COUNTRY PRIVATE SECTOR DIAGNOSTIC

CREATING MARKETS IN GUATEMALA

Unlocking Private Sector Potential to Achieve Sustainable and Inclusive Growth and Economic Development

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EXECUTIVE SUMMARY

This Country Private Sector Diagnostic (CPSD) is a joint undertaking of the World Bank and IFC to identify policy reforms that will catalyze private sector investment and economic development in Guatemala over the next 3 to 5 years. It aims to support the Guatemalan government's efforts to facilitate the growth of a robust and competitive private sector. The intent is to identify barriers and opportunities for an increasingly dynamic private sector so as to boost its contribution to economic growth, job creation, poverty reduction and shared prosperity. The selected areas of focus, policy conclusions, and recommendations are consistent with the analytical framework presented in the Guatemala Systematic Country Diagnostic update,[1] which highlights the advantages of more spatially diversified development.

Guatemala, Central America's largest economy, continues to struggle with modest rates of economic growth and high levels of poverty and inequality. Between 2000 and 2019, annual gross domestic product (GDP) growth averaged 3.5 percent amid tight fiscal and monetary management,[2] but improvements in poverty and social development indicators were slow and uneven. The national poverty head count rate remains high at 56 percent,[3] the Gini coefficient is 0.45 percent, and 48.2 percent of the population lives in rural areas. Guatemala has among the highest gender inequality index scores and lowest rates of female labor force participation in Latin America and the Caribbean.

With a small public sector, the primary role in driving growth and job creation must fall to the private sector. However, private sector development and growth in Guatemala are constrained by several factors. As detailed in this report, these barriers include a weak business-enabling environment, lack of access to finance, infrastructure constraints, and governance constraints, among others. This challenging private sector-enabling environment creates substantive barriers to entry for both domestic and foreign firms, lowers returns to entry, limits competition as firms exert market dominance, and reduces innovation, thus significantly reducing potential private sector employment and productivity growth. Furthermore, these barriers lead to a flourishing low-productivity informal sector, which hinders growth in income per capita.

Formal firms in Guatemala suffer from low levels of dynamism and innovation, which constrain their development and competitiveness. The 2020 Global Competitiveness Report ranked Guatemala 98th out of 141 countries in business dynamism and 98th in innovation capability.[4] Because of low rates of firm entry, the average firm age increased from 17.5 to 28.5 years between 2006 and 2017, one of the oldest age structures globally. Rates of firm entry are also affected by the lack of antitrust regulation or a competition law in the country, which creates further barriers to entry for new companies, affects competitiveness, and diminishes the country's potential to participate in investment markets. The lack of dynamism is also reflected in businesses' reluctance to grow their workforce. Similarly, firms face an adverse innovation environment, as evidenced by the small and decreasing share of firms that report spending on research and development (15.5 percent) or process innovation (37 percent).

The economy has undergone a shift from predominantly low-productivity agricultural activities to manufacturing and services, but quality jobs are limited. Despite increasing employment, the growth of the services sector, which is focused mainly on the domestic market, has not generated the quality of jobs needed to sustain and improve economic outcomes. The sector is characterized by a large number of small firms that export little and operate mostly informally with low levels of productivity. Since 2014, employment opportunities in the formal sector have plateaued, leading to a decline in average income. Guatemala's large informal sector represents an average of 46 to 48 percent of GDP and provides 80 percent of total employment.[5] As the supply of workers seeking formal jobs rose while demand stagnated, wages fell by more than 10 percent during 2014–19, continuing a longer-term pattern.[6] Total investment remained low at an average of 13 percent of GDP during 2014–19, and a growing current-account surplus underscored the increasing movement of capital abroad. Consequently, creating better jobs for more people and decreasing incentives for economic migration will require a more dynamic and competitive private sector.

Although unemployment in Guatemala is relatively low, high rates of underemployment pose a significant challenge. For workers to be enticed out of inactivity, out of the informal sector and other low-productivity activities, and into the formal sector, more-attractive jobs are needed. Creating more and better private sector jobs will also reduce the incentives for migration, limit brain drain, and help the country capitalize on its demographic dividend. Migration in Guatemala is strongly associated with economic factors, specifically with unemployment and underemployment. Emigration, primarily to the United States, has increased in recent years, boosting remittance inflows, but migration and remittances are not a durable model for long-term growth, and accelerating domestic private sector job creation remains a critical policy objective.

The jobs challenge in Guatemala is thus one of increasing both access to waged-employment opportunities and the quality of employment and wage levels. The CPSD and the analysis that follows are therefore focused on addressing these two employment-related challenges by fostering and facilitating an increasingly dynamic, growing, and more productive private sector.

Limited private sector growth and competition also limit nearshoring opportunities in expanding trade with Mexico and the United States. Guatemala's dependence on a limited number of low-value-added exports restricts its growth potential. Guatemala's economy is at an intermediate level of diversification, producing relatively simple goods and services that many countries are capable of exporting competitively. Guatemala is also less integrated into the world economy than other countries with similar levels of income per capita. Economic transformation, facilitated by addressing the constraints noted in this report, would enable Guatemala to capitalize on greater gains from trade, while also generating more and better-quality private sector jobs linked to higher-productivity growth.

The current administration is committed to a private sector-led development agenda aimed at boosting the country's social and economic recovery. The Guatemala Moves Forward (Guatemala No Se Detiene) program, launched in 2021, includes an ambitious strategy to boost the output of 20 major export products by as much as US$5 billion while creating 2.5 million formal jobs by 2030. The initiative establishes a roadmap to attract more foreign direct investment (FDI)

in high-potential sectors and key export-oriented industries over the medium term, particularly to benefit from apparent nearshoring opportunities. The plan also places a renewed emphasis on tackling skill mismatches through programs led and coordinated by the Ministry of Economy and by Programa Nacional de Competitividad (PRONACOM).

While the private sector will remain the primary economic driver, the government must also address long-standing challenges in fiscal policy and public administration to better support robust private sector development. Guatemala's public revenues and expenditures are among the lowest in Latin America and the Caribbean, amounting to just 12.2 and 13.4 percent of GDP, respectively, in 2021. Key laws and regulations are enforced unevenly or not at all. Private firms in Guatemala face a challenging business climate that impedes their growth and development. World Bank's Enterprise Survey and the World Economic Forum's annual Global Competitiveness Report highlighted the adverse impact on the private sector of political instability, corruption, crime, an inefficient government bureaucracy, and asymmetrical competition from the large informal sector.[7] Another World Bank report found that deficiencies in the regulatory environment limit the entry, growth, and competitiveness of formal firms.[8] High administrative costs, weak rule of law, time-consuming and costly contract enforcement processes, and cumbersome insolvency procedures are among the major obstacles facing Guatemalan firms. With an improved business environment, Guatemala could benefit from investment in strategic sectors, namely, in agriculture, recreational services, and light manufacturing, especially those related to food, such as production of meat and oils, which would reduce not only poverty, but also disparities among disadvantaged groups such as women, Indigenous people, and youth.

Cross-Cutting Constraints

In the aftermath of the pandemic, the CPSD is timely in supporting the country to identify key constraints for private investment and formulate appropriate policy reforms. The CPSD focuses on three cross-cutting issues that are long-standing fundamental constraints facing the private sector: (a) limited access to finance for micro, small, and medium enterprises (MSMEs), (b) infrastructure gaps, and (c) weak governance, corruption, and ineffective dispute resolution systems.

Limited Access to Finance for MSMEs

Access to finance, particularly for agricultural producers and MSMEs, is critical to employment generation, productivity gains, and inclusive economic growth. Many MSMEs and agricultural producers in Guatemala struggle to access financing that meets their needs, constrained by high costs, excessive collateral requirements, rigid product design, and limited consumer protections. According to IFC estimates, the MSME financing gap in Guatemala is equivalent to 22 percent of GDP, more than six times the current volume of MSME financing.[9] The MSME financing gap in Guatemala is larger than that of several regional peers (such as Costa Rica and Honduras) as well as the regional average. Rural areas in particular have limited access to finance, with many commercial banks

concentrating their operations in the metropolitan area. Indeed, credit to the agricultural sector accounts for less than 5 percent of the banking system´s total portfolio.[10] Channeling greater volumes of financing through the formal financial sector requires: documentation and collateral requirements that correspond to the population's socioeconomic conditions, accelerated decision-making processes, convenient financing conditions (that is, amount, rate, term, and frequency of payment), long-term certainty of welfare gains from a good credit reputation, and long-term certainty of a sustainable supply of formal-sector financing.

Reform efforts and investments are needed to improve access to finance for MSMEs and agricultural producers. Recent reforms, including new leasing and insolvency laws, hold promise for improving the enabling environment for access to finance for MSMEs and agricultural producers. However, a more ambitious reform program is needed to address persistent barriers to access to finance, including to enhance and expand credit and payment infrastructures; further develop leasing and electronic factoring products; promote competition and improved product design through innovation and financial technology; mitigate risks associated with lending to MSMEs, including via expansion and development of insurance products; accelerate the digital transformation of cooperatives and microfinance institutions; and strengthen financial consumer protections.

Large Infrastructure Gaps

Firms in Guatemala face significant infrastructure constraints that hinder them from taking advantage of strategic access to both the Atlantic and the Pacific Oceans. According to the Global Competitiveness Report, Guatemala ranks 114th of 141 countries in terms of transport infrastructure because of poor road connectivity and quality of road infrastructure.[11] About 19 percent of firms in Guatemala identified weaknesses in the transportation system as a major constraint to activity, above the Central America regional average of 16.7 percent.[12]

Guatemala's transport connectivity deficiencies and poor-quality transport infrastructure pose major constraints to firms and private sector development more broadly. Guatemala´s transport infrastructure relies mainly on a road network that consists of approximately 28,000 km of registered and nonregistered roads. In relation to the country's surface area, the density of roads is below average for the Latin American region (15.5 versus 22 km/100 km^2).[13] This translates into low road network coverage, which limits access to markets and public services, especially in the poorest areas. While Guatemala City enjoys a slightly greater quality of infrastructure, firms located outside the capital experience significant transport constraints. The national port infrastructure also plays an important role in the country's exports and imports and has seen a significant increase in mobilized volumes, which have risen 77 percent in 15 years to reach 28 million metric tons in 2019.[14] However, the country's two main ports, Puerto Quetzal and Santo Tomás de Castilla, have now reached their capacity and are regularly saturated, forcing the country to increasingly use Puerto Cortés, in Honduras. Guatemala also lacks logistics centers designed to support ports, airports, and urban distribution, and the logistical infrastructure is concentrated primarily around the Guatemala City metropolitan area. This limits access to markets in

rural areas by increasing costs and time associated with logistical inefficiencies, severely undermining the competitiveness of agricultural products, and limiting their export capacity, especially for small-scale producers. Addressing this gap will require more investment in refrigerated-cargo handling, trucker rest stops, logistics centers to reduce transport inefficiencies and bottlenecks, and cold-storage infrastructure in port vicinities and near major agricultural production areas.

Rural areas also suffer from major gaps in electric, digital, and water infrastructure. Guatemala has a liberalized electricity market, with 86 percent private sector participation in electricity generation.[15] However, rural electrification rates remain low: 16.3 percent of the rural population lacks access to electricity, far more than the share of the urban population (3.4 percent).[16] Furthermore, access to digital infrastructure, including computer and internet access, is limited, with accessibility in rural areas lagging that in urban areas and the Guatemala City metropolitan area.[17] Water and sanitation services are also deficient: 14.7 percent of the rural population lacked access to improved water services in 2018, compared to 4.6 of their urban counterparts.[18]

Public investment in infrastructure in Guatemala is low by regional and global standards, averaging 0.6 percent of GDP over 2015–2019 (above only that of Brazil).[19] Relatedly, stagnant tax revenues hinder the government's ability to invest more.[20] The InfraSAP study emphasized that budget execution in road infrastructure has increased recently, but there are concerns about the quality of spending.[21] The lack of an overall inventory establishing the state and level of damage across the road network is a major knowledge gap limiting the government's ability to independently establish priorities for road maintenance.[22] The COVID-19 pandemic and natural disasters have reduced public spending on infrastructure and have damaged or reduced the stock of infrastructure. This public infrastructure financing constraint further emphasizes the need to foster and enable private sector investment in infrastructure.

Weak Governance, Corruption, and Ineffective Dispute Resolution Systems

Guatemala's performance on global indexes of governance quality, economic competitiveness, and public sector integrity has worsened significantly since 2015. The steady weakening of institutions has continued to erode trust in the state: in 2020, about half the population believed that corruption had recently increased, from 40 percent in 2016. A weak contractual and institutional environment hinders the development of the private sector, slowing job creation and undermining firm-level productivity. A World Enterprise Forum survey identified crime and corruption as the most important challenges to doing business in Guatemala.[23] In addition, political fragmentation has contributed to an increasingly sluggish and unresponsive legislative process. Furthermore, perceptions of corruption and abuse of power have increased over the last six years, undermining an already weak social contract. Corruption weakens the business and investment climate, and more than 70 percent of firms consider corruption to be a major constraint on growth.[24] Recent reports by LAPOP and the World Justice Project indicate that political corruption and undue influence are growing as limits on government powers weaken.[25] In addition, the extortion rate has dou-

bled in recent years, driven by the growing prevalence of gangs and drug trafficking. Crime-related costs are estimated at about 3 percent of annual GDP.[26]

This weak governance environment poses challenges in attracting FDI in Guatemala, largely because of the failure to implement a legal system that aligns with international standards. Many of the issues that Guatemala faces in attracting FDI are structural, including a lack of institutions and codes of conduct to enable juridical certainty for investment. Although Guatemala has created specific institutions to deal with and promote FDI,[27] evidence indicates that the heavy bureaucracy has been a deterrent to investment.[28] Rent seeking in such an environment is endemic. Potential investors or their agents are often required to personally visit numerous offices to obtain proper and complete information.[29] This becomes extremely burdensome and costly for investors.

Alternate dispute resolution (ADR) instruments can be part of the solution to attract FDI. ADR, as a transparency-enhancing tool, can provide mechanisms for accountability and redress, not only for states and investing companies, but also for Guatemalans and Guatemalan firms. Creating new types of contracts for concessions of public goods and commodities, and harnessing the potential of ADR as a way to improve governance, could be an important step in attracting FDI and facilitating domestic investment.

Identifying Sector-Specific Opportunities

The CPSD also identifies sector-specific opportunities to attract private investment over a 3- to 5-year horizon. Prospective investment opportunities were evaluated according to six selection criteria, which assessed their potential to (a) increase economic growth, (b) foster inclusiveness, (c) support climate change mitigation and adaptation, and (d) improve governance, as well as their consistency with (e) Guatemala's investment attraction strategy and (f) World Bank analytical expertise. The CPSD prioritizes investment opportunities that foster inclusive job creation, especially among female workers, as well as those that promote progressive formalization of informal activities. The climate change and environmental impacts of prospective opportunities are assessed in terms of forest protection, the reduction of CO2 emissions, and enhanced resilience to weather-related shocks. The selection process also incorporates the feasibility of various measures. Finally, the investment opportunities are evaluated in terms of their consistency with the government's priorities for attracting investment and with the body of analysis underpinning World Bank operations in Guatemala. The selection process is supported by two quantitative tools and a desk review of key World Bank analytical work on export competitiveness in Guatemala.

Arising from this analysis, two primary sectors of focus are identified: agriculture and light manufacturing. These two sectors are priority sectors for the government and have significant potential to drive more inclusive development. The agriculture sector, in which Guatemala has a comparative advantage, could boost job creation, especially in rural areas, and exports. Light manufacturing has sig-

nificant employment generation possibilities, export potential, economic inclusiveness, and potential to foster innovation.

Agriculture

The agrifood sector is central to Guatemala's economic development, employment, and food security. Agricultural production in 2022 made up 10.6 percent of GDP and employed over 2.5 million people, equivalent to 32 percent of all workers.[30] Agriculture is also the main source of income in rural areas, employing 70 percent of rural workers and 81 percent of Indigenous workers in rural areas, most of whom are employed in primary agriculture.[31]

Agricultural exports show significant potential. Exports of nontraditional agricultural products, particularly fruits such as papayas, avocados, and berries, have increased and have considerable room to grow. Furthermore, apart from producing and exporting raw material, there are opportunities to increase value added by improving product quality, engaging in additional processing, or developing new commercial uses for traditional and nontraditional products. Improving quality or expanding the portfolio of specialty, organic, fair trade, or environmentally friendly products offers new market opportunities for traditional products such as coffee, cardamom, and bananas. Increased processing capacity could enable the production of dehydrated or frozen fruits and vegetables. Secondary processing such as making vegetable paste, sauces, canned products, and vegetable chips could also generate opportunities for job creation and diversification.

The sector's competitiveness is constrained by low levels of diversification and sophistication and the limited adoption of new and more productive technologies. In addition to the cross-cutting constraints noted above, agriculture is further constrained by low and stagnant labor productivity—about one-third of that in services and industry, particularly in rural areas.[32] In 2019, 80 percent of the sector's workers were employed in primary agriculture and the remaining 20 percent worked in processing. The sector's low value added per worker reflects an environment where 90 percent of workers are informal, 80 percent of farms are smallholdings of less than 0.7 hectares, and 60 percent of farmers are engaged in subsistence production with few or no agronomic plans or technical support.[33]

Postharvest losses present an important constraint. This hindrance is caused by insufficient investment in storage and preservation facilities, including cold storage; limited market information; and lack of uptake of improved handling and management practices. Guatemala loses 20 million tons of food annually, equivalent to 38 percent of total production. These losses correspond to 15 percent of the available agricultural land, 9 percent of the country's total greenhouse gas emissions, and 4.2 percent of annual GDP.[34] In addition, infrastructure constraints noted above and a lack of information about market locations and prices lead to high levels of food loss at the farm level and additional upstream losses along the value chain.

Light Manufacturing

The manufacturing sector accounts for approximately 20 percent of GDP and shows significant growth potential. Light manufacturing benefits from preferen-

tial trade agreements, proximity to the United States, and recent reforms to improve the overall business environment. Guatemala benefits from strong comparative advantages in some of its light manufacturing exports, but unfortunately, most of Guatemala's exports are of low complexity. Manufactured exports have stagnated at around 15 percent of GDP. Most manufacturing activities are concentrated in the Guatemala City metropolitan area, although some decentralization has been enabled by infrastructure improvements and industrial parks in other parts of the country. Importantly, the manufacturing sector has been key in including traditionally marginalized groups in the economy, although it has historically represented only between 12 and 14 percent of the total workforce, which contrasts with close to 30 percent in sectors such as agriculture and retail. However, about 53 percent of workers in manufacturing activities are women and 46 percent of workers identify as Indigenous (Maya, Xinca, or Garífuna), greater proportions than those observed in the rest of the economy.

Further developing the light manufacturing sector could help unleash Guatemala's growth. Light manufacturing has significant employment generation potential with positive impacts on marginalized and vulnerable groups. While the sector has been pivotal in positioning Guatemala as a strategic actor in regional value chains, there are opportunities for further integration in global value chains.

Guatemala is in a unique position to expand its light manufacturing sector, building on government reforms and policy priorities and leveraging the ongoing nearshoring trend. To leverage the country's geographic advantages, authorities should continue to support initiatives aimed at attracting new investments and retaining existing ones. Numerous opportunities present themselves. Fostering the development of domestic inputs for the light manufacturing sector could enhance Guatemala's strategic relation to North America and presents growth opportunities for higher-value textile and apparel products. Allowing for flexibility in the minimum wage could help increase the competitiveness of regions beyond Guatemala City; one way to do so could be to institute different minimum wage categories to reflect the significant differences in productivity across Guatemala's geography. Alleviating congestion on key trade routes would reinforce Guatemala's position as a nearshoring partner. Introducing measures to help firms comply with the tax authority's requirements would help smaller firms be more productive and competitive. Advancing workers' skills would help attract new investments in more sophisticated stages of the light manufacturing value chains. The various industrial land regimes could benefit from greater clarity and transparency regarding the regulations governing each area and would support efforts to attract foreign investment in manufacturing amid the ongoing nearshoring trend. Finally, greater banking sector engagement with light manufacturing firms (especially apparel) could help unleash greater growth for the sector.

Summary of Key Recommendations

Table ES.1 presents a summary of the key recommendations. More-detailed recommendations are included in subsequent sections.

