptions Index 2018, where a score below 50 indicates a serious problem of perceived corruption (Transparency International, 2019).

An expanding digital economy presents significant tax challenges in LAC

Digitalisation has significantly changed global value chains and, consequently, traditional tax rules (OECD, 2015). Higher levels of digitalisation of the economy pose new tax challenges that transcend geographical limits. Currently, multinational companies do not always pay tax wherever they have significant consumer-facing activities and generate profit (OECD, 2019d). To respond effectively to the possible technological disruptions and to avoid fragmentation among countries, co-ordination of digital policies at the international level is needed. "Action 1" of the Base Erosion and Profit Shifting (BEPS) Action Plan, devised by the OECD/G20 grouping 134 countries and jurisdictions, proposes several measures in order to deal with tax challenges arising from digitalisation, such as by creating better rules about where tax should be paid ("nexus" rules) and what portion of profits should be taxed ("profit allocation rules").

In the case of Latin America, no fewer than eight countries have already begun some type of initiative on the incorporation of cross-border digital services into the value added tax (VAT) or Goods and Services Tax (GST) tax base. It is recommended that countries implement the OECD's International VAT/GST Guidelines (OECD, 2017a), and in particular the destination principle for determining the place of taxation of cross-border supplies, and consider implementing the mechanisms for the effective collection of VAT/GST presented in the Guidelines. In the case of the application of VAT, countries in the region are adjusting their national framework to incorporate non-resident companies into the VAT taxpayer registry. The fiscal impact of not meeting the pending challenges about digital taxation can result in a significant loss of resources. For instance, the potential collection generated by the application of VAT and a specific tax on digital services (of a rate of 3%) in ten LAC countries could reach USD 580 million, of which USD 572 million would come from VAT and USD 8 million from the specific tax (ECLAC, 2019b).

The proposed measures are to ensure that multinational enterprises conducting significant business in places where they do not have a physical presence, be taxed in such jurisdictions (OECD, 2019d). Given that the region's tax-to-GDP ratio is significantly below the OECD average, an increase of the fiscal capacity could enhance public investment and service delivery, accelerate development, promote long-term growth and reduce inequalities (OECD, 2019b). Some LAC countries such as Chile, Colombia and Peru are considering a digital services tax on foreign technology companies to boost tax revenue. Argentina (KMPG, 2017), Chile (Baker McKenzie, 2018) and Colombia (Sledz, 2018) have introduced a value-added tax (VAT) on cross-border digital services and on digital services provided by foreign resident suppliers. An example of reform is also the imposition of a VAT or equivalent on cross-border digital services provided by non-resident suppliers to individual consumers (OECD, 2015).

Multiple policy challenges remain before the private sector can realise the full benefits of digitalisation

LAC firms are unable to benefit fully from digital services and applications owing to restrictions on Internet openness, for example by limits on cross-border data flows. The absence of specific policies to encourage both small and young firms to integrate information and communications technology (ICT) in their business models further impedes digitalisation. The LAC region can develop policies that enhance the potential of e-commerce to increase business performance. In this context, the expansion of broadband infrastructure and the strengthening of competition in telecom markets is particularly important (Sledz, 2018). In addition, to ensure that the private sector contributes to stronger and more inclusive growth, it is essential to build a coherent and comprehensive policy framework that can promote private investment and fair market competition. Finally, there is a lack of human capital possessing particular skills required to use digital technologies professionally such as coding or cloud computing skills (OECD, 2019e). To realise the benefits of digitalisation, the region must increase ICT adoption by firms, while ensuring that the diffusion of digital technologies is accompanied by the development of the skills needed for their effective use (OECD, 2016).

PRIVATE SECTOR INSIGHTS ON LEVERAGING THE IMPACT OF NEW TECHNOLOGIES

This section includes insights and recommendations from the private sector. They are drawn from the EMnet meeting on Latin America on 23-24 May 2019 in Paris, France, and the meetings of the EMnet Working Group on Digitalisation in Barcelona, Spain on 26 February 2019 and Córdoba, Argentina on 2 July 2019, in addition to desk research and bilateral discussions with EMnet members and other private sector representatives. Participants at the meetings highlight that new technologies can open up new business opportunities, and have the potential to address long-term challenges, such as expanding digital access. However, in order to make the most of technological advances, key challenges related to skills development, regulatory frameworks, appropriate infrastructure as well as data privacy and security need to be addressed.

