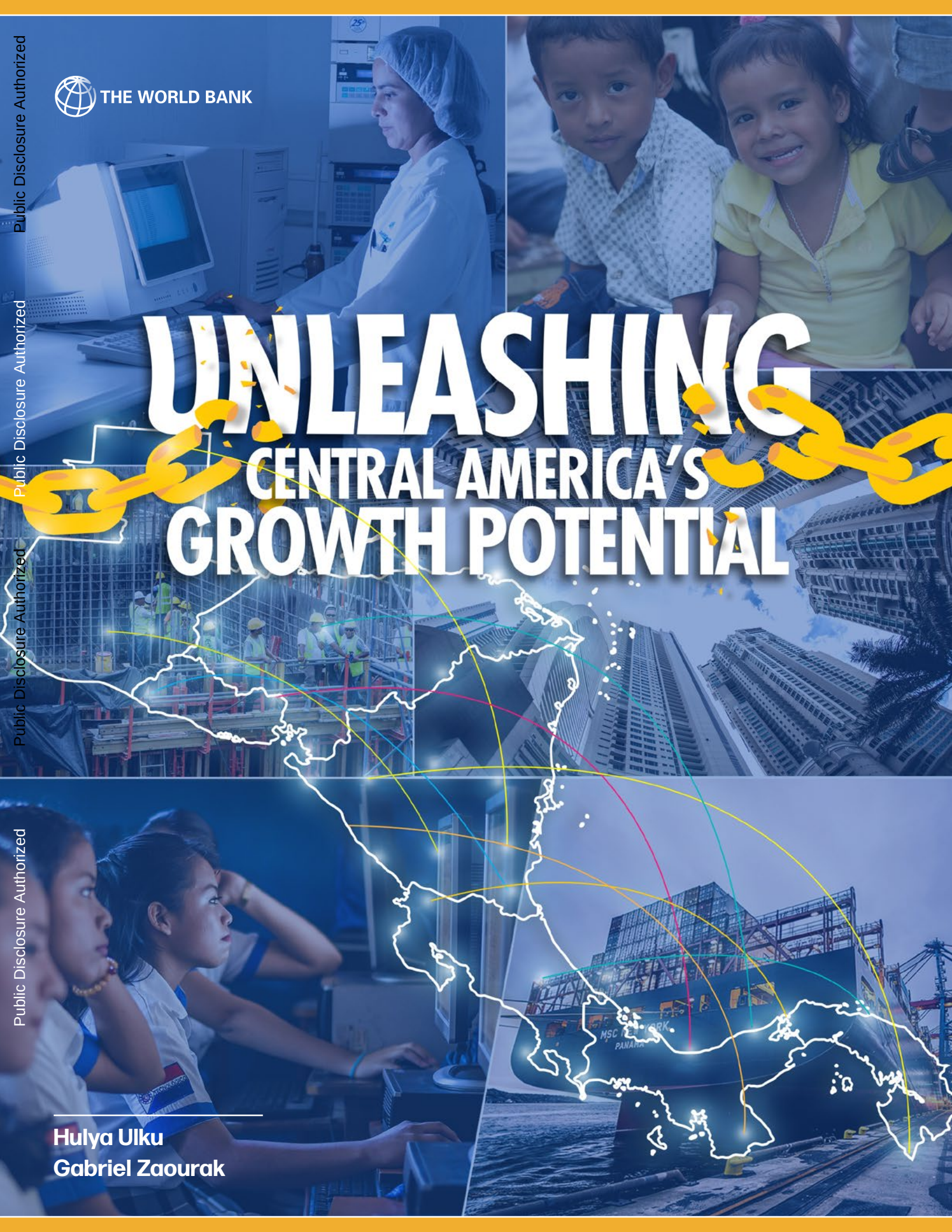

THE WORLD BANK

UNLEASHING CENTRAL AMERICA'S GROWTH POTENTIAL

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Contents

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Preface

Central America's priority is to recover from its deepest economic contraction and restore strong, sustainable economic growth. With increases in working age population projected to decline sharply, strong growth in the long run can only be achieved with higher productivity. More effective participation in GVCs, as well as a robust shift towards sophisticated exports of goods and services will be needed, but neither can be ensured without firms investing in productivity-enhancing innovations. With a high likelihood of limited structural change, greater aggregate productivity must come from within each sector: manufacturing, services and agriculture.

The synthesis report analyzes the main findings of the Unleashing Central America's Growth Potential Study,* focusing on productivity and export performance of the region over the past three decades and accounting for the impact of the Covid-19 pandemic on the region. It aims to identify broad strategic directions for the region that would help to increase sophistication of exports, reduce productivity gaps within the region and vis-à-vis other regions, and achieve higher productivity growth. Where relevant, the report suggests areas for further work that could help develop more granular policy recommendations.

The rest of this synthesis report is organized as follows. The first section, *Macroeconomic and Growth Performance: Historical Context*, provides an overview of the growth performance of the region over the last 30 years and provides the current and future challenges facing the region. The second section, *Productivity*, reviews the performance of productivity growth during 1991-2017, using measures like total factor productivity (TFP) and labor productivity; highlights the productivity-gaps within the region and vis-à-vis other regions; examines the impact of structural change and within-sector changes on productivity growth; and identifies the factors affecting the reallocation of labor within and across sectors and the types of investments by firms to promote innovation. The third section, *Exports*, reviews the growth of exports of goods and services during 1991-2017, focusing on Central American countries' GVC participation and current level of export sophistication; examines the scope for further upgrading of existing exports and diversifying into more complex products; and identifies the factors likely to inhibit the expansion of GVC participation and of export sophistication.

* Six country specific reports and the cross-cutting themes report of Unleashing Central America's Growth Potential analytical body of work is available at http://www.worldbank.org/boostcentralamerica.

Key Messages

Prior to Covid-19, the Central America region grew at an average rate of more than 4.5 percent a year for nearly three decades. The region's exports of goods and services grew robustly, including its manufactured exports. Poverty fell and per capita incomes rose. Panama has made the most notable progress in catching up with the level of U.S. per capita income, followed by Costa Rica. El Salvador and Guatemala moved up more slowly but steadily, while Nicaragua and Honduras lagged others in catching up.

This sustained economic growth in 1991-2017 was achieved with little productivity growth. Labor accounted for two-thirds of the region's GDP growth and capital for the rest. Rapid growth of the working-age population made those increases in labor inputs possible. While labor's contribution will continue to be important, it is likely to be less dominant in the future as the growth of the working-age population is projected to decline sharply. Rising investment rates could compensate for this fall, provided their returns remain attractive. However, given the existence of diminishing returns on capital accumulation, the sustainable growth in the long term needs to come largely from improving efficiency in the use of factors. Higher productivity growth will thus be essential to sustain robust economic gains and finding strategic options to ensure that outcome will be paramount going forward.

The pandemic pushed the region into its deepest economic contraction in 2020 with recovery expected sometime in 2021. The stimulus packages, that included higher social transfers, helped support citizens but it also raised public debt and reduced fiscal space. Fortunately, the external environment has been faring better.[1] Global trade in goods has returned to pre-pandemic levels, commodity prices are holding up, and remittances are higher than a year earlier; Covid-19 has also accelerated the ongoing regionalization of global value chains (GVCs). These developments augur well for the recovery of small open economies. Today is the time to write the new phase of the region's future, for the benefit of current and future generations. To double its GDP per capita in the next twenty years, the region's GDP would need to grow at a minimum rate of 3.5 percent annually, not as high as was it was achieved in 1991-2017. In order to meet this target, raising productivity growth will be crucial. Sustained growth in productivity is critical for economic prosperity as well as for lifting people out of poverty. Long-term increases in earnings can only be maintained by raising productivity. Thus, the road to poverty reduction and employment also requires higher productivity-growth.

However, in the past decades the region has been unable to experience sustained productivity growth, which indicates the necessity to introduce reforms consistently over time to generate a significant structural change. Investments in productivity-enhancing innovations can raise a country's economy-wide productivity growth but the extent of their success depends on the availability and adequacy of complementary factors like education, infrastructure, the efficiency of markets and the quality of institutions. Though Costa Rica and Panama are better placed than others in the region, all countries compare unfavorably with their relevant peers, in respect to these four factors.

1 World Bank (2020a).

The report has identified several key areas where policy reforms can help boost productivity and growth over the medium to long term, with varying weight and priority across countries as indicated in the country specific and cross-cutting themes reports. They include:

- *Coordinating policy actions to reduce barriers to intraregional trade, six Central American countries (C6) + Mexico, and improving infrastructure provide a strong platform to revive the C6 growth engine during post COVID-19 era.* As argued in this synthesis report, further exploiting the growth potential of global value chains (GVCs) require tapping into synergies of the Central American countries as a cluster, rather than as individual islands, which has been the case so far. Reducing the time and cost of trading across borders requires steady and concerted efforts of all Central American countries. Development of a single, harmonized and digitalized border crossing processes for all intra-regional trade can drive the time costs to near zero. Increasing capital and labor mobility across borders would further promote the competitiveness and appeal to foreign investors, which is a sine qua non for integrating in GVCs. Therefore, establishing a regional level-playing field so that foreign direct investment (FDI) is allocated based on each country's comparative advantage and strengthening the economic linkages with other regions, particularly with the US by deepening Central America-Dominican Republic Free Trade Agreement (CAFTA-DR), is crucial for Central America to increase its GVC participation, create jobs and rebuild better.

- *Investing in human capital through the lifespan and promoting access to services*. Most countries in the region have made substantial progress in improving access to secondary education but the quality of that education continues to lag comparators. Addressing the gaps in knowledge and skills will strengthen the productivity, flexibility, and innovative capacity of the labor force. Building human capital will also support the development of modern industries intensive in high-skilled workers, such as information, communication and technology (ICT), as well as less skill-intensive industries such as tourism. Better vocational education and retraining programs are needed for adults.

- *Reducing labor market rigidities and costs and implementing measures to boost female labor force participation*. A flexible labor market supports productivity growth by allowing factors of production to move freely across firms and sectors. Obstacles to migration within the country reduce labor flows from the agricultural sector to services and industry. Laws that make it more difficult to hire and fire workers also prevent reallocation of workers. In addition, educational and labor market policies that remove barriers and incentivize female labor force participation and education could have significant positive impacts on growth, productivity, and development.

- *Boosting investment to close physical and digital infrastructure gaps*. The region faces challenges with regards to the coverage and quality of its physical and digital infrastructure. Poor infrastructure in the region hinders economic growth, exacerbates poverty and inequality, and exposes some of the countries to natural disasters. Large investment projects are needed, but require fiscal space and partnerships with the private sector. Ensuring the timely execution of infrastructure projects would increase the competitiveness of the country in global markets and help promote entrepreneurship and innovation, among others.

- *Strengthening the business environment*. Reforms should address areas that constrain small businesses, including the provision of security and access to financial services. Crime and violence in the northern triangle impact the cost of doing business, affecting competitiveness and discouraging entrepreneurship and investment. Increasing the opportunity cost of engaging in criminal activities could be a first step in the northern triangle, but reforms should also address the lack of job opportunities that is generally at the heart of criminal activities.

- *Creating an enabling environment for innovation*. The region's overall performance in innovation and research and development (R&D) is one of the lowest in the world. Increasing human capital to foster innovation, strengthening the digital infrastructure, and improving the business climate could generate an environment that encourages innovation to spur productivity.

- *Improving the rule of law, property rights and transparency*. Strengthening the legal framework of property rights, further promoting the regulatory business environment and transparency would help the region to increase its investment and business opportunities and promote its competitiveness in global markets. All six countries should seek to enhance government effectiveness and to reduce crime and corruption.

PHOTO BY MICHAEL D. CAMPHIN FROM PEXELS

1. Macroeconomic and Growth Performance: Historical Context

The Central America region is comprised of six countries (also referred to as C6) with a total population of 46 million and a GDP of US$265 billion, approximately. This makes the region's economy the seventh largest in Latin America after Brazil, Mexico, Argentina, Colombia, Chile and Peru. It contains one high-income country, Panama, two upper middle income countries, Costa Rica and Guatemala, and three lower middle income countries, El Salvador, Honduras and Nicaragua. The bulk of the region's population and slightly more than half its GDP are in the four countries with the lowest per capita income, also referred to as the northern countries. Guatemala is the largest economy (US$78 billion) followed by Panama (US$66 billion) and Costa Rica (US$59 billion), and the latter two are the richest in the region in per capita terms.

Though these countries are geographically close to each other, their land connectivity is limited. Honduras borders three countries; Panama borders one; and the rest, two each. Given the region's topography, with tropical ranges in the South, deserts in the North and mountain chains cutting across, land transport connections across borders prove difficult. For trade purposes, these countries depend mostly on maritime transport, as well as on domestic transport to their ports.

Strong growth and relative stability for nearly three decades have led to some social progress, though inequality remains persistent. Sustained growth has reduced poverty noticeably but inequality is stubbornly high in all countries. The availability of social services remains inadequate and access to them is unequal. Without strong economic growth in the future, it will be difficult to generate the employment and the resources that are needed to reduce poverty as well as to improve the availability of and access to social services.

Weak governance is common in the region. High rates of crime and violence prevail in the Northern Countries. However, these have not prevented good economic performance. Despite numerous weaknesses in governance, governments have succeeded in maintaining reasonable macroeconomic stability and implementing various trade agreements adequately. Countries in the region are able to provide an environment where investors, exporters, importers and firms feel sufficiently protected to operate, at higher cost than otherwise, no doubt. The need to strengthen governance and reduce crime and violence further remain important if existing and new investors are to be encouraged to invest more in future.

Economic Growth from 1991 to 2017

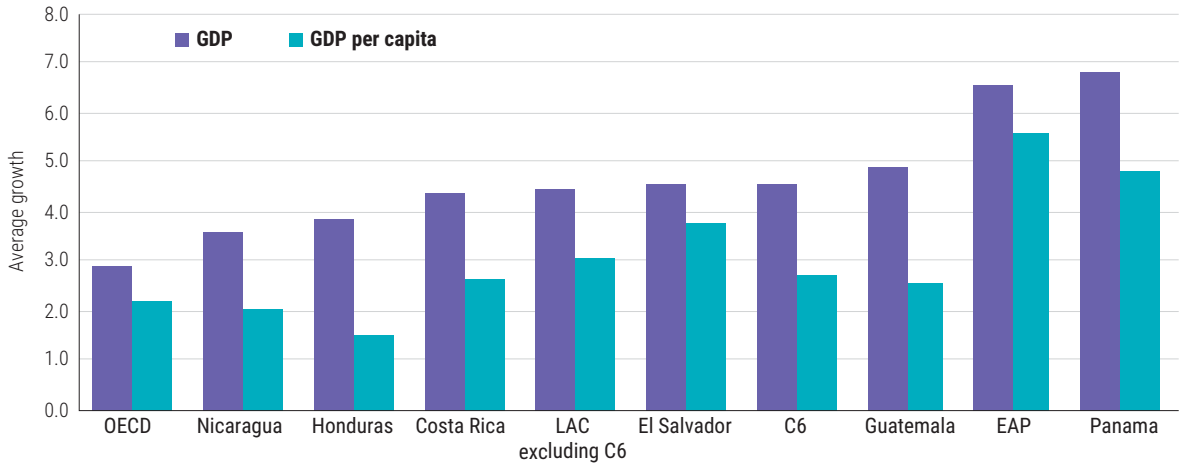
After years of economic volatility and imbalances, the region experienced nearly three decades of growth and relative stability. Average growth in the C6 was low and volatile in the 1980s and early 1990s, marked by the debt crisis and civil wars in the Northern part of the region during the 1980s. Improved macroeconomic policies, structural reforms, and favorable external conditions, helped the C6 revert some of the earlier trends.

Between 1991 and 2017, Central America grew faster than the rest of the Latin American and Caribbean (LAC) region and 1.5 percentage points faster than the average for countries in the Organization for Economic

Cooperation and Development (OECD). Nonetheless, its growth was not as rapid as the average for countries in the East Asia and Pacific (EAP) region. In respect of individual countries, Panama grew the fastest at 6.8 percent, exceeding the EAP average. Costa Rica, Guatemala and El Salvador averaged around 4.5 percent a year while Honduras and Nicaragua, 3.9 and 3.6 percent a year, respectively (Figure 1.1).

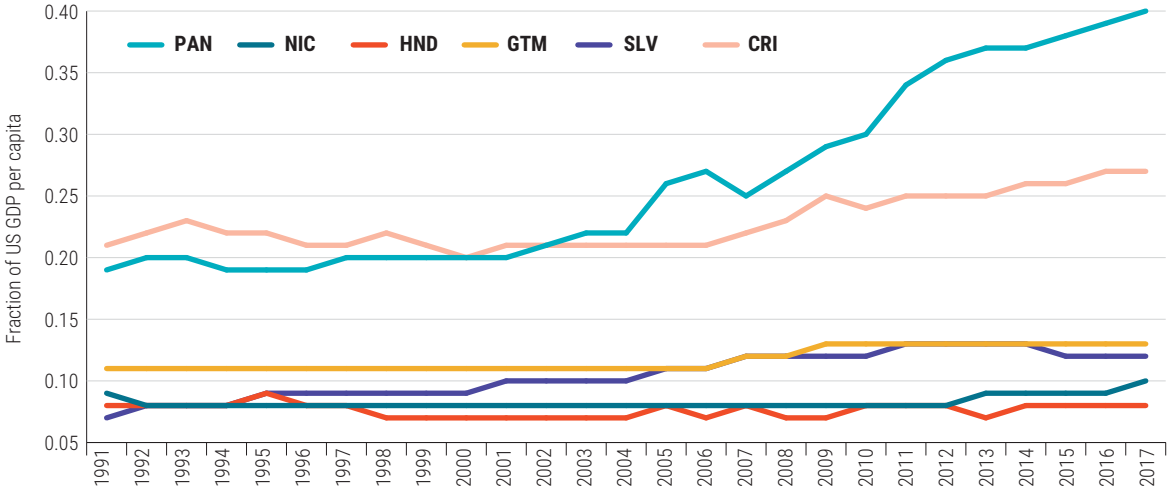
Panama has made the most notable progress in catching up with the level of U.S. per capita income during 1991-2017, followed by Costa Rica.[2] Panama moved up by more than 20 percentage points to reach 40 percent of US income while Costa Rica moved up by 7 percentage points to reach 27 percent. El Salvador and Guatemala rose more slowly but steadily to reach 12 and 13 percent of US per capita income, respectively. Nicaragua and Honduras lagged others in catching up because both experienced prolonged dips in their per capita income during most of the 1990s. (Figure 1.2).

