UNLEASHING CENTRAL AMERICA’S GROWTH POTENTIAL

Costa Rica

Hulya Ulku
Gabriel Zaourak
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Acronyms and Abbreviations</td>
<td>1</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>3</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>5</td>
</tr>
<tr>
<td>2. Macroeconomic and Growth Performance: Historical Context</td>
<td>9</td>
</tr>
<tr>
<td>3. Drivers of Growth: Growth and Development Accounting</td>
<td>13</td>
</tr>
<tr>
<td>3.1. How would reforming the drivers of TFP affect growth?</td>
<td>15</td>
</tr>
<tr>
<td>4. Aggregate Trends in Productivity and Structural Transformation</td>
<td>19</td>
</tr>
<tr>
<td>4.1. Employment composition and structural change</td>
<td>19</td>
</tr>
<tr>
<td>4.2. Sectoral labor productivity growth</td>
<td>20</td>
</tr>
<tr>
<td>4.3. The contribution of structural change to productivity growth</td>
<td>22</td>
</tr>
<tr>
<td>5. Growth Diagnostics Analysis</td>
<td>27</td>
</tr>
<tr>
<td>5.1. Infrastructure</td>
<td>27</td>
</tr>
<tr>
<td>5.1.1. Physical infrastructure</td>
<td>27</td>
</tr>
<tr>
<td>5.1.2. Digital infrastructure</td>
<td>30</td>
</tr>
<tr>
<td>5.2. Innovation</td>
<td>31</td>
</tr>
<tr>
<td>5.3. Financial sector</td>
<td>33</td>
</tr>
<tr>
<td>5.3.1. Access to banking</td>
<td>33</td>
</tr>
<tr>
<td>5.3.2. Financial depth</td>
<td>34</td>
</tr>
<tr>
<td>5.3.3. Bank competition</td>
<td>36</td>
</tr>
<tr>
<td>5.4. Property rights</td>
<td>36</td>
</tr>
<tr>
<td>5.5. Corruption</td>
<td>38</td>
</tr>
<tr>
<td>6. Diversification and Exports</td>
<td>43</td>
</tr>
<tr>
<td>6.1. Why diversification matters to Costa Rica</td>
<td>43</td>
</tr>
<tr>
<td>6.2. Diversification of exports would help sustain growth and create jobs</td>
<td>44</td>
</tr>
</tbody>
</table>
## Contents

6.3. What are the paths for diversification? 48
   6.3.1. Export quality upgrading 48
   6.3.2. New export opportunities based on current capabilities 49
   6.3.3. Services provide opportunities to boost trade and domestic linkage 53

7. Conclusion 57

Endnotes 58

References 61
# List of Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEs</td>
<td>Advanced Economies</td>
</tr>
<tr>
<td>BF</td>
<td>Business Freedom</td>
</tr>
<tr>
<td>CA</td>
<td>Central America</td>
</tr>
<tr>
<td>CABEI</td>
<td>Central American Bank for Integration</td>
</tr>
<tr>
<td>CAFTA-DR</td>
<td>Central America Free Trade Agreement (DR and US)</td>
</tr>
<tr>
<td>CBOE</td>
<td>Chicago Board Options Exchange</td>
</tr>
<tr>
<td>CGE</td>
<td>Computable General Equilibrium model</td>
</tr>
<tr>
<td>CIF</td>
<td>Cost Insurance and Freight</td>
</tr>
<tr>
<td>CPI</td>
<td>Corruption Perception Index</td>
</tr>
<tr>
<td>CRI</td>
<td>Costa Rica</td>
</tr>
<tr>
<td>DB</td>
<td>Doing Business</td>
</tr>
<tr>
<td>DGE</td>
<td>Dynamic General Equilibrium</td>
</tr>
<tr>
<td>DR</td>
<td>Dominican Republic</td>
</tr>
<tr>
<td>DVA</td>
<td>Domestic Value Added</td>
</tr>
<tr>
<td>EAI</td>
<td>Economic Activity Indicator</td>
</tr>
<tr>
<td>ECLAC</td>
<td>Economic Commission for LAC</td>
</tr>
<tr>
<td>EF</td>
<td>Economic Freedom</td>
</tr>
<tr>
<td>EMDEs</td>
<td>Emerging Markets and Developing Economies</td>
</tr>
<tr>
<td>EPU</td>
<td>Economic Policy Uncertainty</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FoB</td>
<td>Free on Board</td>
</tr>
<tr>
<td>FVA</td>
<td>Foreign Value Added</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GDyn</td>
<td>Dynamic GTAP</td>
</tr>
<tr>
<td>GNI</td>
<td>Gross National Income</td>
</tr>
<tr>
<td>GTM</td>
<td>Guatemala</td>
</tr>
<tr>
<td>GVC</td>
<td>Global Value Chain</td>
</tr>
<tr>
<td>HND</td>
<td>Honduras</td>
</tr>
<tr>
<td>IDB</td>
<td>Inter-American Development Bank</td>
</tr>
<tr>
<td>ICSE</td>
<td>International Classification of Status in Employment</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labor Organization</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>IOM</td>
<td>International Organization for Migration</td>
</tr>
<tr>
<td>IRF</td>
<td>Impulse-response Functions</td>
</tr>
<tr>
<td>LAC</td>
<td>Latin America and the Caribbean</td>
</tr>
<tr>
<td>MIMIC</td>
<td>Multiple Indicators Multiple Causes</td>
</tr>
<tr>
<td>NIC</td>
<td>Nicaragua</td>
</tr>
<tr>
<td>NTB</td>
<td>Non-tariff Barriers</td>
</tr>
<tr>
<td>ODA</td>
<td>Official Development Assistance</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PAN</td>
<td>Panama</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing Power Parity</td>
</tr>
<tr>
<td>SEMP</td>
<td>Self-employment Data</td>
</tr>
<tr>
<td>SICA</td>
<td>Central American Integration System</td>
</tr>
<tr>
<td>SLV</td>
<td>El Salvador</td>
</tr>
<tr>
<td>SME</td>
<td>Small, Medium Enterprises</td>
</tr>
<tr>
<td>TFA</td>
<td>Trade Facilitation Agreement</td>
</tr>
<tr>
<td>TPS</td>
<td>Temporary Protected Status</td>
</tr>
<tr>
<td>U.S.</td>
<td>United States of America</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNECLAC</td>
<td>United Nations Economic Commission for LAC</td>
</tr>
<tr>
<td>UNESCAP</td>
<td>United Nations Economic and Social Commission for Asia and the Pacific</td>
</tr>
<tr>
<td>VAR</td>
<td>Vector Auto Regression/Regressive</td>
</tr>
<tr>
<td>VAT</td>
<td>Value-added Taxation</td>
</tr>
<tr>
<td>VIX</td>
<td>Volatility Index</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WDI</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>WEF</td>
<td>World Economic Forum</td>
</tr>
<tr>
<td>WGI</td>
<td>Worldwide Governance Indicators</td>
</tr>
<tr>
<td>WoRLD</td>
<td>World Revenue Longitudinal Data</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
</tr>
</tbody>
</table>
The “Unleashing Central America’s Growth Potential” analytical body of work consists of a synthesis report, six country specific reports, and a report on selected cross-cutting themes. The reports were co-led by Hulya Ulku (Senior Economist, ELCDR) and Gabriel Zaourak (Economist, ELCMU) under the guidance of Jorge Araujo (Practice Manager, ELCMU), Pedro Rodriguez (Program Leader, ELCMU), Seynabou Sakho (former Country Director, LCC2C), Michel Kerf (Country Director, LCC2C) and Robert Taliercio (Regional Director, ELCDR).

Substantive contributions to the country reports and synthesis report were made by Jean Nicolas Arlet, Francisco Arroyo Marioli, Natalia Leonor Campora, Sergiy Kasyanenko, Temel Taskin, and Gabriela Paz Zapata Roman (country reports); Kazi Matin (synthesis report); Jorge Guzman, Steven M. Pennings and Rishabh Sinha (background papers). The chapters of the Cross-Cutting Themes Report were prepared by Guillermo Arenas, Natalia Leonor Campora, Sergiy Kasyanenko, Csilla Lakatos, Alen Mulabdic and Shu Yu. Samuel Jaime Pienknagura contributed to the initial design of the study.

Luis Rojas provided outstanding research assistance, as did Marco Cobanera in the initial stages of the report.

The team appreciate the advice and guidance from the following Central American country economists: Rafael Barroso, Elena Bondarenko, Simon Davies, Tamoya Annika Lois Christie, Aygul Evdokimova and Eduardo Olaberria. The team is also grateful for valuable comments and insights received from Barbara Cunha, Ewa Joanna Korczyc, James Robert Ezequiel Sampi Bravo, Ekaterina Vostroknutova and David E. Yuravlivker. The reports were peer reviewed by Jose Lopez Calix (Lead Economist, EA2M1), Barbara Cunha (Senior Economist, ELCMU), Roberto Fattal Jafe (Economist, DECMG), Julie Rozenberg (Senior Economist, SLDR) and Marc Schiffbauer (Senior Economist, EECM2).

Editing support was provided by Katherine Shafer Coleman, Anne Davis, Suzana Abbott, and Anjali Kishore Shahani Moreno. Administrative assistance was provided by Giselle Velasquez, Miriam Beatriz Villarroel, and Elizabeth Sanchez. The Synthesis Report was designed by Alejandro Espinosa/sonideas.com and its overall dissemination was organized by Anne Davis, Cynthia Flores Mora, Cesar Armando Leon Juarez, Marjorie Jhoanna Delgado Aguirre and Susana Hortensia Mendez Madrid.
1. Introduction*

Costa Rica has seen remarkable social and economic progress over the last three decades, with income per capita doubling, and well-being indicators reaching levels comparable with countries of the Organization of Economic Cooperation and Development (OECD). This progress has been driven by reforms in the 1980s and 1990s that made the country more export-oriented, increasing the role of total factor productivity (TFP) in growth. The country’s outward-oriented strategy, based on attracting Foreign Direct Investment (FDI) and promoting export-led growth, helped modernize the economy and improve the business climate. Large FDI inflows aided in transforming Costa Rica’s export profile by diversifying its export basket and facilitating the economy’s integration into global value chains (GVCs). This commitment to integrate into the world economy is evident in the country’s recent ambition to join the OECD. Costa Rica has built a strong consensus around the OECD accession goal, which translated into the approval of several structural reforms that bring the country closer to international standards and have the potential to increase growth.

Nevertheless, the country still faces substantial challenges if it is to continue advancing toward higher living standards. First, the weak fiscal situation remains a liability, as large fiscal deficits have increased the public debt, which constrains economic growth and threatens Costa Rica’s remarkable achievements. The fiscal reform package approved in December 2018 is key to restoring sustainability, and the World Bank is supporting the government to fully implement it through a series of Development Policy Loans (DPLs). Second, despite robust growth, there have remained relatively high poverty, inequality, and gender gaps over the last decade, with labor informality and unemployment increasing to around 45 and 12.5 percent in 2019, respectively. Furthermore, the gap in GDP per capita with advanced economies remains large, and potential growth has been affected by low public investment and poor productivity growth in some sectors. Tackling these structural challenges and making further advances in living standards depends on raising productivity by setting the right conditions for domestic companies to grow.

The objective of this study is to investigate the drivers and constraints of growth and productivity in Costa Rica and explore areas with high growth potential. Drawing on the historical growth experience of Costa Rica and employing a range of analytical tools, this chapter aims to provide an in-depth analysis of the drivers and constraints of the country’s economic growth. The chapter first takes stock of the historical growth and macro performance of the country, before moving to the growth accounting exercise to understand the past drivers of the country’s growth. In the same vein, a subsequent section analyzes the past drivers of country’s productivity by looking at its structural transformation and investigates how improving productivity drivers could affect the country’s long-term growth. The study then uses cross-country benchmarking and panel data regression analyses based on the growth diagnostic developed by Hausmann et al. (2005) to identify the binding constraints to growth. Finally, the analysis concludes with the link between growth, diversification, and exports.

This study contributes to the existing body of work on Costa Rica by employing a wide range of analytical tools to analyze the growth performance of the country from different angles. The analysis employs several quantitative methods to provide an objective assessment of the drivers and constraints of growth in Costa Rica, including the long-term growth model (LTGM), computable general equilibrium model (CGE), growth diagnostics and product space analyses. The novelty of this study is that it employs the same framework, analytical tools and data to conduct a parallel analysis for each Central American country to allow for a cross-country comparison. Given the wide breadth of the study, in terms of the methodologies used, themes analyzed, and

* For all reports of “Unleashing Central America’s Growth Potential” analytical body of work and the appendix, please see www.worldbank.org/BoostCentralAmerica.
1. Introduction

In this study, it does not envisage to deeply dive into each driver and constraint of Costa Rica’s growth to provide granular policy recommendations. The core objective of this study is to inform policy makers and other interested parties about the country’s strengths and weaknesses affecting its growth, and to form the analytical basis for subsequent investigations of specific areas.

The main drivers of growth between 1991 and 2017 were a rise in the share of the working-age population and an increase in labor productivity due to within-sector productivity growth. The process of trade liberalization initiated in the 1980s through a unilateral lowering of tariffs and the negotiation of free trade agreements helped improve labor productivity by attracting FDI, which transformed Costa Rica’s export profile and helped it integrate into GVCs. However, this process also contributed to creating a dual economy, with a dynamic and competitive export sector and another less-competitive sector composed of small (mostly informal) companies unable to benefit from the opportunities provided by integration into the global economy. As most low-skilled workers reallocated from agriculture to low-productivity services, gains from structural change have been modest. A main drag on productivity growth is the country’s large informal sector. In 2019, informality remained high, at more than 45 percent of workers, particularly women and low-skilled workers.

Infrastructure gaps, low innovation, poor enforcement of property rights, and lack of competition in and development of the financial sector are some of the constraints preventing faster economic growth. The country scores particularly low in the quality of port, road, and railway infrastructure, as well as in fixed broadband subscriptions and international internet bandwidth. Similarly, Costa Rica’s research and development (R&D) share of GDP and patent applications by residents lags countries with similar development levels.