TABLE ES.1

Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
LIMITED ACCESS TO FINANCE BY MSMES			
Weak enabling environment for access to finance for MSMEs.	Implement the leasing law and building capacity of industry to develop and scale leasing products.	MINECO and association of leasing entities	Short
	Amend the banking law to allow MFIs and cooperatives to access the credit registry, push forward the draft law on credit bureaus, and identify the institution that will be responsible for the oversight of credit bureaus.	SIB, MINECO, BANGUAT, Junta Monetaria, and Congress	Medium
Limited availability of diverse and innovative financial products for MSMEs.	Strengthen the ecosystem for electronic factoring, including through capacity building with financial institutions.	MINECO, SAT, and SIB	Short
	Enact an activity-based and proportionate legal and regulatory framework to enable the development of fintech, including e-money operators and crowdfunding platforms.	SIB, BANGUAT, and Congress	Medium
INFRASTRUCTURE GAPS			
Weak regulatory frameworks and governance	Revisit discussions to introduce changes to the regulatory framework regarding procurement processes and contract types, acquisition of the right of way, and dispute settlement, among others.	Congress	Short
Little investment in infrastructure by regional standards	Develop funding arrangements that include private participation and risk-sharing contract modalities such as output- and performance-based road contracts to complement budget resources in line with the needs of the Road Development Plan (2018–2032).	MINFIN, MICIVI	Medium
Rigid public-private partnership framework	Revise and reform the purchasing power parity law and related institutional framework to create institutional procedures and interinstitutional coordination arrangements that facilitate the purchasing power parity project preparation and approval process (with clear roles).[a]	CONADIE, ANADIE, and municipalities (for licenses)	Short to medium
LEGAL FRAMEWORK, DISPUTE RESOLUTION, AND GOVERNANCE			
Weak adherence to international judicial norms, bureaucracy around enforcement, and contractual disputes and settlements	Strengthen legal units and ADR offices in certain ministries and government entities so that they can provide sound advice to the public administration on contractual issues.	Procurador General de la Nación and Congress	Medium
	Consider the creation of specialist courts, or a chamber within a court, to deal with FDI issues.	Procurador General de la Nación and Congress	Medium
	Include clauses in contracts that provide greater legal certainty, particularly those contracts that may be subject to international FDI standards.	Procurador General de la Nación and Congress	Medium

(Table continues next page)

TABLE ES.1

Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
	Allow introduction of ADR mechanisms, including arbitration, for both domestic and FDI-related contracts, and promote negotiation and conciliation as means of conflict resolution.		Medium
AGRICULTURE[b]			
Small farmers lack access to profitable markets.	Support the integration of small farmers into cooperatives which can increase farmers' access to finance, as well as allow them to increase exports and reach new markets by sharing costs of these among small- and medium-scale producers.	MAGA and COCODES	Medium
Low technical capacity weakens export competitiveness.	Provide training in agricultural and business practices and technologies.	MAGA, ICTA, AGREQUIMA, and academia such as IARNA and CEAA	Medium
Inadequate infrastructure limits production, quality, transport, and market access.	Promote and implement MAGA's National Policy of Irrigation, to facilitate small producers' access to investment strategies in the field.	MICIVI	Short
	Improve roads throughout the country, with special focus on connecting main highways to production areas.	MINECO and AGEXPORT	Medium
Lack of access to finance hampers productivity growth in the agriculture sector.	Design agricultural insurance products and schemes for small farmers and extend them to biological risks, such as pests and diseases. In addition, encourage private participation in agricultural insurance by addressing provisions or policies on agricultural insurance.	MAGA	Medium
Lack of R&D hampers the development of adequate vegetative material, pest control, and compliance with phytosanitary requirements.	Identify the potential impact of climate change on existing cultivations, and climate-smart agriculture techniques to mitigate and adapt to such effects.	SIB, MAGA, and insurance companies	Short
	Establish long-term agriculture and agribusiness policies for strategic products, with specific attention to climate change.	MAGA, MINECO, and PRONACOM MAGA	Short Medium
Fragile institutional and regulatory systems undermine the efficiency and efficacy of public spending and public policy design.	Enhance regulation and compliance regarding pesticide use in accordance with export markets and provide alternative products alongside restrictions.	MAGA, OIRSA, and AGREQUIMA	Medium
LIGHT MANUFACTURING			
Limited domestic production of key inputs	Ensure that the GNSD or a similar public-private dialogue remains in place to attract private investment.	MINECO, MINFIN	Short
	Create local supplier development programs to link local suppliers with foreign investors and existing leading firms in Guatemala.	MINFIN	Short

(Table continues next page)

TABLE ES.1

Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
Labor costs, due to a high minimum wage, are high compared to the productivity of the average Guatemalan worker.	Review and adjust the minimum wage to reflect the significant differences in productivity across Guatemala's geography.	Ministerio de Trabajo	Short
High logistics and tax compliance costs, along with delays in international trade.	Modernize DIPAFRONT's drug inspections.	Ministerio de Gobernación Congreso	Medium
	Introduce uniform criteria that firms can follow with regard to purchasing goods at discount and coexporting.	Empresa Puerto Quetzal	Medium
Insufficient technical skills across the workforce for increasingly sophisticated manufacturing sectors.	Organize training for entrepreneurs, MSMEs, and university students to help them leverage the electronic invoice system to prepare their own tax returns.	SAT	Short
	Develop worker skills in the electronics sector via makerspaces, technology transfer program, and a program to rent INTECAP machinery to start-ups to help workers develop skills required to build products and prototypes.	INTECAP, MINECO	Short
Long delays to approve ZDEEP and zonas francas.	Develop clear, transparent, and comprehensive guidelines on the requirements to become a zona franca or a ZDEEP user and developer.	MINFIN, SAT	Short
Insufficient knowledge of financial instruments by banks in the MSMEs sector.	Identify nongovernment risk management financial instruments for banks to provide financing options to the light manufacturing subsectors.	MINECO, SIB, BANGUAT	Short

Note: AGEXPORT = Guatemalan Association of Exporters; AGREQUIMA = Association of Agricultural Chemical Guilds; ANADIE = National Agency of Alliances for the Development of Economic Infrastructure; BANGUAT = Banco de Guatemala; CEAA = Center for Agricultural and Food Studies; COCODES = Consejos Comunitarios de Desarrollo; CONADIE = Consejo Nacional de Alianzas para el Desarrollo de Infraestructura Económica; DIPAFRONT = Division of Ports, Airports and Border Areas; GNSD = Guatemala No Se Detiene; IARNA = Instituto de Agricultura, Recursos Naturales y Ambiente; ICTA = Institute of Agricultural Science and Technology; INTECAP = Instituto Técnico de Capacitación y Productividad; MAGA = Ministry of Agriculture, Livestock and Food; MFIs = microfinance institutions; MICIVI = Ministry of Communications, Infrastructure and Housing; MINECO = Ministry of Economy; MINFIN = Ministry of Finance; PRONACOM = Programa Nacional de Competitividad; R&D = research and development; SAT = Superintendency of Tax Administration; SIB = Superintendency of Banks; ZDEEP = Special Public Economic Development Zones.

a. Changes suggested by National Agency of Alliances for the Development of Economic Infrastructure (ANADIE) in its proposal to reform the purchasing power parity law (Decree no. 16-2010) from June 2020 may guide the implementation of this recommendation, although it may require a medium-term horizon.

b. Specific crop recommendations are included in section 4.1.

Notes

1. World Bank, "Guatemala SCD Update: Building a Stronger Social Contract through Productive, Inclusive and Sustainable Growth" (Systemic Country Diagnostic update, World Bank, Washington, DC, 2022).
2. Data from World Bank national accounts and Organisation for Economic Co-operation and Development (OECD) national accounts data files.
3. The poverty rate is calculated at the international poverty line of US$6.85 per person per day in 2017 purchasing power parity terms.
4. K. Schwab and World Economic Forum, ed., *The Global Competitiveness Report 2019* (Cologne: World Economic Forum, 2019).
5. Hulya Ulku and Gabriel Zaourak, *Unleashing Central America's Growth Potential* (Washington, DC: World Bank, 2021), http://hdl.handle.net/10986/35503.
6. Labor market survey data report falling wages; national accounts data report a stable labor share in GDP.

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ABBREVIATIONS AND ACRONYMS

ADR	alternate dispute resolution
AGEXPORT	Asociación de Exportadores de Guatemala; Guatemalan Association of Exporters
AGREQUIMA	Asociación del Gremio Químico Agrícola; Association of Agricultural Chemical Guilds
ANADIE	Agencia Nacional de Alianzas de Desarrollo de Infraestructura Económica; National Agency of Alliances for the Development of Economic Infrastructure
APHIS	Animal and Plant Health Inspection Service
BANGUAT	Banco de Guatemala; Bank of Guatemala
BPO	business process outsourcing
CAFTA-DR	Dominican Republic–Central America Free Trade Agreement
CARDEGUA	Association of Cardamom Producers of Guatemala
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza; Tropical Agricultural Research and Higher Education Center
CBI	Caribbean Basin Initiative
CEAA	Centro de Estudios Agrícolas y Alimentarios; Center for Agricultural and Food Studies
CEPAL	Comisión Económica para América Latina y el Caribe; Economic Commission for Latin America
COCODES	Consejos Comunitarios de Desarrollo; Community Urban and Rural Development Councils
CONADIE	Consejo Nacional de Alianzas para el Desarrollo de Infraestructura Económica; National Council of Alliances for the Development of Economic Infrastructure
COVIAL	Unidad Ejecutora de Conservación Vial; Road Conservation Executing Unit
COVID-19	coronavirus disease of 2019
CPSD	Country Private Sector Diagnostic
DIPAFRONT	División de Puertos Aeropuertos y Puestos Fronterizos; Division of Ports, Airports and Border Areas
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FEDECOVERA	Federation of Cooperatives of the Verapaces; Federation of Cooperatives of the Verapaces

FENACOAC	Federación Nacional de Cooperativas de Ahorro y Crédito; Federation of Savings and Credit Cooperatives of Guatemala
FSAP	Financial Sector Assessment Program
FUNDESA	Fundación para el Desarrollo de Guatemala; Foundation for the Development of Guatemala
GDP	gross domestic product
GNSD	Guatemala No Se Detiene; Guatemala Moving Forward Initiative
IARNA	Instituto de Agricultura, Recursos Naturales y Ambiente; Institute of Agriculture, Natural Resources and the Environment
ICTA	Instituto de Ciencia y Tecnología Agrícolas; Institute of Agricultural Science and Technology
IFC	International Finance Corporation
ILO	International Labor Organization
INE	Instituto Nacional de Estadísticas; National Statistics Institute
InfraSAP	Guatemala Transport Infrastructure Sector Assessment Program
INTECAP	Instituto Técnico de Capacitación y Productividad; Technical Institute of Training and Productivity
ISO	International Organization for Standardization
LAPOP	Latin American Public Opinion Project
MAGA	Ministerio de Agricultura, Ganadería y Alimentación; Ministry of Agriculture, Livestock and Food
MARN	Ministerio de Ambiente y Recursos Naturales; Ministry of Environment and Natural Resources of Guatemala
MICIVI	Ministerio de Comunicaciones Infraestructura y Vivienda; Ministry of Communications, Infrastructure and Housing
MICOOPE	Cooperativas de Ahorro y Crédito; Savings and Credit Cooperatives
MINECO	Ministerio de Economía; Ministry of Economy
MINEX	Ministerio de Relaciones Exteriores; Ministry of Foreign Affairs of Guatemala
MINFIN	Ministerio de Finanzas Públicas; Ministry of Finance
MSMEs	micro, small, and medium enterprises
NFIS	National Financial Inclusion Strategy
OECD	Organisation for Economic Co-operation and Development
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria; International Regional Organization for Animal and Plant Health
OPRCs	output- and performance-based road contracts
PIPAA	Integral Program of Agricultural and Environmental Protection
PPP	public-private partnership

PRONACOM	Programa Nacional de Competitividad; National Competitiveness Program
R&D	research and development
SAR	special administrative region
SAT	Superintendency of Tax Administration
SCD	Systematic Country Diagnostic
SEGEPLAN	Secretaría de Planificación y Programación de la Presidencia; Planning and Programming Secretariat of the Presidency of Guatemala
SENACYT	Secretaría Nacional de Ciencia y Tecnología; National Secretariat of Science and Technology
SEZs	special economic zones
SIB	Superintendencia de Bancos; Superintendency of Banks
SIECA	Sistema de la Integración Centroamericana; Secretariat for the Economic Integration of Central America
SIVIAL	Superintendencia de Infraestructura Vial; Superintendence of Road Infrastructure
USDA	United States Department of Agriculture
VAS	Vía Alterna del Sur
VAT	value added tax
ZDEEP	zonas de desarrollo económico especial pública; special public economic development zones
ZOLIC	zona de libre comercio; free trade zone for industry and commerce

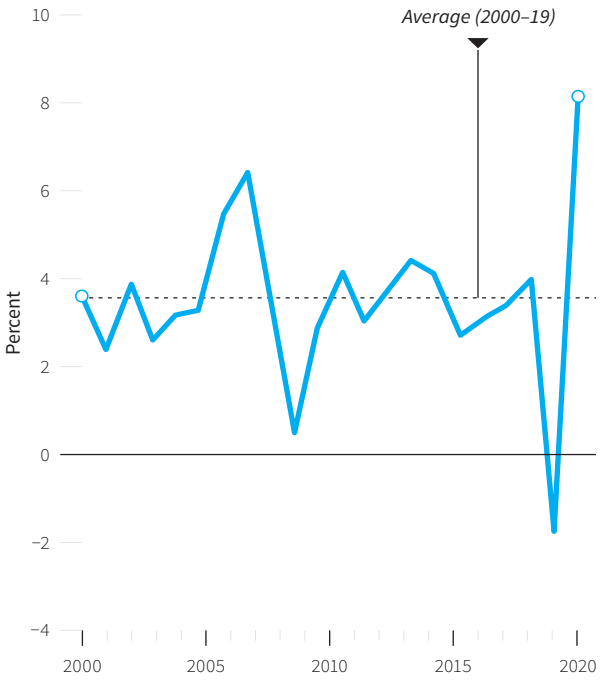
1 INTRODUCTION AND COUNTRY CONTEXT

1.1 Modest Economic Growth and High Levels of Poverty and Inequality

Guatemala is the largest economy in Central America, with a population of 17 million, but with a poverty rate of 56 percent (US$6.85 per day at 2017 purchasing power parity) and a per capita gross domestic product (GDP) of US$5,341 in 2022, it is among the poorest in Latin America and the Caribbean. Despite sound macroeconomic policies, Guatemala continues to struggle with modest rates of economic growth and high levels of poverty and inequality. Guatemala has experienced a modest but steady economic expansion since the late 1990s. Between 2000 and 2019, annual GDP growth averaged 3.5 percent amid tight fiscal and monetary management, but improvements in poverty and social development indicators were slow and uneven. Emigration, primarily to the United States, has increased in recent years, boosting remittance inflows, but migration and remittances are not a durable model for long-term growth. Domestic job creation remains a critical policy objective.

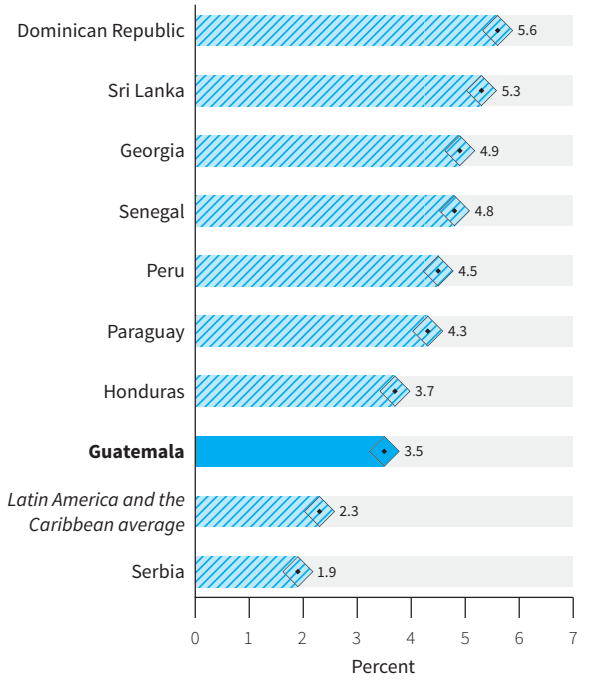
The government has long maintained a prudent macroeconomic stance and had experienced a prolonged period of macroeconomic stability and growth prior to the COVID-19 pandemic. In the decade prior to the pandemic, real GDP growth averaged 3.5 percent (figure 1.1), while per capita GDP grew at approximately 1.8 percent annually. This performance was underpinned by prudent fiscal management and credible monetary policy and propelled by private consumption supported by remittances inflows. Nevertheless, growth has been below that of structural and aspirational peers,[1] all of which outperformed Guatemala, except for Serbia (figure 1.2). In addition, growth was not sufficient to narrow the income gap with the United States: real GDP per capita has remained around 7 percent of US GDP per

FIGURE 1.1
GDP Growth in Guatemala



Source: Central Bank of Guatemala.

FIGURE 1.2
Average GDP Growth in Peer Nations, 2010–19



Source: World Development Indicators.

capita since 2010. Service sectors were the main drivers of growth during this period. Wholesale and retail contributed 0.6 percentage points to the annual growth rate; finance, insurance, and real estate also contributed 0.6 percentage points, followed by manufacturing, which contributed 0.5 percentage points.

Guatemala suffered one of Latin America and the Caribbean's smallest COVID-19-related GDP contractions in 2020 and returned to prepandemic growth levels in 2021. The administration's swift response to the crisis, including the suspension of nonessential activities, mobility restrictions, and fiscal expansion of 2.7 percent of GDP to support households and firms, resulted in a real GDP contraction of only 1.8 percent in 2020 (table 1.1). The recovery in economic activity during 2021 was fast, with growth estimated to have reached 8.0 percent, supported by an increase in remittances of around 35.0 percent resulting from the US labor market rebound. Private consumption is estimated to have been the main driver of growth, contributing 8.4 percentage points to growth, while investment is estimated to have contributed 3.9 percentage points. The increase in domestic demand boosted goods imports, which outpaced export growth (which contributed –5.0 percentage points to growth).

Tight fiscal and monetary policies sterilized rising remittances. Remittances increased from an average of 10.0 percent of GDP during the first half of the 2010s to 17.7 percent in 2021, a record high. The current account balance turned positive in 2016, with the surplus growing to over 5 percent of GDP in 2020, while the financial account also showed a surplus as foreign direct investment (FDI) and portfolio investment inflows were larger than capital outflows. Foreign exchange interventions stabilized the exchange rate, and international reserves increased from US$7.8 billion at the end of 2015 to US$20.9 billion (24 percent of GDP) at the end of 2021. Inflation averaged 4 percent over the past 10 years, thanks to the gradual implementation of an inflation-targeting regime by the Central Bank. Fiscal policy bolstered aggregate demand, and the deficit rose from a low of 1.1 percent of GDP in 2016 to 2.2 percent in 2019 and reached 4.9 percent during the pandemic in 2020 before declining sharply to 1.2 percent in 2021. Fiscal revenues remained low as tax revenues declined from 11.0 percent of GDP in 2010 to 10.6 percent in 2019. Despite the increase of the tax revenue-to-GDP ratio to 12.3 percent of GDP in the wake of the postpandemic recovery and implementation of tax administration reforms, this ratio remains the second lowest in the region, above only that of Haiti. The public-debt-to-GDP ratio rose from an average of 25.0 percent in the 2010s to 30.8 percent at the end of 2021, still among the lowest in the Latin America and Caribbean region.

Despite stable economic growth, there has been little progress in reducing poverty or inequality since 2000. Guatemala has one of the highest rates of social and economic exclusion in the region. Contrary to regional and global trends, the poverty rate increased from 45.0 percent in 2000 to 49.1 percent in 2014 (US$5.50 per day in 2011 purchasing power parity). The poverty rate is estimated to have decreased to 47.8 percent in 2019, which is still above the 2000 level. While the impact of the pandemic increased poverty to an estimated 52 percent in 2020, this increase could have been two to three times greater without the government's policy response targeting the poor. The country is characterized by chronic child malnutrition: stunting affects almost half of all children, particularly

TABLE 1.1

Key Macroeconomic Indicators

	2018	2019	2020	2021	2022
REAL ECONOMY % CHANGE					
Nominal GDP in local currency	4.7	7.7	0.9	11.0	7.9
Real GDP	3.4	4.0	−1.8	8.0	4.1
Contributions of:					
Consumption	3.9	4.4	−1.1	8.4	4.4
Investment	0.8	1.1	−1.1	3.9	0.6
Exports	−0.1	0.0	−1.6	2.2	1.2
Imports	−1.3	−1.7	1.9	−7.2	−2.4
Imports	3.9	5.0	−5.7	22.1	6.5
Exports	−0.4	0.2	−7.7	11.7	6.3
Consumer price index (eop)	2.3	3.4	4.8	3.1	9.2
FISCAL ACCOUNTS AS % OF GDP (central government)					
Expenditures	13.2	13.4	15.6	13.5	14.7
Revenues	11.3	11.2	10.7	12.4	13.0
Primary balance	−0.3	−0.6	−3.2	0.5	−0.1
Overall balance	−1.9	−2.2	−4.9	−1.2	−1.8
Central government gross debt	26.5	26.5	31.6	30.8	30.9
Public external debt	11.5	11.8	13.6	12.9	12.3
BALANCE OF PAYMENTS AS % OF GDP (unless otherwise indicated)					
Current account balance	0.9	2.4	5.1	2.5	1.1
Imports	28.9	27.9	25.1	32.0	37.8
Exports	18.2	17.6	16.5	17.8	20.1
FDI, net	1.1	1.0	1.0	3.8	1.3
Remittance inflows	12.7	13.7	14.7	17.7	19.4
Gross reserves					
In billion US$ (eop)	12.8	14.8	18.5	20.9	20.0
As % of GDP	17.4	19.2	24.0	24.3	23.8
Exchange rate to US$ (average)	7.5	7.7	7.7	7.7	7.8
MEMORANDUM ITEM					
Nominal GDP (in billion US$)	73.3	77.2	76.9	86.2	92.7

Sources: World Bank and International Monetary Fund.
Note: FDI = foreign direct investment; GDP = gross domestic product; eop = end-of-period.

among Indigenous Peoples and those living in rural areas. Human capital indicators are like those of much poorer countries: curbed productivity and growth potential. Guatemala's capacity to improve human capital and social development outcomes is constrained by its weak institutions and low domestic revenue mobilization.