Figure 1.1: Average Growth of GDP & GDP Per Capita, 1991-2017 (percent)



Source: Penn World Tables 9.1. GDP in 2011 International Dollars. Averages are weigthted by population.

Figure 1.2: GDP Per Capita Relative to US GDP Per Capita, 1991 – 2017



Source: Penn World Tables 9.1. GDP in 2011 International Dollars.

2 However, if viewed over a longer period like 1950-2015, only Panama made any progress in converging to U.S. per capita income, when EAP per capita income moved from 10 to 30 percent of U.S. income and Eastern European countries jumped from a similar level in the 1950s to about 40 percent of U.S. income by 2015.

Sector sources of GDP growth

Services grew the fastest and drove overall GDP growth in all countries, except Panama where industry, specifically construction, grew the fastest.[3] Service sector growth was in the range of 4.5 to 5.5 percent a year depending on the country which raised its share to between 60 and 70 percent of GDP in 2017. Two service subsectors – transport, storage and communications as well as finance, real estate, IT and business services – grew faster than all others.

These two service subsectors now represent significant shares of the economy: more than 37 percent of GDP in Costa Rica, Panama and Honduras; around 30 percent in Guatemala and Nicaragua; and 18 percent in El Salvador. Wholesale, retail trade and hotels and restaurants is the other large subsector in services in terms of value-added ranging between 16 and 22 percent of GDP depending on the country (Table 1.1).[4]

Though outpaced by service sector growth, manufacturing and agriculture grew quite robustly too. Agriculture grew at 3 to 4 percent a year in Costa Rica, Guatemala, Honduras, and Nicaragua. Manufacturing, the dominant sub-sector within industry, grew between 2.5 and 4 percent a year in all countries except Panama and outpaced growth in agriculture in Honduras, Nicaragua and El Salvador.[5]

Table 1.1: Average Growth in Sector GDP, 1991-2017 (percent)

	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	El Salvador
Agriculture	3.1	3.0	3.5	4.0	2.0	-0.6
Industry	3.0	3.1	3.1	4.0	7.5	3.3
Manufacturing	2.5	2.8	3.9	4.3	2.1	2.4
Services	4.7	4.3	4.8	3.8	5.5	3.3
Transport, Storage & Communications	8.2	7.5	6.4	5.8	6.7	4.0
Finance, Real estate, & business	6.2	4.8	7.5	4.6	5.8	4.1
Wholesale, retail, hotels and restaurants	4.0	3.6	2.9	4.5	5.8	3.3

Source: UN 7-sector value-added data in 2010 US$; for service-subsectors UN 10-sector data in LCU.

The share of manufacturing in GDP fell in all countries except Nicaragua, with the shares standing between 14 and 18 percent in 2017, depending on the country.[6] Consequently the GDP-share of the industry-sector fell too except in Panama and El Salvador, where it rose because the fall in the share of manufacturing was more than offset by the rise in that of construction and utilities. While the service sector is clearly dominant, agriculture remains important in Nicaragua, Honduras and Guatemala.

Table 1.2: Sector Shares in GDP, 2017 (percent)*

	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	El Salvador
Agriculture	6.4	11.4	13.4	16.0	2.5	6.4
Industry	21.3	27.3	24.1	27.8	28.9	27.3
O.W. Manufacturing	13.6	18.5	16.1	16.8	6.0	17.8
Services	72.3	61.3	62.5	56.2	68.6	66.3

Source: UN; *7-sector value-added in 2010US$.

3 This was mainly because of the canal rehabilitation and expansion project.
4 In Honduras it is only 11 percent of GDP. Service-subsector breakdown based on UN 10-sector value-added data.
5 Other subsectors in industry, like construction and utilities, grew faster but they account for a much smaller share of industry than manufacturing in all countries, except Panama.
6 Share of manufacturing in Panama's GDP is only 6 percent.

Export growth

Growth in total exports of goods and services at 6 percent a year played an important role in sustaining economic growth in 1991-2017. With exports comprising nearly a third of the region's GDP, their growth drives GDP increase as well. Manufactured exports grew the fastest among merchandise exports and service exports grew faster than merchandise exports.

In many countries sustained and robust growth in exports has played a well-known role in not only driving GDP growth but also productivity growth, though the latter depends on domestic policies. Exports are a source of unconstrained demand for competitive output which is particularly important in countries with relatively small domestic markets. Exporting firms are also more productive and become more so through exporting generating spillovers for other sectors, especially as the share of sophisticated exports rise. In addition, expansion of exports promotes reallocation of labor from less to more productive activities within the exporting industry, thereby spreading its productivity premium over a growing share of the country's labor force and raising economy-wide productivity.

However, if product markets are insufficiently competitive and/or labor and financial markets are unduly restrictive, labor reallocation to more productive firms could be slowed down and the incentive of firms to adopt better technology could be weakened. It is thus possible for export growth to contribute strongly to GDP but not much to productivity growth.[7]

Impact of Covid-19

The Covid-19 pandemic hit Central America hard in 2020. Its recession is one of the deepest the region has ever experienced, dwarfed only by the one in South America. This region has not only suffered a supply shock from mobility restrictions, but also a large demand shock as a result of collapsing tourism and falling agricultural prices. The extent of economic contraction has differed across countries. Panama is estimated to contract by 17.9 percent; El Salvador and Honduras are estimated to contract between 8 and 9 percent; Costa Rica by 4.6 percent; Nicaragua by 2.5 percent; and Guatemala, by 1.8 percent.

The crisis and the accompanying stimulus packages needed to mitigate adverse social impacts have increased public debt and reduced the fiscal space needed to raise public investment. Between 2019 and 2021, public debt is estimated to rise by 16 percentage points in El Salvador and Costa Rica; by 12-13 percentage-points in Honduras and Panama; and by 7 percentage points in Nicaragua and Guatemala. Thus, in 2021 public debt is forecasted to reach around 89 percent of GDP in El Salvador, 75 percent in Costa Rica, 55 to 65 percent in Honduras, Panama and Nicaragua and 34 percent in Guatemala (Table 1.3). Except for Guatemala, all countries will have to exercise restraint in their public spending despite the substantial need for outlays on infrastructure and on social services that will be critical to support recovery and future productivity growth. At the same time, it will be necessary to carefully analyze each country's potential for raising revenue and restraining spending, as well as ascertain judicious expenditure choices that can improve infrastructure and human capital.

Table 1.3: Fiscal Deficit and Public Debt, 2019–2021 (percent of GDP)

Year	CRI Fiscal Def.	CRI Public Debt	GTM Fiscal Def.	GTM Public Debt	HND Fiscal Def.	HND Public Debt	NIC Fiscal Def.	NIC Public Debt	PAN Fiscal Def.	PAN Public Debt	SLV Fiscal Def	SLV Public Debt
2019	-6.9	58.5	-2.3	26.7	-0.9	43.1	-1.3	56.7	-3.1	46.4	-3.1	73.3
2020	-9.3	70.7	-5.6	32.5	-5.0	52.3	-5.6	62.9	-7.7	58.0	-9.2	88.6
2021	-8.0	74.6	-4.1	34.1	-5.0	54.9	-4.0	64.1	-5.2	59.3	-6.3	89.4

Source: Country Macro Poverty Outlook (MPO) (2020). Notes: 2019 actual, 2020 estimated and 2021 forecast.

7 Many of the 1990s assessments of East Asian success stories found that strong export growth based on laor cost advantage coexisted with little productivity growth.

The impact of Covid-19 is also creating new export opportunities for Central America. It has accelerated the regionalization of global value chains (GVCs) to North America, a movement that has been underway for some years.[8] US imports of Asian manufactures has been declining since 2017 while imports from Mexico have been rising.[9] GVCs in auto, chemicals and food and beverages sectors have typically had a strong regional orientation, but Covid-19 has focused attention on further regionalization of these sectors as well as of some new ones. Multinationals are investigating more regional options from the point of resilience and competitiveness. Some of the production of essential and non-essential bio-pharmaceuticals, as well as of medical equipment and devices are now being relocated closer to North America. There is also evidence of rising inflows of FDI into Mexico from Asian countries as U.S. retailers push to shorten supply-chain lead times.

Restoring and Sustaining Strong Growth

Restoring and sustaining strong economic growth in the future is a worthwhile goal but no doubt a challenging one. Strong GDP growth was achieved in 1991-2017 without much productivity growth because employment grew rapidly and labor accounted for most of that growth. Rapid growth in the working age population made that growth spell possible. But the projected sharp decline in working-age population growth in all six countries means that potential employment growth is likely to be much lower (Table 1.4).

Table 1.4: Working-Age Population and Employment: Average Annual Growth (percent)

	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	El Salvador
Employment 1992-2017	2.5	1.4	2.9	3.3	3.1	2.7
Working-age population 1992-2017	2.3	1.2	2.8	3.2	2.4	2.2
Working-age population 2020-2035	0.4	0.5	2.1	1.7	1.3	1.2

Source: World Bank projections.

Countries will have to depend more on higher productivity growth to ensure strong GDP growth in the future. Though productivity has not performed well in the past, some notable recent successes in manufacturing and services in the region give hope.[10] In addition, there are large productivity differentials within this region as well as vis-à-vis other regions which augur well for strong 'catch-up' growth in productivity if the right policies and institutions are put in place. Similarly, the potential for increasing the share of more sophisticated exports by upgrading and diversifying, remains considerable.

Moreover, the labor force growth slowdown could be offset, at least in part, by increasing the rate of participation of working-age women. There is scope to do so because the rate is still low, even if it has improved considerably since 1991.[11] In 2017, female participation in Central America was only 48 percent compared to 84 percent for men. This rate for women in each of the six countries is lower than the average for the rest of LAC, at different degrees, and at least 15 percentage points lower than the average for the East Asia and Pacific (EAP) and the Organisation for Economic Co-operation and Development (OECD) regions.

In Central America, women still face considerable barriers in educational and labor market policies. A background paper for this report on Costa Rica, El Salvador and Panama found that removing those barriers could potentially generate significant increases in their female participation rates in the region, boost productivity

8 As early as 2016 more than half of U.S. companies with manufacturing operations in Mexico had moved their production from other parts of the world, including China, specifically to serve the U.S. market (Kearney 2020).
9 Kearney (2020).
10 This will be discussed in details in the next section.
11 In 1991 this region's female participation rate was 41 percent with Costa Rica, Guatemala and Nicaragua having rates ranging between 36 and 39 percent only.

growth and increase output per capita.[12] Thus, introducing more economic support for parents such as early childhood education and childcare services as well as addressing gender norms that perpetuate disparities in employment could boost female participation and growth.

Table 1.5: Labor Participation Rates, 2017 (percent)

	C6	CRI	GTM	HND	NIC	PAN	SLV	LAC*	EAP	OECD
Female	48	51	41	49	53	56	49	57	66	64
Total	66	66	64	69	69	69	63	69	74	72

Source: WDI based on ILO.
*LAC excludes Central America.

12 Each country specific report of World Bank (2021): Unleashing Central America's Growth Potential and Sinha (2019b). Sinha (2019b) applied occupational-choice model to data from Costa Rica, Panama and El Salvador and found that removing barriers faced by women in labor markets and in human capital accumulation could potentially increase female labor force participation rate by 20 percentage points in all three countries, adding a significant boost to output.

2. Productivity

Central America sustained strong economic growth for nearly three decades but the region's performance on productivity growth was lackluster. Total factor productivity (TFP) growth was negative. Labor productivity growth was positive but the rate was much slower than comparators. Structural change made a positive albeit small contribution to labor productivity growth in most countries with within-sector productivity-growth dominant.[13] Today, the region has a huge productivity gap relative to the OECD, the largest being in agriculture and manufacturing; there is also a large productivity differential among countries within the region.

The prospect of higher productivity growth in the future is good with most of it likely to come from within sectors, mainly manufacturing and services, but also agriculture. Structural change will continue to make a positive contribution in some countries. Within each sector productivity growth can come from the reallocation of labor from less-efficient firms to more efficient ones, as well as from individual firms that invest in adopting better technology and/or developing higher-quality products and processes. Manufacturing productivity is likely to grow faster than services, but modest rises in service-sector productivity can have a bigger impact on aggregate productivity, given its high employment-share. Focusing on more productive service subsectors like telecom, ICT, finance and other business is ideal but expanding employment in those services maybe difficult in the near term given their greater dependence on more skilled labor.

Exports and the relative size of the export sector can play a key role in raising aggregate productivity growth. Exporting firms are more productive, and become more so as they learn from competitors and compete by adopting better technology. The productivity effect is magnified when firms export through global value chains (GVCs) and/or when they export more sophisticated items. Exports also provide a large and relatively unlimited market for competitive output. As exports grow, exporting firms attract more workers and spread their productivity premium over a growing share of the country's labor pool. While more open trade policies expand exports, restrictive regulations inhibit labor reallocation and investments in innovation, thereby lowering the productivity-enhancing impact of export growth.

Sluggish Productivity Growth

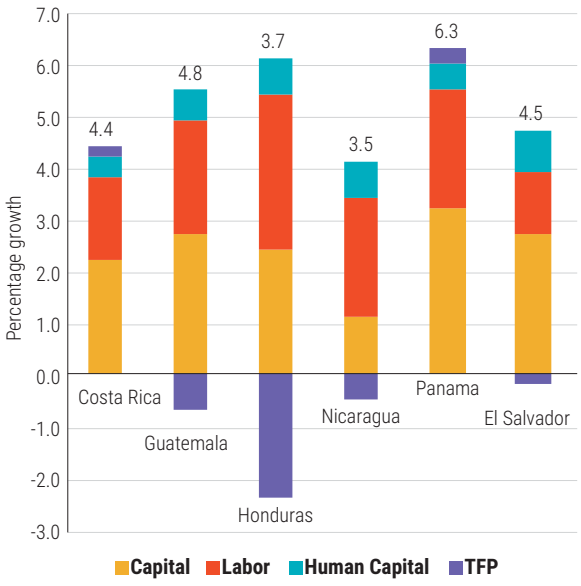
Total factor productivity (TFP) growth has contributed little to economic growth in the region in the last thirty years (Figure 2.1). Labor, including improvements in the quality of human capital, contributed more than two thirds of the region's real GDP growth, and physical capital, the rest. In fact, TFP growth was negative for the region. This compared rather unfavorably with East Asia and the Pacific (EAP) region where TFP grew at the rate of 1 percent a year during the same period.

Only two countries managed to had positive TFP growth, but it was quite low at less than 0.5 percent a year. Increases in labor and capital inputs were the main drivers of GDP growth in every country of the region. Labor, including quality of labor, contributed more than 80 percent in Honduras; 50 to 60 percent in Guatemala and Nicaragua; and around 40 percent in the remaining three countries. Capital contributed between 50 and 60 percent of GDP growth depending on the country except Honduras and Nicaragua where it contributed less (Figure 2.1).

13 Except in Guatemala where it had a negative effect on productivity-growth.

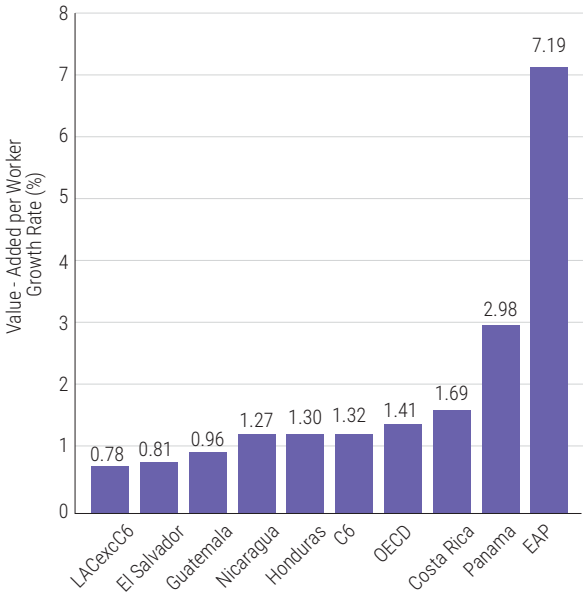
The region's labor productivity grew at 1.3 percent a year over this 27-year period. Although slow, the pace was similar to that in OECD countries and twice that in the rest of the LAC region, yet well short of that in the EAP region. Individually, Panama had the fastest labor productivity growth at nearly 3 percent a year due largely to its high rate of investment, with others much slower. Growth consisted of 1.7 percent a year in Costa Rica, 1.3 percent in Nicaragua and Honduras and by only 0.8 and 1 percent in El Salvador and Guatemala, respectively (Figure 2.2).

Figure 2.1: Growth Decomposition by Country, 1991-2017



Source: World Bank staff elaboration from PWT91. GDP in current PPP

Figure 2.2: Average Labor Productivity Growth, 1991-2017

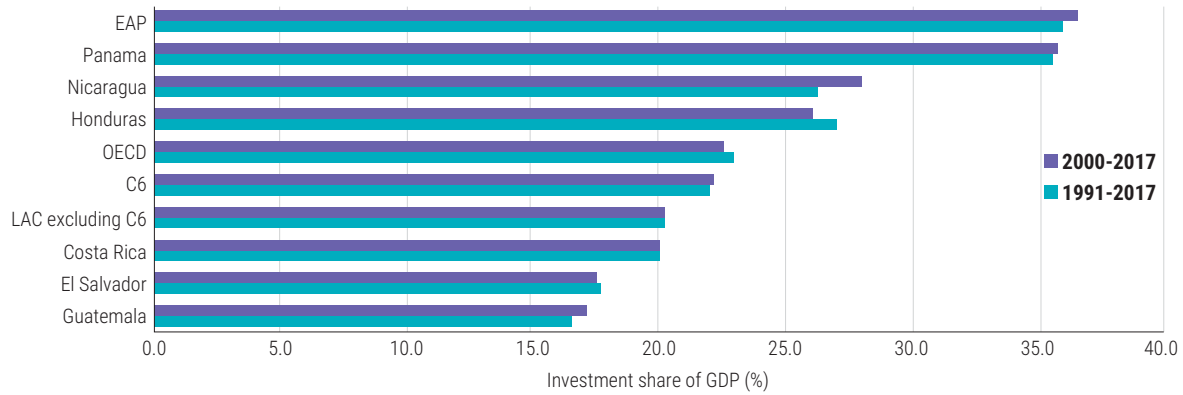


Source: World Development Indicators. Value added in 2010 USD.

