UNLEASHING CENTRAL AMERICA’S GROWTH POTENTIAL

El Salvador

Hulya Ulku
Gabriel Zaourak
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<td>AEs</td>
<td>Advanced Economies</td>
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<td>BF</td>
<td>Business Freedom</td>
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<td>CA</td>
<td>Central America</td>
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<td>CABEI</td>
<td>Central American Bank for Integration</td>
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<td>CAFTA-DR</td>
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<td>CBOE</td>
<td>Chicago Board Options Exchange</td>
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<td>CGE</td>
<td>Computable General Equilibrium model</td>
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<td>CIF</td>
<td>Cost Insurance and Freight</td>
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<td>CPI</td>
<td>Corruption Perception Index</td>
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<td>CRI</td>
<td>Costa Rica</td>
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<td>DB</td>
<td>Doing Business</td>
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<td>DGE</td>
<td>Dynamic General Equilibrium</td>
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<td>DR</td>
<td>Dominican Republic</td>
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<td>DVA</td>
<td>Domestic Value Added</td>
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<td>EAI</td>
<td>Economic Activity Indicator</td>
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<td>ECLAC</td>
<td>Economic Commission for LAC</td>
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<td>EF</td>
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<td>EMDEs</td>
<td>Emerging Markets and Developing Economies</td>
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<td>EPU</td>
<td>Economic Policy Uncertainty</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FoB</td>
<td>Free on Board</td>
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<td>FVA</td>
<td>Foreign Value Added</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GDyn</td>
<td>Dynamic GTAP</td>
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<td>GNI</td>
<td>Gross National Income</td>
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<td>Global Value Chain</td>
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<td>HND</td>
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<td>IADB</td>
<td>Inter-American Development Bank</td>
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<td>ICSE</td>
<td>International Classification of Status in Employment</td>
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<td>Acronym</td>
<td>Full Form</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>ILO</td>
<td>International Labor Organization</td>
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<td>International Monetary Fund</td>
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<td>IRF</td>
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<td>LAC</td>
<td>Latin America and the Caribbean</td>
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<td>MIMIC</td>
<td>Multiple Indicators Multiple Causes</td>
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<td>NIC</td>
<td>Nicaragua</td>
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<td>NTB</td>
<td>Non-tariff Barriers</td>
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<td>ODA</td>
<td>Official Development Assistance</td>
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<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<td>PAN</td>
<td>Panama</td>
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<td>PPP</td>
<td>Purchasing Power Parity</td>
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<td>Self-employment Data</td>
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<td>SICA</td>
<td>Central American Integration System</td>
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<td>SLV</td>
<td>El Salvador</td>
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<td>SME</td>
<td>Small, Medium Enterprises</td>
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<td>TFA</td>
<td>Trade Facilitation Agreement</td>
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<td>TPS</td>
<td>Temporary Protected Status</td>
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<tr>
<td>U.S.</td>
<td>United States of America</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNECLAC</td>
<td>United Nations Economic Commission for LAC</td>
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<td>UNESCAP</td>
<td>United Nations Economic and Social Commission for Asia and the Pacific</td>
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<tr>
<td>VAR</td>
<td>Vector Auto Regression/Regressive</td>
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<td>VAT</td>
<td>Value-added Taxation</td>
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<td>VIX</td>
<td>Volatility Index</td>
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<td>WB</td>
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<td>World Economic Forum</td>
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<td>WGI</td>
<td>Worldwide Governance Indicators</td>
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<td>WoRLD</td>
<td>World Revenue Longitudinal Data</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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1. Introduction*

Although El Salvador’s modest pace of growth has reduced poverty and inequality in recent years, it has not been sufficient to move the country toward the income levels of wealthier economies. Extreme poverty, measured as US$ 1.9 a day, declined from 13 percent in 1995 to 1.5 percent in 2018. During the same period, the Gini coefficient fell from 50 to 39 percent, reducing inequality by more than the LAC average. In recent years, El Salvador has had the second-highest level of equality in Latin America and the Caribbean (LAC), after Uruguay, on par with the world average. However, it has the largest share of the population classified as vulnerable—people who are likely to fall into poverty if a shock occurs—in the LAC region, at almost 50 percent. El Salvador’s GDP per capita relative to the United States has decreased substantially, from 11.4 percent in 1965 to 6.5 percent in 2017. Most of this divergence occurred during 1979–1989, coinciding with its civil war. Since 1990, the relative GDP has improved less than one percentage point.

The objective of this study is to investigate the drivers and constraints of growth and productivity in El Salvador from 1990 to 2017 and explore areas with high growth potential. Drawing on the historical growth experience of El Salvador 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 country’s growth. In the same vein, the subsequent section analyzes aggregate trends in productivity—that is, the engine of the long-term growth—and its link with the process of structural transformation. The study then uses a cross-country benchmarking and regression analysis based on the growth diagnostic developed by Hausmann et al. (2005) to find the binding constraints to growth. Finally, the analysis concludes with the link between growth, diversification, and exports.

The value added of this study is to provide an in-depth analysis of the drivers and constraints of El Salvador’s growth using a wide range of analytical tools. The analysis employs several quantitative methods to provide an objective assessment of the drivers and constraints of growth in El Salvador, including the long-term growth model (LTGM), computable general equilibrium (CGE) model, growth diagnostics and product space analyses. The novelty of this study is to employ the same framework, analytical tools and data to conduct parallel analyses for each Central American country to allow for meaningful cross-country comparisons. Given the wide breadth of the study, in terms of the methodologies used, subjects analyzed, and countries covered, it does not envisage to dive deeply into each driver and constraint of 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 for its growth, and to form the analytical basis for a subsequent investigation of specific areas.

Historically, El Salvador’s growth is driven by factor accumulation, both labor and capital, and not overall productivity. In fact, productivity declined during most of the period examined. More recently, capital accumulation has been on the decline due to lower levels of investment, particularly public investment, in El Salvador. Reallocation of workers from agriculture, manufacturing, and education and health sectors toward the financial intermediation and real estate sector was the main driver of labor productivity growth during 1990-2017. After a slowdown in the 2000s, mainly driven by a decline in the reallocation of workers, labor productivity recovered in recent years, reflecting a rise in within-sector productivity growth.

* Six country specific reports and the cross-cutting themes report of Unleashing Central America’s Growth Potential analytical body of work is available at http://www.worldbank.org/boostcentralamerica
Using these tools, the chapter finds that boosting growth and reducing poverty requires raising productivity growth, stepping up investment and facilitating the entry of women to the labor market. Results using an LTGM show that closing the gaps with El Salvador’s aspirational peers (Chile, Latvia, Lithuania, Panama, and Peru) in five determinants of (total factor productivity) (TFP) by 2035 could increase TFP on average by almost 1 percentage point relative to the baseline. This translates into an average annual gain in GDP per capita of 2.1 percentage points. Second, an extension of the LTGM shows that increasing investment, particularly public investment, would have strong positive effects on growth and poverty in El Salvador, given the low investment rates of the country. Finally, results from a CGE model show that increasing female labor force participation to reach half that of men would increase GDP by 5.6 percent by 2030. Evidence presented in Section Four shows that distortions reducing the mobility of workers across sectors are particularly large in El Salvador, and the removal of those distortions could translate into large output gains.

The binding constraints for growth are identified as: (i) security, (ii) innovation, (iii) human capital, (iv) property rights, (v) limited access to finance for small firms, and (vi) corruption. This is according to cross-country comparisons of key indicators of the Salvadoran economy and regression analyses following the growth diagnostics methodology. Although crime levels have been declining in recent years, security is still a binding constraint to growth, with 80 percent of firms paying for security and 49 percent identifying crime as a constraint to business. Research and development (R&D), the number of researchers, and innovation activities are among the lowest compared to El Salvador’s peers, and are likely to be the cause of low productivity. Corruption and weak property rights hinder the legitimacy of institutions, and about half of all firms in El Salvador see corruption as a major constraint. The education system in El Salvador produces worse outcomes than those of its peers, which can be attributed to low mandatory years of schooling, scarcity of schools in rural areas, gang participation among youth, and poverty rates. Brain drain caused by high levels of out-migration is also behind human capital deficiencies. Finally, El Salvador lags its peers in bank access, but access to finance does not appear to be a constraint for firms, except for small and medium enterprises (SMEs).

Higher productivity and output growth can be achieved through quality upgrading and an export diversification strategy focused on metal, plastic, and chemical products. Export diversification with trade integration is a development strategy that has been successfully applied in other countries, especially relatively small ones. By exporting and engaging in value chains, countries can reduce their dependence on commodities, tourism, and remittances as well as increase their productivity by incorporating the technology embodied in the new export products. El Salvador is in an intermediate stage of diversification. It has the potential to develop by upgrading the quality of its exports and expanding to new export products. Based on its current export capabilities combined with a feasible and strategic approach, diversification into metal, plastic, and chemical products seems the most promising.

Despite the challenges, El Salvador has great potential to bolster economic growth. The country’s strategic location with access to many markets, a growing labor force, and a solid industrial base could support the expansion of the tradable sector to achieve higher and more inclusive growth. Development goals could be achieved with a long-term commitment to structural reform and investment.

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

- **Implementing measures to boost female labor force participation.** 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 the country.

- **Reducing labor market rigidities and costs.** A flexible labor market supports productivity growth by allowing factors of production to move freely across firms and sectors. Obstacles to migration within the country reduce labor flows from agriculture to services and industry. Laws that make it more difficult to hire and fire workers also prevent reallocation.
Boosting public investment.

Reducing crime and violence. Increasing security will have high returns for El Salvador's economic performance. El Salvador has the highest homicide and crime rates globally, putting enormous costs on the country’s economy and society. The Government has taken important initiatives to curb crime and violence and invest in preventive policies. Given that lack of opportunities is generally at the heart of crime activities, policies increasing labor market access, training activities for skills, rehabilitation and integration of ex-convicts and institutional strengthening are likely to reduce crime in the country.

Strengthening the rule of law, property rights and transparency. This would have high pay offs for the country’s long term growth performance and social development.

Investing in human capital. Given that educational outcomes in El Salvador are among the lowest compared to its peers, increasing the coverage and quality of education and job opportunities for youth is important to increase the country’s growth performance and productivity.

Creating an enabling environment for innovation. Since El Salvador’s innovation activities are low and on a declining trend, investing in the drivers of innovation, i.e., human and physical capital, and in national innovation policies is likely to increase the country’s innovation and in turn its productivity and growth.

Increasing small firms’ access to finance. Access to working capital would promote entrepreneurship and the growth performance of the country. Overhauling prohibitively high collateral requirements and increasing credit information could improve the access of small firms to bank finance.

Coordinating with the private sector to identify missing public goods and designing a mechanism to provide them. For those products that are not produced within the country but are close enough to El Salvador’s capabilities, sectoral dialogue could be a solution to facilitate the emergence of new industrial clusters.
2. Macroeconomic and Growth Performance: Historical Context

El Salvador is the smallest country in Central America in terms of land mass, and has achieved modest but stable growth with price stability, despite fiscal imbalances. It ranks third in both population and GDP among the six Central American countries, with a population of 6.42 million and GDP of US$ 22.5 billion in 2018, and it is also the most densely populated country in Central America. The independence of the Central Bank of El Salvador since 1991, and the monetary integration law in 2001 that established the dollarization of the economy, have contributed to the country’s price stability and low but stable GDP growth. Inflation gradually decreased from 32 percent in 1986 to rates below 1 percent on average since 2012. However, low growth and increasing debt raise concerns about fiscal sustainability and vulnerability to financial shocks. Specifically, the gross government debt has increased steadily since 2000, from 29.5 percent of GDP in 2000 to 67 percent in 2018, the highest in Central America since 2008. This poses a particular challenge for a dollarized economy, as it requires a high degree of fiscal prudence to ensure macroeconomic stability. The country’s budget has been improving since 2010 and its tax revenue is the highest among Central American countries (17.8 percent of GDP in 2018), owing partly to the surge in remittances in recent years (Figure 1).