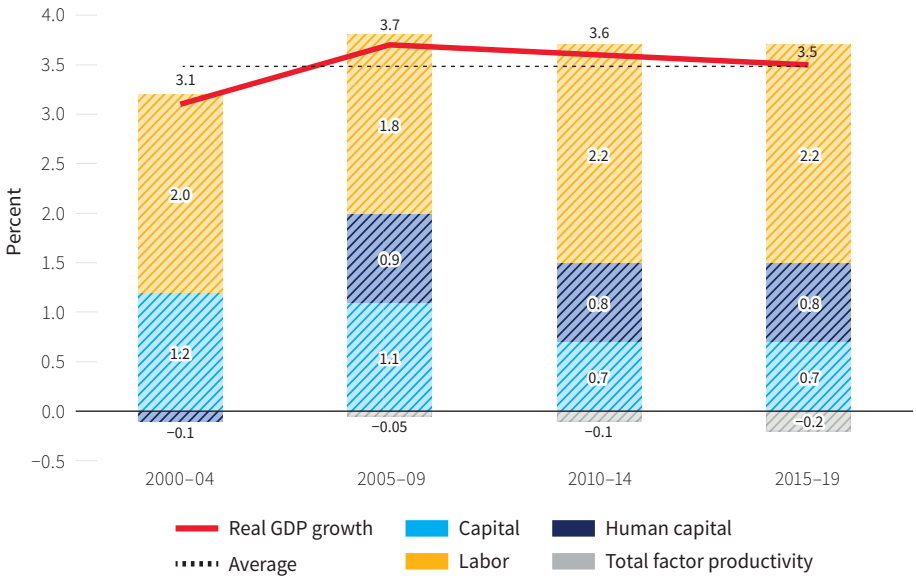
Despite weak investment, GDP growth has been driven primarily by factor accumulation rather than increased productivity. Investment has been below that of its peers and other Central American countries for the past two decades. In addition, the gap has been growing as the share of investment over GDP declined, whereas in peer countries the share increased (figure 1.3). Low revenue mobilization has translated into low levels of public investment and poor infrastruc-

FIGURE 1.3
Gross Fixed Capital Formation, 2000–22

Source: World Development Indicators.
Note: Structural peers include Honduras, Paraguay, Peru, and Senegal, while aspirational peers include the Dominican Republic, Georgia, Serbia, and Sri Lanka.

ture, hindering the private sector and affecting productivity growth. Demographic changes have swelled the size of the working-age population, and recent growth has been driven by a growing labor force supported by a modest degree of human and physical capital accumulation (figure 1.4). Meanwhile, the contribution of total factor productivity turned negative over 2010–19, undermining per capita income growth and slowing Guatemala's convergence with the United States and other Organization for Economic Cooperation and Development (OECD) countries.

FIGURE 1.4
Growth Accounting, 2000–19



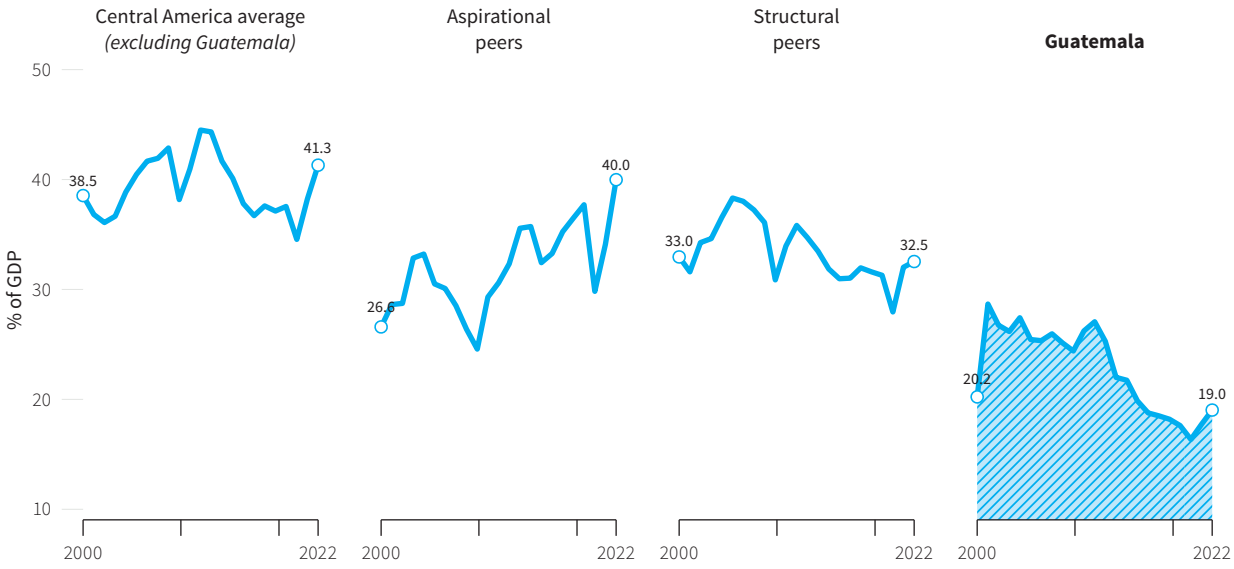
Source: World Bank staff calculations based on Banco de Guatemala (Banguat) data and Penn World Table 10.0.

Emigration, primarily to the United States, has long helped ease demographic pressure on the domestic labor market, and remittances are an increasingly vital component of demand and foreign exchange, though they have reduced the labor supply in the country. Between 2015 and 2020,[2] the number of Guatemalans residing abroad rose by 20 percent to a peak of 1.36 million.[3] Migration has been linked to low living standards, a lack of economic opportunities, extreme weather events such as droughts and hurricanes, food insecurity, and violence.[4] Emigration and related remittance inflows have helped insulate domestic demand from economic shocks, including the effects of the COVID-19 pandemic, but uncertainty around US immigration policy poses a major exogenous risk to emigration and remittances. Migrant outflows underscore the need to accelerate the creation of higher-quality jobs in the domestic labor market and to improve the employment prospects of young people and workers from vulnerable households.

1.2 Low Productivity, FDI, and Export Growth

Low productivity growth has translated into declining exports and a lack of investment opportunities to attract FDI inflows. Merchandise exports as a share of GDP declined to 13 percent in 2020 after peaking at 22 percent in 2004. Total exports have been around half of the Central American average since 2010 (figure 1.5). This decreasing trend contrasts with those of peers which have maintained exports as share of GDP constant, especially with aspirational peers that have increased exports almost 10 percentage points over 10 years. In addition, despite market access to the United States, FDI inflows have also experienced a declining trend since 2013, from a peak of 2.7 percent of GDP to 1.0 percent of GDP in 2019. Subsequently, amid the strong recovery in the United States and the increased global demand for goods, FDI reached a record high of 3.8 per-

FIGURE 1.5
Exports as Percent of GDP, 2010–20



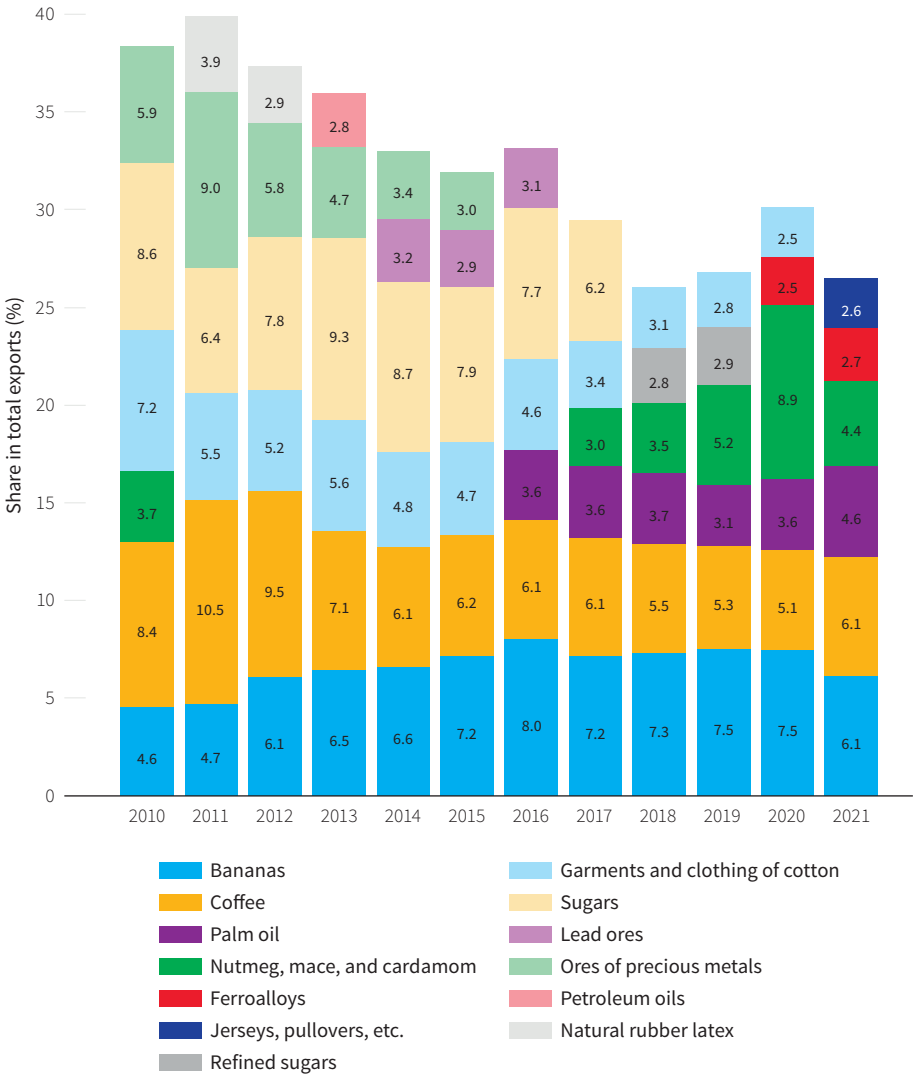
Sources: World Development Indicators and Macro Poverty Outlook, Spring Meetings 2022.

cent of GDP, though this was largely because of the acquisition of a domestic telecommunications firm by its partner firm for US$2.2 billion.

The decline in exports as a share of GDP was accompanied by a decrease in the complexity of the export basket, which is concentrated in low-value-added products. Commodities remained competitive, and exports are increasingly dominated by agricultural goods (bananas, sugar, coffee, and cardamom) and other low-complexity products (figure 1.6), while more-complex export-oriented products, such as chemicals, textiles, and apparel, have stagnated.[5] Between 2010 and 2019, Guatemala's export complexity ranking fell from 77th to 79th of 133 countries.[6] A heavy dependence on commodity exports renders the economy vulnerable to exogenous shocks ranging from adverse weather conditions to global price volatility, while also limiting the gains from trade.

FIGURE 1.6

Main Export Products, 2010–21



Source: United Nations Commodity Trade Statistics Database (UN-COMTRADE; Standard International Trade Classification Rev2).

1.3 Vulnerability to Climate Change

Guatemala is vulnerable to the long-term effects of climate change and unsustainable resource use. Guatemala's forests cover 38.67 percent of its land area, serving as a carbon sink while providing crucial ecosystem services.[7] Nevertheless, the country is susceptible to the effects of climate change, including extreme weather events such as cyclones, heat waves, landslides, and floods, which can severely reduce agricultural production and damage critical infrastructure. In 2020, Hurricanes Eta and Iota caused extensive flooding and dozens of landslides and mudflows that affected 16 of Guatemala's 22 departments, with damages and losses close to 1 percent of GDP.[8] The most vulnerable groups are also the most exposed to disaster-related shocks, which contributes to school dropout rates, child labor, and household poverty, increasing social exclusion and encouraging emigration. Adapting to climate change will require significant public and private investment, while net carbon emissions can be limited through the protection and sustainable use of the country's vast forests.[9]

Notes

1. Structural peers include Honduras, Paraguay, Peru, and Senegal, while aspirational peers include the Dominican Republic, Georgia, Serbia, and Sri Lanka.
2. Peter J. Meyer, "Central American Migration: Root Causes and US Policy (IF11151)," in *Rise in US Immigrants from El Salvador, Guatemala and Honduras Outpaces Growth from Elsewhere* (Washington, DC: Congressional Research Service [CRS]), retrieved April 22, 2021, from https://sgp.fas.org/crs/row/IF11151.pdf.
3. United Nations Department of Economic and Social Affairs (UN-DESA), 2022, retrieved from https://www.un.org/en/development/desa/population/migration/data/index.asp.
4. Aguilera, Anna I., et al., *Migration in El Salvador, Honduras, and Guatemala: A Stocktaking Exercise to Inform WBG Engagement* (Washington, DC: World Bank Group [forthcoming]); Ariel Ruiz Soto et al., *Charting a New Regional Course of Action: The Complex Motivations and Costs of Central American Migration* (Washington, DC: Inter-American Development Bank, 2021).
5. UN-COMTRADE database, trade data, https://comtrade.un.org/.
6. CID's "Atlas of Economic Complexity" https://atlas.cid.harvard.edu.
7. Ministry of Environment and Natural Resources, "National Strategy for the Approach of Deforestation and Degradation of Forests in Guatemala (ENDDBG)" (preliminary document, Inter-American Development Bank and Forest Carbon Partnership Facility, 2021).
8. World Bank estimation based on event-specific damage and loss assessments from the Economic Commission for Latin America and the Caribbean and post-disaster needs assessments (PDNA) from the World Bank, the UN, and the European Union (EU).
9. Climate Investment Fund, "Forestry Investment Plan for Guatemala" (presentation, 18th Meeting of the FIP Sub-Committee [FIP/SC.18] Forest Investment Program [FIP], Washington, DC, June 9, 2017).

2 THE STATE OF THE PRIVATE SECTOR

Domestic demand-driven growth has fueled development of both a modern formal sector and a large, traditional informal sector. In Guatemala, a small but relatively sophisticated formal private sector coexists alongside a large, low-productivity informal sector that provides livelihoods for some 75 percent of the population. Formal firms have greater productivity than their informal counterparts and pay their employees an average of 2.4 times as much.[1] Most formal firms operate in the real estate (32 percent), retail and wholesale commerce (29 percent), and private services (20 percent) sectors, but a small number of formal firms also dominate the manufacturing sector. In addition, most formal workers are concentrated in these sectors; manufacturing employs 16.6 percent of formal employees, and wholesale and retail employ 16.2 percent. In contrast, around 95 percent of workers in agriculture and other primary activities are informally employed, and these sectors engage almost half of all informal workers (43 percent).[2]

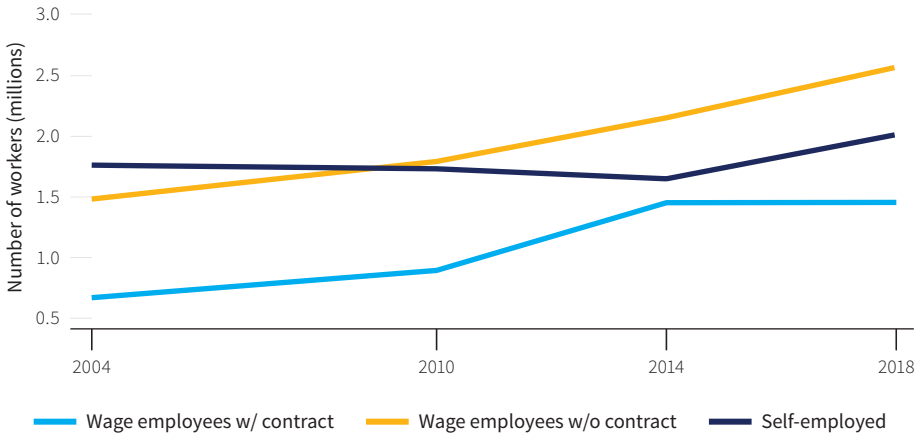
Services firms in Guatemala are smaller and on average tend to export less than manufacturing businesses, though firms in all sectors have worsened their export performance since 2010. According to a World Bank Enterprise Survey,[3] services firms had on average 28.8 employees while manufacturing firms had 57.0 employees in 2017. In addition, companies in both sectors became smaller, services and manufacturing firms having had 58.5 and 81.1 employees on average, respectively, in 2010. What's more, services firms tend to export less: 16.1 percent of manufacturing firms exported (directly or indirectly) 10 percent or more of their sales, whereas only 8.2 percent of services firms had done so in 2017. Once again, the proportion of exporting firms decreased from 2010, when 27.4 percent of manufacturing businesses were exporting more than 10.0 percent of their sales and 10.9 percent of service sector firms were doing so. Furthermore, between 2004 and 2018, hourly labor earnings declined across almost all economic sectors, apart from mining. Wages in construction, retail, and finance and business services declined more than 30 percent.[4] Hence, not only has the shift to the service sector affected overall productivity, but also firms across the board have become smaller, enjoyed less market access, and paid lower wages.

2.1 High Level of Informality

Since 2014, employment opportunities in the formal sector have plateaued, and the country's growing labor force has relied increasingly on self-employment and informality, leading to a decline in average income. The number of contract-based jobs (formal employment) increased from about 0.9 million in 2010 to 1.45 million in 2014.[5] Since then, contract employment has remained broadly unchanged, while the labor force has increased from 3.8 to 4.5 million workers (figure 2.1). Thus, the informal sector has grown considerably, with nearly all net new workers entering the informal sector, with about half of new labor force entrants being self-employed in the informal sector. Guatemala's large informal sector accounts for an average of 46 to 48 percent of GDP and provides 80 percent of total employment.[5] As the supply of workers seeking formal jobs rose while demand for jobs stagnated, wages fell by more than 10 percent during 2014–19, continuing a longer-term pattern.[6] This high level of informality is reflective of a business-enabling environment with significant constraints to the formation and growth of formal business.

FIGURE 2.1

Self-Employment and Informality, 2004–19

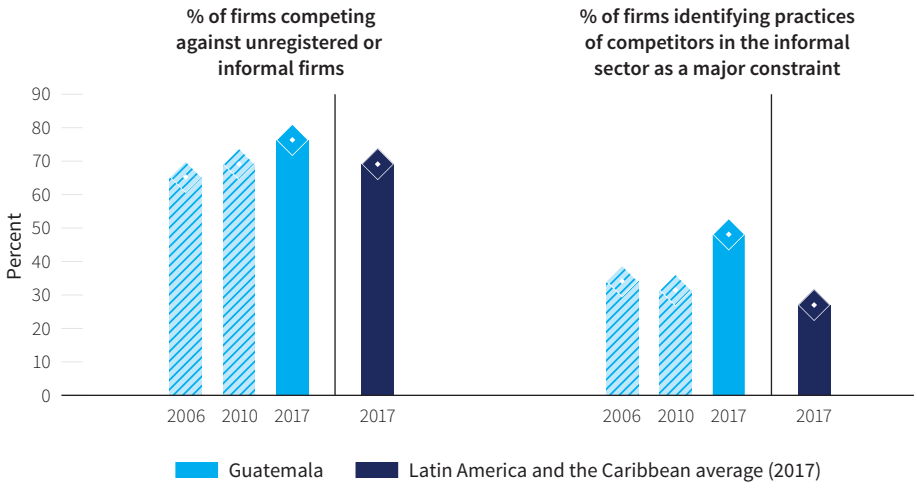


Source: Andreas Eberhard-Ruiz, "Guatemala Jobs Diagnostic" (Job Series 27, Washington, DC: World Bank, 2021), https://openknowledge.worldbank.org/handle/10986/35367.