Investment

Though low, the rate of growth of labor productivity was better than the growth in TFP, mostly because of capital deepening. The investment rate in the C6 region averaged 22 percent of GDP, similar to that in the OECD, but higher than in the rest of LAC. It was still lower than the 25 percent of GDP that would be recommended by the Growth Commission as necessary for countries to achieve sustained strong growth, and was substantially lower than the 35 percent attained by the EAP region during the same period (Figure 2.3).

Figure 2.3: Investment as a Share of GDP, 1991-2017 (percent)



Source: World Development Indicators. Averages are weigthted by population.

The regional average hides wide differences in investment rates across individual countries. Panama had East Asian investment rates of 35% mainly due to the rehabilitation and expansion of its canal. Nicaragua and Honduras exceeded investment rates of 25 percent of GDP while Costa Rica reached only 20 percent. Investment in Guatemala and El Salvador remained quite low during this period averaging around 17 percent of GDP.

Public investment in the region has been lackluster, averaging only 3 percent of GDP (Table 2.1). Nicaragua, Costa Rica and Honduras had public investment rates at or slightly above the regional average while Guatemala and El Salvador were substantially below that. By contrast public investment in the EAP region was more than 12 percent of GDP. As a result, the provision of public goods like infrastructure, especially transport and power, improved little during this period, undermining private investment.

On the other hand, FDI in Central America has been on a rising trend. It has risen from an average of 2.5 percent of GDP in 1991-2000 to 4.5 percent in 2011-17, averaging 3.5 percent of GDP over the 27-year period. This trend reflects in part the region's growing participation in GVCs, especially in Costa Rica, Nicaragua, Honduras and Panama; Guatemala and El Salvador have not benefited as much.[14]

Poor infrastructure in the region hinders economic growth, exacerbates poverty and inequality, and exposes the country to natural disasters. Large investment projects are needed, but require fiscal space and partnerships with the private sector. This report finds that increasing investment, particularly public investment, would accelerate growth on average by almost 1 percent.[15]

Table 2.1: Public Investment and Foreign Direct Investment (percent of GDP), 1991-2017

	Central America	Rest of LAC	EAP	OECD	CRI	GTM	HND	NIC	PAN	SLV
Public Investment	3.1	3.7	12.8	4.2	3.2	2.1	2.6	4.7	3.3	2.7
Foreign Direct Investment	3.5	2.8	3.1	2.4	5.0	1.3	4.3	4.9	7.4	2.3

Source: World Development Indicators.

Structural Change and Productivity Growth in 1991-2017

Structural change or the reallocation of labor from less productive agriculture to the more productive non-agricultural sectors has been important for aggregate labor productivity growth in many countries. Historically, labor has moved from agriculture to industry or mainly manufacturing because the latter has been more productive and generating higher overall productivity growth. The service sector on the other hand is more diverse, including subsectors that are less productive than agriculture as well as others that are as productive as many manufacturing subsectors; thus the favorable productivity effect of reallocating labor from agriculture to services is less obvious, unless all of it goes to the higher productivity subsectors.[16] As it will be discussed, the reallocation of labor from agriculture to non-agricultural sectors has on the whole been productivity-enhancing for the region.

It has been a well-known pattern of development that employment and value-added in agriculture as a share of total employment and total value-added, respectively, decline as a country's income rises, while those in the service sector increase. However, industry, including manufacturing, follows an inverted-U pattern. It grows initially at lower levels of GDP per capita, increasing its share in total employment and in value added first, then peaking, and subsequently declining at higher levels of income. Historically this structural change has been a significant contributor to aggregate productivity growth. In East Asian countries, it played a critical role in boosting and sustaining productivity growth. In the LAC region too, it contributed around half of the growth in aggregate labor productivity in 1950-75, but contributed negatively in 1991-2005.[17]

14 As discussed, a large part of the FDI in Canal is due to the canal project.
15 For further details, please see six country reports of World Bank (2021): Unleashing Central America's Growth Potential.
16 See McMillan and Rodrik (2011) for productivity-reducing effects of structural change.
17 See McMillan and Rodrik (2011) that cites Pages (2010) as the source for this finding on sources of labor productivity growth.

In recent years, the peak and the decline in manufacturing employment and value-added has begun to set in at lower levels of income per capita, than has historically been the case. This trend has been referred to as 'premature de-industrialization'.[18] The middle income countries have been finding it difficult to increase the share of manufacturing in their total employment. This premature deindustrialization, in general, is a policymaking concern, as industrialization is often considered to be an engine of growth. This view contends that robust industrial growth is essential for developing countries to catch up with the developed world, and premature deindustrialization strips an economy of one of the fundamental drivers of growth.[19]

However, there has been considerable heterogeneity across countries in how this has materialized in specific cases. The more developed emerging economies have been deindustrializing for many years, but there are others that display no declines or in some cases even slight increases in employment shares of industry, including manufacturing. Even those countries where the share of total employment in manufacturing has been in decline, the absolute number of jobs in the sector has been rising or stable.[20] Central American countries fall into this latter category with the absolute number of manufacturing employees rising during this period.

Shifts in employment shares

Between 1991 and 2017, the region experienced a substantial reallocation of employment shares (Table 2.2). There was a large reallocation of labor from agriculture to the non-agricultural sectors, with all the gains in employment share accruing to services. The share of agriculture and industry in the region's total employment fell by 7 and 3 percentage points respectively as the share of services rose correspondingly by 10 percentage points. In parallel, the share of employment in the region's manufacturing fell by 4 percentage points.

Table 2.2: Sectors' Shares in Total Employment (percent)†

	CRI		GTM		HND		NIC		PAN		SLV	
	1991	2017	1991	2017	1991	2017	1991	2017	1991	2017	1991	2017
Agriculture*	18	13	39	32	38	32	34	30	27	14	29	19
Industry*	26	18	23	19	21	21	18	18	14	19	25	22
Services*	56	69	37	49	41	47	48	52	58	67	47	60
Manufacture**	17	10	19	14	15	14	15	11	10	7	21	15

Source: *WDI; **Manufacturing employment is from UN-ILO 10 sector data. † Total employment includes informal employment.

Both manufacturing and agriculture lost employment shares in each of the six countries.[21] The decline in manufacturing ranged between 5 and 7 percentage points in Guatemala, Costa Rica and El Salvador, 3 and 4 percentage points in Panama and Nicaragua and only 1 percentage point in Honduras. Agriculture shed the most labor, with its employment share falling by 10 to 14 percentage points of total employment in El Salvador and Panama and by 4 to 8 percentage points in the remaining four countries.

While the employment share of manufacturing fell, the absolute number of manufacturing workers in the region grew by 1.7 percent a year (Table 2.3).[22] In Honduras, the number of manufacturing workers grew by 3 percent a year and in Guatemala, Nicaragua and Panama, by around 2 percent a year. Finally, Costa Rica and El Salvador displayed a modest growth of 0.5 percent a years. Faster manufacturing productivity growth coupled with increases in the number of workers in manufacturing raised aggregate labor productivity but less than it would have ocurred if employment share of manufacturing had risen instead of falling.

18 Rodrik (2016).
19 Rodrik (2013).
20 World Bank (2020b).
21 Industry's employment-share did not fall in Honduras and Nicaragua as construction and/or utilities compensated. In Panama industry actually raised its employment-share due to growth in construction related to the canal rehabilitation and expansion.
22 This is in contrast to the negative growth of manufacturing workers in the rest of LAC as a whole and in Mexico.

Table 2.3: Average Annual Growth in Manufacturing Employment (percent), 1991-2017

Costa Rica	Guatemala	Honduras	Nicaragua	Panama	El Salvador
0.6	2.0	3.1	1.8	2.0	0.7

Source: WDI.

There may be many reasons why the manufacturing sector in these countries is unable to increase its share of total employment. Labor market distortions were found to be restricting the reallocation of workers across sectors in all the six countries. The barriers to reallocation of resources from agriculture to manufacturing include restrictive labor regulations, poor quality of rural education, low financial market efficiency, regulatory barriers and poor infrastructure, all of which have been found to impede such reallocation in the LAC region too.[23, 24] Furthermore, these barriers may also be inhibiting the entry and growth of more productive firms in the manufacturing sector.

The service sector gained the employment share that was lost by agriculture and manufacturing. In Guatemala, Costa Rica and El Salvador services gained 12 or more percentage points of total employment while in Panama, Honduras and Nicaragua it gained 9, 6 and 4 percentage points respectively.

Was the reallocation of labor from agriculture and manufacturing sectors to services productivity-enhancing? Given the wide range of productivity levels across service subsectors, the answer would depend on which subsectors benefited the most from labor reallocation. If more of the reallocated labor went to the more productive service subsectors like telecommunications, finance, ICT as well as professional and other business services, then that would raise aggregate labor productivity. On the other hand, if most of that labor goes into wholesale and retail trade and/or to restaurants and hotels, both often less productive than agriculture, that is likely to reduce aggregate productivity.[25]

An examination of shifts in the subsector shares of total service-sector employment in table 2.4 does not provide a definitive answer. The two service sub-sectors in the first two rows of the table, which include telecommunications, finance, IT as well as professional and other business services, have increased their share in total service-sector employment in all countries except Guatemala. But the wholesale and retail trade as well as hotels and restaurants, both less productive subsectors, also raised their shares.[26]

Table 2.4: Share of Service Sub-Sectors in Total Service Sector Employment (percent), 2017

Service	CRI	CRI	GTM	GTM	HND	HND	NIC	NIC	PAN	PAN	SLV	SLV
Sub-sectors	**1991**	**2017**	**1991**	**2017**	**1991**	**2017**	**1991**	**2017**	**1991**	**2017**	**1991**	**2017**
Transport, Storage, & Communication	8	10	14	8	7	8	8	7	12	13	12	8
Finance, IT & Business Serv.	10	14	4	8	4	8	4	7	7	14	4	10
Wholesale & Retail, Hotels & restaurants	43	37	46	51	40	49	44	50	33	35	38	50
Others*	39	39	36	33	49	35	44	36	13	10	47	32

Source: UN-ILO 10 sector data in LCU for Service Subsector data * Includes subsectors like Public administration and Education, Health, Social work services.

23 Araujo et al. (2014) and Swiston and Barrot (2011) cite some of these impediments for Central America.
24 World Bank (2020b).
25 Ghani and Kharas (2010) finds that recent advances in ICT technologies has meant that these services can be digitally stored, codified, and thus exported like manufactures.
26 The two more productive subsectors in Table 2.5 accounts for 24 percent of service-sector-employment in Costa Rica and Panama and 14 to 18 percent in the other four countries, which is a good starting point for future productivity growth.

Contribution of structural change

Actual estimates for the period 1991-2017 show that the reallocation of labor from agriculture to non-agricultural sectors has been productivity-enhancing in the region. Table 2.5 shows that structural change contributed positively to aggregate productivity growth in all countries, except Guatemala.[27] It accounted for nearly two-thirds of aggregate productivity growth in El Salvador, half in Honduras and only 15 to 25 percent in Nicaragua, Costa Rica and Panama.[28] This is reassuring given that many countries in Latin America and in Africa experienced structural change that was productivity-growth-reducing.[29]

Contribution of within-sector growth

Productivity growth within sectors dominated growth in aggregate labor productivity in 1991-2017. All three sectors contributed, with agriculture being particularly important in Guatemala, Honduras and Nicaragua. Overall the within-sector component accounted for 75 to 85 percent of labor productivity growth in Panama, Nicaragua and Costa Rica and more than 100 percent in Guatemala (due to the negative contribution of structural change); it contributed half and a third to Honduras and El Salvador, respectively (Table 2.5).

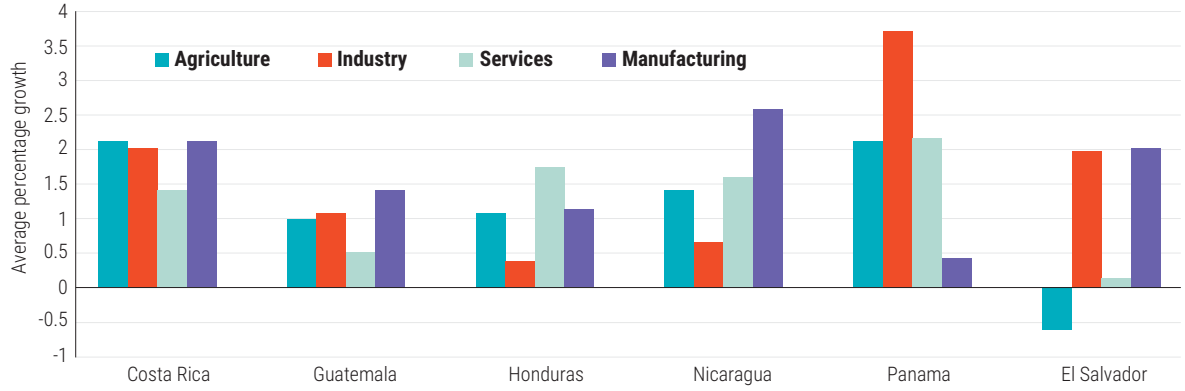
Table 2.5: Components of Labor Productivity Growth (LPG)

	LPG (% per year)	Within component (% of LPG)	Structural change component (% of LPG)
Costa Rica	1.7	85	15
Guatemala	1.0	183	-83
Honduras	1.3	47	53
Nicaragua	1.3	85	15
Panama	3.0	73	21
El Salvador	0.8	37	63

Source: World Bank staff calculations based on WDI.

The manufacturing sector exhibited the fastest rate of productivity growth in most countries as expected, followed by services and then agriculture. In Nicaragua, Costa Rica, Guatemala and El Salvador manufacturing productivity grew faster than that in agriculture and services, and in Honduras where services performed a bit better, it still grew at more than 1 percent a year. In Nicaragua and El Salvador it reached a high of 3 percent and 2.5 percent a year respectively, followed by Costa Rica at 2 percent and Guatemala at 1.5 percent a year (Figure 2.4).

Figure 2.4: Average Labor Productivity Growth by Sector, 1991-2017



Source: World Development Indicators and United Nations.

27 Guatemala was the exception, probably because of its high share of informal employment and thus of informal services.
28 Sinha (2019a) simulates the potential gains in productivity from structural change in Central American countries and finds them to be smaller than accounting estimates, when general equilibrium effects are considered.
29 Mcmillan and Rodrik op.cit.

Service sector productivity grew quite robustly too. Its growth ranged between 1.5 and 2 percent a year in all countries except in Guatemala and El Salvador, where it was less than 0.5 percent. Panama has led the region in services productivity growth during this period.

Whether productivity growth in agriculture was higher, equal to or lower than other sectors, its ability to contribute to aggregate productivity growth depends on its share in total employment. Agricultural productivity grew faster than services in Costa Rica, Panama, and Guatemala. Though it grew the fastest in Costa Rica and Panama, at more than 2 percent a year, its impact on aggregate productivity was low because agriculture's share in their total employment is low. On the other hand, agricultural productivity grew by between 1 and 1.5 percent a year in Guatemala, Honduras and Nicaragua, but that contributed much more to their aggregate productivity because nearly a third of their total employment is in agriculture.

Prospect of Higher Productivity Growth

The prospect for higher productivity growth is positive for two reasons. First, the region's productivity gaps, both aggregate and sectoral, vis-à-vis the advanced economies, are large and with most countries and firms far from the technology frontier. As a result, the potential to catch up productivity is intrinsically high if the right conditions are in place. Second, though there is room for structural change, most of within-sector productivity growth will come from reducing misallocations within a sector as well as from 'imitative' and 'adaptive' innovations by firms. Next we examine both of these elements.

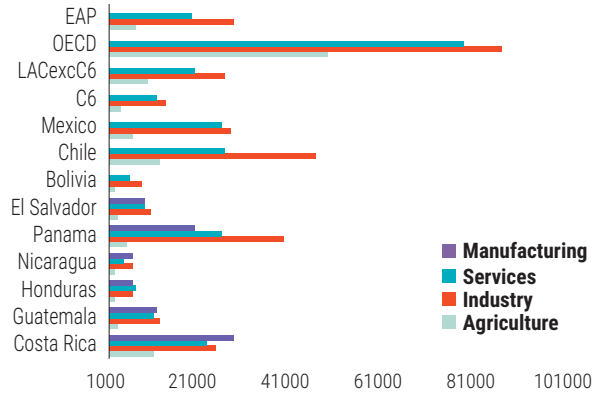
Size of productivity-gaps

Gaps in aggregate labor productivity and sector labor productivity abound (Figure 2.5). Specifically, the level of aggregate labor productivity of the region as a whole is only a sixth of that in the OECD and half of that in the rest of LAC. Panama and Costa Rica do have higher productivity levels than in the rest LAC, and thus around four-tenths and three-tenths of the OECD level, respectively, higher than that of the region. There are also productivity-gaps within the region too, with aggregate labor productivity in El Salvador and Guatemala being a third and in Nicaragua and Honduras, a sixth of the level in Panama.

Relative to the OECD, the agricultural sector has the largest productivity differential, with manufacturing and service sectors coming in second and third. Agricultural productivity in Honduras, Nicaragua, Guatemala and El Salvador is only 4 to 6 percent of OECD's level and only around a quarter of that of the regional leader, Costa Rica. Given that Honduras, Nicaragua and Guatemala have a substantial share of agricultural employment, raising agricultural productivity will have a much bigger impact on aggregate labor productivity in them than in others.

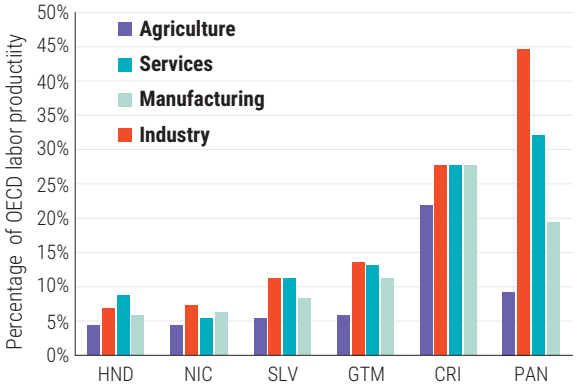
Relative to OECD countries, manufacturing has on average a bigger productivity gap than in services because. The manufacturing value-added per worker in Honduras, Nicaragua and El Salvador is only 6 to 8 percent of that in the OECD and in Guatemala, around 11 percent. Costa Rica and Panama lead the region in levels of manufacturing productivity and thus they are at 28 and 20 percent of that in the OECD, respectively. While the productivity gap for services is lower than either of the other two sectors vis-à-vis the OECD, they are still substantial as shown in Figure 2.6.

Figure 2.5: Labor Productivity, 2017 (in constant 2010 USD)



Source: WDI and United Nations.