The high growth rates recorded in the first half of the 1990s were not sustained. Economic growth was strongly affected by the brutal Salvadoran Civil War (1979–1992). In its first two years, the war left 30,000 people dead, resulting in a decline of more than 13 percent in per capita GDP in 1980 (Figure 2). The high growth rates recorded in the first half of the 1990s are the result of a post-war “rebound effect.” Since the 2000s, the country began a period of positive but modest economic growth, behind aspirational and structural peers (Armenia, Bosnia and Herzegovina, Dominican Republic, Georgia, Serbia, and Tunisia) but catching up to the rest of Central America. Regional trade agreements and market-friendly reforms increased trade flows in the past two decades, however, exports lost competitiveness when faced with the low labor costs of Asian countries. As a result, the maquila sector, a low-tech industry that represented 13.5 percent of El Salvador’s manufacturing GDP in 2003, declined to 8.2 percent of manufacturing GDP in 2015. The service sector is the fastest-growing sector, representing 60.3 percent of the total value added in 2018. However, its productivity has been decreasing, limiting increases in workers’ earnings and the potential for inclusive growth.

El Salvador’s per capita income has been diverging from wealthier economies. As a result of its modest economic performance, El Salvador’s relative real per capita output has fallen to historic lows. El Salvador’s GDP per capita relative to the United States has decreased substantially, from 11.4 percent in 1965 to 6.5 percent in 2017. Most of this divergence occurred during 1979–1989, coinciding with the civil war. Since 1990, relative GDP has improved less than one percentage point, reflecting the stagnation in the growth rate of real per capita output (Figure 4). However, in 2018, El Salvador had the 6th lowest real GDP per capita among 25 Latin American economies, compared to 11th place in 1965.
Figure 1. El Salvador’s government debt vs. tax revenue in 2018

![Tax Revenue vs. Gross Government Debt](source: World Development Indicators (WDI)).

Figure 2. GDP per capita growth of El Salvador (%)

![GDP per Capita Growth](source: World Development Indicators (WDI)).

Figure 3. GDP per capita growth by decade (%)

![GDP by Decade](source: World Development Indicators (WDI)).
Poverty and inequality have decreased, but at a slow pace. After the end of the civil war in 1992, 60 percent of households in El Salvador lived in poverty (relative to the national poverty line). That figure fell to almost 30 percent by 2006. The 2008 global economic crisis reversed some earlier gains, and poverty increased to 40.6 percent in 2011, but then recovered its downward trajectory. In 2017, 29.2 percent of households lived in poverty. The factors correlated with this achievement are increasing real income, growing remittances, more years of schooling, increasing employment rate of the poorest deciles, and decreasing birth rate. Similarly, inequality, measured by the Gini coefficient, decreased from 54.5 percent in 1998 to 40 percent in 2016 (Figure 5).

Social spending contributed to poverty reduction, but its effectiveness is reduced by high tax rates and subsidies that mainly benefit middle-income households. Social expenditures have increased from an average of 8.3 percent of GDP in 2002–2009 to 9.1 percent in 2010–2017, which is still lower than the Latin American average of 11.2 percent in 2016. The high level of public debt limits the space for fiscal maneuvering by restricting social spending. Among the social spending programs, government spending on education and health had the highest impact on relieving inequality, and direct transfers reduced the poverty incidence measured at both national and international poverty lines. However, the effect of the latter is offset by direct and indirect taxes. Subsidies for basic services, such as water, electricity, liquefied gas, and public transport, benefited mainly middle-income households.

The largest financial flows to El Salvador since the early 1990s have come from remittances. From 1990 to 2017, the emigrant population of El Salvador tripled, reaching 1.392 million (one quarter of the country’s total population), most of them concentrated in the United States, making El Salvador vulnerable to changes in the U.S. economy and immigration policies. Almost 57 percent of households have a relative abroad, making remittances a significant source of income for many Salvadoran families, which at the macro level helps to offset the trade
During the first half of the 1990s, remittances more than doubled in the country, representing nearly 13 percent of GDP in 1995. From 2002 to 2006, the country experienced the largest increase in remittances, from 15.4 to 21.8 percent of GDP (Figure 6). In 2018, remittances made up 20.6 percent of GDP. Despite the favorable effects of remittances on the country’s income and poverty rates, high emigration might be hindering growth by draining the country’s human resources stock and increasing reservation wages, among other effects.

Unlike remittances, Foreign Direct Investment (FDI) inflows have been modest. El Salvador has the lowest FDI inflows among its peers (Figure 7). Average FDI inflows to the country represented 0.3 percent of GDP from 1980 to 1998. After the Free Trade Zone Law came into effect in 1998 and the telecommunication and energy sectors were privatized, FDI inflows peaked at 10.1 percent of GDP. The second peak in FDI occurred in 2007, when FDI reached 9.1 percent of GDP after the approval of the International Services Law, which established service parks and centers providing incentives similar to those of the Free Trade Zone Law. During 2012–2018, FDI inflows averaged 1.9 percent of GDP, the lowest in Central America (along with Guatemala). In 2018, FDI flows from the United States constituted 38 percent of total FDI inflows to El Salvador, while FDI flows from neighboring countries in Latin America contributed nearly half of the total FDI inflows, led by Panama, with 21 percent of the total.

FDI in El Salvador is concentrated in the energy, communications, and textile sectors. In 2017, 52 percent of FDI inflows were in the manufacturing sector, mainly in the sportswear manufacturing segment, taking advantage of low labor costs. Over the last ten years, foreign companies have also started to complete the value chain production in the country, for example, in yarn, fabrics, accessories, and clothing. This has promoted competition and innovation in different production lines of the textile industry and helped increase the demand for qualified personnel by 10 percent. In 2018, textile production in free trade zones (maquilas) represented 46 percent of total exports.
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 El Salvador’s recent economic history of stagnation. Economic theory indicates that countries grow by accumulating factors of production, 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 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.

Growth was a combination of positive factor accumulation with negative productivity between 1980 and 2017. Labor contributed an average of 1.1 percent to GDP growth per year in this period, capital accounted for around 1 percent, and human capital contributed an additional 0.8 percent. However, TFP negatively affected economic growth by 1.1 percent per year during the same period (Figure 8). In the last two decades, labor accumulation slowed down in comparison to the 1980s, and in the past seven years it contributed 0.9 percent (versus 1.8 percent in 1981–1990). Capital accumulation followed a similar pattern: in the 1990s, on average, capital contributed 1.5 percent, while its contributions in the 2000s and in the period 2011–2017 were 1.1 percent and 0.8 percent, respectively. Finally, human capital increased its contribution to 1 percent annually starting in 2011.

Sluggish productivity growth has not helped El Salvador close the gap with rich countries. Overall, TFP declined, on average, 0.6 percent between 1980 and 2017, with significant fluctuations over time. The biggest decline in TFP growth took place in the 1980s (an average decrease of 2.6 percent) in a context of internal turbulence coming from the civil war, privatization of companies, and the expropriation of privately owned land (Figure 8). After the civil war, the country was able to adopt important political and institutional reforms that helped the economy recover and attain positive TFP growth. However, this recovery was only temporary. Since the 2000s, TFP growth has been negatively contributing to growth (averaging -0.6 percent) and has become an impediment to closing the gap with high-income countries.

Gross capital formation has lagged relative to its peers. The declining contribution of capital to growth can be explained by the low investment rate. Since 1990, aggregate investment averaged 17 percent of GDP, lower than LAC, structural, and aspirational peers (Figure 9). Private investment as a share of GDP averaged 14 percent between 1990 and 2017, whereas the average public investment rate was around 3 percent of GDP. During the commodity “super cycle” of the 2000s, private investment rose to 19 percent of GDP, but it fell significantly in the 2008 financial crisis and has remained at around 16 percent of GDP since then. In all cases, both private and public investment were below the levels of their peers, not only on average but during most of the period between 2000 and 2018. This is mostly due to a low savings rate (including remittances), which averaged 14 percent of GDP during these years, combined with low FDI, which contributed close to 2 percent of GDP.
Low TFP is reflected in El Salvador's labor productivity, which outpaced only its LAC peers. Labor productivity is a measure closely linked to TFP, and is calculated as value added per worker. Between 1992 and 2018, value added per worker in El Salvador grew less than in aspirational peers, Organisation of Economic Co-operation and Development (OECD) countries, Central American peers, and structural peers (Figure 10). In particular, while labor productivity in El Salvador increased an average of 0.7 percent per year, in structural peers, OECD countries, and aspirational peers, the average was 1.8 percent. As a result, the gap in labor productivity between El Salvador and OECD countries increased slightly, to 12 percent from 10 percent, while aspirational peers have closed the gap by one percentage point.

Increasing investment—particularly public investment—would have strong positive effects on growth and poverty in El Salvador, given the low investment rates of the country. At 17 percent of GDP (3 percent of which is public investment and 14 percent is private investment) the investment rate of El Salvador is below the 25th percentile of low- and middle-income (LMI) countries. Based on simulations using the LTGM that is based on the Solow-Swan growth model and includes investment, TFP, human capital, demographics, an increase in public investment to 9 percent of GDP (75th percentile of LMI countries) boosts growth over 2020–30 by 0.9 percentage points, while increasing it to 12 percent of GDP (90th percentile of LMI) increases growth by 1.3 percentage points (Figure 10b). Similarly, increasing private investment from its current level to 21 percent (75th LMI percentile) boosts growth by 0.8 percentage points through 2020 and increasing it to 26 percent (the 90th percentile across LMI countries), boosts growth by 1.3 percentage points. The effects on poverty of increasing investment rates are also large: In the baseline scenario with no changes in investment, poverty rates at US$ 5.5/day are expected to be around 22 percent. Under the previous scenarios, poverty would decrease by 3–5 percentage points by 2030 (which is a 15–23 percent reduction relative to the baseline).

Increasing female labor force participation would have strong positive effects on growth. Women's labor force participation in El Salvador is currently at 44 percent, well below that of men (75 percent) but slightly above 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 El Salvador. 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 close the labor participation gap with men in half would gradually boost labor supply and is estimated to increase GDP by 5.6 percent. Traditional labor-intensive industries (textiles and apparel) as well as labor-intensive services sectors (public administration) are shown to benefit the most. Higher levels of female labor force activity in El Salvador would increase investment, both
domestic and foreign, by 9.8 percent by 2030. Households would also benefit through an increase in household income and consumption, estimated to increase by 3.5 percent by 2030.

Figure 10. Labor productivity over time and growth rate under different scenarios

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. Here an extended LTGM, drawing on the latest available data, is used to quantify how an increase in the determinants of TFP—innovation, education, market efficiency, infrastructure, and institutions—affects the long-term growth rate of El Salvador. In each of these five indicators, El Salvador underperforms its aspirational peers and the United States (see Appendix III for details). This points to the need for reforms in these areas in order to promote the country’s long-term growth.

Reforms in each determinant of TFP could increase annual GDP per capita growth rate by 2.1 percentage points by 2035. This reform scenario simulates a full catch-up with El Salvador’s aspirational peers in all of the five TFP determinants. To implement these reforms, it is assumed that each TFP determinant increases linearly, so that the country reaches the target by 2035 (Table 1). This scenario generates a path of TFP that follows an inverted U shape, rising to a maximum of 1.2 percent by 2035, and then declining gradually over time. On average, the growth rate of TFP between 2020 and 2035 is 0.9 percent per year, which is almost 0.9 percentage points higher than in the baseline scenario (0 percent). Annual GDP per capita growth would be on average 2.1 percentage points higher than the baseline, and the poverty rate could be 2 percentage points lower than the baseline after four years. By 2035, the poverty rate could be as low as 11 percent, which is 4 percentage points lower than in the baseline.

The above evidence suggests that El Salvador needs to raise TFP growth in order to boost GDP per capita and sustain poverty reduction. El Salvador’s growth has been mainly driven by large labor accumulation and, to a lesser extent, by physical capital accumulation. In fact, as a result of low investment rates in comparison to its peers, the contribution of capital to growth has declined since the 1990s, indicating the need to increase...
investment. Furthermore, there is an untapped opportunity to boost growth by encouraging female labor force participation. However, the main factor dragging growth is the decline in the efficiency of the economy or TFP. Raising productivity growth is key to boosting El Salvador’s growth rates of income per capita and sustaining poverty reduction over time. In the past decades, the country has been unable to experience sustained TFP growth.