Improving innovation performance is key to closing productivity gaps. This requires better collaboration between universities and firms by changing the way public research is funded, to increase incentives for universities to raise the quality and relevance of their research and innovation. Also, strengthening property rights is likely to have significant payoffs, as enforcement is weak in relation to copyright piracy and trademark counterfeiting, which discourages the creation and diffusion of knowledge. Lastly, although Costa Rica has taken important steps to increase financial inclusion, outcomes still display large disparities across regions and gender. Its lending rates are among the highest in the world, constraining access to credit for micro and small firms. However, the country has a state-of-the-art electronic payments system that shows the potential to make FinTech a powerful catalyst for financial inclusion.

Increasing investment and labor force participation, particularly by reducing the large gender gaps, could help increase growth. Costa Rica’s growth has been mainly driven by factor accumulation and, to a lesser extent, by human capital. Consequently, increasing investment and labor force participation would have significant returns. Using a Long-Term Growth Model (LTGM), a “business-as-usual” scenario is compared to one where public and private investment are increased to the 75th/90th percentiles of high-income countries. The results indicate that over 2020–30, GDP growth increases between 0.2 and 0.5 percentage points, and the poverty rate decreases by one percent. Similarly, using a computable general equilibrium (CGE) model, this chapter finds that increasing female labor force participation to half the level of men would increase GDP by 6.4 percent in 2030. Female labor force participation is still significantly lower than the average in OECD and other Latin American countries. According to the OECD, in Costa Rica around half of all working-age women in inactivity report family caring responsibilities as the main cause for not looking for or taking up a job. The country has had some recent progress in extending the coverage of early childhood education and care for under-5-year-olds, and the introduction of flexible working arrangements; however, further policy action is needed.

Finally, the chapter shows that there is room to continue expanding export diversification. Costa Rica has made important progress in recent years expanding both the number of destinations and the number of products exported. However, it remains less open than other countries at the same level of development, suggesting that it may not be capitalizing on all potential gains from trade. Furthermore, merchandise exports largely comprise agriculture products, such as fruits, fish, and coffee. Using unit prices as proxies for quality, this chapter finds that Costa Rica has untapped opportunities to increase the quality of products in which the country already has comparative advantages. Key exports such as pineapples and orthopedic appliances present the best opportunities for quality upgrading, followed by food preparations and bananas. Finally, considering the
trade-offs between adding more complexity to the export basket, the feasibility of producing given resources, and the chances for further diversification in the future, three sectors emerge as providing the most promising opportunities to create jobs and economic opportunities: i) metals, stone, and glass; ii) foodstuffs; and iii) machinery, electrical, and transportation.

This chapter has identified several key areas where policy reforms could help boost productivity and growth over the medium to long term. These include:

- **Promoting innovation.** Costa Rica is at the crossroads of its development stage envisaging a transition from an upper-middle income to high-income country status. Attaining this depends on the ability of the country to compete in the international markets in high value-added products. To achieve this, the country needs to increase the absorptive and innovative capacity of domestic firms by increasing the quality of its education to the levels of OECD economies and investing in physical and digital infrastructure and R&D.

- **Improving physical and digital infrastructure.** Costa Rica faces challenges with regards to the coverage and quality of its physical and digital infrastructure. Ensuring the timely execution of infrastructure projects would increase the competitiveness of the country in global markets and help promote entrepreneurship and innovation, among other benefits.

- **Strengthening the weak spots of the financial sector.** Increasing bank penetration, financial depth and bank competition could bring significant gains to the country by reducing interest rates, increasing investment and promoting small firms and entrepreneurs’ access to finance.

- **Improving the rule of law, property rights and transparency.** Strengthening the legal framework of property rights and further promoting the regulatory business environment and transparency would help the country to increase its investment and business opportunities and promote its competitiveness in global markets.

- **Diversifying exports and promoting high value-added production.** Quality upgrading entails strengthening safety and quality regulations, acquiring knowledge about consumption trends in rich countries, and coordination between the private sector and the public sector to facilitate the emergence of new products that are close to Costa Rica’s capabilities.

- **Reducing the gender gap in labor force participation.** Increasing female labor participation would promote the country’s productivity and long-term growth. Educational and labor market policies that remove barriers and incentivize female labor force participation could have significant positive impacts on growth.
Costa Rica’s transformation from an agrarian to a service-based economy boosted its per capita GDP to the second-highest in Central America, but it faces fiscal challenges. Costa Rica also has the second-largest GDP (US$ 49.5 billion in 2018) and the second smallest population (5 million) in Central America, enjoying a stable macroeconomic environment with low inflation and volatility, high growth, and high FDI inflows since the 2000s. However, with a gross public debt exceeding 53.5 percent of GDP in 2018, Costa Rica has the largest general budget deficit in Central America, averaging 5.4 percent of GDP in 2010–2017, which is well above the average for Central America, at 2.75 percent. Moreover, the country has the second-lowest tax revenue in Central America, at 13.8 percent of GDP, compared to 48.6 percent of government debt in 2017 (Figure 1). The government has taken actions to improve the efficiency of public spending, increase government revenue, decrease rigidities in government spending, and shift the high tax burden from social security contributions to more progressive property and personal income taxes. A comprehensive public finance reform bill, which came into effect on July 1, 2019, is expected to produce savings of 4 percent of GDP over 2018–2023. Fiscal sustainability is vital to ease the pressure of debt service on the economy, increase investor confidence, and have the fiscal space to respond to changing economic conditions.

Costa Rica achieved sustained GDP growth over the last 35 years, with a short period of economic crisis from which it recovered rapidly. The recessive period of 1979–1984 was the worst economic crisis that Costa Rica experienced in the second half of the twentieth century. It caused a GDP decrease of almost 10 percent, devaluing the national currency by about 600 percent between August 1980 and May 1982, and reducing real incomes by about 45 percent in less than two years. The main causes of this recession were the debt crisis that affected many Latin American countries in the early 1980s and the increase in oil prices and political turbulence that pervaded Central America starting in the late 1970s. A contractive monetary policy, control of the exchange rate, and the reduction of the fiscal deficit helped to stabilize the economy in a short period, and it returned to positive growth rates shortly after the crisis (Figure 2). During the 2009 global crisis, real GDP per capita contracted by 2.3 percent, but quickly returned to its upward trajectory, maintaining on average a 2.7 percent growth during 2010–2018, before decreasing to 1.7 percent in 2018.

Costa Rica’s GDP per capita has been converging toward wealthier economies over time. Owing to the transformation from an agrarian to a service-based economy, Costa Rica’s GDP per capita has tripled since 1960, reaching an average growth of 2.7 percent between 2000 and 2017 (Figure 3). The country’s GDP per capita relative to the United States has increased from 17 percent in 1960 to 19 percent in 2017, indicating a convergence toward wealthier economies (Figure 4). Despite the divergence that occurred during the 1980s, where the real GDP relative to the United States fell to 13 percent, the economy has recovered and surpassed its 1960s income level relative to the United States. In 2018, Costa Rica had the 10th highest real GDP per capita among 25 Latin American economies—one place up from 1960.
Figure 1. Costa Rica's government debt vs. tax revenue, 2017

Source: World Development Indicators (WDI), World Bank and World Economic Outlook (WEO), International Monetary Fund (IMF). Note: See Appendix Table 1.4 at www.worldbank.org/BoostCentralAmerica for the definition and methodology of structural and aspirational peers of Costa Rica.

Figure 2. Costa Rica’s GDP per capita growth (% of GDP)

Source: World Development Indicators (WDI), World Bank and World Economic Outlook (WEO), International Monetary Fund (IMF). Note: See Appendix Table 1.4 at www.worldbank.org/BoostCentralAmerica for the definition and methodology of structural and aspirational peers of Costa Rica.

Figure 3. GDP per capita growth by decade (US$ 2010)

Source: World Development Indicators (WDI), World Bank and World Economic Outlook (WEO), International Monetary Fund (IMF). Note: See Appendix Table 1.4 at www.worldbank.org/BoostCentralAmerica for the definition and methodology of structural and aspirational peers of Costa Rica.
Figure 4. Costa Rica’s GDP per capita relative to the United States

![GDP per capita relative to the United States](image)

Source: World Development Indicators (WDI), World Bank and World Economic Outlook (WEO), International Monetary Fund (IMF). Note: See Appendix Table 1.4 at [www.worldbank.org/BoostCentralAmerica](http://www.worldbank.org/BoostCentralAmerica) for the definition and methodology of structural and aspirational peers of Costa Rica.

Although Costa Rica has reduced the poverty rate substantially over the past decades, its inequality remains among the highest in Latin America and the Caribbean (LAC). Costa Rica’s poverty rate, at US$ 1.9 a day, has declined in the last 30 years, from 12 percent in 1989 to 1.4 percent in 2018, while its poverty rate at US$ 5.5 a day declined from 20.3 percent in 2005 to 10.9 percent in 2018 (Figure 5). However, the national poverty rate has stagnated, dropping only from 21.7 percent in 2011 to 21.1 percent in 2018.11 Furthermore, Costa Rica is the only country in LAC where the gap between the poor and the rich has increased, despite high social public spending. The country experienced the sharpest increase in Gini index during 1998–2001, from 46 to 52 (Figure 5), which is mainly attributable to a decrease in returns to education and an increase in the inequality of hours worked among workers.12 Despite some progress over the last two decades, Costa Rica’s Gini index of 48 in 2018 means that its inequality remains one of the highest in LAC.13

Figure 5. Poverty rates (% of population) and inequality

![Poverty rates (% of population) and inequality](image)

Source: WDI.

The lack of significant progress in equity over the past two decades is partially due to limited capacity at the government level to address low coverage of the poor in social spending, including education and pensions.14 Better-targeted and higher-quality social services would help increase employment of youth and the poor and boost the much-needed skilled labor supply. Large fiscal deficits and inefficient public investment
have limited the capacity of the government to expand public services to the poor and tackle inequality. These challenges, combined with the lagging level and quality of education and high youth unemployment, hinder the potential of the country to move into high value-added sectors and take full advantage of the presence of high-tech multinational companies in the country.

**FDI is an integral part of Costa Rica’s successful growth model.** At US$ 2.764 billion, Costa Rica receives the second largest volume of FDI in Central America, after Panama, representing 4.6 percent of GDP in 2018. Open trade and FDI have been critical to Costa Rica’s successful growth. The commercial opening expanded in the 1980s as a way to recover from the debt crisis. During the second half of the 1990s, Costa Rica began a more aggressive policy of attracting investments from high-tech companies such as Intel, which had the “herd” effect of attracting more FDI. Over 2000–2018, Costa Rica’s FDI share in GDP was among the highest globally, with an average of around 6 percent (Figure 6). Between 2007 and 2018, on average 57 percent of foreign investment came from the United States—also its main trading partner—and 20 percent from Europe. Costa Rica’s FDI is mainly concentrated in the manufacturing, services, and real estate sectors, which in 2017, accounted for 46, 18, and 16 percent of all FDI, respectively. However, there is still relatively low participation of local firms in exports and in linkage with high-tech multinationals operating in the country.

*Figure 6. FDI inflows to Costa Rica (percent of GDP)*

![Source: WDI.](chart)
3. Drivers of Growth: Growth and Development Accounting

The analysis of the role of factor accumulation and productivity in economic growth, a method known as growth accounting, helps to understand Costa Rica’s recent economic stagnation. Economic theory indicates that countries grow by accumulating factors of productions, such as capital and labor, and by increasing the efficiency in their use. International experience suggests that at low levels of development, countries are able to increase their production by increasing the amount of their factors. However, given the existence of diminishing returns to the accumulation of capital and labor, sustainable long-term growth comes from improving efficiency in the use of factors. By identifying the factors that drove economic growth in the past, growth accounting sheds light on areas of the economy that could be strengthened to foster economic growth in the long run.

In the past 50 years, Costa Rica’s economic growth model has been mainly driven by factor accumulation, especially labor (adjusted for quality of education) and physical capital. An analysis of the decomposition of GDP growth shows that Costa Rica’s growth was due to more labor and capital, with TFP having a negligible contribution in most of the decades over the last fifty years. More specifically, in the period 1970–2017, the economy grew at an average of 4.1 percent. During that time, 62 percent of GDP growth was driven by labor and human capital accumulation and 39 percent by capital accumulation, while changes in TFP reduced growth by about 1 percent. However, in recent years, the contribution of labor (adjusted for education) to aggregate growth has declined significantly, from 43 percent of the contribution to growth in the 1990s to 27 percent in the last 8 years. On the other hand, TFP gained in its share, from a contribution of 21 percent to growth in the 2000s to a contribution of 27 percent in the period 2011–2017 (Figure 7).

Low productivity growth has been an impediment to closing the gap with the richest countries. For the entire period 1970 to 2017, the growth of TFP averaged -0.1 percent, as a result of significant fluctuations over time. During the 1970s and 1980s, the growth of TFP was strongly negative, at -0.6 and -1.9 percent, respectively. However, over the last 30 years, there have been constant annual improvements in TFP growth, from 0.3 percent in the 1990s to 0.9 percent in the 2000s, and up to 1 percent in the 2011–2017 period, revealing a positive trend in the dynamics of Costa Rica’s productivity (Figure 7). Following the methodology in Caselli (2016), if Costa Rica reached the level of TFP of the United States, given the actual levels of capital, labor, and education, output per worker would be 1.7 times the current level. This counterfactual provides a clear indication of the benefits of increasing productivity.

Since 2000, gross capital formation in Costa Rica has been slightly lower than most of its peers. Between 2000 and 2018, investment as a share of GDP averaged 20 percent of GDP, similar to LAC but lower than the averages of its structural peers (with 24 percent of GDP) and aspirational peers (OECD countries, with 23 percent) in the same period (Figure 8). This occurred despite the fact that FDI contributed on average 6 percent per year during this time. In the 1990s in particular, Costa Rica was the largest host of FDI in Latin America. The inflow of FDI supported capital formation, especially in tourism and manufacturing in the free trade zone. During this time, local savings made up to 14 percent of GDP, below the LAC average and other neighboring countries.
The growth in labor productivity since 1991 has been higher in Costa Rica than in other LAC countries, but has failed to outpace OECD peers, thus preventing income convergence. Labor productivity, calculated as value added per worker, is closely linked to TFP. Between 1992 and 2018, value added per worker in Costa Rica grew less than in structural peers, but more than in LAC, OECD countries, and Central American peers (Figure 9). Between 1991 and 2014, Costa Rica’s labor productivity growth was similar to that of Central American peers, but lower than that of OECD countries. After 2014, labor productivity grew faster in Costa Rica than in these two groups of countries, resulting in higher labor productivity gains relative to Central American peers for the entire period of analysis. This acceleration in growth allowed Costa Rica to recover lost ground with OECD countries, and as a result, by 2017 the gap in labor productivity relative to OECD countries was similar to the gap in 1991.