Informality, partially a function of barriers to entry in the formal sector, has been identified as a business constraint by formal enterprises. Informality is associated with low productivity and low wages and is the result of numerous constraints to firm growth and technological adaptation, and of low levels of investment. It also is a sign of firms' capacity to access financial services and innovate and it limits government tax revenues. Unfortunately, this environment has not improved over recent years and continues to limit entry into formal firms and to limit formal private sector competition. Nonetheless, the percentage of firms that declared that they have been competing with informal firms increased almost 12 percentage points since 2006, to over 75 percent in 2017, which is above the regional average, with an increasing proportion of firms identifying informality as a major constraint (figure 2.2). From 2006 to 2017, the percentage of firms stating that competition from informal firms was a major constraint increased from 34.6 to 48.3 percent, almost double the regional average of 27.1 percent (figure 2.2).

FIGURE 2.2

Informal Firms Identified as a Major Constraint, 2006–17



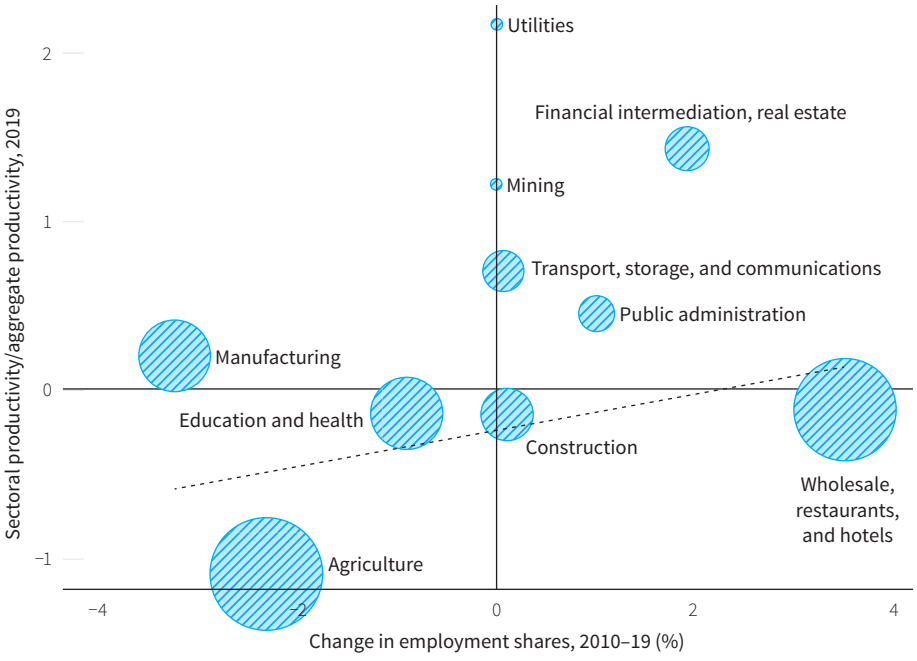
Source: World Bank Enterprise Surveys.

2.2 Low or Stagnant Labor Productivity

Overall productivity has declined, even with the shift away from low-productivity agriculture. The fastest-growing sector is low-productivity services—wholesale and retail, food services, and accommodation—sectors in which productivity has declined since 2010 (figure 2.3). In addition, the share of services in total value added has increased, whereas the shares of agriculture and industry decreased (figure 2.4). Overall, the economic transition and sectoral transformation have not moved workers into higher-productivity activities. Manufacturing firms whose productivity has increased have reduced their share in total employment.

Formal firms in Guatemala suffer from low levels of dynamism and innovation, which constrain their development and competitiveness. In the 2019 Global Competitiveness Report, Guatemala ranked 96th of 141 countries in business dynamism and 98th in innovation capability.[7] The concentration of firms in the capital, Guatemala City, has led to increasing congestion and elevated land prices, limiting competitiveness. Due to low rates of firm entry, the average firm age increased from 17.5 to 28.5 years between 2006 and 2017, one of the oldest age structures globally.[8] Rates of firm entry are also affected by the lack of antitrust regulation or a competition law in the country, which creates barriers to entry for new firms, affects competitiveness, and diminishes the country's potential to participate in investment markets.[9] The lack of dynamism is also reflected in firms' reluctance to grow their workforce in response to rising sales. Similarly, firms face an adverse innovation environment, as evidenced by the small and decreasing share of firms that report spending on research and development (R&D) (15.5 percent) or process innovation (37 percent).[10]

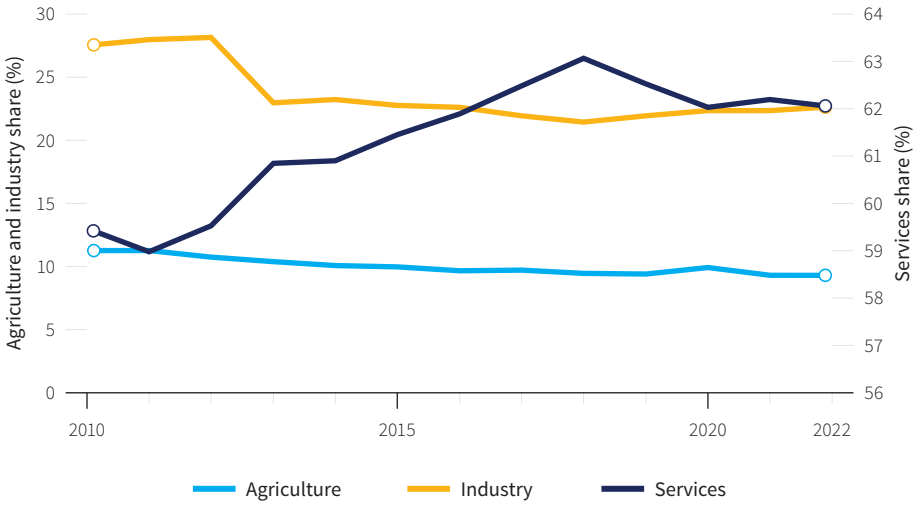
FIGURE 2.3
Structural Transformation, 2010–19



Source: World Bank staff using data from Bank of Guatemala (Banguat) and the International Labor Organization (ILO).
Note: The size of the bubbles represents the share of employment.

FIGURE 2.4

Gross Value Added by Sector, 2010–20



Source: World Development Indicators.

Achieving Guatemala's development aspirations will require shifting to a more inclusive, productive, and sustainable development model. Investing in human capital, particularly among poor and marginalized groups, will be vital to maximize the productive potential of Guatemala's population, while an increasingly decentralized, accountable, and transparent government is required to ensure an adequate supply of basic services, increasingly respond to the needs of citizens, and provide incentives to young Guatemalans to stay in the country. However, Guatemala continues to face enormous challenges in these areas, and an accelerating demographic transition underscores the urgency of creating adequate job opportunities for a young and rapidly growing workforce. Private sector development will be key to facilitating necessary job growth and employment creation, as well as to generating resources for strengthened human capital development and the delivery of social services.

Notes

1. Andreas Eberhard-Ruiz, "Guatemala Jobs Diagnostic" (Job Series 27, Washington, DC: World Bank, 2021), https://openknowledge.worldbank.org/handle/10986/35367.
2. ILO-STATISTICS estimations based on Guatemala's Labor Survey (2015–19 average).
3. World Bank Enterprise Surveys, http://www.enterprisesurveys.org.
4. Eberhard-Ruiz, "Guatemala Jobs."
5. Hulya Ulku and Gabriel Zaourak, *Unleashing Central America's Growth Potential* (Washington, DC: World Bank, 2021), http://hdl.handle.net/10986/35503.
6. Labor market survey data indicate falling wages; national accounts data show a stable labor share in GDP.
7. Klaus Schwab and World Economic Forum, ed., *The Global Competitiveness Report 2019* (Geneva: World Economic Forum, 2019).
8. World Bank Enterprise Surveys.
9. García Mancilla, Claudia, "Ley de la competencia ideal según los principios de la Economía Social de Mercado y Caso Guatemala" (Ciudad de Guatemala: Asociación de Investigación y Estudios Sociales [ASIES], 2015), http://www.asies.org.gt/download.php?get=2015,revista_4.pdf.
10. World Bank Enterprise Surveys.

3 CROSS-CUTTING CONSTRAINTS TO PRIVATE SECTOR DEVELOPMENT

Private firms in Guatemala face a challenging business climate that impedes their growth and development. The World Bank's 2017 Enterprise Survey and the World Economic Forum's annual Global Competitiveness Report highlighted the adverse impact on the private sector of political instability, corruption, crime, an inefficient government bureaucracy, and asymmetrical competition from the large informal sector.[1] A forthcoming World Bank report on policies for business recovery in Guatemala has found that deficiencies in the regulatory environment limit the entry, growth, and competitiveness of formal firms.[2] High administrative costs, weak rule of law, time-consuming and costly contract enforcement processes, and cumbersome insolvency procedures are among the major obstacles facing Guatemalan firms. Uncertainty arising from the legal system's unpredictability, bureaucracy, and limited capacity for dispute settlement presents significant challenges for firm operations.[3]

This section examines the three main cross-cutting constraints to private sector development: (a) limited access to finance by micro, small, and medium enterprises (MSMEs); (b) large infrastructure gaps; and (c) weak governance (corruption), legal framework, and dispute resolution systems. These are long-standing issues in Guatemala; there is consensus among both the authorities and the private sector that these are the primary binding constraints. Firms cite corruption, political instability, and competition from the informal sector as the most significant barriers to growth. Over 21 percent of firms identified corruption and political instability as the top business environment obstacles for firms, and 17 percent noted the informal sector as the biggest obstacle. A total of 13 percent of firms cite access to finance as a major constraint to growth, with 5 percent identifying it as the biggest obstacle. Infrastructure constraints also loom large, as 19 percent of firms in Guatemala pointed to weaknesses in the transportation system as a major constraint to activity and 3.7 percent cited this issue as their biggest constraint.

3.1 Limited Access to Finance by MSMEs

Access to finance, particularly for MSMEs, is critical to employment generation, productivity gains, and inclusive economic growth. Unfortunately, Guatemala's underdeveloped financial sector hinders the ability of MSMEs to expand their operations. A well-developed, deep, efficient, and inclusive financial sector is necessary to steer financial resources toward their optimal use and to drive growth and productivity in the real economy. Yet MSMEs in Guatemala have often struggled to access affordable financing that meets their needs from the formal financial sector. From the perspective of an MSME in Guatemala, a range of factors have historically constrained access to finance, including limited credit histories, high interest rates, poor financial product design, and a lack of acceptable collateral.

According to IFC estimates (2018), the MSME financing gap in Guatemala is equivalent to 22 percent of GDP. The financing gap of the MSME segment—an estimate of the potential demand for financing by MSMEs relative to the current supply of financing—was estimated at greater than US$14 billion, more than six

times the current volume of MSME financing.[4] As a share of current volume, the MSME financing gap in Guatemala is larger than those of several regional peers (such as Costa Rica and Honduras, which have financing gaps of 9 and 15 percent of GDP, respectively).

3.1.1 Current Trends in MSME Finance

Domestic credit to the private sector is below the average of peer countries and has been stagnant in recent years. The total volume of credit to the private sector is 35 percent of GDP as of 2021, which is significantly less than the Latin America and the Caribbean average of 54 percent, behind that of peers like Bolivia (76 percent) and Honduras (70 percent), and has been stagnant, increasing only four percentage points since 2012. In contrast, across all Latin American countries, this ratio has increased by more than 10 percentage points over the same period.

Lending to MSMEs specifically has been stagnant since 2016, with most lending directed to corporate and consumer segments. While the overall credit portfolio increased by more than 25 percent since 2016, this increase was driven mainly by corporate and consumer lending. Lending to small and medium enterprises (SMEs) has been flat and decreased as a share of the total credit portfolio. As of September 2022, lending to SMEs accounts for just 6 percent of banking sector credit portfolio volumes and less than 1 percent of the total number of loans. Microcredit portfolios from the Superintendency of Banks (SIB)[5] financial institutions account for just 3 percent of credit portfolio volumes and 4 percent of the total number of loans. Lending volumes are dominated by corporate loans (53 percent), while most loans are allocated to consumer lending (95 percent).

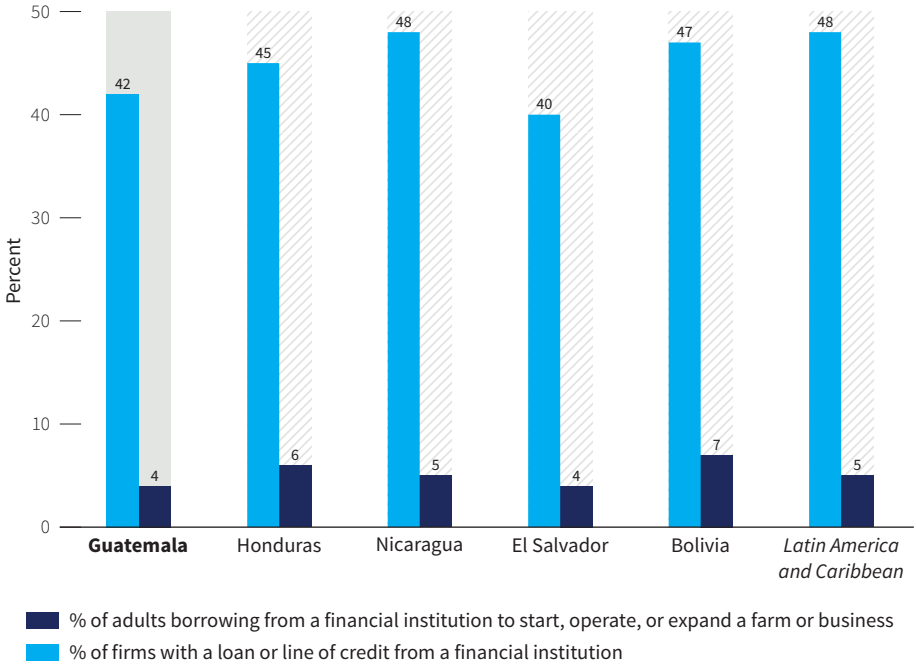
Manufacturing and agriculture borrowing accounts for approximately 16 percent of lending. As of June 2022, lending to the manufacturing sector accounted for 12.3 percent of lending, while the agricultural sector accounted for 4.1 percent. Lending to both sectors has been increasing over the past five years, with lending to the manufacturing sector showing particularly strong growth (18.3 percent annual growth).

Approximately 42 percent of firms in Guatemala have a loan or line of credit from a financial institution, according to 2017 data from the World Bank Enterprise Survey. This places Guatemala below the regional average of 48 percent (figure 3.1). Small firms and those in the retail sector are less likely to report borrowing from financial institutions. There is significant variation in access to finance across firm size in Guatemala: among small firms (those with 5 to 19 employees), just 34 percent report having a loan or line of credit, but this value rises to 53 percent among medium-size firms (20–99 employees) and to 84 percent among large firms (100+ employees). This variation is significantly greater than the average observed across Latin America, which ranges from 41.5 percent among small firms to 69 percent among large firms. The loan portfolio is also highly concentrated in the Metropolitana region, including Guatemala City, with over 70 percent of total loan volumes.

Firms report high collateral costs. Firms report that 67 percent of loans require collateral, with an average collateral value equivalent to 190 percent of the loan

FIGURE 3.1

Use of Financing by Firms and Individuals, 2016–18



Source: World Bank Enterprise Surveys (2016–18) and Asli Demirguc-Kunt et al., *Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (Washington, DC: World Bank, 2018), http://hdl.handle.net/10986/29510.

amount. Relative to the region, although Guatemalan firms require more collateral (62 percent of firms in Latin America and the Caribbean require collateral), the average collateral value is lower (regional average of 202 percent of the loan amount). Medium-size firms (those with 20–99 employees) report the largest share of loans requiring collateral (72 percent) and the highest value of collateral (217 percent). This may indicate a bottleneck that constrains firm growth.

3.1.2 Providers and Products: Innovation and Diversification

The limited amount of formal MSME financing that is available is delivered largely through loans from commercial banks. The financial system in Guatemala is concentrated in and dominated by the banking sector: banks hold approximately 91 percent of total financial sector assets, and within the banking sector, the five largest banks hold 81 percent of total assets. Outside the supervisory perimeter of SIB, financial cooperatives, nonprofit microfinance entities, and financial technology (fintech) firms also provide financing tools to the MSME segment. Factoring and leasing offered by private sector firms were regulated in 2018 and 2021[6] and must be registered in the movable collateral registry to make them an enforceable right against third parties.

Financial cooperatives in Guatemala have a strong presence throughout the country, with an estimated membership base of over 2 million individuals (around 15 percent of the adult population). Financial cooperatives play an important role in financial inclusion, MSME finance, and economic productivity, particularly in rural areas and among Indigenous populations, which are not well served by commercial banks. Most members and assets in the cooperative sector are associated

with the 25 cooperatives federated under the Federación Nacional de Cooperativas de Ahorro y Crédito (FENACOAC, also known under the name Cooperativas de Ahorro y Crédito; MICOOPE). MICOOPE's credit portfolio has been growing and is focused on commercial, consumer, and housing loans. SME financing plays an important role here, since the commercial portfolio targets SMEs—for example, for the acquisition of products and immovable assets. The total credit volume of MICOOPE represents approximately 3 percent of the financial system's total credit portfolio, with annual growth of around 10 percent over the past several years.

The microfinance sector has significant reach and comprises mostly nonprofit institutions. The 2016 Law on Microfinance and Nonprofit Microfinance Entities establishes three types of microfinance institutions.[7] Most microfinance institutions operate as nonprofits and do not take deposits, given the relatively low costs of funding via credit lines from banks. Some microfinance entities consider aspects of the 2016 law onerous and a disincentive to pursuing a license with SIB (since 2016, only one deposit-taking license has been issued to a microfinance entity). The largest microfinance entity in Guatemala (Fundación Génesis Empresarial) has approximately 320,000 clients, of whom approximately 90 percent live in rural areas.

Factoring is an important tool to support the financing needs of MSMEs but has not reached its potential. Factoring can increase MSMEs' working capital, optimize cash flows, and increase MSMEs' capacity to produce and commercialize goods and services. Factoring products can also ease access to finance for MSMEs based on the payment history and solvency of the buyer (rather than the MSME). In 2018, a law regulating factoring and discount contracts was passed, together with changes in the movable collateral law. The legal reforms and subsequent regulation governing the collateral registry permit the assignment and/or financing of invoices and the registration of this assignment. The movable collateral registry is centralized online with regulated fees; all factoring transactions must be registered by use of a special registration form. The Superintendency of Tax Administration (SAT) revamped the regulation for electronic invoicing and established a plan for its adoption for all taxpayers that should be completed by 2023. Despite significant progress over the past few years to align the legal, regulatory, and institutional frameworks to the best international standards, the use of factoring has not increased as expected: by September 2020, there were only 67,715 borrowers using factoring, of over 1.2 million total borrowers. The volume of factoring was about Q1 million, representing about 0.01 percent of the total loan portfolio. Despite the recent communication campaign undertaken by the, movable collateral registry) the opportunities and requirements for factoring are not known by many relevant stakeholders. Businesses using factoring may not understand how to register a factoring transaction in the collateral registry. Anecdotal evidence indicates that eligibility requirements determined by the factor are too restrictive.

More-transparent and simplified rules governing the registration of a factoring transaction in the movable collateral registry are needed. The existing requirement to obtain proof of the communication regarding a credit right transfer makes the process costly and cumbersome; the registration of the transfer in the movable collateral registry should be sufficient. The current requirement to fill in every feature of the collateral in the registry to perform a risk assessment could also be simplified.[8]

Reforms to regulations on electronic invoices as well as some specific financial and tax regulations could enable the expansion of electronic factoring. Although the electronic invoice regulation follows international standards, currently it includes only tax and accounting information, leaving aside commercial and financial information, which can be useful to enable efficient factoring transactions. Information on whether an invoice has been traded is not recorded in the document, which could be easily solved by using a dynamic .xml file allowing the registration of all relevant features for tax and trading purposes. There should be a field to register the endorsement or transfer of the document to a financial institution following a factoring transaction. There should also be a mechanism to differentiate immediately payable invoices from invoices purchasing products or services on credit.[9] The Banking Law (art. 51) does not recognize accounts receivable or invoices as valid and independent guarantees for a loan require an additional guarantee from the assignor. Amendments to tax regulations could establish rules for circumstances in which a company pays an entity other than the one who issued the invoice as a result of a factoring transaction. Also, the tax authority could clarify the way in which an assignment should be documented so that the assigned debtor can pay the assignee smoothly and not encounter obstacles in the use of value added tax (VAT) for tax credit.