**Sustainable reforms are needed to generate a significant change in TFP.** The experience of Asian countries shows that maintaining TFP growth over time is possible, but requires political will to remove constraints and distortions affecting markets. Given that El Salvador lags its aspirational peers in all the determinants of TFP, efforts to close the gap in the short run will be important to reach higher TFP growth. As discussed in more detail in section 4 below, improving the financial system; promoting innovation and the business environment through better security, property rights, and control of corruption; and increasing human capital would help El Salvador step up its productivity and growth. Before moving to the analysis of key areas constraining growth in El Salvador, the next section investigates the 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 establishes 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, then decline as the economy grows.

El Salvador’s economic expansion was accompanied by a shift in the sectoral composition, but industry did not follow the typical hump-shaped path. Figure 11 displays the evolution of nominal sectoral shares of GDP for agriculture, industry, and services. Agriculture’s share of GDP (left panel) steadily declined from about 16 percent in the late 1970s to around 6 percent in recent years. The traditional hump-shaped path of industry is not present, rather the industrial share followed a different pattern, decreasing from around 30 percent in the late 1970s to 23 percent in the late 1980s, rising to 28 percent by the early 2000s, and remaining near that level in recent years. Finally, the share of services in GDP steadily increased from 54 percent in the early 1960s to 65 percent in recent years.

El Salvador also experienced a significant change in its structure of employment across sectors, with both agriculture and industry showing a decline. In 1991, more than 28 percent of workers were employed in agriculture, about 40 percent in services, and 27 percent in the industrial sector. By 2018, the employment share of the agricultural and industrial sectors shrank to 18 percent and 22 percent, respectively. In contrast, the employment share of services increased to 55 percent in the same period.
4.2. Sectoral labor productivity growth and structural transformation

El Salvador’s labor productivity growth performance relative to its peers varies across sectors. The process of structural change is characterized, among other things, by differences in the pattern of productivity growth across sectors and countries. Figure 12 depicts the relationship between average labor productivity growth in each sector and aggregate labor productivity in 1991 for El Salvador and a set of its peers, together with a dotted blue line representing labor productivity growth for OECD countries. El Salvador had the lowest initial level of aggregate labor productivity, and between 1991 and 2017, its labor productivity growth in agriculture and services was below that of all its peers, as well as OECD countries. In contrast, El Salvador’s labor productivity growth in industry outperformed OECD countries and most of its peers, except for structural peers.

El Salvador exhibits a sizeable productivity gap between the most productive sectors and agriculture, the least productive. 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 in developing countries that affect the allocation of resources between sectors and reduce aggregate productivity. However, substantial productivity gaps across sectors could potentially increase aggregate productivity if workers move from sectors with low productivity to sectors with high productivity. The labor productivity gap between agriculture in 2016 (the least productive sector) and the most productive sectors is large: the mining and quarrying sector was 7.5 times more productive, and the transport, storage, and communications sector was 3.3 times more productive.
Box I. Drivers of premature deindustrialization in El Salvador since 1995

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 policy-making concern, as industrialization is often considered to be an engine of growth. This view contends that robust industrial growth is essential for developing countries to catch up with the developed world, and premature deindustrialization strips an economy of one of the fundamental drivers of growth.

In a background paper for this report, Sinha (2019a) investigates the relative strength of different forces in shaping the behavior in 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 differences in labor productivity observed in the data.46

In El Salvador, the industrial share of employment contracted by 3.3 percentage points between 1995 and 2016. 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. As in other regional peers, changes in distortions are the principal channel driving down industrial employment. Changes in the domestic consumption profile created an opportunity for employment expansion (0.5 percentage points). In contrast to the regional trend, shifts in trading patterns reduced industrial employment in El Salvador. Nevertheless, considered jointly with the consumption profile, the net impact of the two channels together was of an expansionary nature.

When compared to its neighbors, and based on model estimates, El Salvador has an intermediate level of labor market distortions in both the industry and services sectors. Like most economies, the services sector experiences larger distortions relative to industry, and the economy faced higher barriers in hiring labor in recent years than at the beginning of the 1990s (Figure II). The elimination of these distortions that weakened structural change implies an output gain of 4 percent, well above the average gains for the region.

Figure I. Decomposition of changes in employment share

Figure II. Estimates of labor market distortion

Source: Sinha (2019a). Note: The bars represent the actual change in employment shares. They 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.

Source: Sinha (2019a). Note: Blue and red 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.
Labor productivity is converging in almost all sectors, but at different rates. Between 1991 and 2016, the productivity gap relative to agriculture increased in only two sectors (manufacturing and transport, storage, and communications) and decreased in the rest (Figure 13). Labor productivity growth was uneven across sectors, which implies that the pace of convergence was quite different. For example, the sectors of mining and quarrying and financial intermediation, real estate, and business activities converged significantly faster than the rest of the sectors, with 5.7 percentage point and 3.6 percentage point reductions in the gap, respectively. Overall, labor productivity is converging in almost all sectors, which is desirable from a structural change point of view. It is important to note that in developing countries, labor markets are segmented, which implies that there are distortions preventing the mobility of workers between sectors. Box 1 describes how removing those barriers in El Salvador translates into important output gains. The next section examines the contribution of structural transformation to aggregate labor productivity.

**Figure 13. Change in the sectoral productivity gap relative to agriculture, 1991–2016**

Source: World Bank staff elaboration using WDI.

### 4.3. The contribution of structural change to growth

**Structural change is the growth of GDP per capita caused by the reallocation of labor across sectors.** Changes in GDP per capita (or value added per capita) can come from the four following 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” component 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.

El Salvador experienced three decades of moderate growth in value added per capita, with important contributions from labor productivity gains in the 1990s and since 2011. Average annual per capita GDP growth decreased from 2.4 percent in the 1990s to 1.2 percent in the 2000s, before rebounding to 1.9 percent in recent years. Figure 14 presents a Shapley decomposition of per capita GDP growth into the sources described above. In the period 1991–2017, increases in labor productivity and in the share of the working-age population were the main drivers of GDP growth, contributing 57 percent and 29 percent of the total change, respectively. Labor productivity growth was the major contributor to GDP growth in the 1990s (76 percent) and in the 2011–2017 period (61 percent), but contributed only modestly to growth in the 2000s (12 percent). Rises in the share of the working-age population contributed significantly to growth in all sub-periods: about 14 percent in the 1990s, 51 percent in the 2000s, and 37 percent in 2011–2017. Increases in the participation rate contributed modestly to per capita GDP growth in every period: around 8 percent in the 1990s, 16 percent in the 2000s, and 4 percent in the period 2011–2017. Finally, changes in the employment rate, which had contributed 3 percent of GDP growth in 1990s and 21 percent in the 2000s, become a small drag in the last period, at -2 percent.
Labor productivity growth decelerated significantly in the 2000s but has recovered in recent years, reflecting a rise in within-sector productivity growth. Figure 15 decomposes the evolution of labor productivity growth into within- and between-sector components (reallocation). The contribution of the reallocation component declined from over 1.5 percentage points in the 1990s to only 0.13 percentage points in the 2000s, largely explaining the deceleration in labor productivity growth observed in the latter period. Labor productivity growth has recovered in recent years, reflecting a rise in within-sector productivity growth and, to a lesser extent, a recovery in the contribution of the reallocation component.

The reallocation of labor that moved from the agriculture, manufacturing, and education and health sectors toward the financial intermediation and real estate sector was the main source of labor productivity gains from the structural shifts. Figure 15 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 2016. 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 El Salvador, workers reallocated from sectors with below-average productivity (for example, agriculture, construction, and education and health) toward sectors with above-average productivity (such as the financial intermediation, real estate, and business activities sector), increasing aggregate productivity.

Although labor partly reallocated to low-productivity services, the movement of workers out of agriculture has contributed to overall productivity growth in El Salvador. Figure 16 shows that there is some reallocation between low-productivity sectors from agriculture toward services (wholesale, retail, restaurants, and hotels), but this reallocation did not offset the rise in productivity in 1991–2016. While labor productivity is higher in the service sector than in agriculture, it is still low relative to the service sectors in peer countries, which limits the positive contribution of the structural shift to economy-wide productivity growth.

El Salvador also has a large informal sector, where most workers have far lower productivity. The size of informality in El Salvador is close to the average in Central America, both in terms of output and employment. The informal sector accounts for around 43 percent of GDP and about 70 percent of total employment, out of which 60 percent is self-employment (that is, around 41 percent of total employment) (Figure 17). Informal output in El Salvador is slightly higher than the Emerging and Developing Economies (EMDE) average by about 9 percentage points of GDP. While informal output declined in El Salvador after 1990, self-employment remained at around 40 percent of total employment. Productivity in the informal sector is twenty percent lower than in the formal sector, suggesting that workers in the informal sector are less productive. To decrease the size of the informal sector to the averages of OECD and aspirational peers, formal output in El Salvador needs to rise by 10–24 percentage points of GDP and formal employment must increase by 11–26 percentage points of total employment.
Figure 16. Change in average employment share and deviation from average labor productivity, ratio

![Change in Employment Shares (Percentual Points), 1991-2016](image1)

Ln(Sectoral Productivity/Aggregate Productivity), 1991-2017

Un(Sectoral Productivity/Aggregate Productivity), 1991-2017

Change in Employment Shares (Percentual Points), 1991-2016


Figure 17. Informality in El Salvador

A. Informal output

Percent of GDP

Source: Elgin et al. (2019), (ILO), World Bank (2019). Notes: DGE (MIMIC) = DGE-(MIMIC-)based estimates of informal output as a percent of official GDP. SEMP (INFEMP) = self-employment (informal employment) as a percent of total employment. Data are from the latest year available (2016 for DGE, MIMIC and model-based SEMP estimates).
5. Growth Diagnostics of El Salvador

Drawing on the growth diagnostics analysis of Hausmann et al. (2005), this section investigates the constraints to El Salvador’s investment and growth. The analysis is carried out in two steps: in the first step, 18 parts of El Salvador’s economy are assessed, using 138 indicators from 2000 to 2018, to identify the areas where the country has a poorer performance than its structural peers and aspirational peers. 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 economic performance indicators and the six areas where the country has the weakest performance relative to its structural and aspirational peers is analyzed using panel data regression analysis. As seen in Figure 18, El Salvador has the lowest relative values in bank access, innovation, security, property rights, human capital, and corruption control. The remainder of this section provides an analysis of these indicators and their association with GDP growth and per capita GDP of El Salvador, to evaluate whether and to what extent they constrain the growth performance of the country.

Figure 18. Growth diagnostics indicators of El Salvador

Source: See Table 5.1 in the Appendix for methodology and sources of all indicators.

5.1. Access to banking

El Salvador lags its structural and aspirational peers in bank penetration. This holds true across all measures of bank penetration presented in Figure 19. For example, there are only 30 ATMs and 11 bank branches per 100,000 adults in El Salvador, compared to 37 ATMs and 22 bank branches per 100,000 in its structural peers, and 54 and 19, respectively, in aspirational peers. Similarly, 6 percent of adults have credit cards and 17 percent have debit cards in El Salvador, compared to its aspirational peers with 16 and 54 percent, respectively (Figure 19). Also, the number of ATMs per 100,000 adults increased much more slowly in El Salvador than it
did in its structural peers—from 23 in 2004 to 38 in 2018, compared to the increase from 4 to 54 in its structural peers (Figure 20). Moreover, according to the World Bank Enterprise Surveys, the share of firms in El Salvador today with a checking or savings account is 84 percent, which is significantly less than the LAC average of 93 percent.\textsuperscript{51} These results are also reflected in El Salvador’s standing as one of the countries in Latin America with the lowest levels of use of formal financial services, according to the World Bank Findex data.\textsuperscript{52}

Financial access is constrained in El Salvador, in large part due to the lack of competition in the financial sector, a large informal sector, and to limited services in rural areas. In El Salvador, the largest three banks own over 90 percent of all financial assets,\textsuperscript{53} which results in market inefficiencies. Furthermore, a study by the Competition Superintendence of El Salvador shows that the credit card industry in El Salvador is dominated by four banks (Banco Agrícola, BAC, Citibank, and HSBC), resulting in high interest rates, high merchant discount rates, and no difference between the consumer cost of using a credit or debit card.\textsuperscript{54} Access to finance is also undermined by the informal sector: only one in four Salvadorans participate in the formal labor force.\textsuperscript{55} Finally, the Banco Central de Reserva (BCR) reports that less than a third of El Salvador’s rural population had a bank account in 2014.