Increasing investment, particularly public investment, could have positive effects on growth and poverty. Based on simulations using an LTGM that is based on the Solow-Swan growth model and includes investment, TFP, human capital, and demographics, an increase in public investment from its current level to 5 percent of GDP (75th high-income country percentile), could boost growth by 0.2 percentage points over 2020–30. However, it should be noted that this is a very large increase in public investment, and given Costa Rica’s current fiscal situation, it is unrealistically high. Nevertheless, this exercise provides an indication of the potential benefits of increasing public investment as a source of growth. On the other hand, increasing private investment from its current level to 20 percent (75th high-income country percentile) would boost growth by 0.15 percentage points over 2020–2030. The shocks in public investment and private investment would lead to poverty reduction by 2030 of around 0.5–0.8 percentage points. Although modest in percentage point terms, poverty rates in Costa Rica are expected to be low by 2030 in the baseline scenario (around 7.8 percent), so these increases in poverty reduction reflect a decline in the poverty rate of 6–10 percent.
Increasing female labor force participation would have strong positive effects on growth. Women’s labor force participation in Costa Rica is currently at 41 percent, well below that of men (70 percent) and slightly below the Central American average (43 percent). Educational and labor market policies that remove barriers and incentivize female labor force participation could have significant positive impacts on growth, productivity, and development in Costa Rica. In addition, introducing more economic support for parents and addressing gender norms that perpetuate disparities could boost female participation. Based on simulations using a CGE model, increasing women’s labor force participation to reach half the level of men would gradually boost labor supply, and is estimated to increase GDP by 6.4 percent (Figure 10). Traditional labor-intensive industries (apparel, machinery, and motor vehicles) as well as labor-intensive services sectors (public administration and business services) are shown to benefit the most. Higher levels of activity would encourage investment (both domestic and foreign) in Costa Rica, estimated to increase by 9.6 percent by 2030. Households would also benefit through an increase in household income and consumption, estimated to increase by 5.7 percent by 2030.

3.1. How would reforming the drivers of TFP affect growth?

To boost TFP growth, reforms in innovation, education, market efficiency, infrastructure, and institutions are needed. As widely cited in both the theoretical and empirical literature, TFP (also referred to as technical progress) is the main driver of the long-term growth rate of an economy. This section uses an extended LTGM to quantify how an increase in the determinants of TFP, which include innovation, education, market efficiency, infrastructure, and institutions, affects the long-term growth rate in Costa Rica. The analysis uses the latest available data to construct the indexes for all five determinants of TFP (see Table 3.2 and Table 3.6 in the Appendix for details on the construction of the indicators). In each of these five indicators, Costa Rica underperforms its aspirational peers, which highlights the need for reforms in these areas in order to promote the country’s long-term growth.

The goal of the reform scenario is to reach the levels of Costa Rica’s aspirational peers in each determinant of TFP by 2030. To implement these reforms, it is assumed that each TFP determinant increases linearly, so that by 2035 the country reaches the target (Table 1). This scenario generates a path of TFP that follows an inverted U-shape, rising to a maximum of 1.8 percent by 2032, and then declining gradually over time. On average, the growth rate of TFP between 2019 and 2050 is 1.5 percent per year, which is almost 1.3 percentage points higher than in the baseline scenario (0 percent). Figure 11 shows that the evolution of per capita GDP
(left panel) and the poverty rate at US$ 5.5 per day (right panel) in the baseline and reform scenarios. Annual GDP per capita growth would be on average 2.2 percentage points higher than the baseline and the poverty rate could be 1 percentage point lower than the baseline after four years. By 2040, the poverty rate could be as low as 3 percent, which is 3.5 percentage points lower than in the baseline.

**Figure 11. GDP per capita and poverty simulations under reform scenarios**

The above evidence suggests that Costa Rica needs to raise TFP growth in order to boost GDP per capita and sustain poverty reduction. Costa Rica’s growth has been mainly driven by factor accumulation and, to a lesser extent, by human capital accumulation. After several reforms in the 1980s and the beginning of the 1990s that made the country more export-oriented, the role of TFP in growth has increased, while the contribution of labor and capital to growth has diminished over time. Furthermore, since 1990 the contribution of labor (adjusted for education) and capital to aggregate growth have significantly declined, indicating the necessity to increase labor force participation, especially women’s participation, and investment. Educational and labor market policies that remove barriers and incentivize female labor force participation could have significant positive impacts on growth, productivity, and development in Costa Rica. To double its GDP per capita in the next 15 years, Costa Rica would need to grow at 4.7 percent annually. In order to meet this target, raising productivity growth is critical to boost Costa Rica’s growth rates of income per capita and sustain poverty reduction over time. The experience from Asian countries shows that maintaining TFP growth over time is possible, but requires political will to remove constraints and distortions affecting markets. Given that Costa Rica lags its aspirational peers in all the determinants of TFP, efforts to close the gap in the short-run will be important to reach a higher TFP growth. The main reforms needed in the country will be documented in more details in section five. Before looking at the key areas constraining growth in Costa Rica, it is useful to further study the main determinants of the TFP dynamics in the country.
4. Aggregate Trends in Productivity and Structural Transformation

4.1. Employment composition and structural change

As countries develop, they move resources away from agriculture to industry and services. This process is known as structural transformation. The structural transformation literature established that as an economy grows, the following patterns emerge:

1. The employment share and nominal value-added share in agriculture declines.
2. The employment share and nominal value-added share in services rises.
3. Industry follows a hump-shaped path: the employment share and the value-added share of industry rise at early stages of development, eventually reach a peak, and decline as the economy grows.

Costa Rica's economic expansion was accompanied by a shift in the sectoral value-added composition, with the service sector taking a greater share of GDP. Figure 12 displays the evolution of nominal sectoral shares in value added for agriculture, industry, and services. At the beginning of the 1980s, the economy was characterized by a model of import substitution. In this period, the government promoted the manufacturing sector and, as a result, its share in the economy increased from 20.2 percent in 1960 to 30.5 percent in 1980. In the same period, the shares of the agricultural and service sectors declined from 11 percent to 7.5 percent and from 68.8 percent to 62 percent, respectively. After the balance of payment crisis of the early 1980s, Costa Rica started a process of reforms that began in 1983 and continued through the 1990s. During this time, the share of manufacturing, agriculture, and services hovered around their average values with no clear trend. In the past two decades, however, the patterns of structural transformation emerged. The shares in total value added of the agricultural and industry sectors declined 2.7 and 7.6 percentage points from 1999–2018, respectively. In contrast, the service sector increased its share by 10.3 percentage points during the same period, reaching about 72 percent by 2018.

The sectoral shift in the sectoral value-added composition partly reflected the reallocation of labor shares across sectors. The share of agriculture in employment declined from about 17 percent in 1991 to 12 percent in 2018. Industry’s share in employment dropped from 24.5 percent in 1991 to 18 percent in 2018 (Figure 12). In contrast, the share of the services sector in total employment increased from 58.5 percent in 1991 to 70 percent in 2018. Although the share of manufacturing in total employment declined, the number of workers in this sector showed an increasing trend, but with a growth rate lower than that of the service sector. In other words, rather than a movement of workers from industry to services, Costa Rica's industry sector absorbed less “new” employment than the service sector, implying a stagnation in industry while the service sector has boomed, in employment terms. The relative allocation of workers away from agriculture to industry and services is consistent with a long tradition in development economics, in which poor countries undergo a process of structural change where labor reallocates from traditional, low-productivity sectors of the economy toward
modern, high-productivity sectors to achieve higher levels of aggregate productivity. However, in Costa Rica this reallocation has not been sufficient to close the total labor productivity gap relative to developed countries.

Figure 12. Structural transformation in Costa Rica: Value added share and employment share in agriculture, industry, and services

4.2. Sectoral labor productivity growth

Costa Rica’s sectoral productivity growth in the agriculture, industry, and services sectors was lower than that of its structural peers. The process of structural change is characterized, among other things, by differences in the pattern of productivity growth across sectors and countries, as illustrated by many studies. Figure 13 depicts the relationship between average labor productivity growth in each sector and aggregate labor productivity in 1991 for Costa Rica and a set of its peers, together with a dotted blue line representing the labor productivity growth for OECD countries. Between 1991 and 2017, agricultural labor productivity in Costa Rica grew on average 1.9 percent each year, which is lower than the growth rate in OECD countries, structural peers, and LAC peers. Even when the industry sector has overall underperformed relative to OECD countries, this sector presented the greatest gain in productivity relative to agriculture and services. Only in the service sector did labor productivity grow more in Costa Rica than in the OECD countries: labor productivity growth in the period 1991–2017 was higher than the average in OECD, LAC, and Central American countries, but lower than the growth experienced by Costa Rica’s structural peers.

Figure 13. Sectoral labor productivity growth (1991–2017)

Source: World Bank staff elaboration using data from WDI.
Box I. Drivers of premature deindustrialization in Costa Rica

Deindustrialization has captured the attention of academics due to systematic differences in the paths followed by today’s developed countries, in contrast to today’s developing countries. Rodrik (2016) points out that the reallocation of resources from industry into services is starting for today’s developing countries at lower levels of development and at lower peaks than evidenced by developed nations. This premature deindustrialization, in general, is a policymaking concern, as industrialization is often considered to be an engine of growth.42

In a background paper for this report, Sinha (2019a) investigates the relative strength of different forces in shaping the behavior of industrial employment in the region using a model that links the production in one sector to the production in other sectors and countries. In this model, employment in a sector is affected by three channels: i) domestic consumption; ii) net exports; and iii) labor market distortions restricting the flow of labor between sectors. While the first two forces increase sectoral employment, the third one contracts it. These distortions are important to account for the difference in the value added and the employment share of a sector as seen in the data.43

In the case of Costa Rica, the industrial share of employment contracted by 6 percentage points between 1995 and 2016. This decline is stark, considering the country with the next largest decline is El Salvador, in which industry shrank by 3.3 percentage points. To understand how much each channel contributed to the actual change in employment, the model is used to perform the following counterfactual: what would be the industrial employment share in 2016 if all variables were kept fixed at the initial year of analysis except for the variable that corresponds to the channel of interest? Figure I provides the results of this exercise. The Costa Rican story is somewhat different from the rest of the region, where the changes in productivity gaps are the main channel driving down the industrial base. While the changes in productivity gaps exert a contractionary force in the country, their impact is mild compared to the changes in domestic consumption. In line with results obtained in other neighbors, shifts in trading patterns (export channel) did attenuate the impact of other channels. In fact, the trade effect has been particularly large in Costa Rica, with only Panama experiencing a stronger tailwind from changes in trade shares.

When compared to its neighbors, and based on model estimates, Costa Rica has the lowest levels of labor market distortions in both industry and services. In most Central American economies, the services sector experiences larger distortions relative to industry. It is not so in Costa Rica, where industrial distortions have been larger than those in services since the 1980s. In keeping with the regional trend, there seems to be no evidence of distortions declining in Costa Rica. Both sectors of the economy face higher barriers to hiring labor in 2017 compared to what they faced in 1991. The model estimates the inefficiency cost of rising distortions to be less than one-tenth of a percent of the aggregate output in 1991 (Figure II). The elimination of these distortions that weakened structural change implies an output gain of 0.4 percent.

**Figure I: Decomposition of changes in employment share**

<table>
<thead>
<tr>
<th>Actual change</th>
<th>Consumption</th>
<th>Consumption + Trade</th>
<th>Trade</th>
<th>Productivity gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>-5</td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Note: The blue bar represents the actual change in employment shares. The pink bars depict the counterfactual change in employment shares when the variables pertaining to a factor are changed, keeping all the other variables fixed at the initial levels.

**Figure II: Estimates of labor market distortion**

Source: Sinha (2019a). Note: Circles (○) and squares (□) denote the labor market distortions in industry and services, respectively. An increase in the value of the distortion in a given sector means that it is costly to workers to reallocate from agriculture to that sector.
Differences in productivity across sectors are in line with evidence. Empirical evidence shows that there tend to be large differences in productivity at the firm level within sectors and between sectors. In addition, these gaps tend to be larger in developing countries than in advanced economies, indicating the presence of distortions affecting the allocation of resources between sectors and reducing aggregate productivity. The relative labor productivity gap between agriculture in 2016 (the least productive sector) and the most productive sectors is large: transport, storage, and communications was 4.08 times more productive than agriculture; manufacturing was 3.2 times more productive; financial intermediation, real estate, and business activities were 2.97 times more productive; and utilities were 2.39 times more productive.

Large productivity gaps across sectors could potentially increase aggregate productivity, if workers reallocate from a sector with low productivity to a sector with high productivity. Between 1991 and 2016, the productivity gap relative to agriculture increased in some sectors and decreased in others, indicating uneven productivity growth across sectors (Figure 14). For example, utilities, public administration, and education, health, social work, and other services have reduced their productivity relative to agriculture. However, most of the sectors have increased the gaps since 1991, indicating that there are still opportunities for a reallocation of resources out of agriculture. An important point to highlight is the fact that in developing countries labor markets are segmented, which implies that there are distortions preventing the mobility of workers between sectors. Box 1 in this chapter shows that removing those barriers translates into output gains.

Figure 14. Change in sectoral productivity gap relative to agriculture, 1991–2017

4.3. The contribution of structural change to productivity growth

Changes in GDP per capita (or value added per capita) can come from four sources: (i) demographic changes, (ii) changes in labor force participation and employment levels, (iii) changes in sectoral productivity (within-sector component); and (iv) the reallocation of labor across sectors (between-sectors component). This last component is typically known in the literature as structural change or structural transformation. Furthermore, the structural transformation component can be decomposed into a “static” and “dynamic” component. While the “static” measures whether workers move to sectors with above-average productivity, the “dynamic” component measures whether productivity growth is higher in sectors with an increase in employment.