The fintech ecosystem is nascent and unregulated. Services are focused on payments, financing products, and automation (of internal processes by financial institutions). The system is self-organized under Guatemala's fintech association and, as of November 2022, it had 32 fintech companies as members. There is no legal or regulatory framework for fintech companies, although SIB and the Bank of Guatemala (Banguat) have been jointly developing a legal framework since 2019. Banks appear to be increasingly willing to close deals with fintech companies, although the process is still very long (about one year), which significantly limits growth opportunities. Seven institutions offer mobile wallets and remittances, nine companies offer financing products, three companies work in the area of insurance technology, and two companies manage payment platforms.

SIB has created the SIB Innovation Hub to support innovation and financial inclusion.[10] Digital transformation is a strategic goal of SIB's. For that purpose, it created a unit (UNIDE) responsible for connecting SIB with fintech companies, generating knowledge on new market trends, and creating a better understanding of the applicable regulatory framework for new products and services.[11]

Many fintech providers focus on tools to improve access to finance by SMEs. In the payment space, a few fintech companies are providing tools for e-commerce, such as payment gateways or electronic payment instruments (prepaid cards, wallets, and so forth). Regarding financing tools to increase lending, there are a couple of companies that are using alternative data to complement traditional credit scoring assessments and are working with banks and microfinance entities. In the financing space, there are three factoring companies, five firms working with alternative finance platforms and one company working with crowdfunding. Since the network and its members are so young (the movement started in late 2019), they are likely still developing their business models and setting up deals with financial institutions. Many of these activities should be regulated and supervised by SIB or other public sector entities because of potential op-

erational and consumer protection risks. It is advisable to enact a legal framework that allows for market entry and growth of fintech companies, including e-money issuers and crowdfunding platforms. In some cases, this process would imply a strengthening of existing laws, such as the Securities Market Law in the case of crowdfunding.

3.1.3 National Policies and Access to Finance for MSMEs

Improving access to finance for the MSME segment is a key objective of the Ministry of Economy (MINECO) and one of the priorities of the National Financial Inclusion Strategy 2019–2023 (NFIS). MSME financing is one of the four policy areas of the NFIS. The goals in this policy area are to increase access to financial products and to use and expand their supply, supported by innovation, the use of nonconventional collaterals, and comprehensive credit information systems. The action plan includes many legal and regulatory changes in the areas of movable collaterals, credit information systems, consumer protection, credit bureaus, credit unions, and other laws to promote the development of financing tools for the MSME segment.[12] The NFIS also includes financial education as a cross-cutting area, highlighting the importance of ensuring that consumers understand the parameters and pricing of available products in the market. MINECO manages various programs to support access to finance for the MSME segment, all of them in collaboration with financial institutions and nonregulated providers. Currently, the ministry manages the National Program for the Development of the MSME, which is responsible for executing all projects in this area. It is supported by a national council formed by private sector representatives (MSMEs and nongovernmental organizations) who manage, implement, and oversee the execution of the national program.[13]

Since 2015, MINECO has also administered the Fondo de Garantía for MSMEs to support their access to financing. Banks, financial companies, cooperatives, and industry associations can access these funds (housed in a trust in Banco de los Trabajadores) to provide services to the MSME segment.[14] Previous diagnostic work by World Bank has highlighted the need to strengthen the sustainability and impact of the guarantee fund, with operational and governance models in line with international good practice. The guarantee fund has historically been undercapitalized, with capitalization of less than US$2 million prior to the COVID-19 support legislation. Onerous document requirements and a guarantee delivery approach that does not facilitate scale-up (for example, a low leverage ratio and a cumbersome approval process) further constrain the guarantee funds' effectiveness.

3.1.4 Enabling Environment, Market Infrastructure, and Recommendations

Credit information systems in Guatemala present important opportunities to increase access to finance by MSMEs. The flow of credit information is incomplete, inefficient, and fragmented, given the lack of a regulatory framework for credit bureaus, among other reasons. Coverage ratios for credit bureaus and the credit registry are low, at 37 and 23 percent of the population, respectively, in 2019.[15]

Nonbanks cannot access the credit registry, and credit bureaus have only partial information about the nonregulated sector. There is also scope to incorporate alternative sources of data to inform credit decisions and value-added services for MSMEs. Needed regulatory reforms include changes in the banking law to allow microfinance institutions and cooperatives to access the credit registry, push forward the draft law on credit bureaus, and identify the institution that will be responsible for the oversight of credit bureaus, among other adjustments. Table 3.1 summarizes the recommended changes.

The legal and institutional infrastructure for the use of movable collaterals is in place. Guatemala has a unified legal framework for secured transactions that extends to the creation of publicity and enforcement of security interests in movable assets.[16] More recently (2018), the Movable Collaterals Registry was revamped. Managed by MINECO, this movable collateral registry is responsible for creating, modifying, executing, and publicizing movable collaterals. It covers a wide range of assets, such as inventory, stocks, raw materials, intangible assets, and others. Prices for the usage of this registry are advertised through its website and can vary from US$1.29 for online searches in the database to US$39 to register a leasing contract.[17]

Guatemala recently enacted its first comprehensive law on insolvency, and regulations are forthcoming. Congress approved the insolvency law in February 2022. A comprehensive legal framework for insolvency can support access to finance and productivity growth for MSMEs by ensuring that viable firms are not forced into liquidation and that the assets of nonviable ones can be put back into productive use. The recently enacted law is Guatemala's first legal framework to facilitate restructuring for households and firms in financial distress. However, the law also contains provisions that are inconsistent with international good practice (such as the limited ability of creditors to enforce secured collateral during insolvency proceedings) that should be addressed, as well as several gaps (such as cross-border insolvency and dedicated provisions for micro and small enterprises). The World Bank is providing technical assistance to develop secondary regulations in line with international good practices on insolvency.

A lack of transparency in prices creates an uneven playing field among financial consumers and providers, reduces price competition, and limits the uptake of formal financial products. The 2015 World Bank-IMF Financial Sector Assessment Program (FSAP) and an internal 2016 financial consumer protection diagnostic noted a number of practices that are not aligned with international good practices for financial consumer protection.[18] For example, information on product prices and features available to MSMEs and other consumers is limited and inconsistent, making effective comparison shopping nearly impossible. For the most part, loan documents provide only monthly nominal interest rates, apply flat interest rates, and are not sufficiently transparent about up-front commissions and costs for overdue loans. Many lenders also engage in product bundling, limiting consumer choice. Reforms are necessary to clarify institutional arrangements for financial consumer protection and put in place a comprehensive regulatory framework with adequate supervisory and enforcement capacity that applies to all financial providers, regardless of whether they are regulated by SIB.

TABLE 3.1

Access to Finance Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Weak enabling environment for access to finance for MSMEs	Issue regulations to support implementation of the 2021 insolvency law (for example, related to processes and administrators).	MINECO	Short
	Amend the banking law to allow MFIs and cooperatives to access the credit registry, push forward the draft law on credit bureaus, and identify the institution that will be responsible for the oversight of credit bureaus.	SIB, MINECO, Banguat, Junta Monetaria, Congress	Medium
	Include financial cooperatives in credit and payment infrastructures.	SIB, INGECOP, Congress	Medium
	Improve financial consumer protections by strengthening institutional mandates for them; establishing a legal and regulatory framework to promote transparency, fair practices, and dispute resolution; and building supervisory and enforcement capacity.	SIB, MINECO, Banguat, Junta Monetaria, Congress	Medium
Limited availability of diverse and innovative financial products for MSMEs.	Implement the leasing law and building capacity of industry to develop and scale leasing products.	MINECO, association of leasing entities	Short
	Strengthen the ecosystem for electronic factoring, including through capacity building with financial institutions.	MINECO, SAT, SIB	Short
	Enact an activity-based and proportionate legal and regulatory framework to enable the development of fintech, including e-money operators and crowdfunding platforms.	SIB, Banguat, Congress	Medium

Source: World Bank elaboration based on diagnostics results.
Note: INGECOP = Inspección General de Cooperativas.

3.2 Infrastructure Gaps

3.2.1 State of Infrastructure Services

Infrastructure constraints affect private sector performance in Guatemala and limit the integration of domestic markets and access to international markets. The poor state of the road network is consistently identified as a key constraint by firms and entities surveyed as part of the CPSD consultations. Trade and logistics are affected by long travel times and traffic congestion, which are expected to worsen in the absence of adequate investment to improve mobility. Moreover, the lack of transport reliability[19] is especially problematic in the Guatemala City metropolitan area, where the country's largest firms operate and which is a route for reaching main ports and customs for trade. Equally, Guatemala's limited accessibility in rural areas has hampered competitiveness, productivity growth, and access to global and regional value chains.

World Bank surveys show that firms in Guatemala grapple with significant infrastructure deficiencies, particularly in transportation.[20] About 19 percent of firms in Guatemala identified weaknesses in the transportation system as a major con-

straint, and 3.7 percent cite this issue as their biggest constraint, above the Central America regional averages of 16.7 and 1.1 percent, respectively.[21] Electricity outages are estimated to have affected more than half the firms in Guatemala and the broader Central American region (54.4 and 55.4 percent, respectively). However, firms in Guatemala appear more resilient to electricity deficiencies: 29.1 percent of firms in Central America identified electricity as a major constraint, while only 11.7 percent of Guatemalan firms did so. Similarly, 6.6 percent of firms in the region reported electricity as their biggest constraint, above the 4.0 percent in Guatemala. Water insufficiencies appear to affect 10 percent of firms in Guatemala and 20 percent in the rest of Central America.

Infrastructure gaps hinder the country from taking advantage of its strategic access to both the Atlantic and the Pacific Oceans. Guatemala ranks 114th of 141 countries in terms of transport infrastructure because of poor road connectivity and the quality of road infrastructure.[22] The perception of road quality has deteriorated at least since 2010, unlike the case of other Central American countries. Of the 65 percent of the registered network that is surveyed, two-thirds is in good condition according to the Plan de Desarrollo Vial 2018–32. The primary and secondary road infrastructure, in general, is in average or good condition, but the road network in rural areas is mostly unpaved and often in poor condition. Furthermore, much of the rural network is not receiving routine or periodic maintenance. Guatemala also scored poorly in the 2023 Logistics Performance Index (2.6 out of 5; rank, 88th of 139 countries), which measures countries' performance on trade logistics, the second lowest among Central American countries. Guatemala underperformed in all categories across the board, with the quality of infrastructure and customs efficiency being the weakest areas. At present, there is no railway service. The rail network was concessioned in 1998, but low levels of transported cargo, coupled with an arbitration case that started in 2005, contributed to its suspension in 2007.[23]

The underdeveloped road network limits people's access to markets and public services, especially in the poorest areas. While Guatemala City enjoys a slightly better quality of infrastructure, firms located outside the capital experience large transport inefficiencies. The road network, which consists of approximately 28,000 km of registered and nonregistered roads, also has a low density. In relation to the country's surface area, the density of roads is below the average for the Latin American region (15.5 versus 22 km/100 km^2).[24] The registered road network is approximately 1.0 meters per capita, while the nonregistered network is 1.6 meters per capita, which reflects a limited provision of road infrastructure in relation to the population. The country is also highly vulnerable to natural disasters, leading to infrastructure disruptions that yield average yearly losses of approximately US$500 million. This is associated mainly with road network disruptions, especially among gravel roads.[25] Rural areas are particularly vulnerable to climate risk because of the poor resilience of the rural road network. Between 2015 and 2020, the impact of natural hazards on infrastructure averaged 4 percent of the investment budget, but it can reach 8.5 percent or more, as was the case in 2019.

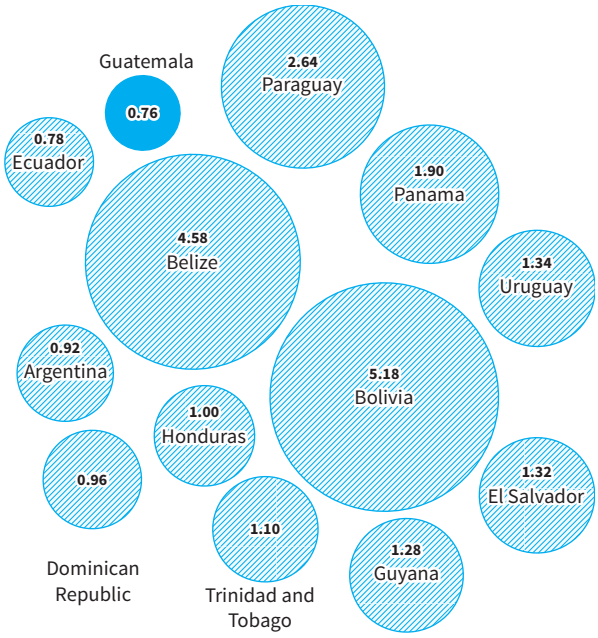
Market connectivity, particularly in rural areas, is hindered by the lack of logistics infrastructure. Guatemala lacks logistics centers designed to support ports,

airports, and urban distribution. Furthermore, the existing logistical infrastructure is primarily concentrated around the Guatemala City metropolitan area. This creates a gap for markets in rural areas by increasing costs and time associated with logistical inefficiencies, severely undermining the competitiveness of agricultural products and limiting their export capacity, especially for small-scale producers. Addressing this gap requires more investment in refrigerated cargo handling, trucker rest stops, logistics centers to reduce transport inefficiencies and bottlenecks, and cold storage in port vicinities and near major agricultural production areas. Guatemala's Pacific agricultural corridor has several collection and distribution centers supported by the Guatemala City metropolitan area, and some have cold storage facilities. However, access to the facilities through the tertiary road network, coupled with distrust among buyers, sellers, and intermediaries, poses challenges.[26] The limited use of information and communication technology in the logistics sector hinders traceability practices, which are key for competitive exports.[27]

In rural areas, private sector performance is hampered by major gaps in digital and water infrastructure, as noted in the agriculture section below. Access to digital infrastructure is severely limited and unequal. While 62 percent of the country has access to mobile telephones, only 29 percent has internet access and just 21 percent has access to a computer,[28] with accessibility in rural areas lagging urban areas such as the Guatemala City metropolitan area. Water and sanitation services are also deficient: 14.7 percent of the rural population lacked access to improved water services in 2018, compared to 4.6 of their urban counterparts.[29] Guatemala is the only country in Latin America except for El Salvador that doesn't have a law regulating water management, treatment, and use.[30] The lack of data related to water resource inventories and land management plans has created a knowledge gap, hindering efforts to mitigate losses and address risks in water-intensive industries and businesses, such as smallholder farming, that are highly vulnerable to climate change.[31]

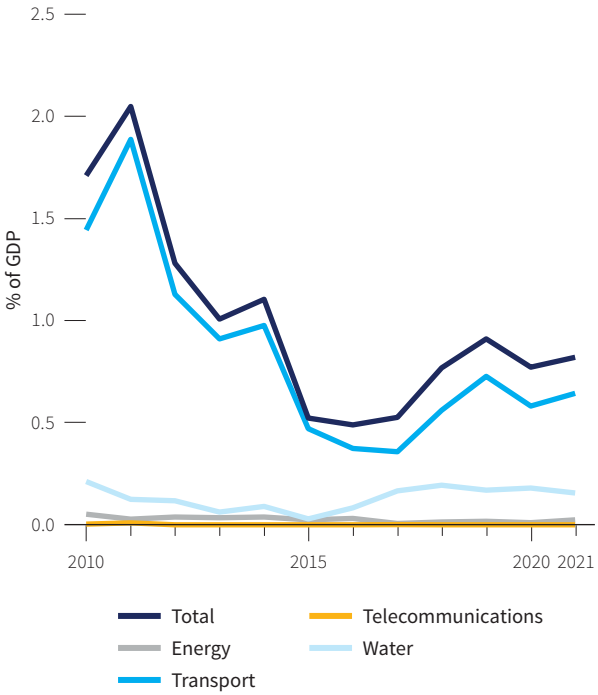
Most public investment in infrastructure is allocated to transport, but these resources are insufficient to cope with the infrastructure gap. Public investment in infrastructure in Guatemala is among the lowest in the Latin America and the Caribbean region, averaging 0.6 percent of GDP in 2015–19 (above only Brazil).[32] As a proportion of GDP, public infrastructure investment declined in the last decade, mainly as a consequence of the fall of investment in the transport sector (figure 3.2 and 3.3). Relatedly, stagnant tax revenues hinder the government's ability to invest more.[33] The Guatemala Transport Infrastructure Sector Assessment Program (InfraSAP) study emphasizes that budget execution in road infrastructure has increased recently, but there are concerns about the quality of spending. The lack of an overall updated inventory establishing the state of and level of damage across the road network is a major knowledge gap limiting the government's ability to spend more efficiently.[34] Further, road maintenance is an issue that also contributes to the infrastructure gap; maintenance services lag and contracts are difficult to monitor.[35] Maintenance of the primary and secondary road networks is the responsibility of Unidad Ejecutora de Conservación Vial (COVIAL), while the Ministry of Communications, Infrastructure and Housing (MICIVI) is in charge of maintaining the registered rural network. In practice, the funds allocated to MICIVI to maintain suitable traffic conditions on rural

FIGURE 3.2
Public Investment in Infrastructure, Regional Comparison Average, 2017–21 (% Of GDP)



Source: INFRALATAM.
Note: Only countries for which there are data for 2021 are shown.

FIGURE 3.3
Public Investment in Infrastructure by Sector



Source: INFRALATAM.

roads are insufficient, limiting local producers' access to regional and national markets. Regarding the primary and secondary networks, COVIAL relies on multiple small annual maintenance contracts (input based) that require a high level of planning and management. This results in a suboptimal use of available resources, limiting COVIAL's ability to ensure a sustainable level of service from its infrastructure. The government has undertaken efforts to invest more in rehabilitation, supported by the Law for Emergencies (Decree 35-2022) and the Law for Strengthening the Maintenance and Construction of Strategic Infrastructure (Decree 21-2022). However, these efforts are focused mostly on primary and secondary networks, leaving rural areas largely unaddressed. Greater private participation in infrastructure could not only help bridge the infrastructure gap, but also provide more cost-efficient practices for road maintenance.

3.2.2 Weak Project Implementation Framework

There are deficiencies in the infrastructure project cycle process, which are highlighted in the GNSD program. Public infrastructure plans are not well coordinated with government policy instruments (Política General de Gobierno) or public budget execution. The involvement of multiple government entities in the execution process extends the procedure to obtain permits and right-of-way, directly affecting project execution. The GNSD program also notes that the public tendering process could be improved, particularly by better defining terms and responsibilities in the contract notice. Although Guatemala has a public-private partnership (PPP) framework in place, it does not allow for unrequested proposals, which limits private participation in the project cycle process.

PPPs and long-term performance-based contracts can help address gaps in connectivity and increase the effectiveness of public infrastructure spending. Private sector participation through PPPs in the road sector in Guatemala remains limited to a few cases. There has been only one road concession implemented in Guatemala from 1998 to 2023: the Palin-Escuintla Road concession, which was bid under the public procurement law (Ley de Contrataciones del Estado) before the PPP law was created in 2010. More recently, in 2022, the Escuintla-Puerto Quetzal Road concession was the first and only project to be approved under the new PPP framework.[36] In addition, the Via Alterna del Sur (VAS) project, which initiated operations in 2016 with a 14-kilometer-long road section, is worth mentioning.[37] The VAS is a toll road which is privately owned, designed and built (including the acquisition of land and release of the right-of-way) without public involvement. Note that these toll roads, Palin-Escuintla and VAS, have presented better conditions and provided greater service than publicly managed roads.[38] Other privately developed projects are in the pipeline.[39] However, despite these recent efforts, it is important to mention a step back regarding the Palin-Puerto Quetzal Road concession. Following the expiration of the concession contract, in April 2023, after 25 years of operation through a private company, the asset´s operation came back under MICIVI responsibility. Toll charging was removed, and maintenance must now be carried out by COVIAL, as for any other public road.[40] Output- and performance-based road contracts (OPRCs), although currently not used in Guatemala, offer an alternative to traditional input-based contracts in road rehabilitation and maintenance.[41] OPRCs can increase efficiency and contribute to cost savings while improving the quality of the network and user perception.