Figure 2.6: Sector Productivity Levels Relative to OECD, 2017



Source: WDI and UNIDO.

Potential for convergence

The nature of convergence in aggregate productivity growth depends not only on the size of the productivity gaps but also on policies, institutions and country-specific factors. Though convergence is found to be more automatic and 'unconditional' in some sectors, policies to nudge more labor in the direction of such sectors/subsectors are still valuable to enhance convergence.

Unconditional convergence[30] in labor productivity is well documented for formal manufacturing where productivity of workers rises regularly even if its pace differs among subsectors because of differences in their technology.[31] The lower the labor productivity in the relevant sector at the outset, the steeper is the trajectory of its increase. A given country's challenge is to get a toehold in these 'automatic-escalator' industries and to encourage more labor and resources into them. The estimated convergence effect is quite significant in manufacturing subsectors like food and beverages, chemicals and chemical products, machinery and equipment, motor vehicles, and numerous other such subsectors.

Tradable services like telecommunications, logistics, finance, IT, as well as professional and other business services are found to also exhibit unconditional convergence.[32] Countries with lower initial productivity in these service subsectors can grow faster relative to countries with higher initial productivity. Like manufacturing, they benefit from technological advances, specialization through economies of scale, agglomeration, network effects, and division of labor.

Within-sector productivity growth

There are two basic ways of increasing productivity growth in a sector. The first is to improve the allocation of resources across farms and firms within a sector, because all too often both efficient and inefficient ones coexist in the same sector. But without adequate competition and efficient functioning of product and factor markets where unproductive firms exit and productive ones can grow, misallocations can continue. The second way is for firms in a sector to invest in productivity-enhancing innovations or to undertake within-firm upgrading of their technology and their products. But such innovation is not an independent activity because returns to investments in better technology depend on adequate availability of complementary factors like trained labor, good infrastructure and competitive product and factor markets.[33]

30 According to Rodrik (2013), the coefficient of unconditional convergence is estimated to be large—2.9% a year – based on 118 countries.
31 For example, textile and garment has a lower rate of convergence in productivity than machinery.
32 Enache, Ghani, and O'Connell (2016) and Kinfemichael and Morshed (2016) find that telecommunications, finance, IT and professional services are among them.
33 Cirera and Maloney (2017) and Kim and Loayza (2019).

The bulk of future growth in aggregate labor productivity will come from within-sector productivity growth.[34] The region will have to tap the productivity growth potential of manufacturing and service sectors mainly, but also of agriculture in countries with a substantial share of agricultural employment.

Agriculture can raise its productivity growth, albeit more modestly than other sectors, by improving technical efficiency with existing technology, the digitization of production, and the introduction of new materials. Investing in transport infrastructure to reduce transaction costs, as well as improving education can help increase productivity. In Guatemala, Honduras, and Nicaragua, where agriculture is a substantial share of employment, even modest increases in agricultural productivity can be significant for aggregate productivity growth. In fact, closing the productivity gap in these three countries with Costa Rica could considerably raise aggregate productivity.

The manufacturing sector has potential for higher productivity growth than in other sectors, but its contribution to aggregate productivity growth may be limited by its share in total employment. The challenge will be to maintain that share in the future to enhance impact and some features of the sector could make that possible. First, there is a relatively large share of small and medium-sized enterprises (SMEs) in the sector in these countries.[35] Thus, facilitating reallocation of labor from SMEs to higher productivity manufacturing firms in the sector that are exporting or are part of a GVC-network, would increase productivity. Second, most subsectors in manufacturing have a near automatic tendency to raise productivity of their workers to varying degrees, which accounts for their ability to generate higher productivity growth over time.[36] Third, with a substantial share of the formal manufacturing sector in GVC-networks and with half of these countries exports in manufactures, the potential for their rapid expansion in the future is high. The next section explores this point in detail.

The service sector is the largest employer. Therefore, growth in service-sector-productivity, even if lower than manufacturing, could raise aggregate productivity growth by a higher amount. In 2017, services accounted for 60 percent or more of total employment in El Salvador, Panama and Costa Rica and around 47 to 52 percent, in the other three countries. As will be discussed shortly, improving productivity in the service sector not only contributes to aggregate productivity growth but also raises productivity in manufacturing and agriculture sectors.

Reducing Within-Sector Misallocations for Productivity Growth

Central American countries have a high share of informal employment with significant differences in productivity levels between formal and informal firms within a sector.[37] The reallocation of labor and resources within manufacturing, from formal to informal, could thus be an important driver of higher sector productivity in manufacturing even without increases of employment share in that sector.[38]

There are gains to be made from the first option of reducing misallocation or productivity gaps across firms within a sector, given the duality of employment. A large share of workers in manufacturing and in services are in informal and SMEs that coexist with formal, well-integrated firms.Thus, reallocation from the former to the latter raises sector productivity. Policies that reduce the cost of formality for firms and/or encourage workers to move to formal firms may be needed. Within formal manufacturing too there are significant differences in productivity among firms that could be bridged to raise productivity.

34 Diao et al. (2017) found that the 'within-sector' component of productivity growth has also dominated several recent growth accelerations in other countries and regions.
35 In Central America, available estimates for 2009 show that SMEs contributed 30 to 50 percent of GDP and 75 to 90 percent of employment (Guasch et al. 2012).
36 Rodrik (2013).
37 When total informal employment is measured by survey-based self-employment data (SEMP), Guatemala's informal employment is 30 percent of total employment, Panama's is 33 percent, Nicaragua and Honduras more than 55 percent and El Salvador, an even larger share. Costa Rica has the lowest share.
38 Informality is explored in details in the cross cutting issues paper for this report.

While recent studies on firm dynamics in Central America are difficult to find, there are estimates of productivity gaps or size of misallocations across firms within manufacturing for various parts of the world.[39] One recent study provides such estimates for countries of Latin America and Sub-Saharan Africa[40], where the gains in productivity from removing those gaps or misallocations range from around 60 percent for El Salvador and Bolivia to 95 percent for Mexico. While there are fewer studies on services given the scarcity of good data, the few that are available on developing countries show similar findings.[41]

There are many conditions that allow such misallocations in the manufacturing sector as well as other sectors to exist and these typically include inadequate competitive pressures for firms and disincentives for workers to move across firms. Product markets have been found to be too regulated in Central American countries.[42] Restrictive labor regulations are widespread in this region.[43] Furthermore, inadequate support for vocational and on-the-job training slowdown the reallocation of labor from less efficient to more efficient firms both within a sector as well as across sectors.

Greater competition within service subsectors can reduce misallocation and enhance productivity and quality of services as a whole. In the recent past, deregulations in some of these countries have led to noteworthy inflows of FDI as well as transfers of better technology. This not only raises productivity of firms with FDI but also facilitates technology diffusion to other competitors and firms within the supply chain, which in turn can reduce productivity gaps across firms within a subsector.[44]

While Central American countries have deregulated many of these service subsectors, restrictions on FDI and trade in telecommunications and professional services still exist in some of them (Table 2.6). The financial sector is the least restricted in countries of this region, while professional services are the most restricted. The Services Trade Restrictiveness Index is highest in Costa Rica and Panama, countries that also have the most skilled labor in the region.

Table 2.6: Services Trade Restrictiveness Index (STRI) in Selected Countries

	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	Mexico	Chile
Financial Services	28.9	18.2	7.2	10.2	2.5	15.3	22.1
Professional Services	60.0	48.0	34.0	22.0	68.0	42.5	27.0
Telecommunication	37.5	0.0	50.0	0.0	25.0	37.5	25.0

Source: https://www.worldbank.org/en/research/brief/services-trade-restrictions-database.
Note: 100 refers to a sector that is completely closed. The lower the score, the more open the sector.

Improving productivity in the service sector not only contributes to aggregate productivity growth but it can raise productivity in manufacturing and agriculture sectors too. Services are used as inputs into the production of goods (embodied services) and are also provided to customers bundled with goods (embedded services). Therefore, raising productivity of backbone services—such as ICT, finance, logistics, and business and professional services—has become increasingly important for agriculture and manufacturing. Efficient and better quality of services is a critical intermediate input into the output and exports of other sectors.

39 Syverson (2011); Hsieh and Klenow (2009)); and Pages et al. (2010).
40 See Table 2.1 in World Bank (2020b) which has estimates of productivity gaps in manufacturing in several countries of Latin America and Sub-Saharan Africa, together with counterfactual gains in productivity from removal of misallocation.
41 There are studies on Portugal, Spain and Latvia but only one on Latin America: Crespi, Tacsir and Vargas (2016)
42 Fajnzylber et al. (2009), Swiston and Barrot (2011), Araujo et al. (2014).
43 Sinha (2019a), World Bank (2020b).
44 Javorcik (2004).

However, these higher productivity subsectors like finance, ICT and other business services are not able to expand their employment substantially. They need a high proportion of skilled labor with a tertiary education and many countries in this region are not well endowed in this. Costa Rica and Panama have tertiary education enrollment rates of around 50 percent or more, but even they have difficulty expanding such skilled labor. The northern countries have less than a third of that rate in tertiary enrollment and their quality of such education is much inferior to that in Costa Rica. As a result, while both productivity level and productivity growth are higher in these subsectors, their capacity to spread that productivity premium over a larger pool of labor in the region will remain limited in the near term.

Innovation for Higher Productivity Growth

Central American countries have many options to invest in productivity-enhancing innovation given their distance from the technology frontier. They can and should adopt and adapt existing non-frontier and frontier technologies from other countries (i.e. undertake 'imitative' and 'adaptive' innovations, as in Aghion and Cette 2014). They can import new processes and new management methods as well as leverage new ideas, all from abroad. The returns on such innovation are typically much higher the further these countries are from the technological frontier because of the ease of transferring new knowledge from abroad, especially in the presence of GVC networks.[45]

However, such innovation cannot be an independent activity. It needs other complementary factors to generate high returns. Firms are unlikely to invest in innovation if they cannot import the necessary machines, hire trained workers and engineers, transport inputs and outputs in time and at reasonable cost or have access to the needed finance. In turn, the availability of these factors depends on competitive product and factor markets, macro-fiscal stability, openness of the trade regime and sufficient institutional quality. For example, if firms are credit constrained, they are likely contrained in how much they can invest in adopting or adapting better technology or in the production of new or complex products. Lower institutional quality, in respect of the rule of law, regulatory quality, and/or property and patent right protection, also lowers returns to investment in productivity-enhancing innovation and leads firms to under-invest.

Even when a government increases its own investment in research and development (GERD) to jump-start or increase firm innovation, those investments generate low returns when complementary factors are inadequate or of poor quality.[46] There is ample evidence that successful innovation requires adequate availability of complementary factors, such as human capital and infrastructure, as well as effective markets and institutions.[47]

Productivity growth itself has been shown to be the joint outcome of the investment or accumulation decisions with respect to knowledge and technology adoption, as well as human capital and physical capital.[48] Based on that insight, a study on Chile found that, notwithstanding its strong credentials in terms of sustained growth and strong exports for many years, the country fell behind East Asian countries in its productivity growth due to lower accumulation of human and physical capital.[49]

The literature has identified a set of factors – innovation, education, infrastructure, institutions and market efficiency –as joint determinants of productivity growth.[50] The Long term Growth Model (LTGM) has used these factors to ascertain their impact on TFP growth in each of the six Central American countries. Values of a composite indicator for each of the factors were computed using a number of available indicators from

45 Griffith et al. (2004) demonstrate this using data from the OECD.
46 Innovation indicators like GERD or patents per capita or scientists/engineers per capita etc. on their own have thus been found to be poor proxies of effective innovation, especially in low and middle income countries (Cirera and Maloney 2017).
47 Cirera and Maloney op.cit.
48 Klenow and Rodriguez-Clare (2005).
49 Kharas et al. (2008).
50 Refer to Kim and Loayza (2019) for a discussion justifying these factors as key determinants of productivity and explanation on how to develop composite indicators.

various sources for each of the six countries.[51] The composite indicator for each factor was then combined into one single-indicator for the five factors cited above. The LTGM then simulated the effect of linearly increasing the level of the 'single-indicator' each year between 2020 and 2035 on TFP growth, where the single indicator of each country would reach the level of that indicator for their respective 'aspirational peers' by 2035.[52] The simulated impact of improvement in that single indicator on the rate of increase in TFP growth is shown in table 2.7. These rates are considerably higher than those that were achieved in 1991-2017.

Table 2.7: Simulated Impact on TFP Growth

	TFP Growth Percent per year
Costa Rica	1.5
Guatemala	1.7
Honduras	1.7
Nicaragua	1.5
Panama	1.4
El Salvador	0.9

Source: LTGM Simulations in the country specific reports of World Bank (2021): Unleashing Central America's Growth Potential.

State of Complementary Factors in Central America

Investments in productivity-enhancing innovations can raise a country's economy-wide growth but the extent of their success depends on the availability and adequacy of complementary factors like education, infrastructure, the efficiency of markets and the quality of institutions. Table 2.8 provides values of composite[53] indicators for each of those complementary factors in the region and their corresponding values for the respective groups of aspirational peer countries.[54]

Countries' needs for reform in these four areas are evident from the gap between the indicator values for each of these countries and those of their respective aspirational-peers. Such reforms, if implemented, can improve the availability and adequacy of those factors and thereby raise these countries' productivity-growth as the simulation-results in table 2.7 suggest. Below the state of each of these four factors in countries of the region are examined to show that they are not only deficient vis-à-vis their aspirational peers, but also vis-à-vis the current requirements and labor demands of businesses.

Education

Education enhances knowledge and skills of the labor force which is essential for the successful adoption, adaptation and diffusion of technology.[55] Firms cannot invest in innovation unless there is adequate availability of skilled labor. Expanding the production and exports of sophisticated goods as well as the exports of modern services also requires the same. Evidence provided in this report, as well as enterprise surveys and other analyses show that in each of the six countries there is a deficit in the availability of skilled labor relative to what is demanded by businesses.[56] The nature of this deficit differs because the types of skills businesses demand in Costa Rica differ from the other countries, and for some other skills the same is true between Panama and the northern countries. Costa Rica needs more labor not only with completed secondary and tertiary education, but also more with technical and science specializations.

51 A complete description of the methodology can be found in the online annex of the report.
52 See Section 2 of each country specific report of World Bank (2021): Unleashing Central America's Growth Potential.
53 Composite of several separate indicators listed in the Annex that are available as a measures of each of those factors.
54 The aspirational peer group of countries are the following: for Costa Rica, they are the OECD countries; for Guatemala: Albania, Latvia, Lithuania, Jordan, Chile, Panama, and Peru; for Honduras: Armenia, Chile, Latvia, Lithuania, Morocco, Panama, and Peru; for Nicaragua: Chile, Latvia, Lithuania, Peru and Panama; for El Salvador: Latvia, Lithuania, Chile, Peru and Panama. for Panama are: Hong Kong, Korea, Singapore, Taiwan, Estonia, Lithuania, and UAE.
55 Hanushek and Woessmann (2015).
56 Araujo et al. (2014) and country studies for this report.

Table 2.8: Indicator Values for Complementary Factors: Countries vs Their Aspirational Peers

Countries\Factors	Education	Infrastructure	Market Efficiency	Institutions
Costa Rica, CRI	55	43	62	55
CRI's Aspirational Peer OECD	72	74	95	71
Guatemala, GTM	22	34	51	45
GTM's Aspiration Peer Group	53	50	71	50
Honduras, HND	34	34	43	45
HND's Aspiration Peer Group	55	49	72	49
Nicaragua, NIC	39	32	49	45
NIC's Aspirational Peer Group	59	51	73	51
Panama, PAN	53	40	63	61
PAN's Aspirational Peer Group	71	68	89	65
El Salvador, SLV	33	38	54	30
SLV's Aspirational Peer Group	55	50	72	51

Source: Table 1 in each country studies of the Unleasing Growth Potential of Central America's Growth Report.

While Costa Rica remains the leader in this region in the quality of technical and tertiary education and in the supply of technically skilled labor, the supply of such labor has been falling short of demand.[57] Firms in Panama, mainly in the service sector, have a growing need for labor with completed secondary and post-secondary education for its services-sector, but adequate supply is made difficult by the low enrollment rates and high dropout rates in secondary education. El Salvador has a large manufacturing sector exporting an array of manufactures with substantial GVC participation, but its firms are constrained from upgrading products and/or adopting better technology because of the shortage of skilled labor.

Though the region has made considerable progress in educating its citizens, the Human Capital Index (HCI) indicates that a child born in Central America today can expect to achieve on average, only 52 percent of his/her future productivity potential. In Guatemala, Honduras, Panama and Nicaragua they can expect to achieve even less. With regards to educational attainment (captured by average years of schooling) and educational quality (reflected by test scores), Costa Rica is at the top within the region (Table 2.9), Guatemala and Honduras are at the bottom. They all suffer to a certain extent from a significant skills-mismatch, that is, between the skills that the education system develops and those that the private firms demand. Of the limited number of people that completes secondary or tertiary education in the northern countries, relatively few are in the technical field, a deficiency that prevents firms, producing and exporting medium-technology manufactures, from expanding easily.

Table 2.9: State of Human Capital in Central American Countries & Comparators

	CRI	GTM	HND	NIC	PAN	SLV	KOR	CHL	MEX
Human Capital Index	0.6	0.5	0.5	0.5	0.5	0.5	0.8	0.7	0.6
Learning Adjusted School Years	9.0	6.3	6.1	6.8	6.5	7.6	11.7	9.4	8.8
Harmonized Test Scores	429	405	400	392	377	436	537	452	430

Source: World Bank.

In parallel to reforming the formal education system, these countries could follow Costa Rica's example and invest more in training their workforce for specific jobs in manufacturing and in services. This could be done in collaboration with the private sector and could have greater impact over less time. Vocational training could be strengthened in consultation with private firms and business associations, to use a curriculum that matches firms' demand for skills.

57 Oviedo et al. (2015) finds that the higher education system does not generate sufficient number of graduates with basic science skills. Fernandez-Stark et al. (2013) provides similar evidence.