While gaps in access to finance persist, El Salvador is slowly catching up on some measures of financial inclusion due to various government programs. The share of Salvadorans with access to financial services was 47 percent in 2016 (according to the BCR), compared to 37 percent in 2014 (per World Bank estimates). Furthermore, from 2004 to 2018, the number of ATMs relative to the population nearly doubled, even though the number of bank branches largely remained flat (Figure 20). This is consistent with research showing that
increasing remittances to El Salvador has had a positive impact on financial inclusion, including the use of deposit accounts. Other studies have shown that mobile technology has boosted access to banking services in remote areas, after successive governments supported the development of electronic payments through cell phones. On the supply side, the ratio of credit to GDP for El Salvador reached 61 percent in 2015, up from 20 percent in 1988. During that time, El Salvador privatized banking, strengthened financial regulation, and dollarized the economy, while non-banking financial institutions (such as cooperative banks) and microfinance establishments became more popular.

Lack of finance appears to be a modest obstacle for economic performance and businesses in El Salvador. According to the fixed effects regression analysis, out of the four indicators of access to banking shown in Figure 19 above, only the number of ATMs has a significant association with real GDP per capita, however, the value of the coefficient is close to zero (at 0.004). Cross-sectional analysis reveals a strong positive association between the access to banking index and real GDP per capita for the full sample of countries (Figure 21). According to the Enterprise Surveys conducted in 2016, five percent of firms see access to finance as the biggest obstacle to their businesses, placing it as the fifth-largest impediment for businesses in El Salvador, far below other areas such as crime (29 percent), informal sector (19 percent), and political instability (17 percent). Moreover, the majority of firms in El Salvador report not needing a loan (54 percent) and a relatively small percentage of firms identify finance as a major impediment to their activity (21 percent, compared to the LAC average of 27 percent) (Figure 22).

However, access to finance is a growing concern among SMEs. Small Salvadoran firms (those with 5–19 employees) are more likely to struggle with access to finance (27 percent of them see it as a major obstacle in 2016, up from 24 percent in 2010). Given that about 40 percent of El Salvador’s economy is informal and that Enterprise Surveys cover only the firms in the formal sector, the number of small firms with limited access to finance is likely to be much higher than 27 percent. Furthermore, 40 percent of all firms in El Salvador use banks to finance investments, compared to 48 percent in LAC (Figure 23). Funding opportunities with prohibitively high collateral requirements (at 205 percent of the loan amount) make it difficult for Salvadoran firms to obtain loans in the first place—or discourage them from even applying. It is also possible that the high rate of remittances are relaxing credit constraints for small firms, reducing the need for external financing from financial institutions.

Figure 21. Access to banking index vs. real GDP per capita (log), 2000-2018
5.2. Innovation

El Salvador underperforms in innovation compared to its structural and aspirational peers. The 2019 Global Innovation Index, which scores economies on innovation performance (Figure 24), ranks El Salvador 108 out of 129, behind all countries in LAC except Bolivia and Nicaragua. The report points to several weaknesses in El Salvador that contribute to its low score, including the regulatory environment and the lack of R&D. Deficient intellectual property rights protection and low competition may also discourage innovators. R&D expenditure stood at only 0.15 percent of GDP in 2016, compared to 0.4 percent in its structural and aspirational peers (Figure 24), ranking it the ninth lowest among 76 countries. In the same year, it had 66 researchers per million inhabitants, nearly twenty times less than the average of 1,268 in its aspirational peers. Surprisingly, despite a fivefold increase in R&D share in GDP from 2012 to 2016 (Figure 25), El Salvador experienced a decline in its innovation index (Figure 25). Low levels of physical and human capital investment are also likely to contribute to its weak performance in research and innovation. El Salvador’s investment rate stood at 17 percent of GDP during 2000–2018, which is the 24th lowest among 172 countries, and its human capital index ranked 85 out of 192 countries in 2017.

The lack of innovation in El Salvador can be observed at the firm level as well and it is negatively associated with economic performance. Local businesses are less likely to have a website, introduce a process innovation, or roll out a new product compared to regional competitors. Only 18 percent of firms in El...
Salvador reported introducing a process innovation in 2016, according to the Enterprise Surveys, in contrast to 31 percent in LAC (Figure 26). Similarly, the percentages of firms that introduced a new product or service in El Salvador (38 percent) or that have a website (43 percent) are lower compared to the LAC averages. Furthermore, the number of journal articles in science, technology, engineering, and mathematics (STEM) fields relative to the size of the economy is the lowest in El Salvador compared to all LAC countries except the Dominican Republic. These are concerning statistics for the long-term growth projections of the country, given the strong evidence in the literature that innovation is the main engine of long-term growth and productivity. According to the fixed effects regression results, an increase of one patent application by residents per one million people is associated with a 0.04 percent increase in real GDP per capita. Although the association between R&D and patent applications is not significant for El Salvador based on the fixed effects results, cross-sectional analysis indicates a strong positive relationship between them for the full sample as well as for El Salvador (Figure 27).

**Figure 26. Innovation indicators from Enterprise Surveys, 2016**

![Figure 26. Innovation indicators from Enterprise Surveys, 2016](image)

Source: Enterprise Surveys and other sources shown in Table 5.1 in the Appendix, World Bank. Data for El Salvador is from 2016; Honduras, Nicaragua, and Guatemala, 2016–2017. Note: results of the figure 29 are from the cross-sectional regression analysis that controls for investment, labor, human capital, and regional and income dummies.

**Figure 27. Patent applications vs. GDP per capita, 2000-2017**

![Figure 27. Patent applications vs. GDP per capita, 2000-2017](image)

Source: Enterprise Surveys and other sources shown in Table 5.1 in the Appendix, World Bank. Data for El Salvador is from 2016; Honduras, Nicaragua, and Guatemala, 2016–2017. Note: results of the figure 29 are from the cross-sectional regression analysis that controls for investment, labor, human capital, and regional and income dummies.
5.3. Security

Crime arguably poses the biggest threat for El Salvador’s economy and society. Although the crime rate has decreased over the last three years, El Salvador has the second-highest murder rate in the world, with 50 murders per 100,000 inhabitants in 2018 (down from 62 in 2017, 83 in 2016, and 105 in 2015).71 The prisoner rate is also among the highest in the world72 and gang violence repeatedly makes international headlines. In fact, El Salvador’s defense ministry estimates that half a million Salvadorans—or close to 10 percent of the population—are associated with gangs, either through direct participation or through coercion and extortion by relatives.73 This has had significant economic costs: it is estimated that Salvadorans pay the combined equivalent of about three percent of GDP to gangs, according to the country’s central bank and the United Nations Development Programme.74

Homicide rates have fallen in recent years, but other types of crime continue to increase. The peak year of gang violence (Figure 28) was 2015, after successive mano dura (iron fist) strategies that spanned presidential administrations from different parties. The latest such policy, in 2014, revoked a 2012 truce with the MS-13 and Barrio 18 gangs, and caused a steady increase in violence and incarceration rates. This further exacerbated prison overcrowding and overextended courts and police resources. In response, the Plan El Salvador Seguro (PESS—Plan for a Secure El Salvador) was launched in 2015, which focused on place-based violence prevention, in conjunction with a slew of programs aimed at improving the criminal justice system, reintegrating inmates into society, and strengthening the institutions responsible for citizen security.75 While the PESS has been credited with reducing homicides, critics point to other measures of crime that continue to rise. For instance, the number of disappearances in El Salvador in 2018 increased to over 3,500—about 200 more than in 2017.76 Moreover, there is no evidence that extortions are on the decline, and the rate of femicides—the intentional killing of women because of their gender—remains the highest in all of LAC.77 In response, the administration of President Bukele introduced the Territorial Control Plan in June 2019, which calls for an increase in security-related spending.

The Fund for Peace ranked El Salvador the 94th most fragile country out of 176 countries in 2019. Among the sub-indicators of the state fragility index, El Salvador scored well on macroeconomic environment and state legitimacy, but did poorly on security and emigration.78 It ranked 48th in the security threat index in 2019, out of 176 countries (with higher ranking meaning greater security threats) and has the second-highest average score on security threats among its structural, aspirational, and regional peers for 2000–2018, at 6.6, after lower-middle-income countries, at 6.8. This is consistent with the research showing that gang violence in El Salvador has led to dramatic increases in migration that are among the highest in the world.79 While El Salvador’s average score on the state fragility index during 2007–2018 is lower than the average of lower-middle-income countries in LAC, it is much higher than its aspirational peers and LAC high-income countries (Figure 29). Moreover, during 2000–2017, El Salvador had the highest average homicide rate (63 out of 100,000 people), followed by LAC upper-middle-income countries, at 22 (Figure 29). In 2017, the country had a homicide rate of 62, compared to 4.4 in its structural peers (Figure 28).

Crime is by far the biggest obstacle for businesses in El Salvador as reported by Salvadoran firms. The 2018 Global Competitiveness Index gives El Salvador the worst score out of 137 countries on the components “business costs of crime and violence” and “organized crime.”80 Moreover, half of firms in El Salvador see crime as a major constraint, according to the World Bank Enterprise Surveys. Crime is also seen as the top business obstacle, above areas like the informal sector, political instability, and tax rates. Most firms in El Salvador incur additional security expenditures compared to their international competitors. Eighty percent of firms in El Salvador reported paying for security services in 2016, the highest compared to other countries in the region, and 29 percent reported having incurred losses due to theft and vandalism, the second highest after Guatemala (Figure 30).81 The business cost of crime is also much higher for Salvadoran firms compared to other countries in the region. Salvadoran firms paid 4.1 percent of their sales for security, lost 0.8 percent of their sales due to theft of their products during shipment (the second highest in the region) and lost 3.3 percent of their sales due to theft and vandalism of their products (Figure 31). Criminality also impacts hiring in the country: more than 5 percent of Salvadorans reported having to change jobs out of concern they would be victimized.82
Crime is a binding constraint for growth in El Salvador. The fixed effects regression analysis of real GDP growth—which controls for investment, human capital, labor, and year trends for 140 countries—shows that an increase in the homicide rate by 1 person per 100,000 people is associated with a 0.13 percent reduction in El Salvador’s growth. Empirical research supports this finding for El Salvador: according to the BCR, the money lost due to violence, combined with money spent on extortion or security, is equivalent to about 15 percent of GDP. Cross-sectional regression analyses of real GDP per capita with respect to the security index and fragile state index also provide support for an inverse relationship between the lack of security and fragile state of countries.