New technologies can open significant opportunities for private sector investment

Participants in the EMnet meeting emphasise the potential that emerging digital technologies have to boost productivity and growth in the region (OECD et al., 2019). The potential of digitalisation to streamline communications and production and generate productivity dividends has been a key driver of the digital agenda. A study conducted by the OECD in 2014 indicates that digital capabilities such as Data Driven Innovation (DDI) can provide key competitive advantages by raising a firm's labour productivity faster than that of non-using firms by approximately 5% to 10% (Deloitte, n.d). Moreover, while technological advances have the potential to transform almost all sectors of the economy (OECD, 2017b), some estimates show that DDI may also result in up to a tenfold productivity growth in certain sectors such as agriculture (Deloitte, n.d.).

New technologies are changing the way in which consumers think, interact and purchase

The diffusion of new technologies in Latin America is having a profound impact on consumer expectations and on the way they interact with companies. Participants in the EMnet meeting emphasise that new technologies have grown substantially in Latin America and the Caribbean over the past decade. Firms themselves, too, are increasingly connected. The number of firms with a website or home page in Colombia and Ecuador saw an increase from 50 enterprises per 100 in 2010 to 80 enterprises in 2017, while in Peru and Uruguay it rose from 50 in 2010 to almost 70 in 2017 (Pilat, 2019). Increased Internet and mobile penetration has led to a sustained growth of e-commerce. The value of business-to-consumer (B2C) e-commerce in Latin America went from virtually nothing to over 87 billion US dollars in 2018 (OECD/WTO, 2017). IoT and AI are further shaping the digital transformation of companies and increasing the demand for personalised experiences.

The digital economy means new markets and businesses

Latin America is well prepared to embark on a digital transformation and companies agree that the digital economy presents unique opportunities to grow new markets and businesses. Apart from the relatively strong economic base, investments in digital infrastructure, a relatively young population, a relatively high mobile and Internet penetration have allowed the emergence of new innovative enterprises.

According to GSMA, the global telecommunications trade body, in LAC, mobile Internet subscribership stood at 68% in 2019, while the smart phone adoption percentage was 69%. The figures are predicted to rise to 73% and 79% respectively by 2025 (GSMA, 2020). In comparison, the 2019 rates for Asia Pacific, the Middle East and North Africa, and Sub-Saharan Africa were significantly lower (GSMA, 2020). Of the 700 million new mobile subscribers by 2025, around 10% or 69 million will come from Latin America. Increased connectivity facilitates the application of new technologies such as IoT, AI and cloud computing. The last has the ability to affect outsourcing relationships, for example by lowering the cost of deliveries, speeding up the rate of change or speeding up implementation.

Several successful examples of new markets and businesses already exist. The rapid development of on-demand deliveries reflects the transition underway. Companies such as Rappi, a Colombian delivery platform, Loggi, the Brazilian delivery service, and Glovo, an app-based delivery start-up, were able to achieve exponential growth in the region, leveraging new technologies to respond to an existing demand for convenience and personalised services (Perretto, 2019; Fieser, 2019). Since 2012, USD 5.7 billion has been invested in tech start-ups in Latin America, and the region now boasts multiple unicorns (Contxto, 2019). In the financial sector, the Brazilian Nubank has become the largest digital bank outside Asia by targeting an urban customer base with mobile banking services, in a country where banks traditionally require significant bureaucracy and offer high borrowing rates (Leahy, 2017). Important foreign investors in the new technologies market in Latin America include Ant Financial, Didi Chuxing, SoftBank, Tencent and Walmart (Lavca, 2018).

Companies rethink their strategies to meet evolving consumer expectations

To take full advantage of new technologies and to translate them into actual gains, companies agree that strategies applied in developed markets were not always suitable in the Latin American context. As a result, firms have sought to develop alternative modes and their suggested solutions for the lower business segment have illustrated this point.