Costa Rica experienced three decades of moderate growth in value-added per capita, with labor productivity as the main driver. After averaging 2.6 percent per year in the 1990s, per capita GDP growth stepped up to an annual average of 2.9 percent between 2001 and 2010, then returned to a growth rate similar to the 1990s between 2011 and 2017. Figure 15 decomposes per capita GDP growth into the sources (i)–(iv) described above. In the period 1991–2017, the main drivers of growth were a rise in the share of the working-age population and an increase in labor productivity, contributing 20 percent and 74 percent of the total change (2.7 percent), respectively. Labor productivity growth contributed significantly to growth in all sub-periods; about 63 percent in the 1990s, 89 percent in the 2000s, and 90 percent in 2011–2017. This increase in productivity dynamism was offset by demographic factors and employment. In particular, the rise in the participation rate was an important...
contributor in the 1990s (14 percent), but it became a drag in 2011–2017. Although not as drastic as the participation rate, the change in the share of working age population also decreased its contribution to value added per capita growth over time, from 22 percent in the 1990s to a contribution of 7 percent between 2011 and 2017.

The good performance in labor productivity was mainly driven by within-sector productivity growth. Figure 16 decomposes the evolution of average annual labor productivity growth into within- and between-sector components (reallocation). The contribution of the within-sector component increased from 82 percent of the labor productivity growth (1.7 percent) in the 1990s to 105 percent between 2011 and 2017. On the other hand, the between-sector component (reallocation) moved in the opposite direction: its contribution to labor productivity growth declined from 18 percent in the 1990s to -5 percent between 2011 and 2017. In other words, the structural transformation component became a drag on labor productivity growth over time. Overall, the within-sector component contributed 85 percent of the labor productivity growth between 1991 and 2017 (2.7 percent), and the structural transformation component contributed 15 percent.

The modest labor productivity gains from structural change in the period 1991–2017 reflected a rise in the employment share of the three most productive sectors in the economy. Figure 17 shows changes in employment shares and the relative productivity of sectors, measured as the log of the ratio between sectoral productivity and average productivity between 1991 and 2017. Positive structural change occurs when (i) workers move to relatively high-productivity sectors or (ii) workers move out of relatively low-productivity sectors. In the case of Costa Rica, the employment share of agriculture declined. Since agriculture has below-average productivity, this reallocation of labor contributed to productivity growth. Similarly, the sectors with the highest initial productivity (utilities; financial intermediation and real estate; and transport, storage, and communication) increased their share in total employment, contributing positively to productivity growth.

A decline in the employment share of agriculture has led to overall productivity gains, but these gains were partially offset by a rise in the employment share of low-productivity services and deindustrialization. Figure 17 shows that labor reallocated away from low-productivity sectors, such as agriculture, contributing to labor productivity growth. However, the decline in the employment share was largely counterbalanced by a rise in the share of other services, one of the least productive sectors in the economy. Furthermore, deindustrialization might be playing a role in limiting reallocation gains. As Figure 17 shows, the manufacturing sector has above-average productivity and its share of total employment has been declining. As result of the decline in agriculture employment and the rise in other low-productivity sectors, the gains from structural change in the period 1991–2017 were only modest.
Despite having low levels of informality for Central American standards, informality in Costa Rica is still above the levels of OECD countries. In comparison to other Emerging Market and Developing Economies (EMDEs), Costa Rica has a relatively smaller informal sector: the informal economy in Costa Rica amounts to 22–25 percent of GDP and comprises about 38 percent of total employment in 2016, out of which 60 percent is self-employment (Figure 18). Its share of informal output in GDP is about 10 percentage points lower than other EMDEs, while its informal (self) employment is about half of that in other EMDEs. However, and despite the decline in informality since 1990, the informal sector in Costa Rica remains above the average level in OECD countries and its aspirational peers, both in terms of output and employment.

In addition, informal worker’s productivity in Costa Rica is lower than the average productivity of workers in the whole economy, suggesting room for improvement. In Costa Rica, people employed in the informal sector tend to be less educated, earn a lower salary, be younger, and consist mostly of domestic female workers (ILO 2015). According to the Costa Rican Continuous Employment Survey from 2014, more than three-quarters of informal workers had not finished primary education, and 11 percent of those workers dropped out of secondary school. Only 13 percent of informal workers are university graduates. One out of three employed informal workers earn a salary lower than the minimum wage (OECD 2016).
5. Growth Diagnostics Analysis

Drawing on the growth diagnostics analysis of Hausmann et al. (2005), this section aims to identify the binding constraints to Costa Rica’s investment and growth. The analysis is carried out in two steps. In the first step, 18 areas of Costa Rica’s economy are assessed, using 138 indicators from 2000 to 2018, to identify the areas where the country has a poorer performance in comparison to its structural peers (Chile, Croatia, Dominican Republic, Lithuania, Panama and Uruguay) and aspirational peers (OECD countries). Each indicator is first standardized to range from 0 to 100, with higher values referring to stronger favorable outcomes, which are then averaged to create aggregate indexes proxying the performance of each of the 18 areas. In the second step, the relationship between the economic performance of Costa Rica and the six areas where the country has a weaker performance is analyzed using panel data regression analysis. Figure 19 presents the scores of all 18 areas of Costa Rica’s economy relative to its structural and aspirational peers, as well as the averages of those scores. As seen in Figure 19, Costa Rica has the lowest relative values in infrastructure, innovation, property rights, control of corruption, and some areas of the financial sector, including access to banking, financial depth, and bank competition. The remainder of this section provides an in-depth analysis of these indicators and their association with the economic performance of the country.

**Figure 19. Growth diagnostics indicators of Costa Rica, 2000-2018**

![Figure 19. Growth diagnostics indicators of Costa Rica, 2000-2018](image)

Source: See Table 5.1 in the Appendix for the full list, definition, and source of the sub-indicators used to construct these indexes.

5.1. Infrastructure

5.1.1. Physical Infrastructure

The quality of Costa Rica’s physical infrastructure lags the majority of comparator economies. The quality of road, port, and railroad infrastructure has the highest lags relative to all comparator groups except for upper middle-income LAC countries (Figure 20). Only in the public service indicator (which measures the presence of state functions to provide basic public services such as health, education, water and sanitation) and...
5. Growth Diagnostics Analysis

the quality of air transport indicator does Costa Rica score higher than some of its peer groups, including the upper-middle-income countries in the LAC and East Asia and Pacific (EAP) regions. The 2019 Global Competitiveness Report placed Costa Rica at 63 out of 141 in infrastructure, up from 71 out of 140 in 2015. Its ranking in the quality of roads, however, was much lower, at 117 out of 141 in 2019—a decline of two points from 2015.49

Figure 20. Quality of infrastructure, 2000–18

Access to electricity reaches 99 percent of the population in Costa Rica, at the same level as the high-income countries of Latin America and close to its aspirational peers (100 percent).50 In line with this finding, Doing Business 2020 ranked Costa Rica in 25th place in 2019 (out of 190 economies) for ease of getting electricity (up from 46th place five years ago), compared to 96th and 43rd for LAC and OECD, respectively.51 Because of its geographic advantage and favorable rainfall levels, hydropower electricity generation accounts for three-quarters of Costa Rica’s total energy production.52 Although high reliance on hydropower generation may involve some risks due to unpredictable fluctuations in rainfall patterns as a result of climate change, Costa Rica’s impressive progress in renewable energy sources is a strong foundation for a sustainable and environmentally-friendly energy supply in the future.

Costa Rica has been gradually modernizing its port infrastructure, however, the quality of its roads and railroads has been stagnating, and transport quality in general is below the OECD average (Figure 21). This has been mainly attributed to insufficient public investment in the maintenance of existing and the construction of new transportation networks, as well as ineffective planning, leading to weak supply and low quality of transport infrastructure, which causes congestion and raises the cost of doing business.53 With fiscal pressures building, there is an urgent need to use public funds more effectively to ensure that transportation infrastructure is not a bottleneck for sustainable growth. Infrastructure planning and funding procedures must be streamlined across different government agencies, and more active participation of the private sector in road network maintenance and provision could help achieve those objectives.54

Among the physical infrastructure indicators, access to electricity and the quality of ports, roads, and railroads are positively associated with Costa Rica’s real GDP per capita (Table 2). Cross-sectional analysis also shows that a high quality of physical infrastructure is associated with a higher real GDP per capita. For example, a one-index point increase in the quality of port is associated with a 0.15 percent increase in real GDP per capita (Figure 22). However, as seen from the figure, Costa Rica’s port quality is among the lowest, whereas its real GDP per capita is higher than many countries with similar or higher port quality. This pattern is observed in the rest of the infrastructure indicators of the country, suggesting the presence of other factors contributing to the country’s economic performance. The OECD Economic Surveys in 2016 also report transport infrastructure as one of the bottlenecks in Costa Rica’s economic performance and recommends streamlining
the complex institutional and legal framework governing public sector works to improve the efficiency and execution time of infrastructure projects. This could be achieved through a single lead agency that coordinates the work across different public agencies.

**Figure 21. Infrastructure indicators of Costa Rica and OECD over time**

![Graph showing infrastructure indicators over time for Costa Rica and OECD](image)

Source: WEF and Fund for Peace.

**Table 2. Association between real GDP per capita and physical infrastructure**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air transport quality</td>
<td>0.002</td>
<td>0.81</td>
</tr>
<tr>
<td>Access to electricity</td>
<td>0.09</td>
<td>3.30</td>
</tr>
<tr>
<td>Port quality</td>
<td>0.06</td>
<td>3.53</td>
</tr>
<tr>
<td>Railroad quality</td>
<td>0.05</td>
<td>2.06</td>
</tr>
<tr>
<td>Road quality</td>
<td>0.09</td>
<td>4.55</td>
</tr>
</tbody>
</table>

Source: See Table 5.1 in the appendix. Note: Coefficients reported in Table 2 are the summation of the coefficient of the variable of interest and the coefficient of its interaction term with Costa Rica dummy, obtained from the fixed effects regression analysis of real GDP per capita (log), after controlling for investment and labor rate, human capital index, and time trend using 1542 to 2900 observations for 102-166 countries over 2000-2018.

Although transport infrastructure in Costa Rica has been set back by institutional inefficiencies and delays, the country has stepped up its infrastructure investment in recent years. An analysis of 15 transport infrastructure projects found delays between three and ten years from the time the contractor was selected to the start of the construction. Numerous public agencies and bodies involved in transport infrastructure contribute to the excessive policy fragmentation, uncertainty, and delay in project execution. The OECD has also identified the complex institutional setting as a factor that hampers efficiency. Recently, the Inter-American Development Bank approved the financing of important infrastructure investment projects in Costa Rica. The largest investments will be in the road infrastructure program through the promotion of public-private partnerships (PPP) for US$ 125 million. The objective is to improve the country’s competitiveness through environmentally sustainable upgrading and expansion of the high-capacity road network (Red Vial de Alta Capacidad—RVAC) in the greater metropolitan area and support the development of road infrastructure projects through PPP models as a complementary mechanism for financing and management. The government is also working on projects to build an urban rail service in the capital, expand port infrastructure, and build an electric freight train on the Caribbean coast.
5.1.2. Digital Infrastructure

Costa Rica has a high mobile penetration rate among LAC countries, but it lags OECD. With an average of 79 mobile phones, 7 fixed broadband subscribers, and 35 internet users per 100 people between 2000 and 2018, Costa Rica has the second-lowest digital infrastructure indicators after the average of upper-middle-income countries in LAC, well below its structural peers (with 95, 11 and 40, respectively) and aspirational peers (with 102, 21, and 64, respectively) (Figure 23). Its mobile network coverage, at 76 percent of the population, is the lowest among comparator economies, while internet bandwidth, at 40 kb/s per user, is the third lowest, after the averages of LAC upper-middle-income (at 24) and Europe and Central Asia (ECA) (at 36) (Figure 24).

Figure 23. Digital infrastructure, 2000–2018

![Digital infrastructure, 2000–2018](image)

Source: Authors’ computation using data from WDI.

Although the share of population using the internet in Costa Rica has been catching up with the OECD average, the internet bandwidth capacity has not improved much, and has deteriorated since 2015. Almost three-quarters of Costa Ricans have access to the internet today, which is 14 times higher than in 2000 (Figure 25a). However, internet bandwidth capacity has improved more slowly, and has been declining recently (Figure 25b). In OECD countries, the internet today is nearly 5 times faster than in 2012, yet, in Costa Rica it is about 4 times faster today than in 2012. This result suggests that information and communications technology (ICT) infrastructure in Costa Rica has failed to expand along with the number of internet users, despite the fact that country is well positioned to be a leader in this area.

Figure 25. Digital infrastructure indicators of Costa Rica and OECD

![Digital infrastructure indicators of Costa Rica and OECD](image)

Source: Authors’ computation using data from WDI and World Bank.
Real GDP per capita of Costa Rica is positively associated with the majority of digital infrastructure indicators. Among the six digital infrastructure indicators shown above, all but internet bandwidth and mobile network coverage are positively associated with the real GDP per capita of Costa Rica, based on the fixed effects regression analysis. Considering that Costa Rica is one of the most developed economies in the region with a larger skilled human capital base than its neighbors, it needs to invest more in digital infrastructure to take advantage of the fourth industrial revolution and catch up with the OECD economies.

### 5.2. Innovation

Costa Rica’s investment in R&D and innovation index are superior to those of many of its peers in LAC, however, they are far below those of EAP and aspirational peers. Costa Rica’s R&D averaged 0.5 percent of GDP during 2000–2017, surpassing ECA and LAC averages, but lagging all other comparator groups (Figure 26). In terms of innovation outcomes, Costa Rica had the third-highest score in the global innovation index among comparator economies during 2000–2017, following its aspirational peers and EAP by 14 index points (Figure 26). However, the number of patent applications by residents (per million population) is the lowest among all comparator economies (Figure 27). The country’s average between 2000 and 2017 is less than half that of LAC upper-middle-income countries, nine times smaller than its structural peers and more than 100 times smaller than its aspirational peers. 