Infrastructure

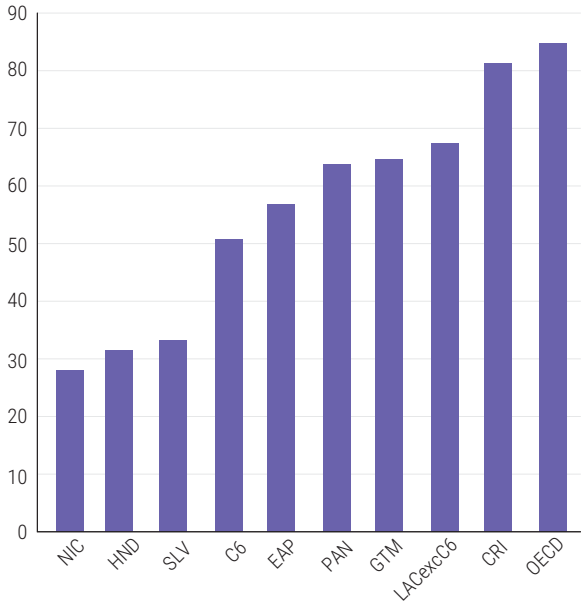
The quality and effectiveness of infrastructure remains quite deficient in most countries of the region, especially in transport and power. On the other hand, the state of digital infrastructure is relatively better, but not in all countries. This is mainly because countries have been investing little in infrastructure due in part to their fiscal constraints. Nicaragua and Costa Rica have been investing relatively more than others, however, given their backlog in the road quality and power infrastructure, it has proven insufficient. Effective infrastructure is essential for firms to get timely and cost-effective access to input and output markets and increase returns to private investment, including investments in innovation.[58]

While transport infrastructure has been improving in all countries, transport costs remain high. Though these countries use their seaports for most of their goods trade, inadequacies in quality of land transport from firms to ports and vice-versa make the time and financial cost of transport high.[59] Guatemala and Honduras have the highest transport costs. This is not surprising given that Central America's infrastructure investment was only 1.1 percent of its GDP in 2017 compared to 1.5 percent for the LAC region and compared to the estimated 6.2 percent that is needed to satisfy the region's medium-term infrastructure demand. Costa Rica and Panama have much better infrastructure than the rest of the countries in the region, and the quality of roads in Nicaragua and Guatemala is much worse than in other countries of the region.

In addition, not only are electricity costs high, but firms face problems of energy supply reliability. This high cost is due to the high dependence of power generation on oil. In particular, in Honduras and Nicaragua the cost is 25 percent higher than the LAC average.[60] Only a small share of total power is derived from renewables in most of these countries. Also, outages can be quite frequent. Firms suffering from losses in production due to electricity outages are likely to underutilize labor and capital and have lower productivity, as has been the case elsewhere.[61]

Finally, the quality of digital infrastructure and the penetration of internet into businesses and households play an important role in the success of firms' productivity enhancing innovations. Successful participation in GVCs and strong exports of modern services depend on them. Many countries of the region have done well in terms of internet penetration. Figure 2.7 shows that Costa Rica is not only a leader in the region in this regard, but also relative to the average for the rest of LAC and the EAP region. Panama and Guatemala are close to the EAP average. On the other hand, Nicaragua, Honduras and El Salvador have a long way to go to catch up on this area.

Figure 2.7: Individuals Using the Internet (percent of population)



Source: International Telecommunication Union.

Market efficiency

Among the four complementary factors, the biggest gap that countries face vis-à-vis their aspirational peers, shown in Table 2.11, is in market efficiency. This is particularly telling because these countries have quite liberal trading regimes with numerous trade agreements that contribute substantially to

58 Fernandes and Pakes (2008) found that firms which suffer more production losses due to electricity outages have lower TFP and underutilize both labor and capital.
59 Transports costs in the region amount to US$ 0.17 per ton-kilometer, well above the estimated costs of US$ 0.06–0.11 in Sub-Saharan Africa and US$ 0.02–0.05 in advanced economies (World Bank 2021a).
60 Marco et al. (2017).
61 Fernandes and Pakes (2008).

that openness. But the full benefits of greater external competition cannot be obtained without adequately competitive domestic markets; more trade cannot translate easily into higher productivity growth if unproductive firms are not pressured by the market to exit, while rewarding innovative and productive ones and promoting the emergence of new businesses. More competition can also incentivize companies to invest in productivity- enhancing innovations in their pursuit to survive and prosper.

Reforms of domestic markets have lagged trade reforms in these countries. There is a need to improve the functioning of their product, finance and labor markets, especially to facilitate more domestic competition. Overall, product or output markets are found to be more competitive than labor and financial markets in Central America, with most of competition in output markets coming from trade; domestic regulations limit that competition internally. The World Economic Forum's assessment of Global Competitiveness ranks 140 countries in terms of these markets' competitiveness and efficiency and the ranks of this region's countries are shown in Table 2.10. Each of the six countries have a better rank for trade openness than domestic competition.

The labor market is uniformly more restricted and regulated in Central America than the other markets, with the financial market trailing behind. Among countries in the region, Costa Rica and Panama rank higher than others in labor market functioning. A more restricted labor market is less conducive to increasing productivity growth as it limits reallocation that is encouraged by a more open trade regime. Similarly, financially constrained firms are likely to under-invest in productivity-enhancing innovations. Enterprise surveys also highlight constraints like availability of finance and of skilled labor, the latter because restrictive labor markets may not reward acquisition of skills adequately.

Table 2.10: Efficiency of Markets, 2019 Ranking among 140 Countries

	Product Markets	Domestic Competition	Trade Openness	Financial market	Labor Market
Costa Rica	41	60	29	70	74
Guatemala	46	59	34	81	122
Honduras	65	93	44	71	95
Nicaragua	98	98	33	103	108
Panama	43	77	18	46	92
El Salvador	80	105	52	62	106

Source: World Economic Forum (WEF) Global Competitiveness Report 2019.

Institutional quality

This is the area where most countries are relatively close to their aspirational peer group performance; only Costa Rica and El Salvador lag their peer groups, the former because the peer group is OECD and the second because the latter performs poorly in all aspects of institutional quality. High rates of crime and violence are major problems in Guatemala, Honduras, and El Salvador. Though property rights and governance remain weak in the region, most countries have sufficient institutional capacity to do quite well in implementing their trade agreements, the free trade zones and their FDI regimes.


Yale
19
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3. Exports in Central America

Robust growth of exports of goods and services accompanied sustained economic growth in 1991-2017. The region's manufactured exports grew more rapidly and doubled its share in merchandise exports. Service exports grew faster than merchandise and raised its share from a quarter to two-fifths of total goods and services exports. However, the share of sophisticated items in total exports is low and, given that these are relatively small economies, the size of the export sector relative to GDP is not high.

For many countries, rapid increase in exports has not only driven growth in GDP but also in productivity. Exports are a source of additional demand and a source of foreign currency. Also, exporting firms are more productive and become more so through exporting, which is further magnified when GVCs are involved[62] and/or when sophisticated items rise in total exports.[63] Export expansion has been found to promote reallocation of labor from less to more productive activities within an exporting industry, thereby spreading its productivity premium over a growing share of the labor force and raising economy-wide productivity.[64] However, if product markets are insufficiently competitive and/or labor and financial markets are unduly restrictive, labor reallocation to more productive firms could be slowed and the incentive of firms to adopt better technology, weakened. Thus exports could contribute strongly to GDP growth without contributing much to productivity growth.[65]

The challenge Central America faces now is to raise the share of sophisticated exports and enhance the productivity of regional export basket. Expanding GVC participation should help to upgrade existing exports and diversify into more complex exports. The recent acceleration of GVC regionalization towards North America is an opportunity for the region to boost export sophistication, provided government and firms can implement reforms quickly coming out of the pandemic.

Robust Growth of Exports

The region's exports of goods and services grew at around 6 percent a year in real terms (Table 3.1). This rate of growth was higher than the average for countries in the OECD and similar to that in the rest of LAC, but lower than that of the EAP region.

Table 3.1: Growth in Exports of Goods & Services (percent per year)

	Real Growth
C6	5.9
Costa Rica	6.2
Guatemala	5.5
Honduras	5.2
Nicaragua	8.3
Panama	5.3
El Salvador	6.1
LAC exc. C6	5.5
OECD	5.3
EAP	7.7

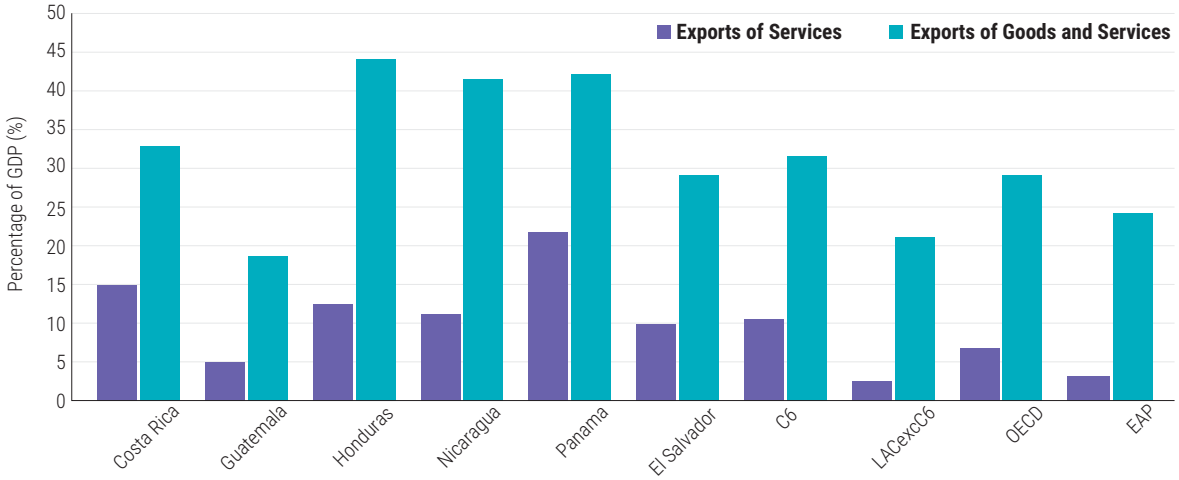
Source: WDI.
Note: Group averages are population weighted. Real growth is based on constant price value of exports.

62 A 10 percent increase in the level of GVC-participation is estimated to increase average productivity by close to 1.6 percent in cross-country studies (World Bank 2019).
63 Rodrik (2006) and Hausman et al. (2005) demonstrate that countries experience faster productivity growth by exporting more sophisticated goods.
64 Melitz (2003).
65 Many of the 1990s assessments of East Asian success stories found that rapid export growth based on labor-cost advantage coexisted with little productivity-growth.

Nicaragua's growth of total exports exceeded the region's average while growth in the remaining five countries was below that average. The region's goods and services exports reached the equivelant of US$ 80 billion in 2017 with Costa Rica, Panama and Guatemala accounting for three quarters of such exports.

However, the size of the overall export sector relative to GDP remains low in Central America. Total export of goods and services comprised only 32 percent of GDP in 2017.[66] Only Nicaragua, Honduras and Panama had a higher share than the regional average. The share of the region's service exports reached 10 percent of GDP, with Costa Rica and Panama having a higher share.

Figure 3.1: Share of Exports in GDP (percent), 2017



Source: WDI. Averages are weighted by population.

Goods exports[67]

Export of manufactures was the major driver of growth in the region's goods exports.[68] This performance transformed Central America's export structure. It not only moved away from its high dependence on agricultural exports but also established a valuable reputation for exporting manufactures and one that can be leveraged more effectively in the future.

The region's manufactured exports grew at an average rate of 20 percent a year and exceeded the rates attained in the rest of LAC and the EAP region during the same period (Table 3.2). Individually, Nicaragua and Honduras experienced even faster growth in manufactured exports than the region as a whole, with growth being slower in Guatemala, Costa Rica and El Salvador though still at double-digit rates.

Table 3.2: Manufactured Real Export Growth 1991-2017 (percent per year)

Countries/Groups	
C6	20.5
Costa Rica	12.4
Guatemala	11.1
Honduras	22.8
Nicaragua	45.1
El Salvador	14.5
LAC Exc. C6	7.2
EAP	11.4

Source: COMTRADE via WITS based on constant export values.

As a result, the share of manufactures in the region's export of goods doubled, rising from 22 to 45 percent (Table 3.3). Most countries in the region experienced a similar doubling or near-doubling of their shares relative to 1991, with Nicaragua raising its share more than threefold. By 2017, El Salvador had the highest share in the region with three quarters of its goods export in manufactures while Honduras had the lowest, with three tenths.

66 The region's goods and services exports reached a peak of 39 percent of GDP in 2011.
67 This sub-section on goods exports covers only five countries; Panama is excluded because its goods exports consist mainly of re-exports.
68 US dollar value of goods export rose from around 8.5 to 48 billion

The corresponding shares for others were more than 50 percent in Costa Rica and more than 40 percent in Guatemala and Nicaragua.

Sustained strong growth in manufactured exports has had a storied role in driving economic growth and productivity growth in many developing countries. This role was owed not only to the sector's productivity premium but also to its potential capacity to absorb workers from other less productive sectors. Manufactured exports have also exhibited a tendency for automatic convergence in export unit values, that is, the lower the average unit value of a country's manufactured export, the faster the country's subsequent growth in such unit values.[69] Also, the potential for scale economies as well as technological diffusion and spillover effects on other sectors is greater for export of manufactures.[70]

Table 3.3: Share of Manufactures in Total Goods Exports (percent)

Countries/Groups	1991	2017
El Salvador	41	74
Costa Rica	24	53
Guatemala	26	42
Honduras	13	29
Nicaragua	9	42
El Salvador	41	74
Central America	22	45

Source: COMTRADE in WITS, based on one-digit SITC.

The region has been a successful exporter of food items for many decades (Table 3.4). Food exports grew at 9 percent a year in that same period with faster growth in Nicaragua and El Salvador. Given the productivity gap in agriculture between Costa Rica and the northern countries that was documented in Section 2, the potential for upgrading quality and increasing competitiveness of the latter's food exports is high.

Table 3.4: Food Exports: Main Items & Growth Rate

Countries	Main Items	1991-2017 (Real % Per Year)
Costa Rica	bananas, pineapples, coffee, food preparations	6.4
Guatemala	sugar, bananas, coffee, palm oil, spices	9.1
Honduras	bananas, coffee, palm oil, seafood,	9.7
Nicaragua	coffee, beef, seafood, sugar, dairy,	14.8
El Salvador	sugar, coffee,	15.3

Source: Taken from the country reports of World Bank (2021): Unleashing Central America's Growth Potential.

Sophistication of goods exports

Notwithstanding Central America's success in expanding manufactured exports rapidly, the share of sophisticated items in total exports remains low. Countries experience faster productivity growth by exporting more sophisticated goods.[71] Such goods provide greater opportunities for productivity growth because they have greater potential to upgrade vertically within the industry (e.g. cars versus bananas) and to benefit from inter–industry spillovers of knowledge like exposure to higher quality technologies.[72] Producing and exporting more complex products has been found to raise productivity.[73]

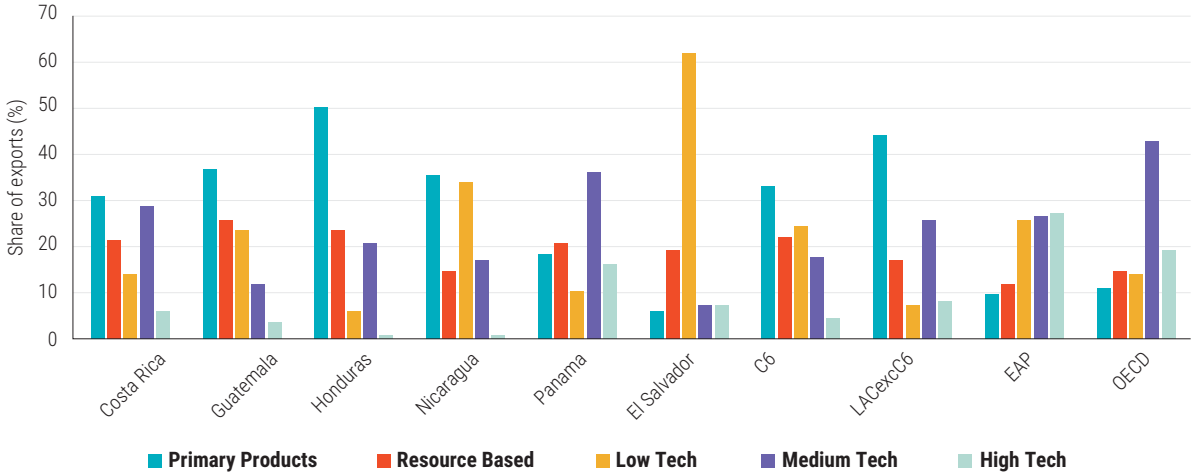
This section assesses the region's current level of export sophistication by using three measures and finds that it compares rather unfavorably with the rest of LAC and the EAP region. The three measures are: the share of medium and high-tech exports in a country's total exports; a country's unit values for selected exports relative to

69 Hausmann et al. (2005).
70 Hallward-Driemeier and Nayyar (2018).
71 Rodrik (2006).
72 Hidalgo et al. (2007).
73 Goodfriend and McDermott (1998), and Diao et al. (2017).

worldwide-maximum unit values indicating relative quality; and a country's economic complexity index (ECI) measuring capabilities that are required to produce that country's current export basket.

The first measure classifies exports by their technological content (Lall 2000) into five categories: primary goods, and then four categories of manufactures, including resource-based, low-tech, medium-tech and high-tech. In 2017 the region's share of high-tech in total goods exports was only 4 percent compared to 8 percent and 27 percent in the rest of LAC and the EAP region respectively (Figure 3.2). Panama's share of high-tech items was the highest at around 16 percent followed by El Salvador and Costa Rica at 7 and 6 percent respectively.