Although Latin America is characterised by higher mobile subscription rates than other emerging regions, for example Africa, a large part of its population is not on line. This figure stood at 237 million people or 38% of the population as recently as 2017 (Pilat, 2019). To address consumers with lower access or less advanced devices, companies have had to come up with products tailored to their unique needs. Uber, the multinational transportation company, launched Uber Lite in Latin America, a version of the app geared towards users in less developed areas. The app can be downloaded using less than 5MB memory and operates using less than 20MB of data (Moed, 2018). In Mexico, to cater to customers without a smartphone, Uber installed physical totems in malls and stadiums at which customers can request a ride. Its rival Cabify has built a multi-model application for taxis, private cars, electric scooters or bicycles and is active in the main capitals of the region (Cabify, n.d.), which are considerably more congested and generally characterised by higher transportation costs than cities in OECD economies (OECD/CAF/UN ECLAC, 2018).

Uber also provides an example of tailoring a business to the specific Latin American context, by allowing cash payments in the region. The company recognises that there is a certain market segment in society that does not have credit cards, but that does need convenient, reliable transportation. This particularly applies in contexts where credit cards are less common, public

safety can be more precarious and public transportation alternatives sparse. Following the implementation of this policy, Uber states that more than 50% of its trips are paid in cash in the region, reaching more than two-thirds in some countries.

While the digital economy has given rise to many new firms, it has also provided an opportunity to traditional ones to innovate their operations. Walmart is a case in point. The US retailer has taken concrete steps to transform its business from physical stores – 3 200 in Latin America – to selling platforms that are both physical and digital. In Mexico, for example, Walmart launched an application called Cashi which allows customers without bank account or credit card to deposit cash in store, to be used as a payment alternative. The money on the app allows its customers to buy products in-store, but also pay on line for services such as telephone or electricity. In addition to making its physical stores more digital, Walmart has also increased its on line presence. Customers can order on line and pick up their groceries in-store. In another example, Brazil's third-largest bank Bradesco has agreed a sponsored data programme with mobile providers including Telefónica's Vivo, Claro, TIM and Oi, for customers accessing its mobile application (Bradesco, n.d.). By offering access to the app for free to users, it was able to double its users, becoming the number one banking app in the Brazilian Google Playstore.

The private sector can drive economic and social sustainability

Companies further highlight that new technological solutions and innovations are also helping to drive sustainable development in LAC. For example, new digital solutions are opening up significant opportunities to address regional challenges such as mobility, green economy and social inclusion.

Technology can offer opportunities in smart mobility

Many LAC cities suffer from high rates of congestion, traffic accidents and pollution (Moed, 2018). MOVO, a shared scooters and electric bicycles start-up active in seven Latin American countries, has found a market in clean, efficient micro-mobility, generating 4 million kilometres of clean travel in its first 5 months of operation (MOVO, n.d.). In another example, Telefónica, through its open innovation hub network Wayra, is collaborating with TheVenturyCity a global accelerator of technological ecosystems, to invest in Latin American start-ups focused on advanced technologies touching on AI, machine learning, IoT, video and cyber security (Telefónica, 2019).

New technologies can benefit the green economy

SUEZ, a French leader in water and waste management, provides an example of a firm that, investing in clean technologies, has developed new activities for operational efficiency, public safety and environmental protection. The company uses digital platforms to ensure optimal and transparent management of water treatment plants, monitoring water inflows and outflows on line with smart meters. Using big data and AI, the company is also working on a project in Colombia to define preventive operational actions for reducing water leakages and providing more real-time information to customers.

Digitalisation can also create more efficient electrical grids that can facilitate large-scale renewable energy provision and create enhanced energy efficiencies. It is estimated that these technologies can reduce the costs of electricity from USD 23 billion to USD 8 billion a year between 2017 and 2031 (Fay et al., 2017). Utilities in the region such as Colombia's Grupo Energía Bogotá

(GEB), an emerging market sustainability leader, have made the promotion of low-emissions energy and efficient energy use part of the core strategy. Through shared value projects, GEB is promoting access to sustainable energy solutions for communities previously unconnected to the grid (GEB, 2018).