R&D spending and patent applications in Costa Rica have not improved much since 2006 and have been on a downtrend recently. In Costa Rica, R&D expenditure and patent applications are about at the same level as a decade ago: investment in R&D is half a percent of GDP, while patent applications of residents dropped back to less than 2 per million people (Figure 28). This downtrend in patent applications in Costa Rica mirrors a similar trend in OECD countries, which may partly reflect declining innovation activity in energy-related technologies amid weaker energy prices (Figure 29). The evidence shows that Costa Rica is losing ground in its ability to innovate compared to other nations: It ranked 55th in the 2019 Global Innovation Index, down from 39th in 2013 (Figure 30). Much of this drop can be attributed to its less favorable position in knowledge and technology output, which may be due to Intel’s decision to downsize its production in Costa Rica in 2014. For example, in 2019, Costa Rica was ranked 49th in the number of new firms created per thousand people, down from 1st place in 2013, and 28th in the share of high-technology exports in total trade, compared to 5th place in 2013. These results indicate that Costa Rica may not be improving its innovative capacity at a pace comparable to its peers. For example, in 2013, relative to its structural peers, Costa Rica was behind only Croatia (at 37th place) in the Global Innovation Index; in 2019, it is behind Croatia, Chile, and Lithuania.
In Costa Rica, innovative activity is primarily driven by multinational enterprises, while domestic firms lag behind. In Costa Rica, nonresidents account for 97 percent of all patent applications filed domestically. However, there was an increase in patent applications filed abroad by firms residing in Costa Rica, which may indicate an increasing willingness of firms in Costa Rica to expand into new markets. However, there is still a large productivity gap between foreign-owned companies, which are the main exporters in Costa Rica, and non-exporting domestic firms. This may indicate that Costa Rica does not efficiently capture benefits from openness and FDI-driven knowledge spillovers. The high-tech manufacturing sector is dominated by foreign-owned exporters and coexists with smaller and much less productive domestic firms. Costa Rican firms with linkages to multinationals are shown to be more productive than those without such linkages, however, only a small number of local firms enjoy such linkages.

Costa Rica’s R&D is not effective in producing innovation or patent applications domestically, but it is positively associated with the country’s growth rate. Fixed effects analysis shows a positive correlation of R&D share of GDP with the growth rate of GDP in Costa Rica, but no significant relationship is observed between R&D and innovation. The latter result may be due to ineffective use of the small R&D investment of the country, which is primarily funded by government due to little private sector involvement and inadequate supply of scientists and researchers. The government should improve the efficiency of R&D investment through the allocation of public funds to research projects on a competitive basis, strengthening monitoring of research funded by the government, and creating a market infrastructure that facilitates synergies and spillovers between public and private investment in R&D. In addition, the government needs to expand resources and programs that encourage local firms, particularly small- and medium-enterprises (SMEs), to innovate, such as improving access of SMEs to seed capital and facilitating linkages between multinational enterprises and local firms to enable technology and knowledge spillovers.
Costa Rica is at the crossroads and in order to make the shift from an upper middle income to high income economy, it needs to transition from imitation to innovation. However, even though Costa Rica’s education level and quality is generally on par with comparator economies, there are weak spots in the country’s education system. For example, PISA test scores in 2016 show that Costa Rica’s test results in sciences, mathematics and reading comprehension are much lower than the OECD average. Evidence also suggests that Costa Rican firms have low absorptive capacity, preventing them to take full advantage of technology diffusion. Therefore, in order to make the jump to the next level, Costa Rica should invest in improving the quality of its education, physical and digital infrastructure and should upgrade its firms’ technical capacity. That Intel still runs some of its R&D and IT activities in Costa Rica signals its vote confidence in country’s technical capacity. However, Costa Rican labor force needs to keep up with the rapid changes in technology and the skill demands of companies in order to compete in the international market to increase its high value-added production activities.

5.3. Financial sector

5.3.1. Access to banking

Though Costa Rica’s average bank penetration levels lagged those of its aspirational peers during 2000–2018, the gap has been narrowing. The average number of ATMs per 100,000 adults in Costa Rica during 2000–2018 was 51—well above the average of 38 for the upper-middle-income LAC economies, but below structural peers (at 58) and nearly half of aspirational peers (at 96) (Figure 31). During the same period, Costa Rica was ahead of its structural peers in the number of bank branches per 100,000 adults (at 21) and the percentage of people who have access to debit cards (50 percent). However, an average of only 14 percent of adults had a credit card during 2000–2018, compared to 22 percent in structural peers and 45 percent in aspirational peers. Costa Rica’s bank penetration has been increasing steadily since 2004: The number of ATMs per adults has tripled from 2004 to 2018 (Figure 32), closing the gap with aspirational peers. Similarly, the number of bank branches per 100,000 people has increased from 16 to 22, and the number of bank accounts per 1000 people has increased from 647 to 1193 during 2004–2016, approaching those in its aspirational peers (with 26 bank branches per 1000 people and 1208 bank accounts per 1000 people in 2016). The percentage of the population with a credit card, on the other hand, has increased only by 2 percentage points, from 12 to 14 percent from 2011 to 2017, remaining well below its aspirational peers, with 47 percent in 2017.

Figure 31. Bank penetration indicators of Costa Rica, 2000–2018

Source: WDI.
Better access to banking in Costa Rica is associated with a higher real GDP per capita. Three out of five indicators of access to banking—number of ATMs, bank branches, and bank accounts, adjusted for population—are positively associated with Costa Rica’s real GDP per capita, based on the fixed effects regression results. These results suggest a positive association between financial inclusion and Costa Rica’s output per capita. In April 2019, Costa Rica launched the national financial inclusion strategy, which aims to expand access to finance through the state-owned banks by encouraging individuals and microfinance institutions to open new accounts.

5.3.2. Financial depth

Financial depth in Costa Rica is comparable to that of its regional peers, yet it is far behind that of its structural and aspirational peers. At 43 percent of GDP, private sector credit in Costa Rica is more than 10 percentage points lower than in structural peers, and twice as low as in aspirational peers, partly reflecting high borrowing costs for private enterprises (Figure 33). Since 2000, financial deepening in Costa Rica proceeded at a much faster pace than in its structural and aspirational peers. Costa Rica’s GDP shares of bank assets, financial deposits, and domestic credit to the private sector have more than doubled from 2000 to 2016, while they only increased about 1.3 times in its structural and aspirational peers. As seen from Figure 34, domestic credit’s share of GDP in Costa Rica increased from 26 percent in 2000 to 60 percent in 2016, while it increased from 81 to 98 percent in its aspirational peers. In 2016, aspirational peers’ GDP shares of bank assets and financial deposits were 103 and 90 percent, respectively, compared to 64 and 26 percent in Costa Rica. These figures indicate that Costa Rica has been deepening its financial sector substantially since the 2000s, however, the gap with the OECD economies (Costa Rica’s aspirational peers) remains high.

Costa Rica’s GDP per capita is positively associated with the majority of financial depth indicators. An increase in the shares of domestic credit to private sector, financial deposits, bank assets, and insurance companies’ assets in GDP is associated with an increase in the country’s real GDP per capita. Bank credit to the public sector, on the other hand, does not have a significant association with real GDP per capita, while stock market indicators are negatively associated. The latter result reflects the fact that Costa Rica’s stock market is small and underdeveloped, with many inefficiencies. In 2016, stock market capitalization in Costa Rica was just 5 percent of GDP, compared to 49 percent in structural peers and 69 percent in aspirational peers, limiting external funding sources for private companies. Securities markets in Costa Rica are dominated by public debt securities, and the secondary market lacks liquidity and efficient price discovery mechanisms. This is partly due to the narrow domestic institutional investor base in Costa Rica, where assets of pension funds and insurance companies, albeit growing (7 percent of GDP in 2016), are still below those in high-income economies in LAC and aspirational peers (at 30 percent). Furthermore, high levels of dollarization, a narrow retail deposit base, and...
high costs of borrowing may restrict the ability of the private sector to obtain financing in domestic currency, which limits the extent of financial deepening, as observed from Figures 35.78

**Figure 33. Financial depth in Costa Rica**

**Figure 34. Domestic credit (% of GDP)**

**Figure 35. Scatter plot of domestic credit share of GDP vs. real interest rate**

Source: Authors' calculations using data from World Bank and IMF.

Source: Authors' computation using data from the WDI and WO.
5.3.3. Bank competition

The banking sector in Costa Rica is less competitive than in both its structural and aspirational peers. In Costa Rica, banks dominate the financial system, with state-owned lenders accounting for half of all bank assets—one of the largest shares of public banks in the regional financial systems. This is likely to create inefficiencies, an excessive regulatory burden, and an uneven playing field in the banking sector. Consequently, the level of financial freedom in Costa Rica falls behind its structural and aspirational peers as well as its high-income regional peers (Figure 36). Moreover, as seen in Figure 35 above, Costa Rica’s lending rate in 2016 is higher than in the majority of the countries in the analysis, which, among other things, is likely to be driven by weak competition. On the positive side, bank concentration has been falling recently in Costa Rica—in line with the overall regional trend—and is below the level of its structural peers (Figure 37).

Figure 36. Banking sector competition indicators, 2000–18

Source: Authors’ calculations using data from World Bank, IMF, and The Heritage Foundation. Note: Bank concentration is measured as the percent of bank assets held by the top three banks.

Figure 37. Concentration in the banking industry

Source: Authors’ calculations using data from World Bank, IMF, and The Heritage Foundation. Note: Bank concentration is measured as the percent of bank assets held by the top three banks.

5.4. Property rights

The strength of property rights protection in Costa Rica is mostly on par with its structural peers, but below its aspirational peers and high-income LAC countries. The property rights index in Costa Rica is 51 out of 100 over 2000–2018, which is 1.4 times that of upper-middle-income countries, but only around two-thirds of its aspirational and regional high-income peers (Figure 38). Costa Rica also lags its aspirational and regional peers in the strength of the rule of law and has a much higher expropriation risk compared to its structural peers (Figure 39). Although Costa Rica’s constitution guarantees protection against expropriation, disputes over expropriation can still be burdensome (for example, over the valuation of expropriated land), often resulting in a lengthy judicial process (OECD 2013). Improvements in the rule of law and judiciary to ensure that disputes over ownership claims are promptly and efficiently resolved, and investors are fairly compensated for expropriated property, would improve the business environment in the country.
Since 2011, rule of law protection and property rights have been improving in Costa Rica. Costa Rica has made significant progress, supported by the OECD accession process, in strengthening its rule of law and property rights protection, pulling ahead of the LAC average (Figures 40 and 41). Notwithstanding this progress, the extent of property rights protection in Costa Rica is still weaker relative to high-income OECD countries (1.2 times higher than in Costa Rica). Nonetheless, Costa Rica scores well on many measures of government efficiency compared to other OECD countries (OECD 2019). Thus, the pace of institutional and governance reforms should be maintained to ensure sustained progress toward stronger rule of law and investor protection in Costa Rica.
5. GROWTH DIAGNOSTICS ANALYSIS

Well-defined and properly enforced property rights are key to achieving high GDP per capita and attracting FDI. Effective investment promotion and extensive policy efforts have fostered an investor-friendly environment, including stronger protection of property and investor rights (OECD 2013). Compared to other regional economies, stronger protection of property rights has helped Costa Rica remain a competitive destination for foreign investors, which has supported robust economic growth. However, since Costa Rica lags its aspirational peers in rule of law and property rights, there is room for reforms to further strengthen them. In fact, weaker property rights (when measured as an expropriation risk) are strongly associated with lower GDP per capita in Costa Rica. For example, an increase in the expropriation risk index by one index point is associated with approximately a 0.01 percent decline in real GDP per capita. This result, together with the findings of the literature on the subject, implies that reforms further strengthening property rights protection in Costa Rica would have significant development dividends. Such reforms would facilitate a transition toward a knowledge-based economy and sustain productivity-enhancing FDI inflows, especially when global competition to attract FDIs has been intensifying.

Costa Rica needs to sustain its broader institutional reform efforts to increase the effect of its structural reforms on its competitiveness. Many structural reforms may fail to deliver meaningful gains if governance is not improved, and laws and institutions do not provide sufficient protection of property and contractual rights (IMF 2019). Compared to many of its LAC peers, Costa Rica has a solid record of progress in such areas as ease of property registration, protection of minority shareholders, and contract enforcement. For example, according to the World Bank’s Doing Business 2020, the land administration index in Costa Rica is 17.5 out of 30—well above the LAC average of 12, but still lower than in several comparable regional economies, such as Peru (18) and Uruguay (22.5), and below the 23.2 OECD average. Therefore, there are areas where Costa Rica can achieve more progress in protecting property rights, such as reducing the time and cost of contract enforcement, increasing the ease of obtaining various government permits and licenses, and improving the quality and efficiency of its judiciary.

5.5. Corruption

Costa Rica has made strides in reducing corruption, although its freedom from corruption indicators still suggest that corruption remains above the levels of the OECD and its high-income peers in LAC (Figure 42). Compared to many of its LAC peers, Costa Rica ranks very favorably in the 2018 Freedom from Corruption index—only Uruguay, Chile, Barbados, and St. Vincent and Grenadines have higher freedom from corruption. Higher corruption in Costa Rica compared to OECD high-income economies may reflect higher red tape and more cumbersome business regulations in Costa Rica. For example, the Global Competitiveness Report 2019 (WEF) places Costa Rica at 124th place out 141 economies in terms of the burden of government regulations, behind its structural peers, such as Chile and the Dominican Republic, which are at 77th and 108th place, respectively. There is a strong association between corruption and red tape (Figure 43) and government regulations have been getting more burdensome in Costa Rica, unlike in its aspirational peers (Figure 44). On the positive side, Costa Rica leads the LAC region in many areas of doing business, such as ease of paying taxes and obtaining government permits (World Bank 2020). Furthermore, in Costa Rica just 7 percent of people who used public services in 2019, such as hospitals and courts, paid a bribe to get access (compared to about 20 percent for the LAC region as a whole). This is the lowest bribery rate in LAC, down from 24 percent in 2017 (Transparency International 2019).