The El Salvadoran Government has taken several steps, in collaboration with international institutions, to decrease crime and violence through preventive measures along with “mano duro” policies. In 2014, the Government created the National Council on Citizen Security and Coexistence (CNSCC) to design and monitor the Safe El Salvador Plan (PESS) initiative focusing on five areas: (i) violence prevention, (ii) control...
and penal persecution, (iii) rehabilitation and social insertion, (iv) attention and protection of victims and (v) institutional strengthening. Despite some coordination and implementation challenges, the plan seems to have had significant impact on reducing crime and violence. Prevention policies including the promotion of education and labor market opportunities, increasing quality of jobs, institutional strengthening and social integration of ex-convicts should be encouraged to decrease crime and violence in the country.87

5.4. Property rights

Strength of property rights measured by various indices are worse in El Salvador compared to aspirational and high-income regional peers. El Salvador has an average score of -0.63 in the rule of law index (ranging from -2.5 to 2.5) during 2000-2018 (Figure 32), which captures perceptions of the extent to which agents have confidence in and abide by the rules of society, compared to its structural (-0.37) and aspirational (0.42) peers. On the property rights index, El Salvador is ranked 99 out of 120, which places the country among the bottom tier of LAC countries, owing to low subcomponent scores on intellectual property and copyright protection, among others. Finally, the expropriation risk index for investors of getting their assets dispossessed is estimated to be at a moderate level (Figure 32). This is equal to structural peers, but much higher than aspirational peers. Unlike its structural and aspirational peers, El Salvador’s score on the Heritage Foundation’s property rights index has declined by nearly 50 percent from 2000 to 2018, below the scores of both aspirational and structural peers (Figure 33). Similarly, El Salvador’s score on the rule of law index decreased by 28 percent over the same period.88 Property crime is a potential driver of this trend, as robbery, burglary, and theft make up close to half of all reported crimes.89

Figure 32. Property rights, expropriation risk, and rule of law, 2000-2018

Figure 33. Property rights index

Weaker property rights are a binding constraint for output per capita in El Salvador. According to the fixed effects regression analysis of real GDP per capita, which controls for investment, human capital, labor, and year trends, a one-percentage-point increase in the property rights index—computed as an average of standardized indices of property rights, rule of law, and lack of expropriation—is associated with an increase of 0.01 percent in real GDP per capita.90 Cross-sectional regression analyses also show a strong positive relationship between the property rights index and rule of law.91
5.5. Human capital

Although El Salvador’s health is well-funded compared to its peers, its funding for education is the lowest, and its brain drain is the highest, compared to peers. Public spending on health from 2000–2018 was the second highest in El Salvador (7.1 percent of GDP) after its structural peers (Figure 34). However, public funding for education during the same period was only 3.7 percent of GDP, the lowest among its peers. The brain drain index, due to the high emigration rate, was the highest in El Salvador, at 7.2 out of 10, followed by the average of the lower-middle-income country group, with 7.1. During the last decade, public spending on both health and education has been stable, at around 6.7–7.0 percent of GDP for health, and 3.7–4.0 percent of GDP for education, while the brain drain index has been deteriorating since 2014, coinciding with the collapse in commodity prices.92 Despite high public funding for education, the country’s literacy rate in 2017 was 88 percent, compared to 94 percent in LAC.93 El Salvador also has the highest share of youth in Central America who are neither in school nor in work.94 The country also has higher student-teacher ratios and lower test scores than most other countries, as seen in Figure 35, which also shows a strong negative relationship between these two indicators.

The education system in El Salvador produces worse outcomes than its structural and regional peers (Figure 36), which can be attributed to low mandatory years of schooling, scarcity of schools in rural areas, gang enrollment among youth, and poverty rates. Notwithstanding its primary school enrollment rate, which is the highest among its peers (at 113 percent of the primary school age group), El Salvador’s tertiary, secondary, and pre-primary school enrollment rates from 2000–2018 are the second lowest, after lower-middle-income countries (at 25, 69, and 59 percent, respectively) (Figure 36). These results are due to several factors: First, in El Salvador, only primary school is mandatory, and young people typically only complete six grades.95 Second, there is a shortage of schools, particularly in rural areas and Indigenous communities, where most students have no means of transportation.96 Third, gang recruitment of children undermines enrollment rates. Fourth, the legal requirements set forth by the General Education Law on areas related to gender equity and discrimination are not consistently enforced.97 Finally, El Salvador’s high poverty rate—which stood at 29 percent in 201798—makes it less likely for underprivileged youth to attend school, as numerous studies have shown.99 Many public schools, while free, require uniforms the costs of which can be prohibitive for low-income families.100 Future macroeconomic shocks could further undermine these households: the 2008 global financial crisis significantly lowered remittances and was found to have decreased school attendance among low-income families.101
5. GROWTH DIAGNOSTICS OF EL SALVADOR

Figure 36. Enrollment rates, 2000-2018

The lack of qualifications in the Salvadoran labor force hinders job prospects and productivity. According to Enterprise Surveys 2016 data, 26 percent of firms reported finding employees with suitable skills as a major obstacle, which is slightly over the 25 percent average in structural peers (Figure 37). This obstacle is also twice as prevalent among Salvadoran SMEs as in large firms. There are several factors contributing to the skill mismatch, one of them being the lack of educational and job training opportunities. School enrollment rates in El Salvador are low, and only half of Salvadoran firms offer formal training. Another contributing factor is that the curricula for tertiary education remain tied to professional disciplines of the past and have been slow to adapt to new technologies, notably in terms of Information and Communications Technology (ICT).

Figure 37. Percent of firms identifying inadequately educated workforce a major constraint, 2016

El Salvador's population suffers from lower life expectancy, higher mortality rates among key segments of the population, and one of the lowest human development indicators compared to its peers. During 2000–2018, El Salvador had the second-lowest average life expectancy age (71) and human development indicator (66) compared to its aspirational peers (at 75 and 78, respectively) (Figure 38). In 2017, life expectancy in El Salvador was 72.9 years, compared to 75.2 in its structural peers and 76.7 in aspirational peers. Breaking down mortality rates among demographic groups in El Salvador yields several key observations. For instance, maternal mortality in El Salvador, while having decreased to 48 deaths per 100,000 live births in 2015, has yet to reach the Millennium Development Goal (MDG) of 38 deaths per 100,000 live births. Another observation is that mortality rates among adolescents and youth are significantly higher than the regional average. In fact, El Salvador is among the top five deadliest places globally for adolescent boys, due to high homicide rates. As a result, during the period 2010–2014, homicides on average accounted for over 32 percent of the life expectancy gap between El Salvador and EU-15 countries.
The weak human capital capacity of El Salvador is a binding constraint for growth. A fixed effects regression analysis of real GDP growth with respect to sub-indicators of the human capital index and a set of control variables show that El Salvador’s GDP growth is positively associated with most of the human capital sub-indicators (Table 2). For example, a 1-year increase in life expectancy is associated with a 0.90 percent boost to GDP growth. Moreover, increasing pre-primary, secondary, and tertiary school enrollment rates and the primary school completion rate by 1 percent is associated with a 0.14, 0.16, 0.43, and 0.12 percent increase in GDP growth, respectively. Similarly, increases in total and youth literacy rates, percentage of women in parliament, and public spending on health and education are positively associated with GDP growth. As expected, an increase in the student-teacher ratio is negatively associated with GDP growth, as well as an increase in the primary school enrollment rate. The latter is likely due to the risk of over-investment in primary education at the expense of other levels of education. These findings show that investments in education, health, and teachers would have high payoffs for El Salvador’s economic growth.

Table 2. Total association of human capital indicators with the real GDP growth of El Salvador

<table>
<thead>
<tr>
<th>Human capital indicators</th>
<th>Coefficient</th>
<th>t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy rate of youth</td>
<td>1.05</td>
<td>3.55</td>
</tr>
<tr>
<td>Percent of women in parliament</td>
<td>0.11</td>
<td>6.47</td>
</tr>
<tr>
<td>Health spending per capita (USD)</td>
<td>0.01</td>
<td>2.28</td>
</tr>
<tr>
<td>Life expectancy, age</td>
<td>0.90</td>
<td>2.61</td>
</tr>
<tr>
<td>Education spending (% of GDP)</td>
<td>1.23</td>
<td>4.57</td>
</tr>
<tr>
<td>Literacy rate</td>
<td>0.82</td>
<td>3.32</td>
</tr>
<tr>
<td>Primary school completion rate</td>
<td>0.12</td>
<td>3.84</td>
</tr>
<tr>
<td>Secondary school enrollment rate</td>
<td>0.16</td>
<td>5.56</td>
</tr>
<tr>
<td>Tertiary school enrollment rate</td>
<td>0.43</td>
<td>6.5</td>
</tr>
<tr>
<td>Student-teacher ratio</td>
<td>-0.18</td>
<td>-8.23</td>
</tr>
<tr>
<td>Pre-primary school enrollment rate</td>
<td>0.14</td>
<td>3.08</td>
</tr>
<tr>
<td>Primary school enrollment rate</td>
<td>-0.14</td>
<td>-7.58</td>
</tr>
</tbody>
</table>

Table 2. Total association of human capital indicators with the real GDP growth of El Salvador

El Salvador has made progress in advancing human development outcomes through the expansion of access to public services and programs (Figure 39). The extreme poverty rate in El Salvador was cut from 13 percent in 1994 to 1.5 percent in 2018 and inequality reduced from a Gini coefficient of 50 to 39 during the same period. Successive strategic development plans and increased social spending were the driving forces in reducing poverty and income inequality, boosting access to health facilities, and steadily curbing food insecurity. Even though health spending as a share of GDP decreased from 2000 to 2008, it was still high compared to regional peers, and it increased again with the financial crisis (Figure 39). Furthermore, education plans like the Plan Nacional de Educación 2021 and the Education Social Plan have tackled high dropout rates by introducing flexible education modalities, such as blended classes (classroom time combined with independent work outside of school), accelerated programs, and online high school classes. These kinds of programs have driven the overall improvement in El Salvador’s Human Development Index over the past decade (Figure 39), despite the deteriorating public spending on health.
5.6. Corruption

Corruption in El Salvador is slightly lower than in structural peers, but far worse than in aspirational peers. El Salvador’s scores on measures of corruption computed by the World Bank, Transparency International, and the Heritage Foundation are, by and large, close to the averages for Central America. For example, El Salvador performs better than Nicaragua and Guatemala, but worse than Costa Rica and Panama. The country also performs slightly better than structural peers, but far worse than aspirational peers (Figure 40). Finally, according to Executive Opinion surveys conducted in 2017 by the World Economic Forum, corruption is the second-most problematic factor for doing business in El Salvador.

Figure 40. Control of corruption indicators, 2000-2018

Corruption in El Salvador hinders the legitimacy of institutions. Past political administrations have been marred by corruption scandals. Under the government of Elías Antonio Saca (2004–2009), US$ 250 million of public funds disappeared, most of which had originally been assigned to a special presidential fund.112 Moreover, since 2015, two former presidents have been convicted of appropriating public funds for private gain, while another has exiled himself to Nicaragua to avoid embezzlement charges. While the prosecution of former heads of state has restored some confidence in the justice system,113 it has also resulted in a distrust of political elites and institutions. The 2018 Global Competitiveness Index gives El Salvador some of the lowest scores globally on components such as “public trust in politicians” (1.5 out of 7) and “favoritism in decisions of government officials” (1.8 out of 7). Recent years have also seen a decrease in the Freedom from Corruption and Control of Corruption indexes, which both rely partially on perception-based surveys (Figure 41).

Corruption scandals have fueled a rejection of the status quo with the election of Nayib Bukele in June 2019. Bukele is not affiliated with either of the two main political parties (the right-wing ARENA and left-wing FMLN) and ran on an anti-corruption slogan of “El dinero alcanza cuando nadie roba” (“There’s enough money if no one steals”). Upon his inauguration, Bukele announced an agreement with the Organization of American States (OAS) to launch the Comisión Internacional Contra la Impunidad en El Salvador (CICIES) (International Commission against Impunity in El Salvador). CICIES is largely modelled after a similar commission in...
Guatemala, CICIG, which reportedly contributed to In parallel, the United Nations Office on Drugs and Crime has supported a broad capacity-building program in El Salvador to strengthen anti-corruption measures at the Ministry of Justice, the Attorney General’s Office, and the Supreme Court.

**Consistent with the above discussion, about half of all firms in El Salvador see corruption as a major constraint.** In 2016, 48 percent of firms in El Salvador identified corruption as a major impediment to their business operations, while another 27 percent saw the courts as a significant obstacle to their business operations, making corruption harder to prosecute. On both measures, El Salvador does better than Honduras or Guatemala, but worse than its other Central American neighbors as well as the LAC average (Figure 42). In other corruption measures of the public sector, different trends emerge. For example, the percentage of Salvadoran firms experiencing at least one bribe payment request (4 percent) is among the lowest in all of the LAC region. On the other hand, the percentage of firms expected to give gifts to get a construction permit (9 percent), is the third highest in Central America.