New technologies can be a driver of social inclusion

Participants further emphasise that new technologies, if implemented and regulated appropriately, can be an important driver of social inclusion. High penetration of mobile services and devices can result in increased inclusiveness and connectedness, especially for rural populations and vulnerable groups. Telefónica, in collaboration with Facebook, initiated the company *Internet para Todos* (Telefónica, 2018). It also received funding from the Development bank of Latin America (CAF), and the Inter-American Development Bank (IDB), and aims to connect over 100 million people in Latin America without Internet access. The project uses new technologies and operating models making wireless broadband deployment more cost-effective and accessible in remote areas. The initiative has already made high-speed mobile Internet available to tens of thousands of Peruvians across the highlands and in the Amazonian rainforest. Using an open approach to network deployment, the company also empowers rural mobile infrastructure operators, local entrepreneurs and communities to collaborate in delivering high-quality connectivity in an efficient and sustainable manner (GSMA, 2017).

Fintech is also contributing to making financial services more accessible. Fintech is advancing well in LAC, where Mexico and Brazil are among the top ten countries with the highest rate of Fintech adoption (OECD et al., 2019). It has already improved access to credit, in particular to SMEs, helping reduce compliance costs and facilitating digital payments at low cost and with high security. This new business is particularly benefitting those segments of society that were previously unbanked or underbanked (OECD et al., 2019).

Business participants also stress the role of digitalisation in strengthening institutional capacities and rebuilding trust in public institutions, by promoting a culture of transparency, accountability and access to information. A majority of LAC countries have adopted national strategies on open government. Moreover, 16 LAC countries have signed the Open Government Declaration, a multilateral initiative for promoting transparency, fighting corruption and empowering citizens (OECD et al., 2019). Both e-government and e-participation indexes show improved performance in LAC countries (OECD/CAF/UN ECLAC, 2018). The private sector can help further improve government efficiency, for example by facilitating the digitalisation of public services. In the utilities sector, for example, SUEZ developed a customer application in Chile and Mexico which provides consumers with better access to water management services, improving efficiency and quality of the service.

Challenges exist to increase private investment in new technologies

EMnet participants stress that a number of barriers to investment in new technologies exist in Latin America and the Caribbean, such as availability of information technology (IT) skills, specific regulations, taxation issues and data privacy and security provisions.

The region continues to face an important shortage of IT skills

One major challenge which companies highlight is the increase in demand for IT skills brought about by digitalisation. The increasing use of new technologies will significantly change the job market. While Latin American employers are optimistic about the impact of automation on hiring, the region continues to face important talent shortages, with skilled trades, sales representatives and IT technicians being among the hardest positions to fill. More companies which are automating jobs in LAC also indicate that they plan to increase hiring compared to firms that do not have automation plans, indicating that automation does not have a negative impact on hiring per se (ManpowerGroup, 2019).

In Latin America and the Caribbean the gap between supply and demand of skills remains the widest in the world, and 75% of companies express difficulties in finding and hiring IT-educated workers. As a result, 50% of LAC companies do not find candidates with the skills they need, compared to 36% of firms in OECD countries. Among the digital skills most needed in the region are competencies in information management, service orientation, 'identify and innovate' procedures and the use of computer tools and programmes (ManpowerGroup, 2019). Soft skills, such as advanced cognitive skills, creativity and emotional intelligence, also remain essential requirements for employees to complement the work of machines. In Mexico, 40% of companies planning to increase headcount in IT roles indicate that communication is the most valued soft skill (ManpowerGroup, 2019).

Firms realise that they can no longer expect to find talent easily, and that human capital development will become increasingly essential. In 2018, 77% of employers expected to be upskilling their workforce by 2020, up from 38% in 2011. Workers, too, report a growing willingness to boost their skills through training programmes. A survey by ManpowerGroup shows that 80% of interviewed millennials would change jobs for a role with the same salary, but more skills training opportunities. Similarly, 93% look for lifelong learning opportunities and are willing to spend their own free time and/or money on further training (ManpowerGroup, 2019).

Firms recognise the importance of investing in training programmes and highlight how national education systems need to adapt curricula to equip students with stronger digital literacy and soft skills. Many have started to create corporate training programmes. Walmart, for example, has established an internal academy to train their management. The company also planned a training scheme for 200 000 women from emerging markets for their first jobs in retail, including in Brazil and Mexico (Walmart, 2016). Telefónica, aware of the importance of education in the digital era, has set up a digital education initiative which aims to provide quality education to underserved communities, including in Latin America. This *ProFuturo* project (a collaboration between Telefónica, its foundation and La Caixa bank) has provided digital training to 8 million children already, and aims to expand to 25 million by 2030 (Medina, 2019).