Higher freedom from corruption is associated with higher per capita GDP in Costa Rica. Both the fixed effects and cross-sectional regression analyses show a strong positive relationship between corruption control and Costa Rica’s real GDP per capita (Figure 45). Moreover, as seen from the figure, Costa Rica’s GDP per capita is on par with its corruption control efforts, both of which are higher than the majority of countries. Given that Costa Rica still lags the high-income economies of LAC and OECD, a strong commitment to anticorruption policies in Costa Rica would continue to bring development dividends. As extensively discussed in the literature, high levels of corruption are often associated with other institutional distortions and inefficiencies, high informality, and low productivity.
Costa Rica has achieved substantial gains from its fight against corruption, but more resources need to be committed to anticorruption policies to maintain momentum. Costa Rica’s efforts to reduce corruption have been sustained by its aspiration to join the OECD, which requires the adoption of rules and policies on corruption consistent with OECD guidelines. For example, in 2017, Costa Rica signed the OECD’s Convention on Combating Bribery of Foreign Public Officials in International Business Transactions which facilitated the approval of laws establishing criminal responsibility of legal persons for domestic and transnational corruption (OECD 2017). Contrary to the regional trend, control of corruption in Costa Rica has been improving since 2012, when it launched the process of joining the OECD.

However, anticorruption efforts in Costa Rica experienced a major setback amid revelations in 2017 of corruption scandals (cementazo) involving numerous public officials. On the positive side, the scandal raised public awareness and triggered a strong response from the government to better monitor and prevent corruption. Going forward, Costa Rica needs to continue strengthening its legal and institutional infrastructure to improve detection of corruption and enforcement of anticorruption laws.
Figure 44. Government regulation 1 (highest) – 7 (zero)

Source: World Bank, Global Competitiveness Report (WEF) and other sources shown in Table 5.1 in the Appendix. Note: The scatter plot is obtained from the cross-sectional regression analysis of 166 countries using data covering 2000–2018. The regression analysis controls for key indicators including investment, labor, human capital, regions, and income groups of countries.

Figure 45. Freedom from corruption vs GDP per capita

Source: World Bank, Global Competitiveness Report (WEF) and other sources shown in Table 5.1 in the Appendix. Note: The scatter plot is obtained from the cross-sectional regression analysis of 166 countries using data covering 2000–2018. The regression analysis controls for key indicators including investment, labor, human capital, regions, and income groups of countries.
6. Diversification and Exports

6.1. Why diversification matters to Costa Rica

Global trends such as slower trade growth, rising trade in services, and the fragmentation of production and automation pose challenges and opportunities for developing countries. Trade grew dramatically over the past 25 years. Capital flows followed a similar pattern. A wave of structural reforms in the 1990s geared toward trade liberalization and the ascent of China into global markets propelled the rise in global trade flows and a shift in the patterns of production worldwide. More recently, globalization has experienced important transformations. Global trade in goods has slowed and is expected to grow modestly in the future, as growth rates in emerging markets even out and trade in services continues to increase in prominence. The increase in trade in intermediates and separation of production into tasks has given rise to regional and global value chains (GVCs). Value chains offer low- and middle-income countries a path to diversify production, and offer new ways to export tasks, services, and other activities. However, low wages alone will become less of an advantage in low-skill-intensive industries, as machines replace certain tasks, and logistics and infrastructure aimed at increasing connectivity will become more important.

Since Costa Rica is a small open economy, it should pursue an export-oriented growth strategy to create job opportunities, generate sustainable growth, and close the income gap with rich countries. In order to import the desired goods, countries need to export. Economic diversification is the shift of production and trade toward a more wide-ranging productive structure, pursued to increase productivity, generate jobs, and foster sustainable growth to reduce poverty. Trade plays a significant role in economic diversification. The successful East Asian countries’ diversification toward the manufacturing sector was accompanied by their integration into the global economy.

Economic diversification is critical for long-term development in Costa Rica. The literature describes various benefits of economic diversification (Appendix VI). The economic development process typically involves a structural transformation, where countries evolve from manufacturing poor-country products to producing rich-country goods. Costa Rica transitioned from being reliant on exports of agricultural goods (coffee and bananas) to becoming an exporter of software and precision instruments. Nevertheless, diversification is still key to achieving sustainable growth for the following reasons. First, it would reduce the country’s reliance on a small number of sectors and help diversify against shocks. Koren and Tenreyro (2007) find that if a developing country with weak financial infrastructure specializes in sectors with high intrinsic volatility, it will tend to suffer greater aggregate volatility. The study states that if a country’s volatility is related to high exposure to a few high-risk sectors, strengthening the financial institutions and diversifying the economy may be virtuous policy choices. Second, the closure of Intel’s microprocessor plant in 2014 underscores the need to find new drivers of exports in the country. Third, the growth decomposition in Section Three shows that labor (adjusted for quality of education) and capital are the two main drivers of growth, although productivity has become an important driver in recent years. The declining contribution of labor in the last 20 years and the aim to close the gap with rich countries highlights the necessity to boost productivity growth, which in part can be achieved through trade. In addition, the literature emphasizes the opportunity to create new and better-quality jobs (high-productivity jobs) in the context of the structural transformation that diversification entails.

Costa Rica is at an intermediate level of diversification, producing a relatively large number of goods that many countries are capable of producing. It is an empirical regularity that as countries develop, they tend to diversify their productive structures into more complex products. As a result, there should be a negative
6. DIVERSIFICATION AND EXPORTS

relationship between the number of products a country effectively exports (diversity) and the average ubiquity of its products. Figure 46 exhibits this relationship and benchmarks Costa Rica against peers. The figure indicates that, on average, aspirational countries (OECD) have high diversity and low ubiquity. In other words, these countries tend to export a large variety of products that are made by relatively few other countries. On the other hand, poor countries tend to export a small variety of products (low diversity), which are produced and exported by most countries (high ubiquity). Costa Rica is a country that exports many products as measured by diversity, but given that level, underperforms in terms of ubiquity. Countries with Costa Rica’s level of diversity tend to have lower ubiquity.

Figure 46. Diversification and ubiquity

![Diversity vs Ubiquity of Exports, 2017](image)


6.2. Diversification of exports would help sustain growth and create jobs

Costa Rica is less open than other countries at the same level of development, suggesting that it may not be capitalizing on all the potential gains from trade. At 16.5 percent, Costa Rica’s merchandise export share of GDP is lower than the average export share among its aspirational (38.1 percent) and structural peers (26.6 percent) (Figure 47). Figure 48 shows that Costa Rica’s trade openness increased during part of the 1980s and 1990s, before declining to around 67 percent in 2018, about the same level observed in the early 1970s. Likewise, Costa Rica’s exports of merchandise do not show an upward trend. However, the importance of Costa Rica’s exports of services rose in the last decades, as the share in GDP of services rose from an average of 5 percent in the 1970s to over 15 percent in recent years.

Costa Rica’s merchandise exports largely comprise agriculture products, such as fruits, fish, and coffee, while exports of high value-added content have declined over time. In 2000, agriculture products represented 36.1 percent of total merchandise exports, and high value-added industrial machinery products, such as computers, accessories for office machines, and medical instruments, accounted for another 21.2 percent (Figure 49). The composition of Costa Rica’s exports deteriorated somewhat in the following two decades, as the share of electronics and textiles products declined, while that of less complex products, such as bananas, avocados, pineapples, and coffee, increased (Figure 50). While the composition of exports did not improve in terms of complexity, the number of new items exported did. Costa Rica’s exports are now more diversified, as 80 new products were introduced since 2000. Although increased diversification is a welcome development, Costa Rica’s exports are still highly concentrated on primary products, as almost 45 percent of merchandise exports are agriculture and food products. To generate more and better-quality jobs, the country needs to further increase...
the value-added content of its exports, diversifying the set of goods exported when possible as well as the set of destinations.

**Figure 47. Costa Rica: Merchandise exports as a percentage of GDP, average 2016–2018**

Source: World Bank staff using WDI.

**Figure 48. Costa Rica: Trade, exports of merchandise, and exports of goods and services (% of GDP)**

Source: World Bank staff using WDI.

**Figure 49. Costa Rica’s export composition, 2000 and 2017**

Export composition in Costa Rica is highly balanced among all different levels of sophistication of goods. The goods that countries produce and how they produce them matter for export-led development. With everything else being equal, goods that embody greater value added in terms of inventiveness, skills, and technology tend to fetch higher prices in world markets. When countries produce goods that are more sophisticated than their income levels would suggest, they tend to see higher rates of future economic growth. Figure 51 shows the technological composition of Costa Rica’s exports. Relative to its peers, Costa Rica has the largest proportion of medium-tech exports, at 28 percent. It is important to take into account that for many years, a single hardware company, Intel, represented a significant part of Costa Rica’s GDP. This explains the high presence of medium-tech products. However, this also affected the share of high-tech exports, which declined from 26 percent of merchandise exports to 4 percent between 2013 and 2017, after Intel downsized its operations in Costa Rica. Primary products, on the other hand, made up 30 percent of exports, below LAC’s 42 percent but above both structural and OECD peers, at 24 and 26 percent, respectively. Moreover, and despite the exit of Intel as a manufacturer, the sophistication of exports has grown steadily since 2000, closing the gap with structural peers in recent years (Figure 52).


**Export composition in Costa Rica**

Export composition in Costa Rica is highly balanced among all different levels of sophistication of goods. With everything else being equal, goods that embody greater value added in terms of inventiveness, skills, and technology tend to fetch higher prices in world markets. When countries produce goods that are more sophisticated than their income levels would suggest, they tend to see higher rates of future economic growth. Figure 51 shows the technological composition of Costa Rica’s exports. Relative to its peers, Costa Rica has the largest proportion of medium-tech exports, at 28 percent. It is important to take into account that for many years, a single hardware company, Intel, represented a significant part of Costa Rica’s GDP. This explains the high presence of medium-tech products. However, this also affected the share of high-tech exports, which declined from 26 percent of merchandise exports to 4 percent between 2013 and 2017, after Intel downsized its operations in Costa Rica. Primary products, on the other hand, made up 30 percent of exports, below LAC’s 42 percent but above both structural and OECD peers, at 24 and 26 percent, respectively. Moreover, and despite the exit of Intel as a manufacturer, the sophistication of exports has grown steadily since 2000, closing the gap with structural peers in recent years (Figure 52).


**Export composition in Costa Rica**

Export composition in Costa Rica is highly balanced among all different levels of sophistication of goods. With everything else being equal, goods that embody greater value added in terms of inventiveness, skills, and technology tend to fetch higher prices in world markets. When countries produce goods that are more sophisticated than their income levels would suggest, they tend to see higher rates of future economic growth. Figure 51 shows the technological composition of Costa Rica’s exports. Relative to its peers, Costa Rica has the largest proportion of medium-tech exports, at 28 percent. It is important to take into account that for many years, a single hardware company, Intel, represented a significant part of Costa Rica’s GDP. This explains the high presence of medium-tech products. However, this also affected the share of high-tech exports, which declined from 26 percent of merchandise exports to 4 percent between 2013 and 2017, after Intel downsized its operations in Costa Rica. Primary products, on the other hand, made up 30 percent of exports, below LAC’s 42 percent but above both structural and OECD peers, at 24 and 26 percent, respectively. Moreover, and despite the exit of Intel as a manufacturer, the sophistication of exports has grown steadily since 2000, closing the gap with structural peers in recent years (Figure 52).


**Export composition in Costa Rica**

Export composition in Costa Rica is highly balanced among all different levels of sophistication of goods. With everything else being equal, goods that embody greater value added in terms of inventiveness, skills, and technology tend to fetch higher prices in world markets. When countries produce goods that are more sophisticated than their income levels would suggest, they tend to see higher rates of future economic growth. Figure 51 shows the technological composition of Costa Rica’s exports. Relative to its peers, Costa Rica has the largest proportion of medium-tech exports, at 28 percent. It is important to take into account that for many years, a single hardware company, Intel, represented a significant part of Costa Rica’s GDP. This explains the high presence of medium-tech products. However, this also affected the share of high-tech exports, which declined from 26 percent of merchandise exports to 4 percent between 2013 and 2017, after Intel downsized its operations in Costa Rica. Primary products, on the other hand, made up 30 percent of exports, below LAC’s 42 percent but above both structural and OECD peers, at 24 and 26 percent, respectively. Moreover, and despite the exit of Intel as a manufacturer, the sophistication of exports has grown steadily since 2000, closing the gap with structural peers in recent years (Figure 52).

Costa Rica has diversified its export destinations over time. Figure 53 shows that since 1990, the total number of Costa Rica’s export destinations has followed an upward trend, similar to the experience of its structural and aspirational peers. The United States has been the main destination for Costa Rica’s products in the last decade (Figure 54), buying nearly 40 percent of Costa Rica’s exports. Other important destinations are Panama, Nicaragua, Belgium, and the Netherlands. Over 70 percent of Costa Rica’s exports of medical instruments in 2016 were shipped to the United States, while most of the remainder was shipped to Belgium. Other products are also exported to only a few destinations: for instance, about 60 percent of Costa Rica’s exports of orthopedic appliances were shipped to the United States, and over 50 percent of pineapple exports and about 40 percent of bananas exports were imported by the United States, Belgium, and the Netherlands.

Source: World Bank staff using COMTRADE SITC2
Since 2011, merchandise export growth was mostly driven by new products to old markets. Figure 55 portrays the decomposition of export growth since 1994. As is standard in the literature, export growth can be decomposed into the intensive margin of trade, which refers to exports of old products to old markets, and the extensive margin of trade, which refers to exports of old products to new markets, new products to old markets, or new products to new markets.91 Of the 113 percent increment in the volume of exports during the period 1994–2000, the intensive margin of trade accounts for 70 percent of Costa Rica’s export growth, while exports of old products to new markets account for most of the remaining balance. This remarkable performance in exports is largely explained by the arrival of Intel as a producer and exporter of high-tech manufactures in 1997. With the implementation of the CAFTA-DR free trade agreement, exports experienced an increase of 56 percent in the 2000s, purely on account of the intensive margin of trade. Between 2010 and 2017, exports were stagnant because of the closure of the Intel plant, growing only 2 percent. Between 2014 and 2017, the decline in exports was due to the reduction of exports at the intensive margin, but this was offset by an increase in exports of new products to old markets and exports of old products to new markets.

6.3. What are the paths for diversification?

Diversification strategies can take many forms, from adding value to existing exports to developing new products and services. This section uses several standard trade analytical measures, like revealed comparative advantage, export quality, and product space analysis, to indicate paths for diversification.