In addition, key stakeholders, including from the private sector, are supporting changes to the legal framework that allow the private sector to play a larger role in providing infrastructure. The PPP framework aims to provide a mechanism through which the private sector can play a role in infrastructure development for transportation and energy projects (box 3.1). Unlike energy projects,

BOX 3.1

Guatemala's PPP Framework

Public-private partnerships (PPPs) are a tool through which the private sector can help address the infrastructure gap and increase the effectiveness of public infrastructure spending through partnerships in investment projects and service provision. Guatemala's PPP law was approved in 2010 and its regulatory guidelines were approved in 2011, creating the National Agency of Alliances for the Development of Economic Infrastructure (ANADIE), a government office responsible for coordinating and promoting PPPs. Despite these efforts, only one project has reached the tender stage—namely, the Escuintla-Puerto Quetzal highway, after a three-year process. Other PPP transport projects under preliminary study include a dry port at the border with Mexico (Puerto Seco Intermodal Tecún Umán II), modernization of the capital's airport (Aeropuerto Internacional La Aurora), and a light metro line (Metro Riel) in the Guatemala City metropolitan area. The framework has a limited track record partly because of the inadmissibility of private and unsolicited initiatives and the need for congressional approval after the project is awarded. InfraSAP outlines other constraints that have hindered the development of PPP projects, such as ANADIE's insufficient budget for structuring projects, the lack of standardization and specialized guidelines at the national and municipal levels, and complex institutional arrangements. The government is considering addressing these shortcomings. InfraSAP also finds that the PPP framework is in line with good practices through a balanced institutional framework and is supportive of a friendly business environment. Key features of the framework include a competitive procurement procedure, structured delivery capacities, public commitments and contractual incentives for project financing, and the opportunity for international arbitration.

Source: World Bank staff, with information from the PPP law and the Guatemala Transport Infrastructure Sector Assessment Program (InfraSAP).

all transport projects that provide services to the public require congressional approval. In consultations with key stakeholders, this was cited as a limitation and a reason for delays in the development of new projects. The private sector is sponsoring a bill proposal for a new road infrastructure law (Ley General de Infraestructura Vial) that has been under congressional review for over 2 years.[42] This proposal offers a large institutional reform for the road sector that could enable more private sector participation in road development.[43] Notably, it aims to improve the regulatory framework regarding procurement processes and contract types, acquisition of the right-of-way, and dispute settlement, among others.

3.2.3 Guatemala's Main Economic Corridors are Also Affected by Weak Infrastructure

Guatemala's key cross-border economic corridors that facilitate its integration into global value chains are affected by infrastructure shortcomings.[44] The Atlantic economic corridor runs from Guatemala's and Honduras's Atlantic ports into El Salvador and is central to trade among these countries. The portion of the corridor located in Guatemala (CA13 toward the Honduran border) needs major maintenance work that is already identified in the country's Road Development Plan 2018–2032. Transport along the Guatemala-Honduras corridor, where tropical fruit, bananas, vegetables, oil palm, and maize come from, can be made more efficient with maintenance (CA13) and capacity expansion (CA09).[45] The second major corridor, which runs between Guatemala City and El Salvador's western cities (via CA01 and CA08), is important for the trade of agricultural and food products but is heavily affected by congestion. This corridor could benefit largely from bypasses to avoid the flow of freight transport through the city, potentially reducing transit time by 12 percent on routes through Guatemala City. There are two initiatives that would alleviate congestion: (a) Beltway 50 (Anillo 50), which is to be approximately 180 kilometers long and built in eight sections of four lanes, and is financed and managed by MICIVI;[46] and (b) ANADIE, which has an expressway (Via Express) project with a radius smaller than that of Beltway 50, approximately 28 kilometers of four lanes.[47] In both corridors, there are textile production centers that would benefit from improvements in the infrastructure. Transport along these corridors is further constrained by the lack of any dedicated public logistics centers in Guatemala, as the existing capacity is inside free trade zones and industrial zones, many of which are private and provide on-site infrastructure.

Furthermore, only 40 to 60 percent of the rural population along the corridor connecting Guatemala with Honduras and El Salvador has access to an all-season road. Access to all-season roads in Guatemala's portion of this agricultural corridor is less than 60 percent in some municipalities. While some products exported by land from Guatemala must be temperature controlled, their proportion is currently small.[48] Some cold storage facilities can be found along the Guatemala-El Salvador corridor, although dedicated cold storage infrastructure is not common in the rest of the country. Perishable products are particularly affected by excessive border crossing wait times.

The airport (Aurora International Airport) and the seaports of Quetzal and Santo Tomás de Castilla, which facilitate trade along these corridors, also suffer from

significant deficiencies. The international airport could optimize its operations by relying on physical traceability systems and a deconcentrated cargo area, thereby improving the flow of cargo, which includes pharmaceuticals, electronics, and, increasingly, agricultural products. The national port infrastructure also plays an important role in the country's exports and imports and has seen a significant increase in mobilized volumes, which have risen 77 percent in 15 years to reach 28 million metric tons in 2019.[49] However, the country's two main ports, Puerto Quetzal and Santo Tomás de Castilla, have now reached their capacities and are regularly saturated, forcing the country to increasingly use the port of Puerto Cortés in Honduras. On the Pacific coast, Puerto Quetzal, the country's most important bulk port, is affected by congestion in its road access. While the port has seen innovations to meet growing demand for exports such as fruit through the establishment of new cold storage facilities, it is affected by the lack of efficient controls and long inspection processes. Guatemala's major port on the Atlantic coast, Santo Tomás de Castilla, a privately managed port and major point of export for products such as cardamom, coffee, textiles, and light manufactures, has experienced congestion problems in recent years, despite being the most efficient port in the national port system. Guatemala could increase its exports per capita by 45 percent if its roads, railroads, ports, and airport infrastructure were to match those of its East Asian emerging-markets competitors.[50]

3.2.4 Recommendations to Close the Infrastructure Gap

Strengthening sector governance, coordination, and planning could yield better infrastructure. Improving governance requires actions in many areas and tight coordination of the multiple stakeholders involved. Changes in the regulatory framework, such as the ones suggested in the proposed road infrastructure law, could help mobilize more resources to unlock greater investment to expand and support the road network. Although the sector is centralized, there are deficits in terms of coordination, which call for efforts to review and improve transport planning and coordination practices. Ports, which are key to the competitiveness of the country's economic corridors, also grapple with the absence of coordination among the actors involved and lack a comprehensive development strategy. Guatemala's trade takes place mainly through seaports, so maintaining and upgrading these ports (including private ones) are important to continue and grow the country's participation in global value chains.

Reducing the connectivity gap will require more resources from the budget and users. Leveraging the Road Development Plan 2018–2032 could help address some of the country's infrastructure needs. However, the plan is not binding, and resources are not guaranteed. Authorities should consider allocation of further budget resources in line with the plan's requirements. Authorities could also develop a funding program that leverages alternatives that could raise revenues associated with the sector (for example, fuel, vehicle, and carbon taxes) but also explore land value capture through the development of transport projects and review of land use and parking fees. Similarly, promoting blended finance solutions through development bank financing could help increase the flow of resources to infrastructure. Introduction of the use of OPRCs in Guatemala for road rehabilitation and maintenance would create more efficiency in the use of public resources and risk

sharing with the private sector and better results for the road users. Exploration of the issuance of thematic bonds linked to the Sustainable Development Goals, building from the successful experience of the social bond issued in April 2020, is also recommended.

The legal and institutional frameworks to develop PPPs are in place, but reform is needed. Private investment through PPPs is an alternative mechanism for infrastructure development, but it has yet to materialize in the transport sector. In 2020, ANADIE, Guatemala's PPP agency, prepared an initiative to reform the PPP law, but the proposal was not officially presented to Congress for approval. Indeed, the current PPP framework could be modified to be friendlier to the private sector, while establishing procedures and terms that favor transparency and competition in the procurement process. Key areas to consider include optimizing procedures along the project cycle and allowing for unsolicited proposals, especially if aligned with development and socioeconomic priorities.

Table 3.2 lists recommendations aimed at closing Guatemala's infrastructure gap from the three areas discussed (regulatory and institutional, funding, and PPPs).

TABLE 3.2

Infrastructure Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Weak regulatory frameworks and governance	Revisit discussions to introduce changes to the regulatory framework regarding procurement processes and contract types, acquisition of right-of-way, dispute settlement, and more.	Congress	Short
Low investment in infrastructure by regional standards	Develop a binding national road infrastructure plan spanning the national and municipal levels, as well as the maintenance of roads.[a]	SEGEPLAN, MICIVI (DGC and COVIAL), ANADIE	Medium
	Develop funding arrangements that include private participation and risk-sharing contract modalities to complement budget resources in line with the needs of the Road Development Plan 2018–2032: ➔ Exploring cost-efficient and risk-sharing contract modality (such as OPRCs) for the rehabilitation and maintenance of road assets. ➔ Studying options to implement land value capture and transport-oriented developments that can bring more resources to the sector. ➔ Reviewing land usage and parking fees.	MINFIN, MICIVI	Medium
Rigid PPP framework	Revise and reform the PPP law and related institutional framework to create institutional procedures and interinstitutional coordination arrangements that facilitate PPP project preparation and approval process (with clear roles).[b] This includes	CONADIE, ANADIE, municipalities (for licenses)	Short to medium
	➔ Customizing a public investment assessment methodology for PPPs, especially cost-benefit analysis and socioeconomic assessment, including a method of screening for PPP suitability and a tool for the prefeasibility stage.	CONADIE, ANADIE	Short

(Table continues next page)

TABLE 3.2

Infrastructure Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
	→ Reforming the PPP law to enable unsolicited proposals from private initiatives within a clear framework that is consistent with investment plans and public sector priorities.	CONADIE, state contracting agency	Short

Source: World Bank elaboration based on diagnostics results.
Note: DGC = Director General of Roads; SEGEPLAN = Planning and Programming Secretariat of the Presidency of Guatemala.
a. The proposed road infrastructure law under discussion in Congress establishes the creation of a national road infrastructure plan; this recommendation could be the basis for development of such a plan, if and when the law is approved.
b. Changes suggested by ANADIE in its proposal to reform the PPP Law (Decree no. 16-2010) from June 2020 may guide the implementation of this recommendation, although a medium-term horizon may be required.

3.3 Legal Framework, Dispute Resolution, and Governance

Firms require a stable, transparent, rule-based, and enforceable legal framework to reduce uncertainty and facilitate investment and contractual arrangements. Unfortunately, the absence of reliable, impartial, and equitable enforcement of rules and regulations governing the private sector is a major challenge in Guatemala. Guatemalan firms are more likely than their regional peers to cite institutional and governance problems as a main obstacle to doing business, and they regularly list political instability and corruption as among the most important challenges. Weak governance and pervasive corruption undermine firm operations, discourage innovation, and act as a regressive tax, particularly on the small firms that are least able to surmount governance challenges or defend themselves from official predation.

Guatemala's performance on global indexes of quality of governance, economic competitiveness, and public sector integrity has worsened significantly since 2015. The steady weakening of institutions has continued to erode trust in the state: in 2020, about half the population believed that corruption had recently increased, up from 40 percent in 2016.[51] Poor governance quality has undermined public service delivery, particularly in disadvantaged regions, while a weak contractual and institutional environment hinders the development of the private sector, slowing job creation and undermining firm-level productivity. In 2017, crime and corruption were identified as the most important challenges to doing business in Guatemala, with more than 70 percent of firms considering corruption a major constraint on growth.[52] Recent reports[53] indicate that political corruption and undue influence are growing as limits on government powers weaken. In addition, the extortion rate has doubled in recent years, driven by the growing prevalence of gangs and drug trafficking; crime-related costs are estimated at about 3 percent of annual GDP.[54] In addition, political fragmentation has contributed to an increasingly sluggish and unresponsive legislative process, and fewer laws were passed in 2019 than at any other time in the last 20 years. These setbacks pose a considerable threat to the country's long-term social stability and reform efforts.

This weak governance environment also poses challenges in attracting FDI, largely because of the failure to implement a legal system that aligns with international standards. Many of the issues that Guatemala faces in attracting FDI are structural, including a lack of institutions and codes of conduct to enable juridical certainty for investment. Since the 1960s, Costa Rica has been a leading example in Central America in safeguarding the rights of individuals and firms against abuses by government by providing a clear, detailed, and efficient legal system.[55] It has one of the largest bodies of laws addressing administrative decision-making, and the legislature continuously updates it.[56] Other countries in the region—Ecuador, El Salvador, and Peru—have all enacted new legislation to attract FDI. Ecuador enacted the Organic Law for Productive Promotion, Investment Attraction, Employment Generation, and Fiscal Stability and Balance (the Productive Development Law, passed in August 2018). This law introduced a series of amendments to reform taxes and exceptions for basic industries.[57] Peru passed a new administrative procedures act in 2019—texto único ordenado de la Ley no. 27584, Ley que Regula el Proceso Contencioso Administrativo[58]—that provides clear procedures and rights against potential abusive government administrative action. In 2017, El Salvador enacted its own administrative procedures act, Ley de la Jurisdicción Contencioso Administrativa,[59] which was informed by the need for new procedures that could effectively enhance the rights of individuals and firms and accelerate administrative and judicial procedures.

Despite Guatemala's laws governing commercial contracts, the contractual and dispute resolution landscape remains uncertain and reduces investor confidence for both domestic and foreign firms. Perceived risk levels are increased by regulatory instability and the history of breach of contract by government. Guatemala has a law for foreign investment, Ley de Inversion Extranjera,[60] and an arbitration law, Ley de Arbitraje, which regulates how private parties may submit and settle disputes. However, Guatemala does not legally recognize other methods of dispute resolution.[61] The Guatemalan Constitution nonetheless allows considerable discretion on the part of the government to settle disputes with third parties.[62] In terms of private commercial contracts, Guatemala's code of commerce regulates the types of commercial contracts that private parties can enter into with each other. Guatemala's code of commerce also regulates the types of companies that may be established in the country, and the procedures to register companies, industries, and patents are regulated by other local laws.[63]

The laws regulating the country's investment environment suffer from significant limitations that hold investment growth back despite proinvestment government policies. Guatemala has taken many measures to attract investment. Originally, Guatemala created free-trade zones for commerce and industry.[64] As part of its liberalization process, the country expanded its FDI incentive policies by legislating a tax-free zones regime for the importation, transformation, assembly process, and exportation of goods.[65] These zones are used for the maquila industry, which has its own legal regime[66] and also has a salary structure differentiated from those of other industries in the country. More recently, Congress enacted laws to improve working conditions in industrial areas.[67] In Congress's docket of law initiatives, there are several ILO conventions waiting to be approved. Moreover, Guatemala has a very old (1947) labor law code.[68] This code has rarely been reformed or updated. Although Guatemala has subscribed to

and approved many ILO conventions on the recognition and protection of new forms of labor, they have yet to be translated into laws. Therefore, companies and lawyers are unaware of these international labor laws, which has pushed many to rely on informal labor.

Guatemala's legal system also faces limitations in complying with certain international conventions, such as the United Nations Declaration on the Rights of Indigenous Peoples, as well as competition laws under the EU-Central America Association Agreement. A conflict repeatedly observed through case law is Guatemala's failure to nationally regulate the right of prior and informed consent of Indigenous groups. Although there has been strong jurisprudence recognizing the right of prior and informed consent, the Guatemalan Constitutional Court has interpreted the need for Congress to enact a law to regulate it and in 2017 gave Congress one year to enact a law on the topic.[69] In the view of the court, Congress has yet to enact a law that would comply with international standards. Nonetheless, the court has sometimes established precedents and rulings that have contradicted previous judgments, thus creating problems of interpretation. Again, this legal uncertainty imposes constraints and disincentives for both domestic and foreign investment. Furthermore, under the EU-Central America Association Agreement, Guatemala committed itself to adopting competition laws.[70] These laws would require regulatory institutions to protect consumer rights and avoid discrimination and predatory business practices.[71] However, Guatemala remains the only Central American country without laws protecting consumer rights and has very limited regulatory institutions and legal provisions to ensure healthy competition practices.[72]

Another issue exhibited in Guatemala's arbitral case law is the concept of denial and delay of justice by domestic courts. The Constitutional Court is overburdened with cases and faces endemic delays.[73] This is the result of customary malpractice by local litigants and corruption issues within the judiciary.[74] Such is the case of Kappes, in which the Constitutional Court took several years to judge an issue related to the consultation process with Indigenous groups.[75] This placed the investor in an uncertain situation as to whether it could continue with its mining project.

Although Guatemala has created specific institutions dealing with and promoting FDI, evidence indicates that a heavy bureaucracy has been a deterrent to investment.[76] Guatemala is a paper-driven country. The use of digital means for investment—to apply for and secure contracts and projects, obtain access to government offices and courts, make contracts between private parties, and other activities— is limited.[77] This forces investors to create a presence in Guatemala and hire locals with the requisite knowledge and time to navigate the procedures, costs, and delays. In addition, excessive bureaucracy has led to the establishment of numerous government agencies, each with its own procedures and decision-making outcomes. The result is a lack of coordination between government agencies, duplication and redundancy in procedures, and different requirements frequently not established in law. Rent seeking in such an environment is endemic. Potential investors, or their agents, are often required to personally visit each office and obtain proper and complete information.[78] This becomes extremely burdensome and costly for investors.

Alternate dispute resolution (ADR) instruments may provide a short-term solution for FDI by providing mechanisms for accountability and redress, not only between states and investor companies, but also for Guatemalans and Guatemalan firms. ADR may also pave the way for taking medium- and long-term state action at the legislative, administrative, and judicial levels. ADR is a transparency-enhancing tool. Concession or state contracts with clear transparency provisions provide a means for clarity, openness, and accountability to the public and civil society. Creating new types of contracts for concessions of public goods and commodities, and harnessing the potential of ADR to improve governance, could be an important step in attracting FDI and facilitating domestic investment. Table 3.3 summarizes the recommendations.

TABLE 3.3

Legal Framework, Dispute Resolution, and Governance Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Limited adherence to international judicial norms, reduce bureaucracy around enforcement, and streamline contractual disputes and settlements.	Strengthen legal units and ADR offices in certain ministries and government entities so that they can provide sound advice to the public administration on contractual issues.	El Procurador General de la Nación and Congress	Medium
	Consider the creation of specialized courts, or a chamber within a court, to deal with FDI issues.		Medium
	Contracts, while respecting unique circumstances and requirements, should include clauses that provide greater legal certainty. These could include: ➔ Reflecting the context of Guatemala in contracts, particularly conflict with Indigenous peoples and the need for free prior and informed consent in mining and energy projects. ➔ Introduction of transparency and openness clauses in contracts so that local stakeholders have access to the concession or state contracts. ➔ Making clear in all FDI-related contracts that Guatemala is subject to international FDI standards, so that future governments understand and realize that any action taken in relation to the contract may be subject to international FDI standards. ➔ Determination of the obligation for companies to undertake regular due diligence reports in relation to the impact of their investment on local communities and the environment. This includes avoiding informal labor relations with domestic labor and encouraging the transmission of technical and professional knowledge. ➔ Developing schemes for revenue sharing that are clear and open to the local population, with shared-accountability between government and companies. ➔ Allowing the introduction of ADR mechanisms, including arbitration, and promoting negotiation and conciliation as means of conflict resolution.		Medium

Source: World Bank elaboration based on diagnostics results.

Notes

1. World Bank Enterprise Surveys, https://www.enterprisesurveys.org; Klaus Schwab and World Economic Forum, ed., *The Global Competitiveness Report 2019* (Geneva: World Economic Forum, 2019), https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf.
2. Forthcoming World Bank report on policies for business recovery in Guatemala.
3. CPSD team discussions with Fundación para el Desarollo de Guatemala (FUNDESA), March/April 2022.
4. IFC, MSME Finance GAP Database, updated 2018, https://www.smefinanceforum.org/data-sites/msme-finance-gap.
5. These figures do not include institutions not supervised by SIB, such as credit unions and microfinance institutions.
6. Decreto 1-2018, Ley de los Contratos de Factoraje y de Descuento, y decreto 2-2021, Ley de Leasing.
7. Deposit-taking microfinance institutions (microfinanciera de ahorro y crédito), which can be funded by deposits from the public or by issuing debt (a microfinance entity regulated and supervised by SIB); non-deposit-taking microfinance institutions (microfinanciera de inversión y crédito), which can be funded by issuing debt (a microfinance entity regulated and supervised by SIB); and nonprofit microfinance entities, which cannot take deposits or issue debt (registered with MINECO).
8. Guatemala's authorities are working on a reform of the current framework for the collateral registry.
9. Recent changes in the e-signature framework might also help to increase uptake and usage of this tool.
10. See the SIB Innovation Hub online: https://www.sib.gob.gt/SIBInnovationHUB/web/sib/inibcio and https://www.youtube.com/watch?v=Cw-1h_3ZF84.
11. There is another innovation hub managed by Imágenes Computarizadas de Guatemala, which allows fintech companies to make transfers and receive funds using the services of an automated clearing chamber (privately owned). It works under a scheme of indirect participation, since the fintech company has to enter an agreement with a direct participant to access these services. Three fintech companies are using this service at present.
12. Estrategia Nacional De Inclusión Financiera Para Guatemala, ENIF 2019–2023, Ministerio de Economia, Guatemala, agosto de 2019.
13. MINECO, "Elección y Nombramiento de Delegados de Organizaciones no Gubernamentales y de Beneficiarios/Empresarios ante el Consejo Nacional para el Desarrollo de la Microempresa, Pequeña y Mediana Empresa," 2019, https://www.mineco.gob.gt/.
14. MINECO, "Reglamento para Operaciones Financieras del Programa Nacional para el Desarrollo de la Microempresa, Pequeña y Mediana Empresa," 2015, https://www.mineco.gob.gt.
15. World Bank World Development Indicators 2019.
16. See decrees 51-2007 and 69-2014, regulating the movable collaterals law.
17. The exchange rate used is Q1 = US$0.13 (https://www.xe.com/, September 14, 2020). See applicable prices here: https://www.rgm.gob.gt/informacion-arancel.
18. International Monetary Fund, "United States Financial Sector Assessment Program" (Washington, DC: International Monetary Fund, 2015).
19. World Bank InfraSAP, 2022.
20. World Bank Enterprise Survey 2017.
21. The latest data for Guatemala were released in 2017. The Central America regional average is a simple average, constructed with data for countries from 2016 and includes the Dominican Republic, El Salvador, Honduras, and Nicaragua. Costa Rica and Panama were not included in the regional average, as their data date back to 2010.
22. World Economic Forum and Schwab, *Global Competitiveness Report*.
23. Existing lines connect Puerto Barrios in the Caribbean Sea with the Pacific Coast and also reach Tecún Umán at the border with Mexico. Elizabeth Whitsitt, "Tribunal Hears Additional Challenges to Its Jurisdiction in *Railroad Development Corporation v. Republic of Guatemala*," *Investment Treaty News*, April 8, 2010, https://www.iisd.org/itn/en/2010/04/07/tribunal-hears-additional-challenges-to-its-jurisdiction-in-railroad-development-corporation-v-republic-of-guatemala-3/.