Institutional strengthening and improved regulatory practices are a priority in the digital transformation in Latin America

Companies highlight the importance of creating a strong business and investment environment through good regulatory practices. An "institutional trap" presents significant constraints for businesses in Latin America. Despite improvements in past years, institutions are failing to respond to citizens' increasing demands. Distrust and low satisfaction with the quality of public services are

deepening, while citizens see less value in fulfilling their social obligations through paying taxes. This, in turn, makes raising tax resources for public institutions to provide better quality goods and services – which businesses also make use of – more difficult (OECD et al., 2019). The OECD recommends countries prioritise institutional strengthening in terms of modernising public services, citizen security and justice (OECD et al., 2019). Companies, in turn, stress the need for stronger investment regulations to improve transparency, procedures and co-ordination between national and local policies.

Businesses argue that corruption and legal certainty remain major challenges in the region, generating additional transaction costs and risks. According to the World Bank Enterprise Survey, 8.6% of companies in LAC experienced at least one bribe request in the last 6 months, 14% expected to give gifts to secure government contracts, while 44.5% saw corruption as a major constraint. More than in other regions, 25.4% of firms in Latin America identify the court system as a major constraint (World Bank, 2019b).

Companies stress the importance of the agility of procedures to reduce bureaucracy and offer easier access to regulations and government services. Some firms highlight the need to integrate emerging digital technologies in government practices, for instance in licensing, permitting and payments, in order to facilitate bureaucratic procedures. Removing the “human factor” in licensing and permits can not only increase transparency but also help reduce corruption incentives. Many countries have started implementing initiatives to increase the use of digital technologies for public services. For instance, 62% of countries in Latin America and the Caribbean have already adopted national strategies on digital open government (OECD/CAF/UN ECLAC, 2018), helping promote a culture of transparency, accountability and access to information. Similarly, initiatives in innovation labs started to gain traction across the region. In some cases, these “labs” are created to foster greater collaboration and citizen engagement with public institutions in order to design cost-effective, risk-taking small pilot projects. Initiatives such as *Mi Quito*, *Mi Medellin*, *Agora Rio* have the objective of putting administrative procedures and public services on line.

Developing more quality, affordable and accessible digital infrastructure is essential

EMnet participants highlight how access to quality and affordable digital infrastructure is essential. This includes not only the fixed and digital backbone infrastructure, including the proximity of Internet Exchange Points (IXP), but also access and speed of service. Digitally enabled innovation requires new infrastructure such as broadband, spectrum and new Internet addresses (OECD, 2019e). While significant resources have gone into broadband infrastructure, access to digital technologies remains a challenge. Only 57% of Latin Americans are connected to the Internet and only 103 million citizens have fixed broadband subscriptions. These numbers are lower than the OECD average (OECD et al., 2019). More than 40% of Latin America’s population had access to mobile broadband services but did not have a subscription, pointing to affordability or other consumer challenges. This “usage gap” represents an opportunity to connect an additional 267 million consumers (GSMA, 2019).

Companies stress the need for key policies to enhance the access to digital technologies. They include competition policies in telecommunications markets combined with national broadband strategies, both for current networks as well as for future technologies such as 5G and IoT. Government investments or incentives can help to reduce regional digital divides. Concrete

examples of government policies include subsidies, public-private partnerships (PPPs), tax incentives and contributions to Universal Service Funds (USF) – which, if applied correctly, channel additional investments into remote areas (GSMA, 2016a). The availability, cost and allocation of spectrum bands can further stimulate private investments into coverage expansion. Sometimes a flexible approach to spectrums (e.g. populated areas versus remote, unpopulated areas) can attract more investment. Smart and adequate spectrum allocation procedures are necessary not only to simplify auctions, but also to encourage a long-term perspective that includes room for investment in infrastructure and in new technologies and services to the benefit of the population.