6.3.1. Export quality upgrading

Building on comparative advantages, quality upgrading can boost productivity and support an export-oriented strategy.92 A common finding in the literature is that developed countries tend to export and consume higher-quality products than developing countries. Consequently, the ability of developing countries to transition from low-quality to high-quality products is seen as an important step toward export success and, ultimately, economic development.93 However, there is substantial heterogeneity in the scope for product differentiation, given that some products are characterized by a larger “quality ladder” than others.94 In general, the evidence suggests that the potential for quality upgrading is larger in manufacturing than in agriculture, but there are opportunities in the latter as well. Examples of products with a “long ladder” are wine and champagne, two products that have been used extensively in the trade literature, given the existence of objective measures of quality.95

Costa Rica has untapped opportunities to increase the quality of products in which the country already has comparative advantages. The trade literature has relied on unit values (price per unit sold) to proxy quality.96 Figure 56 shows the worldwide maximum and minimum prices (normalized to the average price) for the main merchandise exported by Costa Rica (blue line), together with the minimum, maximum, and average price charged by the country across all destinations (red line).97 As discussed, the scope for quality differentiation (blue line) varies across products. In each of the five products there are good opportunities for quality differentiation. The country has managed to export products with the highest quality (when the maximum world price and Costa Rica’s price are close) in all goods except pineapples and orthopedic appliances. However, Costa
Rica mainly exports low-quality products (at low prices), and therefore the volume-weighted price of each product is close to the minimum worldwide price in all five products. In the case of pineapples and orthopedic appliances, the country is exporting low-quality products on average, and there are opportunities to increase the quality of production to reach higher prices. In the other products, the evidence indicates that Costa Rica has the ability to produce higher quality products but needs to scale up in volume to reach all markets.

Quality upgrading of exports entails complying with the safety and quality standards and preferences of rich countries. Strengthening safety and quality regulations and acquiring knowledge about existing differences and evolving trends in the types of products rich countries demand are key to upgrading quality. The inability to comply with international quality standards has been identified as one of the main constraints to achieving quality upgrading. Therefore, would be a first step to improving the quality of exports. These practices are radically different from those typically used in the domestic market and involve adapting products to foreign demand. This entails upgrading production processes, complying with the strict requirements of foreign distributors, and establishing long-term relationships with foreign distributors to secure up-to-date information about foreign markets.

Improving institutions is important to upgrading the quality of products. Theoretical and empirical evidence suggest that the production of higher-quality varieties of a good typically requires the use of higher-quality inputs, which demand more customization and relationship-specific investments. Accordingly, countries with better institutions (governance, rule of law, property rights) and better contracting environments tend to have a comparative advantage in the production of high-quality products. Given that Costa Rica presents significant gaps in institutional strength relative to high-income LAC and OECD countries, improvements in these areas could increase the opportunities for quality differentiation.

6.3.2. New export opportunities based on current capabilities
Recent research has shown that the process of economic diversification does not occur at random, rather there is path dependence. Changes in the revealed comparative advantage of nations are governed by patterns of relatedness of products. In general, when countries diversify their export bundles, there is a propensity to move from the products they are producing to products that are close, in terms of production knowledge and capabilities. Empirically, similarity is measured as the likelihood that a pair of products is co-exported. If two goods require roughly the same knowledge and capabilities, this should show up in a higher probability of a country having a comparative advantage in both products. Intuitively, if countries that tend to export wheat also export corn, then a country that starts exporting wheat should be able to diversify toward corn, given that the knowledge to produce them is similar. To graphically represent the connection of similarity across products (a network), the literature developed what is called the product space: two products are connected by links based on their probability of being co-exported by countries.

Products in the product space differ in complexity and in the opportunities they present to diversify in the future. Figure 57 shows this network structure for Costa Rica. The color of each node/product corresponds to a community, which is defined as a set of products that tend to be connected to each other more frequently because they share the same set of required knowledge and capabilities to be produced. Products and their communities differ not only in complexity, but also in how connected they are: the higher the connectivity of
6. DIVERSIFICATION AND EXPORTS

a product, the higher the opportunities to diversify to other products. In general, more complex communities are more connected, and tend to be at the center of the product space. Based on this, the country’s opportunity gain (COG) is defined as the value of diversifying to a product that allows a country’s export basket to improve connectivity.

**Costa Rica has made inroads into the larger, more complex, and more connected communities in the product space.** The country has a significant presence in many products at the center of the product space, particularly, in agriculture and chemicals (such as paints and varnishes and other plastic plates). However, key export products such as bananas, plantains, and pineapples are still close to the periphery of the product space and have low opportunity gains. Yet Costa Rica has made inroads into the larger, more complex, and more connected communities such as construction materials, electronics, and machinery. These sectors on average are more complex, and they open opportunities to increase connectivity for further diversification and ultimately boost growth. In addition, the country has a strong presence in high value-added machinery (such as orthopedic appliances and medical instruments).

**Countries can follow different approaches to diversify their economic structure, depending on their needs.** Figure 58 maps each country in the space of Economic Complexity Index (ECI)-Complexity Outlook Index (COI). Countries with low complexity typically have many products that are not at the core of the network, and as a result do not have good connectivity. For these countries, the optimal approach would be to diversify into products that provide more opportunities for future diversification. Countries with low complexity but that are well connected to more complex products might emphasize proximity of products. On the other hand, countries with high complexity and good connectivity are in the best position to continue raising average complexity and connectivity without much effort (Costa Rica is part of this group). Finally, countries with good complexity but lacking connectivity should give equal weight to the proximity of products to diversify, and opportunity. Based on these considerations, a diversification strategy for Costa Rica should take into account the trade-offs between distance, complexity, and opportunity value. To do this, two approaches are suggested: feasible diversification and complex diversification.

**Figure 57. Costa Rica’s location in the product space**
The feasible diversification strategy emphasizes feasibility rather than opportunities for further diversification. According to this strategy, a country should expand the set of goods it produces by focusing on products that have a higher level of sophistication, and for which the expertise required to produce them is closest to the country’s present set of knowledge and production capabilities. This strategy stresses labor-intensive industries that will immediately create jobs. Specifically, the feasible index gives more weight to products that are close to the export basket of the country and gives less weight to the opportunity gain. This index weights closeness by 0.6, while the Product Complexity Index (PCI) and COG have a weight of 0.2 each. The government’s role is to provide incentives for attracting private investment, generate new production capabilities, and provide crucial public goods, such as infrastructure.

Of the 50 most feasible products for diversification, more than half belong to metals, stone, and glass; foodstuffs; and wood; but the products belonging to plastics and rubbers score higher, on average, on the feasible diversification index. Table 4 shows the distribution across sectors of the 50 four-digit harmonized system (HS) products scoring higher on the feasible transformation index (see Appendix VII for details), as well as the mean of the index in each sector. In terms of the number of products, metals, stone, and glass present the highest number of diversification opportunities (10), followed by foodstuffs (9), and wood (9). However, according to the mean value of the index, plastics and rubbers seem to offer the most feasible diversification opportunities, followed by foodstuffs.

Combining the information on the number of top 50 products in each sector, and their average feasibility index value, three sectors are revealed as providing better strategic opportunities: i) foodstuffs, ii) wood iii) metals, stone, and glass. The feasibility analysis identified opportunities within foodstuffs in the articles of miscellaneous edible preparations and beverages, spirits and vinegar (such as beer, soups and broths, coffee extracts, other fermented beverages, and so on). Within the wood sector, the opportunities exist in wood and articles of wood, wood charcoal, paper and paperboard, newspapers, pictures & other products (such as densified wood, wood carpentry for construction, strips and other pieces of wood, corrugated paper and paperboard, and newspapers, journals, and periodicals, and so on). Finally, in the metals, stone, and glass sector, diversification is more likely in articles of iron or steel, aluminum and articles thereof (such as tanks etc. > 300 liters, iron or steel; other tubes, pipes, and hollow profiles of iron or steel; aluminum structures like bridges, towers, and so on).

The complex diversification strategy emphasizes the development of more complex products that provide more opportunities for further diversification (larger strategic value). The products identified by this strategy may require production capabilities that are not close to those in the country. This index weights COG by 0.6, while PCI and closeness have a weight of 0.2 each. The sectors identified in this strategy are important to
booster economic growth, improve the diversification outlook, and create jobs of higher quality.

Among the 50 products with the largest strategic diversification value, close to 80 percent of the products belong to three sectors: chemical and allied industries; machinery, electrical, and transportation; and metals, stone, and glass. Table 4 shows the distribution across sectors of the 50 four-digit HS products scoring higher on the complex diversification index (see Appendix VII for details), as well as the mean of the index in each sector. In terms of the number of products, chemical and allied industries present the highest number of complex diversification opportunities (22), followed by machinery, electrical, and transportation (9); and metals, stone, and glass (12). According to the mean value of the index in the sector, the miscellaneous sector seems to offer the best strategic diversification opportunities with the largest strategic value.

After combining the information on the number of top 50 products in each sector and their average strategic value, three sectors emerge as those providing the better strategic opportunities: i) machinery, electrical, and transportation; ii) miscellaneous; and iii) metal, stone, and glass. The complexity analysis identified opportunities within machinery, electrical, and transportation mainly in the subsector “boilers, machinery, nuclear reactors, and mechanics appliances” (such as compression-ignition internal combustion piston engines; machines not elsewhere classified; calendaring or other rolling machines, other than for metals or glass; and machining centers for working metal, and so on). Within the miscellaneous sector, the opportunities exist in optical, photo, cine, checking, precision, industries (such as X-ray machines, machines for testing the mechanical properties of materials, and measuring instruments). Finally, in the metals, stone, and glass sector, diversification is more likely in the sector producing tools, implements, cutlery, spoons, and forks of base metal; and iron and steel products, such as articles for utensils, of cermet, knives and blades for machines, and interchangeable tools for hand tools).

Combining the two approaches, three sectors provide a good balance between feasibility and strategic opportunities for diversification: i) metals, stone, and glass; ii) foodstuffs; and iii) machinery, electrical, and transportation. Although not all the sectors offering higher feasible diversification opportunities present the better strategic diversification opportunities, by combining the results of these analyses we identify the three sectors above as those providing the better overall diversification opportunities. The metals, stone, and glass sector provides a unique opportunity, as it is one of the top feasible diversification opportunities and also one of the best complex diversification opportunities. The foodstuffs sector provides the best feasible diversification opportunities and the machinery, electrical, transportation sector offers the best complex diversification opportunities.

The capabilities to achieve some of these products within the feasible and complex approaches require solving a chicken-egg problem that could be eased with government involvement. To venture into the production of some of these products, it is not enough to just provide more education or improve infrastructure. The process of diversification requires the emergence of industries that in most cases are not currently available. In fact, these industries may require inputs or know-how that are not currently within the country. Furthermore, given that these industries do not exist, workers do not have the incentives to acquire the necessary skills to operate in those industries. The government could ease this problem by providing incentives to the private sector and creating an enabling environment to nurture the new sectors.

### Table 4: Main sectors on the top 50 products for export diversification using the complex approach

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Numbers of products</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical and Allied Industries</td>
<td>9</td>
<td>0.9</td>
</tr>
<tr>
<td>Machinery, Electrical, Transportation</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Metals, Stone, Glass</td>
<td>9</td>
<td>0.9</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Plastics and Rubbers</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: World Bank staff using COMTRADE and Observatory of Economic Complexity.
For products close to current capabilities, sectoral dialogue could be a solution, but for products far from current capabilities, the approach has to be more creative. In particular, dialogue could allow the identification of the necessary missing public goods and ways to provide them. However, for products far from capabilities, specialized institutions such as a public venture could be set up to fund new business models and initiatives that could trigger significant future entry. The fund would give the government access to those ideas, analyze the obstacles, and inform public policy, so that the requisite public inputs could be provided if deemed reasonable. Some successful examples of this type of institution are the Fundación Chile and the Industrial Development Corporation in South Africa.

New technologies and changing globalization patterns provide challenges and opportunities for export-led manufacturing strategies, all of which entail competitiveness, capabilities, and connectedness. In order to take full advantage of these opportunities and to mitigate some of the costs associated with these changes, countries need to address three areas: competitiveness, capabilities and connectedness. Competitiveness addresses the shift from low wages as the main incentive to produce in developing countries to broader considerations of the business environment in determining low unit labor costs. The notion of capabilities addresses the need for workers and firms to strengthen their ability to adopt and use new technologies, and for the government to provide the necessary infrastructure and regulations to support the spread of new technologies. Finally, connectedness relates to the importance of access to inputs and the output market. Key elements in this area are improvements in logistics, reductions in tariffs and nontariff barriers, and reductions of restrictions in services, particularly trade restrictions.

Improving competitiveness and connectedness could have large payoffs for Costa Rica. Countries can be mapped in each of the three areas to identify where they need to improve. Figure 59 illustrates such mapping. Competitiveness is constructed by combining different indicators such as ease of doing business and the rule of law. Capabilities to support technology diffusion and innovation combine dimensions such as ICT use and tertiary school enrollment. Finally, connectedness to markets combines dimensions such as logistics performance, restrictions on trade in manufactured goods, and restrictions on trade in professional services. Based on these measures, Costa Rica is considered to have an average level of connectedness and to have medium competitiveness. As discussed in section 5, the country scores particularly low in the quality of port, road, and railway infrastructure, as well as in fixed broadband subscriptions and international internet bandwidth—all factors affecting connectivity. Consequently, improving in these areas could have large payoffs.

Figure 59. Country distribution in the space of competitiveness, capabilities, and connectedness

6.3.3. Services provide opportunities to boost trade and domestic linkage

Exports of services from Costa Rica remain an area of great potential for job creation and growth. Two characteristics that made manufacturing the preferred sector for growth in the past were the possibility to face competitive pressures that allowed for improvements in efficiency, and the possibility of expanding demand by exporting to global markets. Today, the old view of services as being non-tradable, with low scale and low productivity, is being challenged by the disruption of ICT. The evolution of the internet, digitalization, and electronic storage are allowing a rapid increase in cross-border trade in services, which is an opportunity for developing countries to sustain services-led growth. The increasing prevalence of productivity-enhancing characteristics in services, including in low- and middle-income countries, expands the range of activities that will likely have positive spillovers for development.110

Costa Rica’s exports of services are consistent with its level of income. The performance of exports of services as a share of GDP is within the expected range, given the country’s per capita income level (Figure 60). In the regional context, Costa Rica performs extremely well in comparison to all of its Central American neighbors except Panama. Ghani and Kharas (2010) show that there is a linear positive relationship between the growth of services and the growth of GDP, indicating that there is a correlation between high growth in services and high growth in GDP. Figure 60 confirms this correlation: while aspirational peers and OECD countries have exports of services as a large share of GDP, low-income countries minimally participate in trade in services.