**Figure 42. Corruption indicators from Enterprise Surveys, 2016**

![Corruption indicators from Enterprise Surveys, 2016](image)

Source: Enterprise Surveys, World Bank. Data for El Salvador is from 2016; Honduras and Guatemala are from 2017; Costa Rica and Panama from 2010; and LAC is from the latest surveys available.

**Corruption has a small negative correlation with real GDP per capita in El Salvador.** The fixed effects regression analysis of real GDP per capita (log) with respect to the freedom from corruption index and other controls shows a highly significant positive relationship between real GDP per capita and lower levels of corruption. Although this association is small (0.004), given other mitigating factors—the freedom from corruption index does not capture all aspects of corruption, corruption also affects economic performance and productivity through many different channels, and corruption is considered a major constraint by 50 percent of firms for their businesses—it is an important indication that corruption is likely to constrain El Salvador’s growth.
6. Diversification and Exports

6.1. Why diversification matters to El Salvador

Global trends such as slower trade growth, the rising trade in services, the fragmentation of production, and automation pose challenges and opportunities for developing countries. Trade grew dramatically over the past 25 years, and 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 of 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 moderate and trade in services continues increasing in prominence. The increase in trade in intermediates and the 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 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 El Salvador is a small open economy, an export-oriented growth strategy is a sound approach to create job opportunities, generate sustainable growth, and reduce the dependence of the country on remittances. 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, which is pursued to increase productivity, generate jobs, and foster sustainable growth to reduce poverty.116 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 would help El Salvador establish buffers against climate shocks and commodity cycles, and create better-quality jobs linked to higher productivity growth. The literature provides various benefits of economic diversification (Appendix VI). In the case of El Salvador, diversification is critical to achieve sustainable growth for the following two reasons: even though El Salvador is not the typical commodity exporter, diversification would allow the country to reduce its GDP volatility. Koren and Tenreyro (2007) find that if a developing country with weak financial infrastructure specializes in sectors with high intrinsic volatility, it tends to suffer greater aggregate volatility.117 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, growth decompositions in Section 3 showed that past growth was driven by labor and, to a lesser extent, capital accumulation rather than productivity improvements, which contributed negatively to growth in the past 40 years. This growth model is not sustainable in the long run, given that the demographic dividend that led to the increases in the working-age population in the last 40 years will vanish, and its positive contribution to growth will dissipate. Since an export-oriented strategy implies higher competition in the global markets, productivity growth is key for success. In addition, the literature emphasizes that the structural transformation that diversification entails brings with it the opportunity to create new and better-quality jobs (high productivity jobs).118

El Salvador is at an intermediate level of diversification, producing goods that many countries are capable of producing. The economic development process typically involves a structural transformation, where countries evolve from manufacturing poor-country products to rich-country goods (Hesse 2018). 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 relationship between the number of products a country effectively exports (diversity) and the average number of countries that export that product (ubiquity). Figure 43 demonstrates this relationship and benchmarks El Salvador against its peers. On average, poor countries export few products (low diversity), which are produced and exported by most countries (high ubiquity). El Salvador is a country that exports many products as measured by diversity, but given that level, underperforms in terms of ubiquity. Countries with El Salvador’s level of diversity tend to have lower ubiquity. Nevertheless, El Salvador stands out for being the country in Central America with the lowest ubiquity.

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

El Salvador seems less open than other countries at the same level of development, suggesting that it may not be capitalizing on all potential gains from trade (Figure 44). At 22.7 percent, El Salvador’s merchandise exports’ share of GDP is lower than the average merchandise export share among its aspirational (34 percent) and structural (26.4 percent) peers. These numbers suggest that El Salvador may not be capitalizing on all potential gains from trade. Figure 45 shows that El Salvador’s trade openness has been increasing substantially since the late 1980s, reflecting a constant increase in imports. Exports of services were negligible from the mid-1990s to the late 2000s, before gaining some significance in recent years.

Source: World Bank staff using WDL.
El Salvador’s merchandise exports largely comprise low-complexity products, such as textiles and food, while exports of high value-added content remain limited. In 2000, apparel products represented 55.3 percent of total merchandise exports, and low value-added food products, such as coffee, tea, spices, and sugar, accounted for another 22.2 percent (Figure 46). The composition of El Salvador’s exports improved somewhat in the following two decades, as the share of apparel products declined significantly, and that of more complex products, such as chemicals, metal, and electrical machinery products, increased (Figure 46 and Figure 47). In addition, El Salvador’s exports are now more diversified: close to 100 new products were introduced since 2000. Although these are welcome developments, El Salvador’s exports are still highly concentrated in primary products and low-value added, low-complexity manufactures. In order 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.

El Salvador’s export basket is dominated by low-tech products. 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 ingenuity, 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 48 shows the composition of exports according to technological classification. Among all the comparison groups, El Salvador has the largest share of low-tech, at almost 63 percent of merchandise exports, well above its peers. In practice, most of these products belong to articles of apparel and clothing, which represent close to 40 percent of merchandise exports. Resource-based manufactures, at 16 percent, and primary products, at 6 percent, occupy the smallest share of exports in comparison to all peers. Since resource-based and low-tech products account for almost 70 percent of exports, there is little room left for other goods. In particular, the share of medium-tech products in El Salvador is relatively small, representing 7 percent of total merchandise exports, versus an average of 18 percent across all peers. Over the past 17 years, the complexity of the export bundle has improved, after a large decline in the early 2000s (Figure 49). However, and despite the pace of convergence, the country has not been able to catch up fully with its structural peers.
Over time, El Salvador has increasingly diversified the destination of its exports, but the United States remains the main export destination. Figure 50 shows that since 1990, the total number of El Salvador’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 El Salvador’s products over the last decade (Figure 51), buying more than 40 percent of El Salvador’s exports. Other important destinations are Guatemala and Honduras, which each imported 13.8 percent of El Salvador’s exports in 2017, Nicaragua (7.5 percent), and OECD countries (6.2 percent).

The United States is the main destination for almost all of El Salvador’s core exports, showing that limited diversification of destinations is pervasive across El Salvador’s export products. Over 90 percent of El Salvador’s exports of electrical capacitors, condensers, jerseys, pullovers, and other undergarments of cotton and synthetic fibers in 2016 were shipped to the United States, while the remainder was shipped to other Central American and OECD countries. From the set of El Salvador’s main export products in 2016, only articles related to the conveyance or packing of goods are exported in similar ratios to different destinations other than the United States.

Merchandise export growth was mostly driven by exports of old products to old markets. According to 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. As seen in Figure 52, of the 220
percent increase in the volume of exports during the period 1994–2000, the intensive margin of trade (old products to old markets) accounted for almost all growth in exports, while exports of old products to new markets and new products to old markets accounted for a marginal fraction. With the implementation of the CAFTA-DR free trade agreements in 2006, exports continued increasing, but at a moderate rate of 29 percent, which again was mainly driven by the intensive margin, but with a stronger presence of exports of new goods to old markets. Between 2011 and 2016, the performance of exports was disappointing, with a 4 percent decline in volume. However, from 2014 to 2016, exports regained some dynamism, and exports of merchandise increased 1 percent. In this period, exports of old products to new markets played an important role as a source of growth.

Figure 51. El Salvador’s main export destinations, 2007–2017

Figure 52. El Salvador’s export growth decomposition

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. 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. However, there is substantial heterogeneity in the scope for product differentiation, given that some products are characterized by a larger “quality ladder” than others. 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. 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.

El Salvador has untapped opportunities to increase the quality of products in which it already has comparative advantages. The trade literature has relied on unit value price distribution to proxy quality ladders. Figure 53 shows the worldwide maximum and minimum price (normalized to the average price) for the main merchandise exported by El Salvador, together with the minimum, maximum, and average price charged by the country across all destinations. As discussed, the scope for quality differentiation varies across products. In the case of El Salvador, electrical capacitors and condensers and articles of packing goods present the best opportunities for upgrading, followed by jerseys, pullovers of synthetic fibers; undergarments, knitted, of synthetic fibers; and other undergarments, knitted, of cotton. The country has managed to export products with the highest quality (the maximum price of the world) in articles of packing goods and jerseys, pullovers of synthetic fibers. However, El Salvador mainly exports low-quality versions of those products (at low prices), and therefore the volume-weighted price is close to the minimum worldwide price. This evidence indicates that El Salvador has the ability to produce higher-quality products, but its capacity needs to be scaled up in volume to all markets. In the other four products, exports are mainly of low quality at low prices, indicating that there are opportunities to increase the export prices if the country manages to increase the quality of production.

Quality upgrading entails strengthening safety and quality regulations and acquiring knowledge about existing differences and evolving trends in the types of products rich countries demand. The inability to comply with international quality standards has been identified as one of the main constraints to achieving quality upgrading. Therefore, strengthening safety and quality regulations to move toward international standards could be a first step to improving quality. The literature has also found that quality upgrading is associated with the adoption of a new set of business practices more oriented to export markets. These practices are radically different from those typically used in the domestic market and involve adapting products to foreign markets.
demand. The practices also require upgrading production processes and complying with the strict requirements of foreign distributors, with whom long-term relationships should be established to secure up-to-date information about foreign markets.

**Improving the institutional framework is key to upgrading the quality of products in the country.** 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 a more developed institutional framework, including governance, rule of law, property rights, and a strong contracting environment tend to have a comparative advantage in the production of high-quality products. Given that most of the development constraints in El Salvador are in part attributable to the poor quality of institutions and weak governance, improvements in these areas could open up opportunities for quality differentiation to facilitate an export-oriented economic development strategy.

### 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 advantages of nations are governed by the pattern of relatedness of products. In general, when countries diversify their export bundles, there is a propensity to move from 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 open to diversify in the future.** Figure 54 shows this network structure for El Salvador. 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 tend to involve the same set of 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 a product, the greater the opportunities to diversify to other products. 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.

**El Salvador has started production in larger, more complex, and more connected communities to increase opportunity gains.** The country has a significant presence in many products at the center of the product space, such as agricultural products (food preparations, bakery products) and textiles (sweaters, pullovers, and sweatshirts). However, key export products such as sugar and coffee are still close to the periphery of the product space and have low opportunity gains (Figure 54). El Salvador has made few inroads into the larger, more complex, and more connected communities such as chemicals (packing lids and medications, packaged) and some well-connected metals (aluminum bars).

**Countries can follow different approaches to diversify their economic structure depending on their complexity and connectivity needs.** Figure 55 maps each country in the space of the Economic Complexity Index (ECI) and 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 increasing average complexity and connectivity without much effort (El Salvador is part of this group). Finally, countries with good complexity but lacking connectivity should weight equally proximity of the products to diversify and opportunity value. Based on the previous discussions, a diversification strategy
for El Salvador should take into account the trade-offs between distance, complexity, and opportunity value. To do this, the feasible diversification and complex diversification approaches should be considered.

**Figure 54. El Salvador’s location in the product space**

![Figure 54](image)

**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, about half belong to metals, stone, and glass; food-stuffs; and machinery, electrical, and transportation; but the products belonging to plastics and rubbers score higher, on average, on the feasible diversification index.** Table 3 shows the distribution across sectors of the 50 four-digit harmonized system (HS) products scoring higher on the feasible 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, metals, stone, and glass presents the highest number of diversification opportunities (11), followed by foodstuffs (7), and machinery, electrical, and transportation (6). However, according to the mean value of the index in the sector, plastics and rubbers seems to offer the most feasible diversification opportunities, followed by wood products.

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 feasible opportunities: i) metals, stone, and glass; ii) plastics and rubbers; and iii) wood.137 The complexity analysis identified opportunities within metals, stone, and glass in the subsector “articles of iron or steel, and aluminum and articles thereof” (such as aluminum structures like bridges and towers; and ceramic sinks, washbasins, and similar sanitary fixtures). Within the plastics and rubbers sector, opportunities exist in the subsector “plastics and articles thereof” (such as plastic builders’ ware and other articles of vulcanized rubber). Finally, in the wood sector, diversification is more likely in “wood, articles of wood, and wood charcoal products” (for example, packing boxes, wood carpentry for construction, and densified wood).

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 boost economic growth, improve the diversification outlook, and create jobs of higher quality.