Companies need policies that enhance trust in the digital ecosystem

Ensuring trust is critical for individuals, firms and governments to use digital technologies. Important elements of trust are digital security risk management, including with private sector actors; a privacy strategy that strikes the right balance between privacy protection and intellectual property rights on the one hand, and the benefits of data sharing and reuse on the other; and consumer protection suited to the digital age, which includes fraud and identity theft protection (OECD, 2019a). In an example from LAC, Chile not only applies trust-enhancing policies domestically, but it also incorporated relevant policies for digital transformation in its trade negotiations, in an effort to ensure trust in the digital ecosystem including with its trading partners. Example of measures related to on line privacy, cross-border data flows and on line consumer protection (OECD, 2017b).

Companies indicate that the objectives of open markets, including free flow of information, and data privacy and security need to be carefully calibrated. They recognise that privacy regulations are an important step to building trust among citizens regarding the use of personal data and to maintain a level of trust in digital services. In Argentina, Mexico, Peru and Uruguay, the regulator for data protection is the same as for transparency and access to public information, in a sign of the intimate link between data privacy and transparency (Lehuedé, 2019). In its policy recommendations, the OECD urges countries to focus on a practical implementation of privacy protection through an approach grounded in risk management, recognising that more and extensive use of personal data brings greater economic and social benefits but also increases privacy risks. In its work on the topic, the OECD recognise that data flows across borders amplify the need for improved interoperability among privacy frameworks as well as strengthened cross-border co-operation (OECD, 2013). Argentina and Uruguay are two examples of countries having pioneered data protection in order to facilitate business development, mainly to facilitate the outsourcing of services (Lehuedé, 2019).

Companies note that countries wishing to boost data privacy or security individually can hamper operations across the continent if regulation is not sufficiently co-ordinated. They mention how data localisation requirements can give rise to increased costs to businesses, in particular SMEs, which have fewer resources to invest in security than, for example, cloud-based services. Big data, of growing importance in the digital economy, has great potential to support public policy in different fields. Yet while data protection is important, regulation requiring data to be stored locally can hamper cross-border flows of big data. A solution can be found in countries recognising “adequate” protection abroad in other locations in Latin America. Other solutions to consider include instruments such as Binding Corporate Rules (BCRs). This data protection policy, which originates in the European Union, regulates how companies can transfer data outside the EU but within a group of undertakings or enterprises, while being legally binding and enforceable by every member

concerned, thus meeting the dual objective of privacy protection while facilitating the digital economy (European Commission, n.d.). Some companies have highlighted the EU's General Data Protection Regulation (GDPR) as a regional privacy regulation as a reference for other jurisdictions.

Companies see progress on tax collection and the taxation of the digital economy

Companies discuss the impact of fiscal frameworks on private investment and see a need to keep tax systems relatively simple and inclusive. On the digital economy in particular, EMnet participants welcome the progress of the OECD work on taxation of the digital economy. They deem the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS), regulating tax contributions of digital companies in the countries in which transactions take place and on cross-border digital services, of particular interest (OECD, 2020b).

Tax structures in Latin America and the Caribbean depend more on indirect taxes, which tend to be less redistributive, than direct taxes as in most OECD economies (OECD et al., 2019). More than half of all tax revenues in LAC comes from consumption taxes such as value-added taxes (VAT) or sales taxes, while personal income taxes represent less than 10% of the total. Several key factors undermine the success of direct tax policies in LAC. For example, there is a relatively small tax base, as calculations show that only 10% of the population in Latin America are registered taxpayers (IDB, 2013). Moreover, the taxable base primarily contributes through taxes on wages as a consequence of tax privileges for returns on capital and high levels of evasion (ECLAC, 2014). Estimates show that about half of potential revenue from personal income taxes is lost through evasion in Latin American countries (IDB, 2013; OECD, 2019c). Personal income taxes are further eroded because of low statutory rates, large standard tax reliefs and high tax allowances (Barreix, Benitez and Pecho, 2017). Taxes, VAT in particular, play an increasingly important role in Latin American public finances. Although trending toward the OECD average, the LAC tax-to-GDP ratio of 23% still trails OECD countries. VAT revenue as a percentage of GDP in LAC countries increased by 3.7 percentage points between 1990 and 2017, trending to the OECD average level (6.0% and 6.8% of GDP respectively in 2016), owing to the increase of VAT rates, the expansion of the taxable base and the strengthening of the VAT collection system (OECD, 2019c).