24. Inter-American Development Bank, "Guatemala to Improve and Rehabilitate the National Road Network with IDB Support," news release, February 7, 2019, https://www.iadb.org/en/news/guatemala-improve-and-rehabilitate-national-road-network-idb-support#:~:text=Despite%20this%20high%20traffic%2C%20the,of%20operation%20and%20transit%20times.
25. World Bank InfraSAP, 2022.
26. Aiga Stokenberga et al., *Economic Corridors to Promote Trade and Sustainable Development in Central America* (English), Mobility and Transport Connectivity Series (Washington, DC: World Bank). 2022.
27. World Bank InfraSAP, 2022.
28. Instituto Nacional de Estadísticas, 2019.
29. de la Fuente and Gomez, forthcoming.
30. Elisa Colom: "Solo un plan para garantizar el acceso universal al agua podrá evitar un estallido social". 2021, https://aguacero.plazapublica.com.gt/content/elisa-colom-solo-un-plan-para-garantizar-el-acceso-universal-al-agua-podra-evitar-un.
31. Gabriel Woltke, "Elisa Colom: 'Solo un Plan para Garantizar el Acceso Universal al Agua Podrá Evitar un Estallido Social,'" July 5, 2021, https://aguacero.plazapublica.com.gt/content/entre-el-mitch-y-eta-una-ley-se-posterga-tormenta-tras-tormenta.
32. Information from INFRALATAM.
33. Tax revenue fell slightly from 11.1 percent of GDP in 2013 to 10.5 percent in 2019. World Development Indicators, World Bank.
34. Carlos Kestler, "Conectividad Rota: Causas y Soluciones para Una Red Vial casi en Abandono," *Prensa Libre* (June 22, 2022), https://www.prensalibre.com/pl-plus/guatemala/comunitario/conectividad-rota-causas-y-soluciones-para-una-red-vial-casi-en-abandono/.
35. For more information regarding the issues surrounding road maintenance, see InfraSAP.
36. The concession was awarded in 2018 but not approved by Congress until November 2021.
37. The VAS has built two more sections since, 8 kilometers in Guatemala City and 9 kilometers toward Carretera, El Salvador.
38. Henry Bin, "Xochi: Una Carretera Privada, por Favor, porque el Camino Público no Hay Modo que Llegue," *Con Criterio,* May 5, 2022, https://concriterio.gt/xochi-una-carretera-privada-por-favor-porque-el-camino-publico-no-hay-modo-que-llegue/.
39. A new toll road connecting Retalhuleu to Suchitepéquez, a stretch of 31 kilometers connected to the CA02 main road, is in the planning phase and is expected to be finished by 2025. To fund the US$150 million project, the road will be financed by private investors as well as by a new investment fund through which local communities can invest in the project. See https://concriterio.gt/xochi-una-carretera-privada-por-favor-porque-el-camino-publico-no-hay-modo-que-llegue/.
40. Sandra Vi, "Guatemala Elimina Cobro de Peaje para Autopista Palín-Escuintla," *República*, May 2, 2023, republica.gt.
41. The current legal framework prevents multiyear maintenance contracts and would not allow the implementation of such contracts in the present state. Maintenance practices are still input oriented (quantity contracts), which is the most common and traditional practice.
42. The proposal was submitted to Congress in April 2018, the first review happened in March 2019 after changes were introduced by Congress, and the second review happened in October 2020. A third review is needed for the law to be approved.
43. The bill proposes the creation of the Superintendence of Road Infrastructure (SIVIAL), a new technical governing body within the MICIVI to oversee the road network. The proposal also institutionalizes a National Road Infrastructure Plan (Plan Nacional de Infraestructura Vial) with a 30-year horizon that should be binding (the projects to be assessed and for which studies are prepared and developed should be taken from this plan), creates a new mechanism to provide right-of-way and declare public utility without need for Congress approval, creates a road infrastructure fund that enables leveraging of additional resources, and introduces availability-based management contracts which would enable the implementation of OPRCs.
44. World Bank, "Guatemala Transport Infrastructure Sector Assessment Program: Key Findings and Recommendations," 2022.
45. There is an Inter-American Development Bank—financed project in preparation to expand CA09 from El Rancho to Teculutan (37 kilometers), but there are still 175 kilometers from Teculutan to the ports in the Atlantic that need to be converted to four lines.
46. Beltway 50 goes from Sanarate municipality, approximately km 54 of Route CA09 North, passing Sansare-Sanyuyo-Mataquescuintla-Laguna del Pino-CA01 Oriente-El Jocotillo-El Obrajuelo-Guanagazapa-CA02 Oriente-Escuintla. Of the eight sections, one is under construction, one is under contract, and two are being procured.

47. The expressway would go from approximately km 10 of Route CA09 North to CA01 Oriente, passing San Jose Pinula and Fraijanes.
48. World Bank, "Guatemala Transport Infrastructure Sector Assessment Program."
49. World Bank, "InfraSAP Guatemala, Improving Transport Connectivity" (Washington, DC: World Bank, 2017).
50. Refers to nonhydrocarbon or mineral exports. East Asian emerging market competitors are as follows: China; Indonesia; Macao SAR, China; Malaysia; the Philippines; Thailand; and Vietnam. For more information, see Gonzalo Salinas, "Proximity and Horizontal Policies: The Backbone of Export Diversification" (IMF Working Paper WP/21/64, IMF, Washington, DC, 2021), and IMF, *Guatemala: Selected Issues* (IMF Country Report 22/164, Washington, DC: IMF, 2022).
51. Data from Corporación Latinobarómetro, 2020.
52. World Bank, 2017.
53. Latin American Public Opinion Project (LAPOP 2021) and the World Justice Project (2021).
54. Laura Jaitman, ed., *The Costs of Crime and Violence* (Washington, DC: Inter-American Development Bank, 2017).
55. Código Procesal Contencioso-Administrativo, no. 8508.
56. The last reform was April 28, 2006.
57. IFC, *Creating Markets in Ecuador: Country Private Sector Diagnostic, Fostering a Dynamic and Resilient Private Sector* (Washington, DC: IFC, September 2021), 18.
58. Decreto Supremo no. 011-2019-JUS.
59. Decreto no. 760 of 2017.
60. Congreso de la República de Guatemala, Decreto no. 9-98.
61. Congreso de la República de Guatemala, Iniciativa no. 3126, https://www.congreso.gob.gt/detalle_pdf/iniciativas/4563.
62. Constitution of Guatemala, art. 171 (L).
63. Congreso de la República, Decreto no. 2-70.
64. Congreso de la República de Guatemala, decreto 22-73, Ley Orgánica de la Zona Libre de Industria y Comercio Santo Tomás de Castilla.
65. Congreso de la República de Guatemala, Decreto 65-89, Ley de Zonas Francas.
66. Congreso de la República de Guatemala, Decreto 29-89, Ley de Fomento y Desarrollo de la Actividad Exportadora y de Maquila.
67. Congreso de la República de Guatemala, Decreto no. 19-2016, Ley Emergente para la Conservación de Empleo.
68. Decreto no. 1441, Código de Trabajo de Guatemala.
69. Corte de Constitucionalidad, Expedientes Acumulados 90-2017, 91-2017, and 92-2017, Sentencia, 26 May 2007.
70. Article 279 of the EU-Central America Association Agreement, https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:346:0003:2621:en:PDF.
71. Article 279.
72. Since 2016, Congress has been debating the latest law initiative on the topic. See https://www.congreso.gob.gt/detalle_pdf/iniciativas/5245.
73. Human Rights Watch, "Running Out the Clock: How Guatemala's Courts Could Doom the Fight against Impunity," *Human Rights Watch*, 2017, 11–12.
74. Carlos Arturo Villagrán Sandoval, "Guatemala: The State of Liberal Democracy," in Richard Albert et al. (ed.), *Global Review of Constitutional Law* (I-CONnect-Clough Center, 2018), 126. See also "Risk & Compliance Portal, Guatemala Corruption Report," https://www.ganintegrity.com/country-profiles/guatemala/.
75. Kappes case, Notificación de Intención de Conformidad con el Tratado de Libre Comercio entre la República Dominicana, Centroamérica y los Estados Unidos, https://www.mineco.gob.gt/sites/default/files/carta_de_intencion-mayo_2018-esp.pdf.
76. See for example the Programa Nacional de Competividad de Guatemala (PRONACOM), https://www.pronacom.org/sobre-pronacom/; Benjamin Roseth et al., ed., *El Fin del Trámite Eterno: Ciudadanos, Burocracia y Gobierno Digital* (Washington, DC: Inter-American Development Bank, 2018), 126.
77. Roseth et al., *El Fin*, 126.
78. Roseth et al., *El Fin,* 126.

4 SECTOR ASSESSMENTS

4.1 Sector Selection Framework

Prospective investment opportunities were evaluated according to six selection criteria, which assessed their potential for (a) increasing economic growth, (b) fostering inclusiveness, (c) supporting climate change mitigation and adaptation, (d) improving governance, (e) consistency with Guatemala's investment attraction strategy, and (f) alignment with World Bank analytical expertise (table 4.1). The selection process also sought to prioritize investment opportunities that foster inclusive job creation, especially among female workers, as well as those that promote progressive formalization of informal activities. Climate change and the environmental impact of prospective opportunities are assessed in terms of forest protection, the reduction of CO2 emissions, and enhanced resilience to weather-related shocks. The selection process also incorporates the feasibility of various measures and those that allow private firms to operate effectively in an environment with governance challenges. Finally, investment opportunities are evaluated in terms of their consistency with the government's priorities for attracting investment and with the existing body of analysis underpinning World Bank operations in Guatemala.

On the basis of the selection criteria summarized in appendix A, the CPSD focuses on and analyzes investment opportunities in two primary areas: agrifood production and (b) light manufacturing. Private sector investment and growth play a vital role in job creation and improvement in labor productivity that can benefit the poor and those in the bottom 40 percent of the income distribution. Model estimates indicate that investments in the agriculture sector and light manufacturing have the greatest impact on poverty and shared prosperity. Furthermore, investment in agriculture and light manufacturing benefits largely the most disadvantaged groups, such as women, youth, and Indigenous populations. This benefit to the poorest people arises through three main channels: creating jobs for the unemployed, generating sectorwide increases in productivity, and thus providing higher-paid jobs for employed workers. The development of light manu-

TABLE 4.1
Sector Selection Criteria

	Criterion	Light manufacturing and industrial parks	Agriculture and agricultural processing
a	Economic growth	✓	✓
b	Inclusive job creation	✓	✓
c	Climate change adaptation and mitigation	✓	✓
d	Good governance	✓	
e	Alignment with government priorities	✓	✓
f	Consistency with World Bank expertise	✓	✓

Source: World Bank analysis.

facturing and industrial parks, the latter of which can act as business accelerators, can also increase direct and indirect employment, boost exports, promote innovation, and strengthen legal and regulatory frameworks with broader economywide and private sector development implications.

A broad cross-section of sectors and activities was considered in the analysis. In addition to agriculture and light manufacturing, these included, among many others, food manufacturing, construction, warehousing, communications, financial and business services, and fisheries, and numerous related subsectors. A significant impact on poverty was also observed for investments in recreation and other activities, and traded sectors (estimated at around 90,000 and 80,000, respectively, individuals moving out of poverty), but with lower income gains for the bottom 40 percent (around 0.4 to 0.5 percent) than for agriculture and light manufacturing. Mining sectors such as coal, gas, and oil were among the industries with the lowest welfare gains, with an estimated poverty reduction for fewer than 40,000 individuals and average income gains for the bottom 40 percent of less than 0.35 percent.

To complement the analytical assessment, the team also conducted internal and external consultations which validated investment opportunities related to agrifood and light manufacturing. The CPSD team met internally with World Bank and IFC sector experts and held virtual consultations with key stakeholders in Guatemala. From these discussions, light manufacturing, cold-chain infrastructure, fresh-food processing, construction, electronics assembly, business process outsourcing (BPO) services, and textiles were identified as areas in which the private sector showed especially strong interest. The government's GNSD strategy prioritizes the development of more-productive crops (such as vegetables, avocados and other fruits, and coffee) and the apparel industry in the near term. In the medium term, the authorities aim to attract investment in pharmaceuticals, medical equipment, electrical components, and BPO services. Discourse clarified that food processing requires cold chain infrastructure and that manufacturing could benefit from industrial parks. Guatemala's trade and investment agency (PRONACOM) highlighted the importance of light manufacturing and industrial parks as components of its nearshoring strategy. The agency plans to leverage the current incentives framework for special economic zones (SEZs) to attract cornerstone foreign investors. Within the light manufacturing sector, industrial parks can provide the necessary infrastructure and security conditions required by private firms in the textiles, agro-industry, electronics, and BPO sectors.

Other investment opportunities were evaluated but not prioritized as CPSD focus areas because of the presence of binding constraints and demand-side factors. High levels of insecurity and crime, coupled with an inadequate road network, discourage large-scale investments in Guatemala's tourism and recreation services sector. A small domestic market, weak regulatory framework, and poor infrastructure limit opportunities in the telecommunications sector. The BPO subsector faces connectivity constraints and strong competition from neighboring countries and established players, such as Costa Rica, which are already moving up the value chain. The industrial textile sector suffers from labor cost constraints due to the elevated minimum wage, even though consultations indicated that Guatemalan textile workers tended to be highly productive by regional standards. The pharmaceutical and medical equipment sectors, which are high-

lighted in the government's program, require major changes in the regulatory framework for product registries as well as better logistics infrastructure to connect suppliers—and these reforms are beyond the five-year horizon of the CPSD. Process standards, digital financial services, access to finance for MSMEs, and remittance channels are key areas for productivity, jobs, and financial inclusion, but they will be examined as elements of the enabling environment within the sectoral assessments rather than as stand-alone investment opportunities.

4.2 Agriculture Sector

Guatemala is a predominantly agricultural country. Agriculture production in 2019 reached US$8.6 billion, representing 11 percent of GDP and employing over 2.5 million people, equivalent to 32 percent of all workers.[1] Agriculture employs 70 percent of rural workers and 81 percent of Indigenous workers in rural areas.[2] Since 2013, the sector has grown value added at an average annual rate of 4.6 percent (lower than the average nominal GDP growth of 6.1 percent), and the labor force has grown by a yearly average of 1 percent.[3]

Agriculture is also central to the country´s export-led economic model. In 2021, exports of agriculture products reached US$3.1 billion, representing 4 percent of GDP and 30.4 percent of all exported goods. The largest markets for Guatemalan agriculture products are the United States (56.41 percent), Saudi Arabia (4.95 percent), and Japan (3.53 percent). The most important products are bananas (9.3 percent of total exports), coffee (9.0 percent), palm oil (6.9 percent), and cardamom (5.0 percent).[4] Guatemala accounts for 55.15 percent of global cardamom exports, 6.8 percent of banana exports, and 2.0 percent of global sugar exports. Exports have been boosted by various trade agreements, especially the Dominican Republic–Central America Free Trade Agreement (CAFTA-DR) and the European Union–Central America Association Agreement, as well by Guatemala's proximity to the United States.

Agriculture exports are essential, but their competitiveness and revenues are constrained by low levels of diversification and sophistication and by limited adoption of new, more productive technologies. Guatemala's top five exports are bananas, cardamom, coffee, raw sugar, and palm oil, all products of relatively low economic complexity. Between 2010 and 2020, Guatemala's export complexity ranking fell from 77th to 82nd of 133 countries. Among the country's top five exports, bananas and sugar are constrained by low prices in destination markets because of poor quality. The palm oil is also considered to be of poor quality and sells for average prices. Coffee and cardamom, on the other hand, have a reputation for good quality that allows them to garner higher prices in international markets. The limited adaptation of technology, such as irrigation and optimal genetic varietals, also renders producers vulnerable to increasingly frequent and adverse weather conditions. Heavy dependence on commodity exports and limited crop diversification leave producers exposed to global price volatility, while also limiting the gains from trade.

Guatemala has the potential to expand and diversify agricultural exports through nontraditional products such as papayas, avocados, berries, and others. Exports

of nontraditional agricultural products have increased in recent decades and have considerable room to grow. The GNSD strategy prioritizes development of more-productive crops (such as vegetables, avocados and other fruits, and coffee). Apart from producing and exporting raw material, there are opportunities to increase value added by improving product quality, engaging in additional processing, or developing new commercial uses for traditional and nontraditional products. Improving quality or expanding the portfolio of specialty, organic, fair trade, or environmentally friendly products offers new market opportunities for traditional products such as coffee, cardamom, and bananas. Increased processing capacity could enable the production of dehydrated or frozen fruits and vegetables. Secondary processing, such as making vegetable paste, sauces, canned products, and vegetable chips, could also generate opportunities for job creation and diversification of local production.

Agriculture is constrained by low and stagnant labor productivity.[5] Nonetheless, agriculture is key to the country's export basket, as noted above, and plays a crucial role in employment, supports the country's domestic food system, and is the backbone of food security. The sector´s low value added per worker engaged in primary agriculture is largely the result of 90 percent of workers being informal. A total of 80 percent of operations is done by smallholders with less than 0.7 hectares, and 60 percent of farms are involved in subsistence production with limited or no agronomic plans or technical support.[6] Productivity is further hindered by inadequate infrastructure, a lack of financing, and climate change–induced risks. As a result, an estimated 40 percent of agriculture producers live below the poverty line, which is closely linked to the country´s ongoing and worsening food security crisis[7] (see box 4.1). In 2019, 80 percent of the sector's workers were employed in primary agriculture and the remaining 20 percent worked in processing. The value added per worker in agriculture averaged US$3,337, while those employed in primary agriculture averaged US$2,269 and those in processing averaged US$7,741. These values are very low compared with an average of US$23,600 for Latin America and the Caribbean.[8] These averages also hide vast differences between traditional production, generally found for cereals and beans, which remains below US$650 in value added per worker, and more technical operations, such as for sugar cane and bananas, which surpass US$7,000 in value added per worker.

Postharvest losses also present an important constraint that cannot be overstated. Guatemala loses 20 million tons of food annually, equivalent to 38 percent of total production. These losses correspond to 15 percent of the available agricultural land, represent 9 percent of the country's total greenhouse gas emissions, and cost 4.2 percent of annual GDP.[9] More than 35 percent of beans and maize spoils because of poor harvest management, pests and animals, and salmonella and aflatoxins. This is largely the result of insufficient investment in storage and preservation facilities, inadequate transport logistics, extended transport times due to weak road infrastructure, and lack of uptake of improved handling and management practices. In addition, a lack of information about market locations and prices leads to large amounts of food loss at the farm level and additional upstream losses along the value chain. Addressing these substantive loss issues could lead to significant increases in rural incomes, export quantities and quality, and associated GDP.

BOX 4.1

Food Insecurity in Guatemala

Guatemala ranks 80th of 113 countries in the Global Food Security Index[a] and has the highest level of child malnutrition in the Western Hemisphere. While agriculture is a major source of support for Guatemala's domestic food system, 77 percent of families consume a poor or inadequate diet, characterized by high consumption of cereals (maize) and low consumption of animal foods, fruits, and vegetables.[b] Protein consumption is low, with vegetable protein providing on average 68.5 percent of intake and animal protein the remaining 31.5 percent.[c]

In its western highlands region, where most Indigenous Mayan people live, 48 percent of the population is chronically undernourished.[b] Chronic child malnutrition (stunting) affects 47 percent of all Guatemalan children under five years of age, 58 percent of Indigenous children, and 66 percent of children in the lowest income quintile.[d] Malnutrition in rural areas can rise to greater than 70 percent, particularly in regions with large Indigenous populations.