Figure 3.2: Technological Content of Merchandise Exports (%)



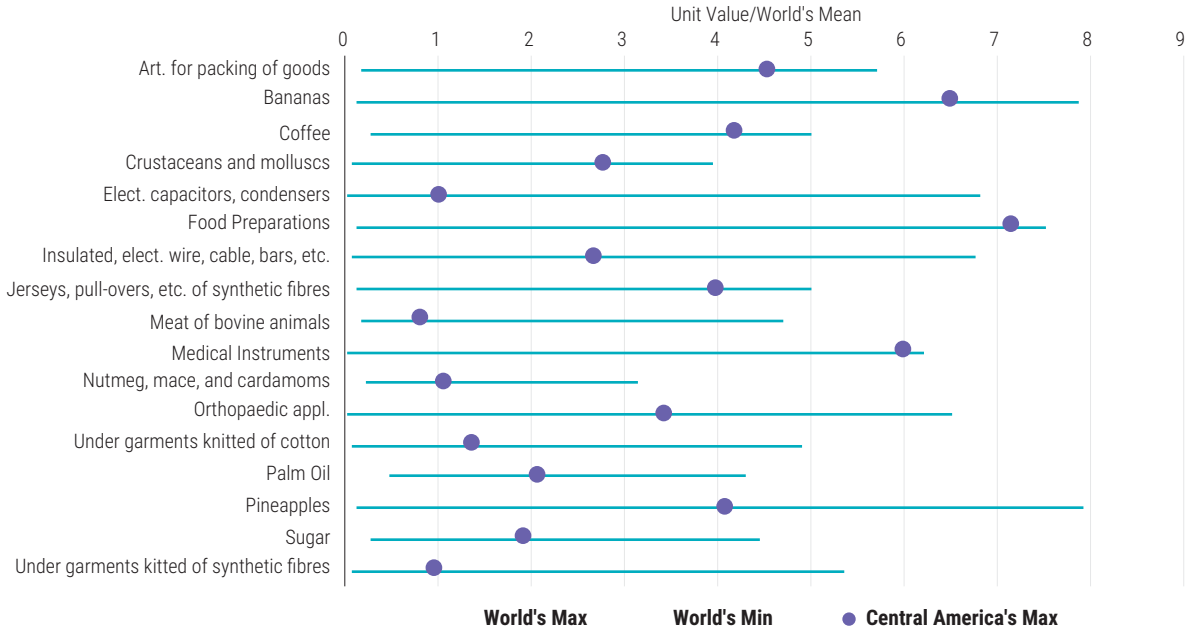
Source: COMTRADE via WITS.

The second measure uses export unit-values to assess quality, where higher unit values of the same product represent higher quality of that product.[74] Just as manufactured exports can be categorized into low-, medium- and high-technology products for the first measure, products belonging to one of those categories can also be classified along a quality spectrum of low-, medium- and high-quality with correspondingly different unit values.[75] The spread between the worldwide minimum and maximum export-unit-values (normalized to the average price) for a product represents the scope for upgrading (also known as quality ladder). The potential for quality upgrading for a given product is given by the distance between the export unit value and the worldwide-maximum unite-value. Figure 3.3 represents the quality ladder for selected products of Central American countries.[76] The dot on each of these lines represents the unit-value received by the country in the region that exports at the highest unit price. The gap between that dot and the worldwide-maximum is the scope for quality-upgrading for that product in that particular country in the region. However, for those countries in the region that are exporting that same product but of a lower quality (i.e. at a point below the dot), the potential for upgrade is greater.[77]

In the case of some exports, the current quality represented by the dot on the vertical line is close to the worldwide-maximum suggesting relatively less room for upgrades. The maximum export unit-value received by a Central American country in the case of banana, coffee, seafood, food preparations, jerseys and pullovers as well as medical devices, is close to the worldwide-maximum unit-value.[78] However, for other items like cotton and synthetic under-garments, spices, seafood, palm oil, and some fruits, the price charged by the best exporter in the region is close to the worldwide-minimum. This is an indication that the region is exportig low-quality products and that there is scope for upgrading.[79]

74 Khandelwal (2010).
75 For example, within food and beverages, bananas and coffee have significant quality differences and this range is reflected in their unit values. The same is true when it comes to low-tech garments, medium-tech auto-parts or high tech medical devices.
76 Details available in the six country studies (op. cit.) where a few selected export items were examined.
77 Every country not only has some exporters producing the best quality and thus receiving maximum unit-value, but also others that maybe exporting the same product at a lower quality; the room for upgrading is considerably higher for those exporting firms in the same country.
78 Costa Rica is producing such quality in banana, food preparations, and medical devices and Honduras in coffee.
79 Individual countries like Honduras and Guatemala have room to upgrade quality in banana. Guatemala and Nicaragua can do so in coffee, and El Salvador and Honduras in electric capacitors and insulated wires and cables.

Figure 3.3: Quality Upgrading Opportunities



Source: World Bank staff calculations from CEPII data.

The third measure of a country's export sophistication is the ECI. The idea behind the measure is that every export product involves highly specific inputs such as knowledge, labor training, infrastructure, physical assets, intermediate goods, property rights, regulatory framework and many other public goods.[80] The more capabilities a product requires to be produced, the more complex is the export product and fewer are the countries that produce and export them. Exporting bananas and pineapples requires different capabilities than exporting clothing, and exporting clothing requires different capabilities than chemicals, cars or other machinery, with chemicals, cars and machinery being the most complex in that list. The products require not only a different, but also an increasingly larger set of capabilities which accounts for their higher degree of complexity. Estimates of ECI for each country's current export basket are shown in Table 3.5.

Table 3.5: Economic Complexity Indices, 2017

Countries/Groups	ECI
Costa Rica	0.32
Guatemala	-0.29
Honduras	-0.44
Nicaragua	-0.90
El Salvador	0.22
C6*	-0.23
Rest of LAC*	0.15
EAP*	0.87

Source: Atlas of Economic Complexity.
Note: *population-weighted average.

On the basis of these estimates, Costa Rica and El Salvador are the region's leaders in sophistication of the current export baskets; the estimated ECI is 0.32 and 0.22 respectively, which is higher than the average for the rest of LAC. The ECI for the Central American region as a whole is -0.23. Nicaragua has the lowest complexity, with Guatemala and Honduras somewhere in between the highest and lowest. These indices, whatever their level in 2017, are the result of incremental growth in complexity of exports over time since 2000.[81]

80 Hausmann and Klinger (2007).
81 For details of this analysis, please see Section 6 of the country reports of World Bank (2021): Unleashing Central America's Growth Potential.

Destinations of goods exports

The features of Central America's export market are noteworthy from the point of view of export growth and sophistication. First, the share of developed economies, mainly the sum of United States (US) and the European Union (EU), in the region's exports declined noticeably. This was mainly because the fall in the share of the EU market was larger than the rise in the share of the US market for the region's exports (see Table 3.6).

Such a decline in the share of developed economies in the region's export market is not favorable for increasing sophistication and complexity of its exports. More trade with advanced economies offers better direct and indirect opportunities for raising the degree of economic complexity in Central American economies, which is important if the goal is higher productivity. Trading with more complex economies that produce sophisticated and innovative products and services can generate more learning for this region's exporting firms, not only directly through the import of knowledge and technology, but also indirectly, through the frequent business interactions that trading requires.[82] A recent assessment shows that in the LAC region, North-South trade agreements have been more helpful from the point of view of economic complexity than South-South ones.[83]

Table 3.6: Main Destinations of Goods Exports 1991 vs 2017 (percent of total)

	CRI		GTM		HND		NIC		SLV		C6	
	1991	2017	1991	2017	1991	2017	1991	2017	1991	2017	1991	2017
USA	51.6	40.9	36.2	34.5	64.5	40.2	28.4	58.6	33.9	44.9	33.0	37.4
EU	20.2	20.9	4.7	9.2	14.5	29.1	4.8	8.4	4.4	3.0	20.7	13.9
C6	15.5	21.6	34.7	31.4	7.4	17.0	23.8	15.3	53.4	41.7	14.2	24.9
EAP	1.4	4.4	1.6	4.6	1.0	2.6	20.5	2.3	1.6	2.8	9.0	8.0
LAC Rest	2.4	6.8	5.6	6.6	1.5	4.0	1.4	3.9	2.9	3.6	3.1	3.3
Mexico	0.3	2.6	5.6	4.6	0.2	1.5	0.9	6.6	2.0	2.0	6.3	6.1
ROW	8.6	2.8	11.6	9.0	10.9	5.7	20.3	4.9	1.8	2.0	13.7	6.4

Source: COMTRADE via WITS.

Though the share of the US market in the region's exports rose, the same was not true of every country. While the US share in exports of Nicaragua and El Salvador increased, it fell significantly in respect of exports from Costa Rica, Guatemala and Honduras.[84] Nevertheless, the US remains the dominant market for goods export of each of these five countries, with its share ranging from 60 percent of Nicaragua's exports to 35 percent of Guatemala's.[85]

Second, the EU's share of exports rose in all countries except El Salvador. Costa Rica and Honduras had more than 20 percent of their exports going to the EU while Guatemala and Nicaragua had only 9 percent. The increase in shares was due in part to the EU Free Trade Agreement signed in 2012.[86]

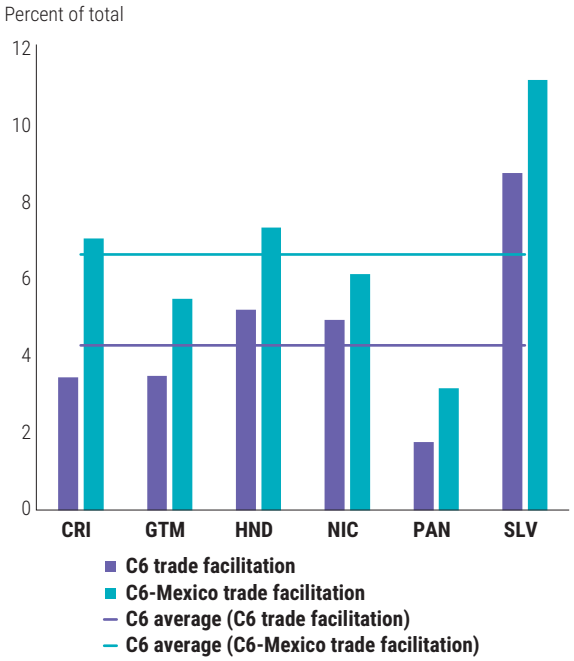
Third, Central America is the second largest export-market for all countries in the region except Honduras where EU has that position. The share of Central America in region's exports rose from 14 percent to 25 percent. Guatemala, El Salvador and Nicaragua are the most dependent on this market. Improving cross-border transport and coordinating regulatory reforms could raise intra-regional exports considerably, especially in goods that are difficult to export to distant markets.[87] However, given the similarities of their production structure and the relatively small size of their domestic markets, the potential for export growth cannot be large; additionally, export growth is unlikely to contribute much to raising the sophistication of their exports.

82 Morales et al. (2014); and Bahar et al. (2014).
83 World Bank (2019b).
84 For further details, please see country reports of World Bank (2021): Unleashing Central America's Growth Potential.
85 Panama is excluded as most of its exports are re-exports.
86 In 2012 EU signed a free trade agreement, similar to the US, with Central American countries.
87 See Section 2 on intra-regional trade in "World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.

Nevertheless, further deepening of intra-regional integration, including reduction of transport and trade facilitation costs and harmonization of regulations should be pursued because it would benefit global exports through GVCs.[88] More fluid capital, labor and goods movements across the six countries within the region can facilitate further GVC expansion and thus exports of more sophisticated products. A more level playing field for investment in the region could attract more FDI, an essential component of GVCs, because such inflows could be allocated across individual countries in the region based on each one's comparative advantage in GVC tasks. For example, under the rules of origin in trade agreements with the US and EU, yarn or fabric produced in one country of the region can be an input into garments produced in another and the resulting garment would still be eligible for duty-free entry into the US or the EU market.[89]

However, the low share of these countries' exports to Mexico, despite the latter's economic size and geographic proximity is of concern. Recent analysis, done for this report, shows that high transport and trade facilitation costs have reduced trade between these countries and Mexico. Reducing these costs, could raise exports significantly. The estimated impact of a 15 percent reduction in the cost of Central America's trade, with and without Mexico, is shown in Figure 3.4.[90] Also Mexico's central role in North American GVCs makes such trade important for the region's GVC participation too.

Figure 3.4: Change in GDP by 2030 after Lowering Trade Cost, with and without Mexico



Source: Figure 1.2 in World Bank (2021a): Unleashing Central America's Growth Potential – Cross-Cutting Themes.

Role of GVCs in the Region's Export Growth and Sophistication

Central America's success in manufactured exports, especially in improving sophistication, was facilitated by the participation in GVCs. The fact that their firms in the GVC network could produce and export a slice of the product value chain at a large enough scale to be globally competitive, without having to build the entire value chain within the country, made rapid expansion of manufactured exports possible in most of these countries. It was also easier to upgrade products and functions along the export value chain and/or to add new products because foreign firms in these GVC networks shared their technology, invested in machinery and provided training and support to the region's firms to master new technology.[91]

The entry of Central American firms into manufacturing GVCs was primarily through the insertion in value chains in three main product groups[92]: textile and garments, automotive (e.g. wire harnesses or ignition wiring sets for vehicles) and medical devices. These product groups spanned low, medium and high-tech manufacturing

88 Transport and trade facilitation costs are estimated to be very high for both global and intra-regional trade in each of these countries, World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.
89 Arias (2014). Under current state of intra-regional integration a Korean manufacturer of knit apparel in Nicaragua invested in a yarn-spinning mill in Costa Rica in order to export the yarn spun in its Costa Rican facility to Guatemala, where it is knitted into fabric and then cut & sewn into knit apparel in the same company's garment factories in Guatemala, Nicaragua & Haiti.
90 The full implementation of the WTO's Trade facilitation agreement is estimated to reduce trade costs by 15.5 percent, which increases intra-regional trade by 61 percent and the sub-region's GDP by 4.3 percent by 2030. If this reduction in trade costs is extended to Mexico, trade between Central America and Mexico increases by 130 percent and Central America's GDP by 6.7 percent by 2030. See World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.
91 World Bank (2019a).
92 There were other manufactured exports too, like pharmaceuticals, paper products, plastic packaging and electrical machinery, but each of these comprised a relatively small share of total.

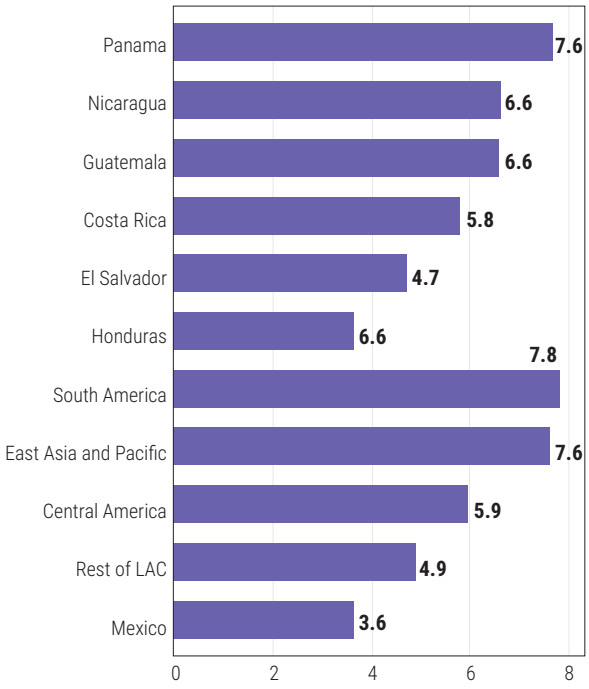
and they each became significant contributors to the region's export basket. In 2017 the region exported nearly $1 billion of textile and garments, more than $1 billion of automotive wire harnesses and $3 billion of medical devices.[93] Not all countries participated equally in each of these product groups. El Salvador, Nicaragua and Guatemala were the main garment exporters while Honduras and Nicaragua were the main exporters of wire harnesses followed by El Salvador exporting a fifth of their export value. Only Costa Rica exported high-tech medical devices. GVCs clearly facilitated the rise in medium- and high-tech manufactured exports like wire harnesses, medical devices and pharmaceuticals, but the increases were slow and small.[94]

However, the region's weakness in producing and trading intermediates undermined its ability to improve export sophistication substantially. Countries in the region bought and used less imported intermediate inputs in their gross GVC exports and exported less intermediate goods for use as inputs in foreign countries' gross exports, relative to more successful comparators like Mexico and countries in the EAP region. Among the reasons for weak GVC integration are the region's high trade costs that reduced imports as well as its inadequate human capital that undermined the competitive production of intermediates.

Value-added trade

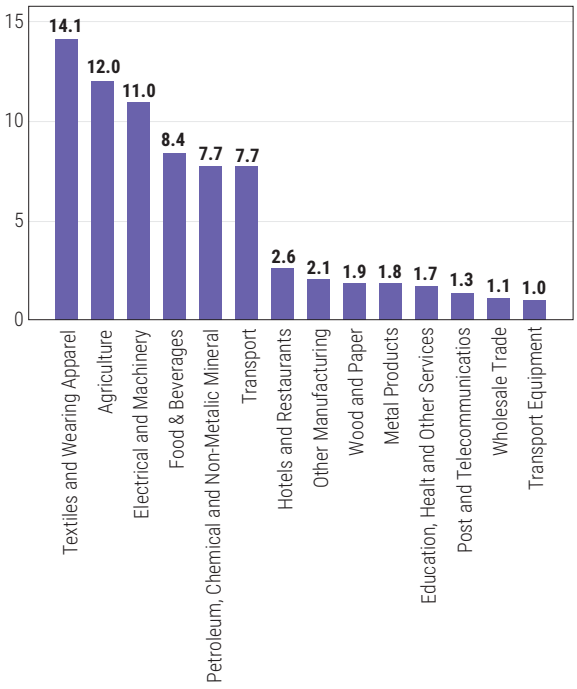
Without examining trade in value-added terms, it is difficult to understand the nature of a country's GVC participation. A country's gross GVC exports consist of three components whose performance impacts a country's economy. The first component is foreign value-added (FVA) comprising of imported intermediates from foreign suppliers that are used as inputs into the country's gross exports (also referred to as backward GVC integration). The second is domestic value-added (DVA) in the country's own gross exports of final goods that are typically consumed in foreign countries and the third is DVA in the country's own gross exports of intermediate goods that are also used as inputs by a foreign country in their gross exports. Both the first and the third components relate to trade in 'intermediates', a key aspect of GVCs around the world.

Figure 3.5: Annualized Growth of DVA by Country, 2005-2015 (percent)



Source: Figure 2.3 in World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.

Figure 3.6: Annualized Growth of DVA in Central America by Sector, 2005-2015 (percent)



Source: Figure 2.4 in World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.

93 The region also exported pharmaceuticals of more than $1 billion in the same year.
94 For example, the share of machinery exports in the region's exports rose from 1.5 to 7.5 percent in 1991 -2017 with Costa Rica, Honduras, and Nicaragua having higher shares, but none of them were close to the EAP average of 45 percent.

The sum of the last two components is a country's total DVA generated by GVCs and the rate of its growth is an indication of the contribution of GVCs to the country's employment, income and productivity.[95] Figures 3.5 and 3.6 show the annualized growth of DVA between 2005 and 2015; the first figure relates to growth in each of the six countries of the region and their comparators while the second shows DVA growth in selected sectors of the Central American region as a whole.[96]

The annual rate of growth of DVA in the Central American countries as a group was 6 percent a year over that decade. This rate exceeded the rate in the rest of LAC and in Mexico, where Mexico's is a very successful GVC exporter. Individually, DVA in Guatemala and Nicaragua grew at around 8 percent, faster than the regional average, while in El Salvador, Honduras and Costa Rica it grew by between 4 and 6 percent. The EAP region performed better than all countries and groups in the figure.