Modern services are consistently gaining participation in total exports and therefore are becoming a potential source of quality job creation. Developed countries tend to export more complex services, often called “modern” or “nontraditional” services.111 Among these services, economists typically include ICT, financial and insurance services, and health and other business services which include professional, consulting, technical and trade-related, and research and development services. A feature of these services is that, in general, they are more intensive in high-skilled labor, which implies that they would generate high-wage jobs that would allow the absorption of highly skilled workers. Loungani et al. (2017) find after studying trade in services that modern services are growing worldwide and present a relevant opportunity for many countries, since they do not require proximity between buyers and supplier. This reduction in trade costs opens the door for developing countries to participate in high-tech markets, since the reallocation of services worldwide is each day more of a possibility. However, regulatory barriers continue to slow down trade in these services, even though deregulation has coincided with a marked increase in FDI inflows in developing and developed countries.112

In Costa Rica, the share of modern services in exports is rapidly growing. As a percentage of service exports, modern services went from 37 percent in 2010 to 49 percent in 2018. Furthermore, modern services are becoming more relevant in total exports: they have risen from 14.4 percent of total exports in 2010 to 21.2 percent in 2018. However, most exports of services in Costa Rica today are still traditional service exports such as travel (including tourism), transportation and construction.

Costa Rica’s service export growth has been fueled by ICT, travel, and other business services. The ICT industry has made important progress as a genuine source of exports, increasing the value of exports, the share of Costa Rica’s service exports, and its revealed comparative advantage.113 In particular, ICT exports have more than doubled in only 8 years, and the industry’s participation in services increased from 10 percent to 13
percent between 2010 and 2018. Not only is strengthening the ICT sector important as a source of growth, it is a key input for trade integration, private sector development, and public service delivery. Additionally, other business services have boomed, and contributed to more than one-third of Costa Rica’s service export growth between 2010 and 2018. This aligns with the country’s comparative advantages as measured by the revealed comparative advantage index. Besides these two well-performing sectors, Costa Rica has an additional comparative advantage in tourism, which is important given its potential to create jobs for low-skilled workers in related activities such as hotels, restaurants, and entertainment. On the flip side, these types of sectors are less likely to provide much by way of productivity gains.

**Better institutions and higher levels of education are complementary sources of comparative advantage that are necessary to improve trade in services.** The value-added content or complexity of services is not homogeneous. For instance, professional services are more complex than hotel services. In general, the production of more complex processes implies a larger number of tasks. An economic environment with well-defined rule of law is associated with comparative advantages in complex services, and as a result, with higher exports of complex services. This is because complex services are dependent on strong institutions that enforce contracts: better institutions increase the probability that contracts are enforced, and therefore complex services with multiple tasks have a higher probability of been delivered. Similarly, complex services require high-skilled workers, and therefore the quality of the pool of workers is a key enabler of trade in services.
7. Conclusion

This chapter has shown that despite the immense progress Costa Rica has achieved, many challenges remain to boost economic growth and improve shared prosperity. The gap in GDP per capita with advanced economies remains large (due to still-low productivity), while informality and unemployment are high. Growth potential has fallen due to weak investment and productivity. Overall, responding successfully to these challenges will hinge on deepening recent reform efforts to advance growth and productivity. The country has built strong cross-party consensus in Congress on the reform agenda linked to the OECD accession process. Indeed, reform momentum in the last 18 months has been extraordinary, with several legal initiatives approved in record time, facilitated by the World Bank. Full implementation of this wide-ranging effort is necessary to improve living standards.

Maintaining the reform momentum and undertaking additional key reforms as identified in this chapter could significantly increase GDP per capita and improve productivity growth. According to the findings in this chapter, structural reforms are needed in several areas, from eliminating barriers to competition, to improving infrastructure, accelerating innovation, strengthening the business environment through tighter control over corruption, reinforcing property rights, and providing better access to finance. In particular, the results of the extended LTGM showed that closing the gaps with Costa Rica’s aspirational peers in five determinants of TFP (innovation, education, market efficiency, infrastructure, and institutions) by 2035 could increase TFP on average by 1.3 percentage points relative to the baseline and GDP per capita growth by 2.2 percentage points, and reduce the poverty rate by 3 percentage points.

Costa Rica’s export basket still shows a higher reliance on less sophisticated products relative to the OECD average, but the government can facilitate diversifying to more complex products. Harnessing its existing productive experiences and specialization patterns, Costa Rica could benefit from upscaling opportunities in several medium- and high-tech intensive industrial sectors. The fastest and most efficient path forward would be to move from products the country is already producing to products that are close in terms of production knowledge and capabilities. Considering Costa Rica’s status in those two areas, and considering the trade-offs between adding more complexity to the export basket, the feasibility of producing given resources, and the chances for further diversification in the future, three sectors emerge as providing opportunities to create jobs and economic opportunities: i) metals, stone and glass; ii) foodstuffs; and iii) machinery, electrical, and transportation. The capabilities to achieve some of the products within these sectors require solving a chicken-egg problem that could be eased with the provision of incentives to the private sector and the supply of an enabling environment.

Services provide another alternative for export diversification. The evolution of the internet, digitalization, and electronic storage are allowing a rapid increase in cross-border trade in services, which is an opportunity for developing countries to sustain services-led growth and create more and better-quality jobs. The ICT industry has made important progress as a genuine source of exports, increasing the value of exports, the share of Costa Rica’s service exports, and its revealed comparative advantage. Two other promising sectors are other business services and tourism. In order to boost high-skilled services, improving institutions to ensure contracts are enforced and increasing skills to ensure a supply of skilled labor are necessary conditions.
At 8.6 percent it was 30th highest in 2017 among 125 countries and at 8.5 percent it was 22nd highest in 2018 among 101 countries that had data.

According to data from WDI, Costa Rica's per capita GDP in 1980 was US$ 4,800 (in 2010 USD) compared to US$ 9,890 in 2018. Panama had the highest real GDP per capita in Central America in 2018 (US$ 11,724).

See data from WDI. GDP is in 2010 constant U.S. dollars. Guatemala has the largest economy, with a GDP of US$ 54.5 billion in 2018, and Panama is the least populous, with a population of 4,314 million in 2019. During 1980–2008, the average inflation rate in Costa Rica was 18 percent while the lowest was 9.16 percent. From 2009 to 2014, the average inflation rate fell to 5 percent and in 2017 it fell to 1.6 percent. Variance of GDP growth fell from 0.16 during 1970–94 to 0.04 during 1995–2016. Net FDI inflows as share of GDP were 5 percent during 2010–2017, the fourth-largest in Central America (CA) after Panama, Nicaragua, and Honduras.

Government expenditure in Costa Rica is the highest in CA (17.3 percent), also higher than the LAC average, while government revenue is the second lowest in CA (17.6 percent of GDP) after Guatemala (11.3), and also lower than the LAC average of 26 percent.

According to the IMF, Costa Rica's heavy reliance on social security contributions had adverse effects on labor market participation and the formal sector.

Compared to the regional average of 2.3 percent in the same period.

According to World Bank's Macro Poverty Outlook (MPO) in 2020, Costa Rica's poverty rate (at US$ 5.5 per day) was 10.9 percent in 2019, a more than one-percentage point increase from 2018 (which was 9.7). The national poverty line is computed based on population-weighted subgroup estimates from household surveys. Due to differences in estimation methodologies and poverty lines, estimates should not be compared across countries.

Costa Rica was above the Gini LAC average of 45.8 (excluding Costa Rica) in 2018, while in 2000 it was below the LAC average of 54.29. WDI (2019).


Costa Rica's current account balance has been negative, but with a decreasing trend since the 2000s. Between 2017 and 2018, the current account deficit increased moderately, from 3 to 3.3 percent of GDP, due to a higher trade deficit for goods amid political unrest in Nicaragua. This adversely affected intra-regional trade.

Villasuso, J. M. (2000). This deceleration reflected external factors, namely, the increase in the price of raw materials (particularly hydrocarbons) and rising global interest rates. The political and social conditions in neighboring Nicaragua also harmed intra-regional trade. Internal factors have postponed investment decisions and eroded consumers' confidence, including the fiscal uncertainty generated by government elections in the first quarter and the subsequent public sector strike against the fiscal plan.


Compared to the regional average of 2.3 percent in the same period.


Villasuso, J. M. (2000). This deceleration reflected external factors, namely, the increase in the price of raw materials (particularly hydrocarbons) and rising global interest rates. The political and social conditions in neighboring Nicaragua also harmed intra-regional trade. Internal factors have postponed investment decisions and eroded consumers' confidence, including the fiscal uncertainty generated by government elections in the first quarter and the subsequent public sector strike against the fiscal plan.


Compared to the regional average of 2.3 percent in the same period.

According to World Bank's Macro Poverty Outlook (MPO) in 2020, Costa Rica's poverty rate (at US$ 5.5 per day) was 10.9 percent in 2019, a more than one-percentage point increase from 2018 (which was 9.7). The national poverty line is computed based on population-weighted subgroup estimates from household surveys. Due to differences in estimation methodologies and poverty lines, estimates should not be compared across countries.


Costa Rica's current account balance has been negative, but with a decreasing trend since the 2000s. Between 2017 and 2018, the current account deficit increased moderately, from 3 to 3.3 percent of GDP, due to a higher trade deficit for goods amid political unrest in Nicaragua. This adversely affected intra-regional trade.

Villasuso, J. M. (2000). This deceleration reflected external factors, namely, the increase in the price of raw materials (particularly hydrocarbons) and rising global interest rates. The political and social conditions in neighboring Nicaragua also harmed intra-regional trade. Internal factors have postponed investment decisions and eroded consumers' confidence, including the fiscal uncertainty generated by government elections in the first quarter and the subsequent public sector strike against the fiscal plan.


Compared to the regional average of 2.3 percent in the same period.

According to World Bank's Macro Poverty Outlook (MPO) in 2020, Costa Rica's poverty rate (at US$ 5.5 per day) was 10.9 percent in 2019, a more than one-percentage point increase from 2018 (which was 9.7). The national poverty line is computed based on population-weighted subgroup estimates from household surveys. Due to differences in estimation methodologies and poverty lines, estimates should not be compared across countries.


Costa Rica's current account balance has been negative, but with a decreasing trend since the 2000s. Between 2017 and 2018, the current account deficit increased moderately, from 3 to 3.3 percent of GDP, due to a higher trade deficit for goods amid political unrest in Nicaragua. This adversely affected intra-regional trade.
Estimates are based on simulations using the dynamic GTAP model (GDyn)—a multi-sector, multi-region, multi-factor CGE model. The model is ideal for measuring the impact of labor market policies, as it takes into consideration general equilibrium linkages such as interactions between consumers, producers, and governments; inter- and intra-industry links; interactions between domestic and foreign markets; and resource constraints. Results capture the long-run impacts of policy changes, as results are reported relative to a baseline scenario by 2030.

It is implicitly assumed that women entering the labor force had no previous economic value added, that is, taking care of children or their employment in informal activities is only captured to the extent that these are in the official labor force statistics. Wages for women are assumed to be the same as those of men.

See for example endogenous growth theories of Romer (1990); Aghion and Howitt (1998).


This is a standard assumption in all models of structural transformation.

Relative to its structural peers, Costa Rica is only surpassed by Lithuania (15th place) in the ease of getting electricity index. World Bank (2019b).

For between sectors see Hsieh and Klenow (2009) and Busso and Madrigal (2013), among others. For references on within-sector, see Rodrik and McMillan (2011).

Rodrik (2013).

Obstacles to migration reduce labor flows from the agricultural to services and industry (see Restuccia et al. 2008). This is a standard assumption used in all models of structural transformation.


For structural transformation typically holds for developed and developing countries. See the flagship “Economic transformation and Future of Work in LAC” 2019. Also, see Ruttan (1975) and Herrendorf, Rogerson, and Valentinyi (2014).

Sectoral composition can be divided into three periods: import substitution, recovery and liberalization, and the contemporaneous economy.

Costa Rica liberalized its economy, closing some state-owned firms, reducing tariffs, and, in general, opening the economy to stimulate more domestic and foreign competition.

With the exception of the period 2007–2013, in which total employment decreased in the industry sector.

See Lewis (1954), Fei and Ranis (1964) and Chenery (1979).


See Schwab (2019; 2015): The Global Competitiveness Reports, WEF.

Enterprise surveys.

Relative to its structural peers, Costa Rica is only surpassed by Lithuania (15th place) in the ease of getting electricity index. World Bank (2019b).


IMF (2019).

The results are obtained from the fixed effects regression of real GDP per capita (log) on each digital infrastructure indicator and their interaction terms with country dummies, after controlling for investment and labor rate, human capital index, and time trend. Average numbers of observations used in the regressions range from 623 to 2915 observations covering 138 to 162 countries over 2000–18. According to these results, the digital infrastructure aggregate index as well as the sub-indicators of broadband subscriptions, mobile subscriptions, fixed broadband subscriptions, and internet users have a positive and significant association with real GDP per capita.

Data Bank Microdata Data Catalog https://data.worldbank.org/

Developed by WIPO.

The results are obtained from the fixed effects regression analysis of real GDP per capita with respect to bank access indicators and the interactive term between these variables and country dummies after controlling for GDP per capita, investment, labor, human capital, and year dummies. Observations range from 928–2029 from 87–158 countries during 2000–18. See Table 5.1 in the Appendix for the source and definition of variables used in the analysis.
Note: To reduce the influence of measurement error and outliers, we “winsorized” the unit prices for each HS6 product by keeping the values between the 3rd and 97th percentile.
References


Balassa, Bela. 1965. Trade Liberalization and ‘Revealed’ Comparative Advantage. The Manchester School of Economic and Social Studies 33: 92-123.


UNLEASHING CENTRAL AMERICA’S GROWTH POTENTIAL | COSTA RICA

62