In this context, participants in the EMnet meeting note that the digitalisation of the economy can create further challenges for public finances and point to the need to find equitable taxation principles for operations in this sector. Global B2C e-commerce sales of goods alone are now estimated to be worth USD 2 trillion annually in the region, with projections indicating they may reach USD 4.5 trillion by 2021. Cross-border e-commerce is expected to reach USD 1 trillion by the same year (OECD, 2019f). Progress in the area could result in a fairer contribution of digital companies to local taxes while contributing to the fiscal sustainability of countries in the region. Companies further recognise that it is difficult for regulators to keep up with the rapid changes in the technological landscape, and recommend a prudent approach to facilitate and encourage more innovation and investment.

Tax challenges to developing digital infrastructure

Broadband networks are the foundation of digital economies. Increased availability and effective use of broadband services can advance social inclusion, productivity and good governance. EMnet participants note that a significant tax burden on communications companies can act as a barrier to additional investment in digital infrastructure.

The OECD recommends countries in Latin America to avoid sectoral over-taxation that deters broadband expansion and use. Public authorities can also establish incentives and finance networks when markets alone are not able to meet that demand (OECD, 2019a). In Colombia, for example, a recent OECD report found that the taxation and regulation burden on the communication industry can be considered as very high (OECD, 2019b). In an example, Colombia was found to levy an additional tax of 4% on top of the standard VAT on mobile voice and data services on top of the standard VAT of 19%; such “luxury” tax was found to be hard to justify on communication services, which are the necessary foundation of the digital economy and for a sector with positive externalities for the entire economy. An additional tax on mobile services has a direct effect on the total cost consumers have to pay for their communication services and, as a consequence, risks hampering the adoption of such services (OECD, 2019b).

Overall, in the case of Colombia, the OECD recommended finding ways to reduce the overall fees and taxes on the communications sector (OECD, 2019b). In this context, EMnet meeting participants note that certain governments in the region have increased the fiscal burden on telecommunication companies specifically, with participants signalling that an approach more in line with the taxation of other industries could incentivise investment while benefitting the wider economy. Finally, companies stress the need for transparency and predictability of future taxation, as this brings certainty to the business environment and thus facilitates investment.

CONCLUSION

In a rapidly growing digital economy, the private sector is a key driver of innovation. Making use of digital technologies, companies can create positive dynamics to address long-term challenges in the LAC region by improving productivity, reducing inequalities and expanding digital access. New technologies can also help governments improve their efficiency and transparency.

Companies need people with the right skills to take full advantage of new technologies. It requires governments and the private sector to invest in human capital development to ensure a digitally competent labour force. Governments are also encouraged to adopt new technologies and digitalise government services. Challenges remain related to the quality of digital infrastructure, data privacy, security risks and a fragmentation of regulations between countries. Another important issue for the private sector is the taxation of the digital economy, which the OECD is currently addressing through its OECD/G20 Inclusive Framework on BEPS.

Notes

- ¹ Emerging and Developing Asia encompasses Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Nepal, Palau, Papua New Guinea, the Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu and Viet Nam.
- ² Blockchain is a combination of already existing technologies that together can create networks that secure trust between people or parties who otherwise have no reason to trust one another. Specifically, it utilises distributed ledger technology (DLT) to store information verified by cryptography among a group of users, which is agreed through a pre-defined network protocol, often without the control of a central authority. The marriage of these technologies gives blockchain networks key characteristics that can remove the need for trust, and therefore enable a secure transfer of value and data directly between parties (OECD, 2018).
- ³ A "Tecnolatina" is a technology-based private company born in Latin America. Most of them are entrepreneur-driven digital ventures with an international footprint.
- ⁴ The concept in which high-speed digital networks transform software delivery from a physical carrying device used to install the software on a machine to remote software delivery via the Internet (Lippoldt and Stryszowski, 2009).
- ⁵ Vulnerable employment is calculated as the sum of contributing family workers and own-account workers as a percentage of total employment of the relevant group (both sexes, males, females). This indicator captures the proportion of workers who are less likely to have formal work arrangements, and are therefore more likely to lack elements associated with decent employment (ILO, 2009).

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