Three sectors did particularly well in this respect. DVA in textiles and clothing, a sector dominated by exports from El Salvador, Nicaragua and Guatemala, grew at more than 14 percent a year. The other two were agriculture and electrical machinery, where DVA grew by 12 percent and 11 percent a year respectively. Other manufacturing sectors like food and beverages, chemicals, as well as transport grew between 7 and 8 percent a year with paper and metal products growing the slowest at only 2 percent.

Though total DVA captures GVC's contribution to a country's employment income and productivity, countries should not seek to maximize DVA share per unit of an export product. When policies seek to restrain the use of imported inputs in order to raise the DVA of a product by limiting firms' ease of access to the variety (and often higher quality of intermediate inputs are available abroad), it reduces competitiveness and productivity of those products. Lower productivity and competitiveness ultimately hampers growth in gross exports and thus in total DVA.[97] Unless firms are free to make efficient choices about their input combinations, they cannot remain competitive on the world market. To participate effectively in GVCs, governments should view DVA and FVA as complements.

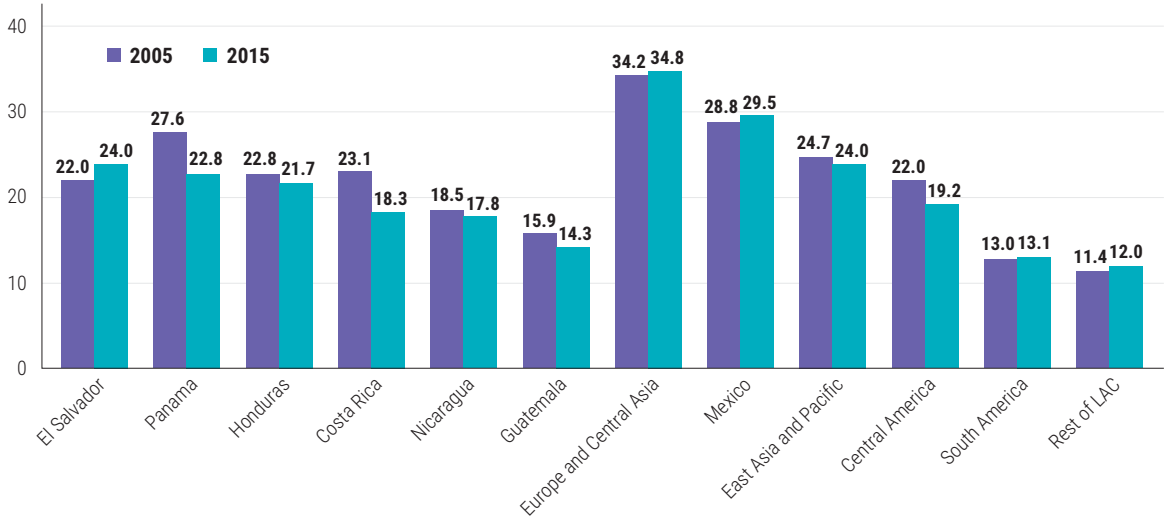
Backward GVC integration

Countries in this region have not done well in using imported intermediate inputs (see Figure 3.7). The share of FVA in Central America's gross exports (i.e. backward integration) has been lower than in Mexico and in the EAP region in both 2005 and in 2015 for which there are estimates; between 2005 and 2015 that share also declined from the rather low level. Except for Costa Rica, all other countries experienced declines in the share of FVA during that period; it rose in Costa Rica but from a level that was substantially lower than Mexico share in 2005.

While a higher share of FVA in gross exports is not necessarily success, its low share relative to other GVC-participants and declines from that low share, should raise alarm bells. Countries have not become major exporters in GVC networks without becoming successful importers of intermediates.[98] The growth of GVCs worldwide has been driven by the search for competitive and higher quality intermediates. It is thus of concern when Central America ends up with the second lowest rate of GVC participation among the comparators.[99] None of the six countries has done well in either supplying or in buying and using intermediate inputs. Figure 3.8 shows how this region compares with others: it does better than the rest of LAC but not as good as Mexico or South America within the LAC region and it does significantly worse than the EAP region.

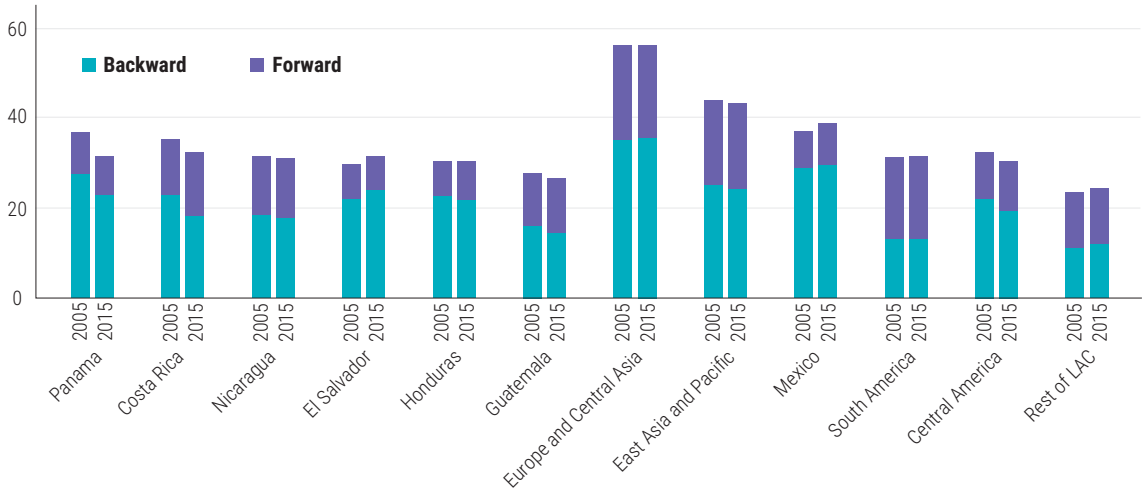
95 Value addition is a function of productivity, associated with the breadth, variety and sophistication of task and activities in which the country specializes and GVC's in-built mechanism for foreign lead firms to share their technology and provide training as it contributes to productivity.
96 The findings are based on the value-added trade data in the EORA database that was available for 2005 and 2015.
97 DVA and FVA should be viewed as complements in GVC integration as easy access and greater use of a variety of higher quality imported intermediates, embodying better technology, increases productivity.
98 Amiti and Konings (2007).
99 The GVC participation index combines measures of forward and backward integration to measure a country's participation in a vertically integrated production and trade like in GVCs.

Figure 3.7: Foreign Value Added in Gross Exports (Backward Integration) (percent)



Source: EORA database.
Note: Rest of LAC includes only the Caribbean and Belize.

Figure 3.8: GVC Participation Index for Central America and Comparators, 2005 vs 2015



Source: EORA database.
Note: Rest of LAC includes only the Caribbean and Belize.

The region's poor backward GVC integration may account for the region's low export sophistication. These countries' difficulties with importing and/or producing intermediates can be traced to two sources. First, the trade cost at the border and behind-the-border costs of transport and logistics are too high. Second, weak capacity of firms in these countries to produce competitive and good quality intermediates (i.e. whether these are intermediate goods or services) is because of inadequate availability of complementary factors in these countries that are necessary for successful adoption of new technology (see discussion on Innovation in Section 2).

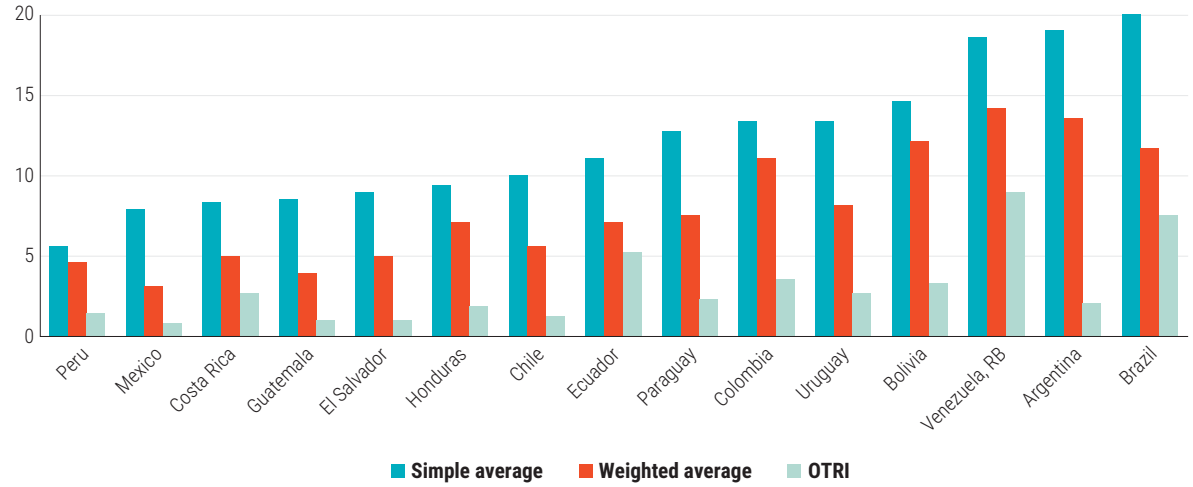
On the first, the state of tariff and non-tariff policies as well as of transport and logistics in Central America, are not very favorable to backward integration. There is evidence on developing countries that lower tariffs on manufacturing goods do encourage countries' backward GVC participation.[100] And tariffs on intermediate inputs have had a strong negative impact on GVC participation. High cost and time of transport, according to

100 A 1 percentage point decrease in a country's average manufacturing tariff is associated with an increase of 0.4 percentage points in that country's backward GVC participation share in gross exports.

developing country suppliers, has been an obstacle to entering, establishing, or upgrading in GVCs.[101] High logistics costs have prevented specific countries from participating in GVCs for electronics and fruits and vegetables.[102] Trade in parts and components in international production networks are found to be much more sensitive to logistics performance than trade in final goods.

While Central American countries are more open than many, its transport, logistics and trade facilitation arrangement remain deficient. Tariffs are relatively low, but even at current levels, they can pose a barrier when inputs cross borders several times. Non-tariff measures exist, but estimates of the overall trade restrictiveness index (OTRI) in Figure 3.9 show that they are quite low too (i.e. 2 percent or lower).Overall trade policies are quite competitive vis-à-vis successful GVC participants like Mexico and Chile.

Figure 3.9: Trade Barriers in Selected Central American Countries & Comparators (percent)



Source: Figure 22 in World Bank (2019b).
Note OTRI is overall trade restrictiveness index.

The same cannot be said about the ease of trading (Table 3.7). On trade facilitation and logistics, Central America is behind comparators like Korea, Chile and Mexico. Performance on time to export at the port is quite competitive in most countries of the region; only in Honduras and Nicaragua are the ports not operating efficiently, which can be an important obstacle making exports less competitive vis-à-vis other GVC participants. However, on logistics, which include behind-the-border movement of goods from firms to ports (exports) and ports to firms (imports), all countries of Central America except Panama performs poorly. Without correcting this, these countries will find it difficult to take advantage of the new export opportunities from the regionalization of GVCs in North America. After a careful examination of the critical bottlenecks in movement of goods to and from port, this should become a priority area of reform.

Countries from this region have a location advantage for participating in GVCs in North American, given the dominance of the US market. Manufacturing firms, including those from Asia, that need to minimize response times, favor Mexico as a production site when producing for the North American market. Door-to-door time for products sourced from China's east coast and continuing into the interior of the United States average three to four weeks via the West Coast, and four to six weeks via the East Coast. In contrast, door-to-door time is less than a week for products sourced from Mexico.[103] This advantage is critical for manufactured products whose demand is volatile or for perishable, bulky and seasonal products for which carrying costs are high. The six countries could benefit from their location if they reduce trade costs by improving their transport and trade facilitation situation.[104]

101 OECD, WTO and UNCTAD (2013).
102 Arvis et al. (2010).
103 There is another advantage. Prices of freight costs for shipping a container to Pittsburgh indicate that shipping from Mexico costs only 57% of the price of shipping from Brazil and 49% of that of shipping from China (Boston Consulting Group, 2008, 2014).
104 Also Mexico's ample labor coupled with capital and advanced technology from Canada and the US and the new USMCA trade agreement could generate a major resurgence in the coming years.

Table 3.7: Ease of Trading Indicators for Central America and Comparators

	Logistics Performance Index (2018 Rank out of 160)	Enabling Trade Index (2016 Rank out of 136)	Time to Export (Hours in 2019)
Costa Rica	73	57	20
Guatemala	125	69	36
Honduras	93	86	108
Nicaragua	n.a.	76	72
Panama	38	58	24
El Salvador	101	74	24
Korea	25	27	13
Chile	34	21	60
Mexico	51	49	20

Source: LPI and Time to Export is from World Bank and Enabling Trade Index is from WEF.

Export of services

Service exports are an increasingly important part of global trade. The share of service exports in world GDP has more than doubled in the last 25 years, and the service sector accounted for nearly a quarter of global trade in 2017. The share of developing countries in global service exports has also grown, reaching 25 percent in 2017.

Central America's service exports grew at an average real rate of 7.5 percent between 1991 and 2017. Panama and Costa Rica exported US$13 and US$9 billion in services in 2017 accounting for more than two-thirds of the region's exports of US$32 billion. Guatemala was next at US$3.5 billion, Honduras and El Salvador between US$2.5 and to 3 billion and Nicaragua only US$1.5 billion.

The region's service exports grew faster than goods exports and the region raised its share in total exports of goods and services from a quarter to two fifths. Costa Rica and Panama had the highest share of services in their respective total exports at around 40 percent, while the share of the remaining countries hovered between 25 and 35 percent each.

Table 3.8: Composition of Service Exports in Central America (percent)

	Costa Rica	Guatemala	Honduras	Nicaragua	Panama	El Salvador
Modern Services	49	27	15	12	17	15
Travel Services	43	55	25	54	33	34
Transport Services	5	8	4	2	48	17
Other Services	3	10	56	32	2	34

Source: UNCTAD.

In terms of the composition of service exports, modern services – finance, ICT, professional and business services – have grown in all countries. Costa Rica achieved the largest increase in modern services of 30 percentage points between 1991 and 2017 and now these account for nearly half of its total service exports (see Table 3.8). Guatemala's share of modern services reached a quarter while Panama, Honduras and El Salvador reached more than a 15 percent and Nicaragua around twelve percent (Table 3.8). ICT dominates modern service exports in Nicaragua, Honduras and El Salvador, and business services do in Costa Rica and Guatemala and financial services in Panama.

Travel and tourism remain a major service export across the subregion. It comprises nearly half or more in Costa Rica, Guatemala and Nicaragua and around a third in Panama and El Salvador. The share of transport in service exports is mainly in single digits except for Panama where it accounts for more than half of total service exports given the presence of the Canal, its major asset.

Upgrading and Diversifying Exports

To increase the share of sophisticated items in the region's export of goods and activities, two areas could be targeted:quality upgrading of existing exports as well as diversifying into new and more complex exports in respect of both goods and services.

Goods exports

In agriculture, there are several possibilities in respect of quality upgrading.[105] Coffee and cocoa exporters can move to more niche products like specialty coffee and cocoa that add value and acquire a new higher-value part of the market. In fruits there is also room for considerable value creation by moving to a ready-to-eat segment of the market in banana, as well as other tropical fruits like mango, melon, papaya and pineapple. In seafood, the move should be toward a ready-to-cook segment which is a higher-value market. However there would be a need for substantial improvements in infrastructure for better quality control and logistics.

Diversifying into more complex exports is not a smooth process of changes along a continuum but rather a messy process beset by market failures. Product-space analysis should be used to identify the potential for diversification.[106] The ease with which a country can move to producing new more complex exports depends on what its current capabilities look like, or rather capabilities that are used for the countries current export basket. Countries that have built up capabilities in producing a certain good can redeploy them more easily to produce new exports that are near the 'product-space' that are being currently exported because market failures are less binding when firms have to make small adjustments to capabilities to produce a new export. The central part of that 'product-space' is dense, with many complex goods clustered close to each other (e.g. chemicals, machinery, metals etc.) and thus many more opportunities exist to diversify while in the periphery, where agricultural items and labor-intensive manufactures are typically located. The northern countries of the region have more of their exports in the periphery, though some of them have a small share of their exports in the central part (e.g. pharmaceuticals, auto parts) while Costa Rica has a much larger share in the center.

On the basis of the 'product space' analysis, this report found that Central American countries could diversify into complex exports in five different subsectors. Not all countries have the same knowledge and capabilities to start with and thus their potential subsectors for diversification differ. This analysis has been carried out at the 6-digit product-level and aggregated those products into subsectors.[107] Table 3.9 highlights subsectors with the highest potential for diversifying into complex exports and the corresponding countries for which they are relevant.

Table 3.9: Potential for Diversifying into More Complex Export Products

Export Products	Countries
Machinery, electrical and transportation	Costa Rica, Guatemala, and Nicaragua
Foodstuff	Costa Rica, Honduras, and Nicaragua
Chemicals and allied subsectors	El Salvador, Guatemala, and Honduras
Plastic products and rubber products	El Salvador and Honduras
Metals, stone and glass	Costa Rica and Nicaragua
Miscellaneous	Guatemala

Source: Section 6 of the country reports of World Bank (2021): Unleashing Central America's Growth Potential.
Note: Annex to Section 6 provides disaggregated items for each country.

105 Crisculo et al. (2019).
106 Hausmann and Klinger (2007).
107 For a more detailed description of the product space analysis and the main characteristics per country, please refer to each country specific report in World Bank (2021): Unleashing Central America's Growth Potential.

In manufactures, the potential for upgrading and diversifying into more sophisticated exports is high. Diversifying into more complex and more technology-intensive manufactures in chemicals and pharmaceuticals, in machinery or plastics and rubber products are feasible as some countries in the region have demonstrated in the cases of wire harnesses and medical devices. Greater regionalization of GVCs to North America in areas of essential bio-pharmaceuticals and essential bio-medical materials and equipment could be another route for upgrading and diversifying. Upgrade of existing garment exports into higher-end items or a move from cotton into synthetic or into higher-end modern materials are worthwhile options to explore for northern countries that are large garment exporters.