Among the 50 products with the largest strategic diversification value, more than 80 percent of the products belong to three sectors: machinery, electrical, and transportation; metals, stone, and glass; and chemical and allied industries. 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, machinery, electrical, and transportation presents the highest number of complex diversification opportunities, at 22, followed by metals, stone, and glass (12), and chemical and allied industries (7). According to the mean value of the index in the sector, the machinery, electrical, and transportation sector seems to also offer the 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 providing better strategic opportunities: i) machinery, electrical, and transportation; ii) miscellaneous; and iii) chemical and allied industries. The complexity analysis identified opportunities within machinery, electrical, and transportation mainly in the subsector “boilers, machinery, nuclear reactors, and mechanics appliances” (such as machines not elsewhere classified, calendaring or other rolling machines other than for metals or glass, and machining centers for working metal). Within the miscellaneous sector, the opportunities are in the subsector “optical, photo, cine, checking, and precision” (such as x-ray machines, machines for testing the mechanical properties of materials, and measuring instruments). Finally, in the chemicals and allied industries sector, diversification is more likely in organic chemicals and miscellaneous chemical products (such as prepared culture media for micro-organisms, esters of other inorganic acids of nonmetals, phenols, and phenol-alcohols).

**Table 3. Main sectors of the top 50 products for export diversification using the feasible approach**

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Number of products</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal and Vegetable Products</td>
<td>4</td>
<td>0.56</td>
</tr>
<tr>
<td>Chemical and Allied Industries</td>
<td>5</td>
<td>0.61</td>
</tr>
<tr>
<td>Foodstuffs</td>
<td>7</td>
<td>0.55</td>
</tr>
<tr>
<td>Machinery, Electrical, Transportation</td>
<td>6</td>
<td>0.53</td>
</tr>
<tr>
<td>Metals, Stone, Glass</td>
<td>11</td>
<td>0.62</td>
</tr>
<tr>
<td>Mineral Products</td>
<td>2</td>
<td>0.57</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>3</td>
<td>0.57</td>
</tr>
<tr>
<td>Plastics and Rubbers</td>
<td>4</td>
<td>0.69</td>
</tr>
<tr>
<td>Textiles and Footwear</td>
<td>5</td>
<td>0.60</td>
</tr>
<tr>
<td>Wood</td>
<td>3</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Source: World Bank staff using COMTRADE and Observatory of Economic Complexity.

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137

138
In conclusion, three sectors emerge as having a good balance between feasible and strategic opportunities for diversification: i) plastic and rubbers, ii) metals, stone and glass; and iii) chemical and allied industries sectors. Although the sectors offering higher feasible diversification opportunities do not present the better strategic diversification opportunities, by combining the results of these analyses three sectors were identified as providing the best overall diversification opportunities. The plastic and rubbers and metals, stone, and glass sectors provide the best feasible diversification opportunities, while also providing relatively good complexity and opportunities for further diversification. The chemical and allied industries sector provides good feasible diversification opportunities and is among the sectors with the best complex diversification index, indicating high potential for future diversification and adding complexity to the export basket. In addition, the machinery, electrical, and transportation sector has the potential to become one of the top sectors in El Salvador in the long run, as it provides the best complex diversification opportunity.

The capabilities to achieve some of these products within the feasible and complex approach require government involvement to build capacity and incubate new industries. 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 is not currently within the country. Given that some of the industries do not exist in the country, there is little incentive for workers to acquire the necessary skills to operate in these industries. The government could ease this problem by providing incentives to the private sector and creating an enabling environment to nurture the new sectors.

For products close to current capabilities, sectoral dialogue could be a solution to overcoming production obstacles, but for products far from current capabilities, there must be a new and specialized approach. In particular, dialogue could lead to the identification of the necessary missing public goods and ways to provide them. However, for products far from existing capabilities, specialized institutions such as a public venture could be set up to fund new business models and initiatives that could trigger significant future entries into the market. The fund would give the government access to those ideas, analyze the obstacles they face, and inform public policy, so that the requisite public inputs could be provided if deemed reasonable. Some successful examples of these type of institutions 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. In order to take full advantage of these opportunities and to mitigate some of the costs associated with these changes, countries need to embrace 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. Capabilities addresses the need for workers and firms to strengthen their ability to adopt and use new technologies. In addition, it requires the necessary infrastructure and regulations to support the spread of new technologies. Finally, connectedness relates to the importance of access to inputs and output market. Key elements to progress in this area are improvements in logistics, reductions in tariffs and nontariff barriers, and the reduction of restrictions in services, particularly trade restrictions.

El Salvador needs to strengthen the capacity absorption of workers and firms. Countries can be mapped in each of the three areas to identify where they need to improve. Figure 56 illustrates such mapping.
6. Diversification and Exports

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, El Salvador is considered to have low levels of capabilities to adopt new technologies. As stated in Section 5, improving in this area could have large payoffs to facilitate an export-led manufacturing strategy. The lack of qualifications in the Salvadoran labor force is an obstacle, and therefore strengthening human capital is critical to improving the country’s capacity to adopt and adapt to new technologies.

6.3.3. Services are an area of great opportunity for boosting trade and domestic linkage

Exports of services from El Salvador remain an area of great potential for job creation and growth. Two characteristics that have made manufacturing the preferred sector for growth in the past were the ability to face competitive pressures that facilitate improvements in efficiency and the possibility of expanding demand by exporting to global markets. Today, the old view of services being non-tradable, with low scale and low productivity, is being challenged by 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 service-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.141

El Salvador’s exports of services are in line with what it is expected, opening the door for improvements and growth. The performance of services exports as a share of GDP are in line with the expected level, given the country’s per capita income (Figure 57). In the regional context, El Salvador exports more services than Guatemala, but it is far from the levels of Panama and Costa Rica, the stars of the neighborhood. 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 57 confirms this correlation: while in aspirational peers and OECD countries services exports are a large share of GDP, low-income countries minimally participate in trade in services.

Modern services are consistently gaining participation in total exports and are becoming a potential source of quality job creation. Developed countries tend to export more complex services, often called “modern” or “nontraditional” services.142 Among these services, economists typically include ICT, financial and
insurance services, and health and other business services, which are mostly professional services such as consulting, architecture, and so on. These services in general are more intensive in high-skilled labor, which implies that they are important in generating high-wage jobs that allow the absorption of highly skilled workers. After studying trade in services, Loungani et al. (2017) find that modern services are growing worldwide and present a relevant opportunity for many countries, since they do not require proximity between buyers and suppliers. This reduction in trade costs opens the door for developing countries to participate in high-tech markets, since reallocation of services worldwide is each day more of a possibility. However, regulatory barriers continue to slow down trade in these services, despite the fact that

In El Salvador, the share of modern services exports has recently stagnated. Between 2010 and 2014, exports of modern services as a share of services exports declined from 15.4 percent to 12.7 percent. Since then, there has been a slight recovery: modern services were 14.6 percent of total services exports in 2018. In addition, exports of modern services have become more relevant, growing from 4.6 percent of total exports in 2010 to 5.6 percent of total exports in 2018. However, most exports of services today remain traditional exports such as travel (including tourism), transportation, and construction (Table 5).

Tourism, ICT, and air transport are services that are showing signs of an important dynamism. Travel services have made significant progress as a genuine source of exports. Between 2010 and 2018, travel services exports have almost tripled, contributing almost 50 percent of the growth in services exports during the same period. Moreover, travel services now represent more than 36.2 percent of total service exports, and the sector is rapidly gaining competitiveness in the global economy, as measured by the revealed comparative advantage (RCA) index. This is a promising sector for El Salvador, since it can create many jobs for low-skilled workers through opportunities in hotels, restaurants, and entertainment. On the flip side, this type of sector is less likely to provide much by way of productivity gains. A given service subsector is unlikely to provide opportunities for productivity growth as well as job creation for unskilled people simultaneously. In the same time interval of 2010 to 2018, ICT exports grew close to 30 percent and maintained their comparative advantage, albeit declining in recent years. Strengthening the ICT sector is not only important as a source of growth, but also because it is a key input for trade integration, private sector development, and public service delivery. In addition to tourism and ICT, air transport is a service with good prospects. The country has shown comparative advantages in the past and exports have grown almost 40 percent in the last 8 years.

Better institutions and higher levels of education are complementary sources of comparative advantage in the more complex goods and 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 a 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 good 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 being delivered. Similarly, complex services require high-skilled workers, and therefore the quality of the pool of workers is a key enabler of services trade.
Conclusion

El Salvador has achieved modest and stable growth rates that have allowed the country to reduce poverty and inequality but have not enabled it to catch up with more developed countries. El Salvador’s growth rate of real output per capita has been lower than the rates of its peers during the last two decades, averaging 1 percent in 2000–2009 and 2.05 percent in 2010–2017. Extreme poverty—per capita household income under US$ 3.2/day—declined from 20 percent in 2008 to 8 percent in 2018, and the Gini coefficient fell from 0.51 in 2000 to 0.38 in 2017. El Salvador’s GDP per capita relative to the United States has decreased substantially, from 11.4 percent in 1965 to 6.5 percent in 2017. Most of this divergence occurred during 1979–1989, coinciding with the civil war. Since 1990, the relative GDP has improved less than one percentage point.

The objective of this study is to shed light from a macroeconomic perspective on the obstacles to higher and sustainable growth in El Salvador through several analytical approaches. The approaches are complementary and include growth accounting, analysis of sectoral employment and labor productivity, cross-country regressions, and analysis of exports and diversification opportunities.

The first approach is growth accounting, which has shown that past growth came from factor accumulation and productivity. Labor contributed an average of 1.1 percent to GDP growth per year between 1980 and 2017, capital accounted for around 1 percent, and human capital contributed an additional 0.8 percent. However, TFP negatively affected economic growth by 1.1 percent per year during the same period. In the last two decades, labor accumulation slowed down in comparison to the 1980s, and in the past seven years it contributed 0.9 percent (versus 1.8 percent in 1981–1990). Capital accumulation followed a similar pattern: while in the 1990s, on average, it contributed 1.5 percent, the contribution in the 2000s and in the period 2011–2017 were 1.1 percent and 0.8 percent, respectively. Finally, human capital increased its contribution to 1 percent annually starting in 2011.

The analysis of sectoral employment and production showed that labor productivity growth came initially from structural change—the move of labor from less-productive to more-productive sectors—and then from within-sector productivity. In the period 1991–2017, increases in labor productivity and in the share of the working-age population were the main drivers of GDP growth, contributing 57 percent and 29 percent of the total change, respectively. During this period, structural change (the reallocation of workers across sectors) contributed significantly to labor productivity growth. In particular, the reallocation of labor from the agriculture, manufacturing, and education and health sectors toward the financial intermediation and real estate sector was the main source of labor productivity gains from structural change. However, these gains were partially offset by the reallocation of workers toward low-productivity services such as retail. After a slowdown in the 2000s mainly driven by a decline in the reallocation of workers, labor productivity has recovered in recent years, reflecting a rise in within-sector productivity growth.

Cross-country regressions following the growth diagnostic approach showed that the binding constraints to growth are: (i) security, (ii) property rights, (iii) human capital, and (iv) corruption and limited access to finance for small firms. El Salvador has one of the highest crime rates in the world, and recent corruption scandals have tarnished two former presidents. Human capital is poor due to deficiencies in primary education but also in professional education. Finally, while large firms don’t report problems in accessing finance, small and medium firms point to that as a binding constraint.

Finally, by exploring the link between growth, diversification, and exports, the analysis showed that El Salvador has the opportunity to pursue an export-led growth strategy by upgrading product quality and
diversifying exports to products with similar capabilities to those in its current export basket. El Salvador has untapped opportunities to increase the quality of products in which the country already has comparative advantages, as shown by the distribution of the unit value of the goods exported by the country in comparison to the world’s distribution. In the case of El Salvador, electrical capacitors and condensers and articles of packing goods present the best opportunities for upgrading, followed by jerseys, pullovers of synthetic fibers; undergarments, knitted, of synthetic fibers; and other undergarments, knitted, of cotton. In general, when countries diversify their export bundles, there is a propensity to move from products they are producing to products that are close, in terms of production knowledge and capabilities. Based on this approach and combining a feasible and strategic analysis, the sectors with promising products for diversification belong to metal, plastic, and chemicals.