Future service exports

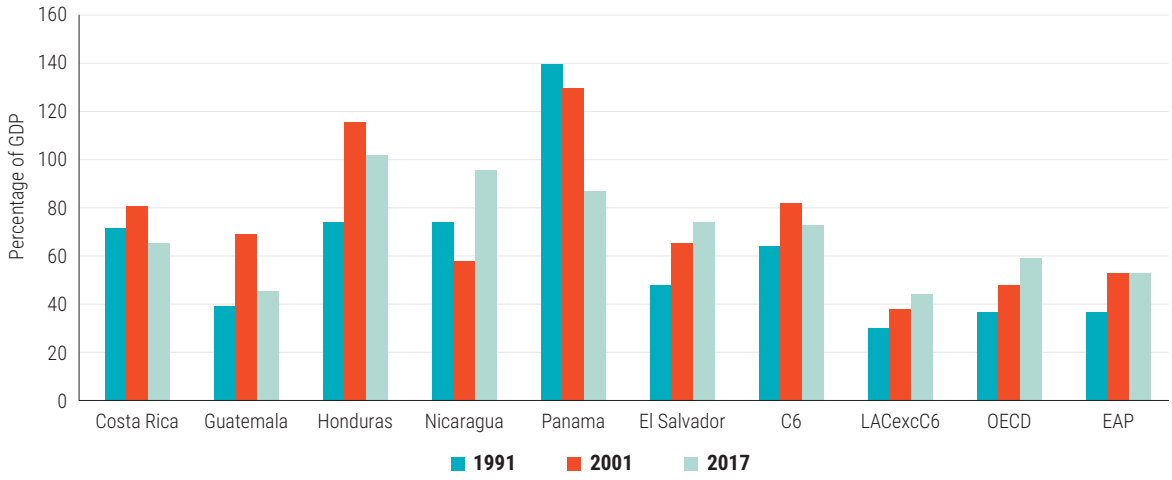
Countries should not only continue on the tried and true track of further promoting tourism and travel, they should also endeavor to expand the export of modern services. With more labor moving from agriculture to services, governments could focus on a two-pronged effort to enhance the productivity of the service sector as a whole: one aimed at expanding modern services and the other at raising the competitiveness and productivity of the less productive trade and tourism area, mainly retail trade and hotels, by attracting more foreign investment.

The expansion of modern service exports –finance, ICT, professional and business services– may depend increasingly on reducing existing restrictions on trade and foreign investment in services, improving digital infrastructure and expanding skilled labor. The first two can be done relatively quickly but the third relating to increasing skills will be time-consuming because it requires substantial improvements in access to and quality of secondary and tertiary education.

More Open, But with High Trade Costs

Central American countries are more open than many, but not enough given that these are small economies that are much more dependent on the external market for their growth and productivity performance. The region's openness ratios are higher than the rest of the LAC region as well as other regions, but they are not as high as other sub-regions with small economies like the Western Balkans and the Baltics.[108] More importantly, the ratio of trade to GDP has actually fallen between 2001 and 2017, with Nicaragua and El Salvador the two exceptions to that trend (Figure 3.10). The six countries have also harnessed the GVCs for exports commendably, but their production of and trade in intermediates is below comparators, and their level of export sophistication is low.

Figure 3.10: Changes in Trade GDP Ratios



Source: WDI. Averages weighted by population.
Note: Trade is defined as the sum of exports and imports (of goods and services).

108 The region's trade to GDP ratio is around 70 percent with Nicaragua, Panama and Honduras with shares between 80 and 100 percent.

Their trade regimes have become less restrictive in recent decades. But the remaining tariff and non-tariff restrictions (as seen in Figure 3.9) may be inhibiting multiple border-crossings as some GVCs require. All six countries completed their accession to the World Trade Organization (WTO) in the 1990s. Numerous trade agreements have been signed that have reduced not only their own non-tariff restrictions but also tariff and non-tariff barriers in partner countries. The two agreements that probably had a substantial impact on easing trade and investment in both goods and services and expanding participation in GVCs were the CAFTA-DR agreement with the US in 2004 and that with the EU in 2012. Both established free trade areas with the region, including commitments for services trade, investment, intellectual property and government procurement. However, there may still be scope for further reductions in tariff and non-tariff restrictions.

Notwithstanding the above, trade costs, including tariffs, transport and trade-facilitation costs are estimated to be high.[109] These costs are equivalent to an intra-regional average tariff of 74 percent. Average trade costs are estimated to be as high as 91 percent for El Salvador and 80 percent in Honduras with a low of 64 percent for Panama. Trade facilitation costs, including customs clearance, have been coming down in recent years driven by the implementation of WTO's TFA. It has been estimated that the full implementation of TFA commitments could reduce total trade costs by more than 15 percent.[110] The region on average has implemented three quarters of its commitments with Costa Rica at near completion and Panama, at more than 80 percent of its commitment, and so some of that reduction has taken place.

Time and costs of transport are high in the region. Transport costs amount to US$0.17 per ton-kilometer in Central America, well above the estimated costs of US$0.02–0.05 in advanced economies, but also higher than US$0.06–0.11 in Sub-Saharan Africa.[111] On average, transport costs account for about 2.6 percent of firms' non-value added expenditures in the six countries, with firms in Guatemala and Honduras facing even higher costs. In sectors more dependent on transportation like agriculture and food products, the share of transport costs is 4.5 percent. The region's continuing low rate of public investment in transport infrastructure has not helped. With the fiscal impact of Covid-19, transport investments should be prioritized with an eye on increasing GVC participation and making exports more competitive.

As the recovery from the current economic contraction gains steam, countries should accelerate efforts to increase the openness of their trade regimes, implement fully their TFA commitments and invest in priority transport infrastructure to lower time and cost of transport.

109 Trade costs as defined here refer to all costs involved in trading goods internationally relative to those involved in trading goods domestically and capture trade costs in a wider sense, including not only international transport costs and tariffs but also other trade cost components.
110 Moise and Sorescu (2013).
111 World Bank (2021a): Unleashing Central America's Growth Potential - Cross-Cutting Themes.


5. COMENTARIO

4. Conclusion

Central America's priority is to recover from its deepest economic contraction and restore strong economic growth in a sustained manner. With increases in working age population projected to decline sharply, strong growth in the long run can only be achieved with higher productivity. More effective participation in GVCs, as well as a robust shift towards sophisticated exports of goods and services will be needed, but neither can be ensured without firms investing in productivity-enhancing innovations. With a high likelihood of limited structural change, greater aggregate productivity must come from within each sector: manufacturing, services and agriculture.

Firms tend to under-invest in innovation if a country has inadequate availability of complementary factors, such as human capital and infrastructure, as well as efficient markets and institutions. Firms may find it easier to adopt and adapt new technology and to export more sophisticated exports when they are part of a GVC network because they can receive support from foreign firms for that purpose. But in a context where complementary factors are in short supply and/or that trade costs are too high, such backing from foreign firms is less forthcoming. The evidence found in this reports shows that the six countries suffer from high trade costs and inadequate availability of complementary factors to varying degrees.

There is great urgency to address these issues and the current conditions offer opportunities to be seized. While the Covid-19 pandemic has pushed each country into a deep recession from which recovery will be gradual, it has also accelerated the regionalization of GVCs to North America. This nearshoring will create further opportunities for Central American countries to increase their GVC participation. However, the region runs the risk of missing out on this opportunity if the governments do not reform and invest expeditiously in areas that will attract high value foreign investment. In this respect, efforts to reignite and deepen CAFTA-DR free trade agreement will be very important to attract the US investors planning to relocate their businesses to the US and neighboring countries.

Policy Challenges

The broad direction of policy challenges aimed at raising productivity growth is similar across the six countries, even though their starting points in each policy area differ. They include reduction in trade costs and removal of restrictions on FDI in services, especially in modern services, as they are direct impediments to expanding GVC participation. To encourage investments in productivity-enhancing innovations and ensure their success, all countries ought to reform and invest to improve human capital, infrastructure, markets and institutions, though each country's priorities in each area will differ.

Reduce trade costs at the border

Trade costs are high and need to be reduced substantially if GVC participation is not to be stunted. Steady and concerted efforts by all Central American countries to liberalize their trade regimes further, to speed up trade facilitation processes and to fill critical gaps in transport infrastructure are needed. Though tariff rates are not high, when intermediate goods cross a country's border multiple times, it adds up.[112] The region's cost of and time to obtain customs clearances are clearly higher than its many competitors. The completion of ongoing implementation of WTO's TFA will reduce that cost, as will the adoption and implementation of a single, harmonized and automated border crossing system in each country. These actions together with investments in priority transport infrastructure can bring trade costs down significantly to make increases in GVC integration more attractive. This will not only facilitate trade within the region but also increase trade with Mexico and the rest of the world.

112 However, there are non-trivial tariffs for food products and apparel and there are numerous nontariff barriers.

Reduce restrictions on FDI in services

Reducing restrictions on FDI in modern services can enhance inflows of better technology and more capital into modern services like ICT, finance and business services. These services are not only exportable but they also serve as intermediate inputs into manufacturing and agriculture. FDI can raise service sector productivity and in turn raise the productivity of manufacturing and agriculture too by virtue of more efficient and better quality service-inputs. The service sector is also the largest employer and where more people will end up working in the future. Thus, any rise in its sector productivity will increase aggregate productivity growth.

Complementary Factors

Deficiencies in complementary factors – human capital and infrastructure, as well as efficient markets and institutions – result in under investment of productivity-enhancing innovations.[113] Though Costa Rica and Panama are better placed than others in the region, all countries compare unfavorably with their relevant comparators, in respect to these four factors.[114]

Human capital

Expanding the stock of skilled labor is an urgent priority not only because it is in short supply, but also because it takes time to do so. Insufficiently skilled labor derails firm investments in the adoption or adaptation of new technology and/or the introduction of new products. At the simplest level, workers must be trainable so that they can run new machines. Well-trained engineers are necessary to install and/or to maintain such machines and they must be able to tweak them to better suit local conditions where needed. Any increase in the aggregate intensity of innovation efforts cannot be successful without more skilled labor. Costa Rica needed higher skilled labor for its high-tech medical-devices exports just as Honduras and Nicaragua needed appropriately skilled labor for their medium-tech wire harness exports. To the extent they succeeded in providing such labor, they expanded their exports. But further growth in those exports or entry into other technology-intensive GVC exports may not happen if the country cannot supply more skilled labor.

Education and training are the main instrument for improving the adequacy of skilled labor. The composition of the stock of skilled labor varies widely among countries in the region but overall, they are in short supply. Most countries in the region have made substantial progress in improving access to secondary education but the quality of that education continues to lag comparators. Costa Rica and Panama have done better than others in terms of both enrollment and quality, but even they are substantially behind comparators, especially their East Asian peers. The story is similar in the case of enrollment and quality of tertiary education, though adequate supply of labor with tertiary education is essential for expanding modern service exports as well as for innovation investments more generally. Expanding access to secondary and tertiary education must be accompanied by better quality if it is to make a difference in adequate supply of skilled labor. Better vocational education and retraining programs are needed for adults.

Infrastructure

Without a significant investment increase in priority infrastructure, growth in exports of goods and modern services will be inhibited and innovation investments will be depressed. These countries suffer, to varying degrees, from inadequate power, transport, telecommunications and digital infrastructure due to low public investment.

Specifically, deficiencies in transport and telecom inhibit export sophistication and GVC participation. High transport costs discourage multiple border crossings of intermediate goods that GVCs often require. Sophisticated modern services like finance, IT and professional services, are exported and imported only because they can be digitally stored and then transported using efficient telecom infrastructure. GVCs require constant improvements in telecom infrastructure and services for their continued growth. Sophisticated manufactured exports use more of these services as key intermediate inputs.

113 Cirera and Maloney (2017).
114 See Section 5 of each ountry report of World Bank (2021): Unleashing Central America's Growth Potential. When compared to their structural and aspirational peers each country in general lags aspirational peers and sometimes structural peers.

While filling critical infrastructure gaps in each country will be critical for higher productivity growth, the post-Covid-19 fiscal situation makes more public investment for such infrastructure uncertain at best. Further work is needed to assess what is available in terms of fiscal space and to identify clearly the priority infrastructure investments that could be funded from public resources. It will also be necessary to work out options in respect of private investment in infrastructure; power and telecom are two areas that could rely the most most on such investment.

Labor market

Restrictive labor regulations restrict mobility of labor from less to more productive activities, a key attribute of an efficient labor market. Without such mobility it is difficult to achieve higher growth in aggregate productivity. Informal employment keeps labor stuck in low-productivity jobs within the manufacturing sector. Reallocation of labor between sectors is necessary for structural change. But reallocation among subsectors and among firms within a sector is equally vital for raising a sector's productivity growth. Dispersion in productivity-levels within manufacturing is large, like in the rest of Latin America and thus returns to labor reallocation are correspondingly high. Reforming labor market restrictions in general and reducing limits and costs of hiring and firing, should help in all six countries in this respect.[115] Moreover, the labor force growth slowdown observed in these countries could be offset, at least in part, by increasing the rate of participation of working-age women. There are many factors limiting women's access to jobs, and lack of flexible contracts is one of them. Also, mothers with young children need daycare and transport at night may also be a problem, among others.

Financial markets

Reforms to strengthen and improve the region's financial markets are needed. The financial depth in most of these countries is low. Finance markets are not well developed in the region with the exception of Panama; they do not compare well with their structural peers. Well-developed financial markets improve the efficiency of capital allocation and enable firms to make productivity-enhancing investments by allowing firms to diversify investment-risk and increase liquidity.[116] For countries with an initial level of productivity, lower financial depth has been associated with lower labor productivity and slower subsequent productivity growth.[117]

Quality of institutions

Improving the quality of institutions is a regional imperative. All six countries should seek to enhance government effectiveness, to strengthen property rights and to reduce crime and corruption. Greater government effectiveness and more assured property rights are essential for ensuring macro-stability, for implementing trade agreements and free trade zones and for attracting FDI. High rates of crime and violence, especially in the northern countries, discourages investors by raising costs of security and uncertainty and thus correspondingly, reducing crime, especially homicides, can be important for increasing GVC participation.

Central America can restore and sustain strong growth through higher productivity growth if it rises to the policy challenges cited above.. The pandemic has depressed growth and reduced fiscal space but it has affected trade less adversely and created additional export opportunities.

This synthesis report will support a dialogue on the multiple challenges that these countries have to address to ensure sustained strong GDP growth with higher productivity growth. To double its GDP per capita in the next twenty years, the region will need to grow at a minimum rate of 3.5 percent annually, not as high as what was achieved in 1991-2017. To meet this target, raising productivity growth will remain critical. In the earlier decades the region was able to achieve robust GDP growth without much productivity growth because of rapid growth in employment and the working age population. The challenges of implementing policies that will support higher productivity growth and raise share of sophisticated exports should not be underestimated. Tackling them effectively demands a strong strategic vision, policy coordination and building state capacities.

115 Evidence for this report provided by Sinha (2019a).
116 Fisman and Love (2003).
117 Buera et al. (2011).

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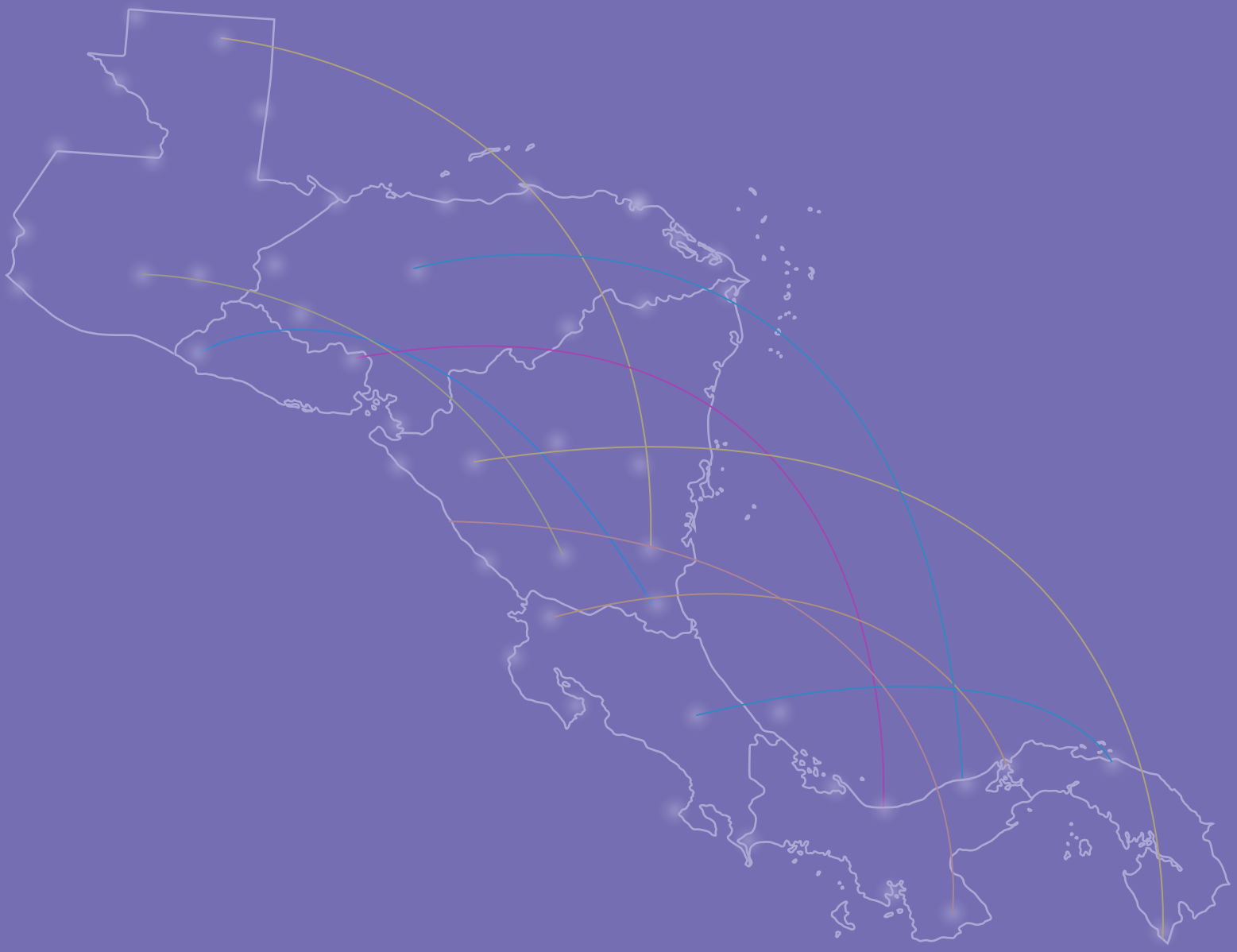

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