Although the approaches pursued in this study do not yield granular policy recommendations, common themes for policy attention are the need to increase private investment and generate fiscal space for higher public investments. Government interventions are needed also to strengthen policies and institutions to curb corruption. The fact that low quality of the labor force has emerged as an obstacle to growth needs to be addressed by educational policies that focus on regular education (primary and secondary), but also technical and vocational education. Lastly, government reforms to improve the business environment, especially regarding international trade, are needed to support an export-led growth strategy.
1 The five determinants are innovation, education, market efficiency, infrastructure and institutions that are linked to policy choices. This model is an excel-based tool that could be use by policymakers for more detailed counterfactuals if desired.
2 WDI. Since the 1990s, the volatility of El Salvador's GDP per capita growth has been much lower than its aspirational peers and, for the most part, its structural peers.
3 Historical Review, Central Bank and Reserve of El Salvador [https://www.bcr.gob.sv/].
4 WEO. Costa Rica has the second-highest gross government debt in Central America, with 53.5 percent of GDP in 2018.
5 IMF Country Reports No. 18/151 and No. 19/143.
6 Tax revenue represents on average 16.5 percent of the GDP in the period 2008-2017. Data is from Federal Reserve Bank of St. Louis and WEO. IMF Article IV (2019).
8 El Salvador's structural peers are Armenia, Bosnia and Herzegovina, Dominican Republic, Georgia, Serbia, and Tunisia; and aspirational peers are Chile, Latvia, Lithuania, Panama, and Peru. See Table 1.5 in the Appendix for the methodology used for determining the structural and aspirational peers.
10 Li and Mesquita Moreira (2019).
13 WDI.
14 From 2003 to 2012, poverty in LAC declined three times faster than in El Salvador (CPF 2016).
16 WDI.
18 Poor households have a greater proportion of children under 12, three years less than average schooling, a 10 percent higher probability of being self-employed, and twice the likelihood of being unpaid family workers as the non-poor (SCD 2015).
21 Padilla, Santamaría, and Villarreal (2019).
25 WDI.
26 Moody’s (2018).
29 CEPAL (2018).
30 Moody’s (2018).
31 See Appendix I for a discussion on the concept of productivity and how it is measured.
33 This largely reflects our calculation of TFP as a residual (in line with standard growth accounting methodologies) such that the recent period of growth slowdown and recession appears caused by a negative contribution of productivity, when in fact it was driven by other unobserved factors that are bundled into the TFP residual, such as an increase in spare capacity and inventories.
34 See Appendix I for a discussion of different measures of productivity commonly used in the literature.
35 Here, it is assumed that the public capital stock generates social benefits in the future. In this sense, investment with low social returns shouldn’t be considered. To see more details of the model, see Appendix III.
36 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.
37 It is implicitly assumed that women entering the labor force had no previous economic value added. For example, taking care of children or their employment in informal industries 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.
38 See for example endogenous growth theories of Romer (1990), Aghion and Howitt (1998).
39 Indicators used to conduct the indexes for each of these areas are listed Appendix III and the data used to compute these indicators are available upon request.
40 Kim, Loayza, and Meza-Cuadra (2016); Kim and Loayza (2019).
See www.worldbank.org/BoostCentralAmerica for the appendix.

Buera and Shin (2013).

Structural transformation typically holds for developed and developing countries. See the flagship “Economic transformation and Future of Work in LAC” 2019. Also, see Kuznets (1973) and Herrendorf, Rogerson, and Valentinyi (2014).

See Duarte and Restuccia (2010 and 2018) and Herrendorf, Rogerson, and Valentinyi (2014).

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).

See Buera and Kaboski (2009) and Restuccia et al. (2008).


Ibid.

See Table 1.5 in the Appendix for the methodology used to identify the structural and aspirational peers of El Salvador and Table 5.1 in the Appendix for the full list of indicators.

See Table 5.1 in the Appendix for the methodology used to compute indexes and the full list of indicators used to compute the indexes for each of the 18 areas.

Enterprise Surveys, World Bank.

According to World Bank data (Findex 2017), just 6 percent of the poor population (bottom 40 percent) have accounts at financial institutions.


World Bank (2016).

World Bank (2016).


Argumedo (2017).

Argumedo (2017).

According to 2016 Enterprise surveys data, 54 percent of firms in El Salvador report not needing a loan, compared to 45 percent in the LAC region.

Enterprise Surveys, World Bank.

Enterprise Surveys, World Bank.

According to 2016 Enterprise Surveys data for El Salvador, 76 percent of loans require collateral, compared to an average of 71 percent in LAC. The value of collateral needed for a loan averages 205 percent in El Salvador, compared to 199 percent in LAC.


The number of researchers in R&D in El Salvador increased by 4 percent from 2015 to 2016 on a per capita basis (UNESCO Institute for Statistics).

See WDI.

See WDI. Patent applications by residents per million people have decreased from 1 in 2015 to 0.6 in 2017.

Articles are classified by year of publication and assigned to each country/economy on basis of the institutional address(es) listed in the article.

ClariVate Analytics, special tabulations from Thomson Reuters, Web of Science, Science Citation Index (SCI), and Social Sciences Citation Index (SSCI); IMF, World Economic Outlook Database, 2018 (PPPS GDP).

See Romer (1990); Aghion and Howitt (1998); Ulku (2007).

The results are obtained from the fixed effects regression analysis of real GDP per capita (log) on innovation index and its interaction term with country dummies, after controlling for log of GDP per capita, investment rate, labor rate, human capital, and year dummies and accounting for heteroskedasticity and cross-correlations in the errors. Data cover 1664 observations from 120 countries during 2000–2018. El Salvador had data for 2015–2017. Results using innovation index also revealed a significant association of innovation with real GDP per capita.

Insight Crime (2018); United Nations Office on Drugs and Crime (2017); Latin America Report No. 64 (2017); World Bank El Salvador Overview (2019).

Institute for Criminal Policy Research (2018). In 2018, the prisoner rate in El Salvador was the second-highest in the world with 604 prisoners per 100,000 population, after the USA with 655.

Foreign Policy (2019).

Penate, de Escobar, Quintanilla, and Alvarado (2016).


Fund for Peace.

Kalsi (2018).


World Bank Enterprise Surveys


Results are not here but available upon request. They are obtained from the fixed effects regression analysis of real GDP growth with respect to the homicide rate and its interaction term with country dummies, after controlling for log of GDP per capita, investment rate, labor rate, human capital, and year dummies and accounting for heteroskedasticity and cross-country correlation across error terms. Data cover 2047 observations from 140 countries during 2000–2018. The fixed effects analysis also shows a positive correlation between the aggregate security index and real GDP per capita.

The Economist, based on the estimate of Central Bank of El Salvador.

Results are not reported here but available upon request. The model is cross-sectional regression analysis of real GDP per capita with respect to violence and crime indicators, after controls for investment, labor, human capital, and regional and income dummies. Numbers of observations for Figure 32 and 33 are 168 and 159, respectively, covering 2000–2018.


See World Bank’s rule of law index in World Development Indicators database.


89 OSAC (2019).
90 Authors’ computation using data from resources shown in Table 5.1 in the Appendix. Results are not reported but available upon request.
91 Results are not reported here but available upon request.
92 WDL.
93 WDL.
94 WDL.
95 OECD (2015).
96 USAID (2018).
97 Brent Edwards, Martin, and Flores (2017).
98 World Bank, Global Poverty Working Group.
100 Brent Edwards, Martin, and Flores (2017).
101 See Duryea and Morales (2011).
102 World Bank Enterprise Surveys data.
104 See World Bank: “Renovating the Public Health Care System in El Salvador.”
106 Canudas-Romo and Aburto (2019).
107 Only in the regression analyses with literacy rate of youth and student-teacher ratio, the number of observations were relatively low at 350 for 49 countries and 872 for 65 countries, respectively. Period covered is 2000–2018 in general, however, it changes depending on the availability of human capital indicators.
108 WDL. Also see Figure 5 in the first section of the chapter.
110 Brent Edwards, Martin, and Flores (2017).
111 Brent Edwards, Martin, and Flores (2017).
113 Surveys conducted by USAID show that, following the decision to pursue major cases of corruption implicating high-ranking government authorities, citizen assessment of the work of the Prosecutor General’s Office (FGR) markedly improved. Source: USAID (2017). “Perceptions Of Security And Confidence In Public Institutions”.
114 According to a report by the International Crisis Group, CICIG in Guatemala helped reduce the murder rate by 5 percent annually since it was established in 2007. The report argues that the decrease in corruption reduced violent crime for several reasons; notably public funds are no longer diverted away from services that prevent violence.
115 The results are from the fixed effects regression analysis of real GDP per capita (log) with respect to freedom from corruption index and its interaction term with country dummies, after controlling for investment rate, labor rate, human capital, and year dummies and accounting for heteroskedasticity and cross correlations in errors.
117 That can limit a country’s ability to defend itself against economic fluctuations.
118 OECD/WTO (2019).
119 Diversity measures the number of products a country effectively exports. By “effectively,” we mean the number of products for which the country has a revealed comparative advantage as measured by the Balassa index (Balassa, 1965). Ubiquity refers to the number of countries that effectively export a product. Behind this measure lies the assumption that countries only export those products for which they have the required knowledge. See Appendix VI for a formal definition of these concepts.
120 The data available at WITS and COMTRADE after 2016 was not reliable at the product level since it shows large discontinuities in key products. For this reason, the figure shows data until 2016.
121 See Lall (2000) and Hausmann, Hidalgo et al. (2011).
122 Old products are defined as those exported at least twice in the previous five years from the beginning of the period. Similarly, old markets are comprised of all partners to which the home country exported in at least two out of the last five years, starting from the beginning of the period. Therefore, the products and markets classified as old vary depending on the period analyzed. For example, old products in the period 2001–2005 are those exported at least twice in the years 1997–2001. In the period 2006–2010, the corresponding old products are those exported at least twice in the years from 2002 to 2006, and so on.
123 See Henn et al. (2017).
124 See Khandelwal (2010).
125 The difference between the maximum and minimum quality of a given product is called “length of the quality ladder.” See Khandelwal (2010).
126 See Crozet et al. (2012).
127 As it is standard in a large part of the literature, we will proxy quality with unit values. See Schott (2004), Hummels and Klenow (2005), Khandelwal (2010).
128 Here we are using a weighted average, where the weights are given by the export value for a given unit price relative to the value of exports of an HS96 product.
129 OECD/WTO (2019).
130 Artopoulos, Friel, & Hallak (2013).
131 See Levchenko (2007), Hallak and Schott (2010), and Essaji and Fujiwara (2012).
133 Technically, the product space is a network that formalizes the idea of relatedness between products traded in the global economy.
134 Notice that this concept is different from the idea of input-output linkages. Here two products could be integrated in a value chain but be part of two different communities, given that the stock of knowledge and capabilities to produce them are different.
135 The COI is a measure of how many complex products are near a country’s current set of capabilities. It captures the ease of diversification for a country, where a high COI reflects an abundance of nearby complex products with similar capabilities to the ones the country is using.

136 For more details on the construction of these indexes, please refer to Appendix VII.

137 These sectors were selected based on an index that combines the number of products and mean value of the feasible index (normalized series). For more details on the construction of these indexes, please refer to Appendix VII.

138 These sectors were selected based on an index that combines the number of products and mean value of the complexity index (normalized series). For more details on the construction of these indexes, please refer to Appendix VII.

140 Hallward-Driemeir and Nayyar (2017).
141 See Ghani and Kharas (2010).
142 See Anand et al. (2012) andDuarte and Restuccia (2019).
143 See Hallward-Driemeir and Nayyar (2017).
144 A country has revealed comparative advantage if the RCA indicator is greater than one. In 2018 the indicator is 0.93, but we consider that the country is still competitive in tourism.
145 Hallward-Driemeir and Nayyar (2017).
146 Costinot (2009).
147 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