Food access is constrained by three main factors. The first hindrance is low real wages that make buying enough nutritious food a challenge. The minimum wage, which is higher than the average income in rural areas, is sufficient to cover only 63 percent of a household's Basic Food Basket costs.[e] The second problem is location, as remote places with poor road infrastructure make transportation complex and food more expensive. The third element is gender discrimination. Food security and nutrition improve considerably when women, especially rural women, are protected from discrimination and have adequate access to protection, education, productive inputs, and employment opportunities.[f]

The COVID-19 pandemic increased the levels of poverty and food insecurity in Guatemala, especially among vulnerable groups such as rural households, women, and Indigenous people.[g] Moreover, the war in Ukraine has further worsened global and national food security, especially because of its impact on global maize, fertilizer, and oil markets.[h] As World Bank states, support to sustainably expand social safety nets and increase food security will be critical to protect families with young children from hunger and food insecurity caused by both temporary shocks and structural conditions.[i]

Guatemala's food system, which relies heavily on the country's agricultural production, can play a key role in more efficiently delivering food and nutrition security. Strengthening and modernizing the food system can help cover gaps in food security and nutrition, meet future incremental needs, improve farmers' welfare, and reduce dependency on agricultural imports. These measures would involve increasing productivity, enabling imports and a robust export market, and expanding market opportunities for isolated regions.

a. The Economist Group, "Global Food Security Index 2021," https://impact.economist.com/sustainability/project/food-security-index/.
b. Viviana M. E. Perego et al., *DIGITAGRO— Investing in Digital Technology to Increase Market Access for Women Agri-preneurs in Guatemala* (Washington, DC: World Bank, 2022).
c. FAO, FIDA, OMS, PMA, and UNICEF, *Versión Resumida de el Estado de la Seguridad Alimentaria y la Nutrición en el Mundo 2022: Adaptación de las Políticas Alimentarias y Agrícolas para Hacer las Dietas Saludables más Asequibles* (Rome: FAO, 2022), https://doi.org/10.4060/cc0640es.
d. World Bank, "Responding to COVID-19: Modern and Resilient Agri-Food Value Chains Project," December 7, 2020.
e. Food and Agriculture Organization of the United Nations ((Santiago: FAO, 2019).
f. "La Autonomía Económica de las Mujeres en la Recuperación Sostenible con Igualdad," Informe Especial, February 10, 2021, 1–15, https://www.cepal.org/es/publicaciones/46633-la-autonomia-economica-mujeres-la-recuperacion-sostenible-igualdad.
g. Secretaría Técnica de la Mujer del Consejo de Ministras de la Mujer de Centroamérica y República Dominicana (STM-COMMCA), "Impacto y Efectos Socio-Económicos Diferenciados de COVID-19, en la Vida de las Mujeres Rurales y Recomendaciones Emanadas del Mismo" (San Salvador, STM-COMMCA, 2021).
h. FAO et al., "Adaptación de las Políticas Alimentarias."
i. World Bank, "Guatemala SCD Update: Building a Stronger Social Contract through Productive, Inclusive and Sustainable Growth" (Washington, DC: World Bank, March 2022).

4.2.1 Identification of Opportunities

The analysis identified key value chains for further focus: peas, French green beans, avocados, papayas, and cardamom. Among commodities in Guatemala's horticulture production, both peas and French green beans, often considered as a single chain because they are often produced and marketed together, were selected for their high trade volumes. For fruits, Guatemala has seen a major increase in papaya exports, growing from US$3.6 million to US$23.8 million between 2010 and 2021. As an avocado producer, Guatemala also has great potential to supply a larger share of a commodity that is rapidly growing in world imports.

Evaluating the competitiveness of agricultural products, their growth potential, and external demand for them can be important proxies for investment potential. This was measured using two main indicators: the average growth rate

of Guatemalan exports of a selected good and the average growth rate for the commodity's world imports. The dynamism and trade positioning of Guatemalan produce in foreign markets were further analyzed through three specific criteria: the share of each commodity in total Guatemalan exports to the United States, the degree of trade complementarity for each commodity between Guatemala and the United States, and the level of Guatemalan export specialization for each type of produce regardless of the destination of trade flows.[10] The indicators used to measure these criteria, respectively, were the monetary value of Guatemalan exports to the United States in 2019, the trade complementarity index between Guatemala and the United States in 2019, and the revealed comparative advantage index of Guatemala for each commodity in 2019.

This analysis indicates that Guatemala shows investment potential for fresh produce, most notably in horticulture and fruit products. To date, low-quality processing methods and fragmented distribution logistics have impeded the development of Guatemala's fresh-fruit value chain. Opportunities to leverage revealed comparative advantages were identified in the spice, fruit, and horticulture subsectors. These value chains could be further developed, but doing so will require sizeable investments to expand capacity, such as the development of cold chain infrastructure. The analysis identified the top two products for each of the fruit and horticulture categories and one product among spices, and examined the investment opportunities and challenges for these crops.

4.2.1.1 Cardamom

Current State of Production

Guatemala is the largest exporter and second largest producer of cardamom in the world, and its exports have surged over the past decade. Between 2021 and 2022, production of parchment cardamom reached an estimated 37,000 tons. Most of this is exported, representing more than 60 percent of the total international cardamom supply and 3.8 percent of Guatemalan exports in 2021.[11] Cardamom exports have grown from US$308 million to US$520 million between 2010 and 2021. Volatility for cardamom exports has been high in recent years, partly because of variability in the international price of cardamom and shortages in production from key world suppliers, as in the case of India.[12] The five main destinations for Guatemala's cardamom exports are the Arab Republic of Egypt, Bangladesh, Jordan, Saudi Arabia, and the United Arab Emirates.

Cardamom production is concentrated around smallholder producers in poor regions of the country. Around 95 percent of cardamom production in Guatemala is undertaken by smallholders in farms usually smaller than 2 hectares that also produce subsistence crops such as corn, beans, and, in some cases, coffee or bananas for self-consumption.[13] Studies estimate that the average cardamom plantation in the department of Alta Verapaz is 0.65 hectares. The departments of Alta Verapaz and Quiché represent 82 percent of production and 90 percent of the area under cardamom production. However, the populations of these departments also face very high poverty rates, 89 and 77 percent, respectively.[14] Around half of smallholders participate in an active cooperative or other kind of association, and the other half operate alone either formally or by being part of an in-

active organization. Inputs are largely sourced directly by smallholders, as most cardamom producers obtain seeds from their own plantations or their neighbors.

The cardamom supply chain has several intermediaries. Farmers sell their produce to a wholesale buyer (commonly named "coyote"), or the producer transports their product to collection centers. Local collectors or retailers then sell the product to processors who transform cherry cardamom into parchment cardamom. Some farmers also process cardamom themselves through the estimated 2,000 drying systems installed on farms, though capacity is limited.[15] A noteworthy example is the industrial plant for cardamom processing installed by the Federation of Cooperatives of the Verapaces (FEDECOVERA) in 2016 in Cobán, Alta Verapaz. After processing, regional buyers and wholesale intermediaries buy parchment cardamom from processors and sell it to exporters. On occasion, processors sell directly to exporters, which necessitates that the product meet specific color and size requirements related to quality as well as adequate transformation process standards.

The storage and drying process of cardamom require precise and timely techniques. Speed and quality of storage are key to keeping the cardamom capsule green, which is a key determinant of cardamom quality. Greenness can be retained by storing the product within the first 12 hours after harvest, and jute bags are used to maintain a temperature of 22° to 24°C.[16] The drying process is the most complex stage of the conversion of cherry cardamom into parchment cardamom, as it demands a continuous temperature of between 40 and 50°C to retain the green color. An increase in temperature significantly increases the percentages of yellow or split capsules and heat injury,[17] and lower temperatures cause cardamom to lose its color and become white.

Quality is also compromised by the lack of use of fertilizers and pesticides and by smallholders' use of seeds from their own plantations. Limited use of fertilizers leads to low yields, while limited use of pesticides leads to problems with thrips and picudo. Producers tend to select seeds from the best plants in terms of capsule size and resistance to diseases among their own plantation or those of their neighbors. However, they largely ignore the specific genetic variety and characteristics of the seeds they possess, which are often suboptimal because of their edaphoclimatic conditions. This in turn compromises product quality and resilience to external factors. Moreover, the small scale of operations means that an individual farm's best seeds might not be enough to cover the entire plantation, thereby requiring the use of lower-quality seeds.

Lack of strategic planning and sanitary control over cardamom production is another constraint. Farmers generally do not employ adequate and timely nutrition and phytosanitary control programs, partly because of ignorance of what, when, and how fertilizers and pesticides should be used and the profitability of such investments. The producers also do not strategically plan their planting and production. This is because many smallholders consider cardamom production as secondary to other activities, such as working in coffee plantations or producing corn, bananas, or other crops. However, this is changing as an increasing number of farmers learn about the profit potential of cardamom.

The drying process for cardamom entails logistical and quality difficulties. To dry a batch of cardamom, processors need to gather enough cherry cardamom within a strict time frame after harvest. This is a challenge, since production is largely decentralized and not strategically planned. While cardamom does not require cold chain infrastructure, it must be processed quickly after harvest to retain its color. As a result, small producers face an urgency to sell once the cardamom is harvested, leaving cherry cardamom producers at a disadvantage with intermediaries. Wood is used to dry an estimated 90 percent of the country's cardamom but taints it with soot and changes its smell and taste. The use of wood also creates difficulty in maintaining a constant temperature. Furthermore, reliance on wood fosters deforestation and associated negative social and environmental impacts.

Recommendations

The drying process could benefit from more efficient and sustainable methods. This could take different forms, but switching from wood to gas would allow faster, safer, and more uniform drying. Finding more efficient, cleaner, and more uniform ways of drying is hampered by low human capital, inadequate materials, and a lack of extension services and standardized procedures. For example, almost all machines use black steel instead of stainless steel, which would be more appropriate for food processing. Despite existing awareness of these challenges, there remains a need to systematize experiences and standardize processes so that drying is carried out in the best possible way.[18] Other specific improvements include reducing batch sizes so processing can occur with fewer logistic hurdles, optimizing drying designs, and validating the use of sodium carbonate for washing prior to drying.

Improved access to finance would help improve cardamom quality and the returns to smallholder producers. Since cardamom production is concentrated among smallholders, access to credit and financial resources is limited. Farmers usually work on land accredited by a communal agreement with the landowners, leading to a lack of legal certainty.[19] Irregular or informal land tenure arrangements limit access to finance and government support, since land is commonly the main collateral requisite. Furthermore, with insecure property rights, incentives for investment in irrigation, soil regeneration, and land leveling, among others, are low. A lack of finance also impedes access to fertilizers, pesticides, and equipment needed to process cardamom and secure better prices.

Standards and certification are an opportunity to ensure the production of high-quality cardamom for export. Guatemala could work on strengthening compliance with increasingly strict standards from cardamom-importing countries, especially in terms of maximum limits for pesticide residues.[20] While access to pesticides is limited by unaffordability, producers who can afford pesticides still require awareness of the appropriate quantities of pesticide to be used. This issue has not been critical to date because of the relatively lax standards in the Middle East but is poised to become increasingly central as standards in that region are raised, consumption shifts to Europe, and stronger competition arises from countries such as El Salvador, Honduras, Sri Lanka, Tanzania, and others. Investment in national laboratories and certifying firms by the private and public sectors is needed for analysis and quality control to produce and enforce standards in cardamom production.

Better vegetative material is also needed. Nurseries capable of selecting and reproducing the best varieties in terms of cherry size, color, resistance, and yield should be encouraged. Although they could operate as conventional private companies, they could also operate through subsidy schemes following the Starbucks model with Marseillaise coffee, in which millions of coffee plants with the desired characteristics are bred and delivered free of charge. Alternatively, nurseries could operate through PPPs to provide incentives for this type of investment. Large organizations such as the Association of Cardamom Producers of Guatemala (CARDEGUA) and FEDECOVERA would be best suited to play a leading role.

Training for farmers in the design and implementation of high-yield operations in agro-forestry systems can improve cardamom quality. Such training involves proper and timely nutrition, pest and disease control, adequate shade and soil management, and selection of enhanced cardamom varieties alongside trees. This can be achieved by expanding the National Rural Extension System, strengthening national agricultural development strategies led by the Ministry of Agriculture (MAGA), and reinforcing the capacities of extensionists as promoters of rural development. In addition, with the expansion of this program, agronomic plans for land use, seed selection, water use, fertilizers, and pesticides can be developed. A research center for cardamom involving the private sector, universities, and the public sector could address these gaps in training and technical knowledge. This would require the capacity to evaluate and develop vegetative material, establish best production and manufacturing practices, study plant responses to soil and altitude, and set strategies to deal with pests and diseases.

Closer ties between producers and exporters could help increase the production of high-quality cardamom. Being closer to producers could allow exporters to secure larger quantities and a better quality of cardamom, with traceability and in compliance with future more stringent standards by importing countries. Moreover, exporters could be key to providing producers with training, production plans, inputs, and credit, as seen in other value chains. This becomes crucial as competition from other producing countries intensifies and standards in consuming countries rise. Greater output does come with a potential trade-off in the international cardamom price, given Guatemala's share of world exports, but the trade-off will decrease as competition intensifies and is potentially offset by higher quality and greater sustainability of the supply. Lastly, connecting producers with exporting companies could help producers to generate more value added by increasingly eliminating intermediaries.

Commercialization can be enhanced through new channels at the community, municipal, and regional levels. Examples of these new channels include incorporating cardamom in food and beverages on the local market, finding new destinations for parchment cardamom, or integrating cardamom into other food products, such as cardamom-based essential oils, chocolate, coffee, or others. Having real-time access to price information on the diverse commercialization channels and locations through information and communication technologies would add benefit by reducing price volatility at the national level.

Recommendations for cardamom are summarized in table 4.2.

TABLE 4.2

Recommendations to Support the Cardamom Industry

Challenge	Recommendations	Implementing agencies	Short or medium term
Low efficiency and lack of innovation in agricultural practices.	Foster development of agronomic plans for land use, seed selection, water use, fertilizers, and pesticides. Strengthen national agricultural development strategies through programs like the National Rural Extension System.	MAGA	Short
	Establish nurseries to select and reproduce the best varieties of cardamom, operationalized through PPPs or subsidy schemes that breed and provide cardamom plants to farmers.	CARDEGUA, FEDECOVERA, MAGA	Medium
	Develop a research center for cardamom that increases the capacity to evaluate and develop vegetative material, establish best production and manufacturing practices, study plants' response to soil and altitude, and set strategies to deal with pests and diseases.	CARDEGUA, FEDECOVERA, USAC, academia, private sector firms with research institutes	Medium to long
Deficient market linkages and inadequate production techniques.	Link producers and export companies to increase quality and quantity of cardamom exports in light of rising competition.	AGEXPORT, PRONACOM, exporting firms, cardamom producer associations	Short
	Develop training programs for processing practices for drying cardamom and using gas drying equipment rather than wood.	MAGA, INTECAP	Medium
Limited market opportunities.	Increase commercialization of cardamom in secondary products.	PRONACOM, companies working with related products such as chocolate and oils	Medium

Note: AGEXPORT = Guatemalan Association of Exporters; INTECAP = Instituto Técnico de Capacitación y Productividad; USAC = Universidad de San Carlos de Guatemala.

4.2.1.2 Peas and Green Beans

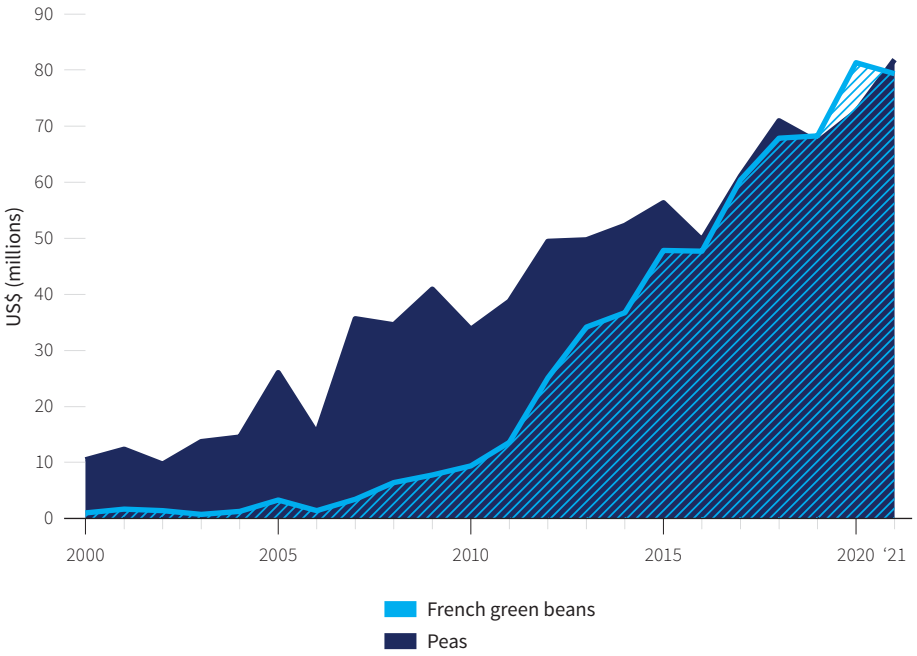
Current State of Production

Guatemala is a major exporter of peas and French green beans.[21] Guatemala is the world's leading exporter of peas (18 percent of total world exports in 2021) and the sixth largest exporter of French green beans (5 percent of total world exports in 2021).[22] French green bean production increased by 115 percent over the past 10 years. In 2020, Guatemala exported 32,659 tons of peas, with an annual growth rate of 1.6 percent, despite the pandemic. Exports of green beans reached 31,751 tons, with an annual growth rate of 7 percent.[23] In 2021, the value of exports of both products reached US$160 million (figure 4.1). These plantations involve around 60,000 families in 200 communities.[24] The three main destinations of peas and French green beans exports in 2021 were the United States (61 percent of total), the United Kingdom (14.9 percent), and the Netherlands (11.1 percent).

The value chains for peas and green beans require close coordination between seed suppliers, smallholder farmers, wholesale distributors, and exporting firms. The seed supply for both products is dominated by a few seed-producing enterprises that invest heavily in research and innovation and sell high-quality products through export agencies on the Guatemalan market, such as Popoyán, Prose-

FIGURE 4.1

Total Exports of Peas and French Green Beans from Guatemala



Source: Trade Map, 2022.

millas S.A., and Agrosemillas S.A. Peas and green beans are grown by many smallholders and a few large agricultural companies that are usually associated with smallholders and also act as exporters. Under strict export requirements, smallholders and export companies work closely to achieve high-quality products that comply with regulations in destination countries. Producers who sign a sales agreement with export firms or cooperatives deliver the product to supply centers, where the products that satisfy the required quality standards are selected, while those showing signs of damage are rejected.[25] Guatemalan firms and brokers that own or lease refrigeration plants where vegetables are selected, washed, cleaned, and packed undertake the processing and packaging operations.

The need for refrigeration renders the cold chain essential for postharvest logistics. The susceptibility of both crops to temperature makes refrigeration the most important postharvest element and transportation the most difficult part. Peas are easier to handle and have a longer life than green beans, but both products need to be transported in refrigerated trucks with a constant temperature of 4° to 7°C and 95 percent relative humidity to ensure that the products remain in good condition for 7 to 10 days. Very low temperatures can cause mechanical damage to the pod dermis, whereas high temperatures can cause accelerated ripening. There are differences in the storage of peas and green beans, specifically in the method of cooling on a small or large scale as well as in direct contact with ice or water. In addition to the export of fresh peas and green beans, these products are also exported frozen, which allows larger volumes and lower risk.[26]

There are insufficient cold storage centers within agricultural production areas. This negatively affects postharvest handling and product quality and forces producers to harvest during the morning, when ambient temperatures are relatively

low. Given the lack of cold storage facilities and the cost of refrigerated trucks, exporters use trucks without cold services at dawn or at night to take advantage of cool ambient temperatures. However, this technique does not ensure product quality as well as cold systems would. Only in some instances is the product transported in trucks equipped with cold systems. Furthermore, the export of frozen peas and green beans, which allows export in larger volumes and with lower risks, is severely limited by the greater investment requirements for the required infrastructure, as well as the cost of electricity.

Poor seed quality constrains the quality of small farmers' products. Except for producers working with exporting firms that provide them with seeds, independent small producers often use seeds from lower-quality plants for reproduction, since those of higher quality are sold to export firms. This causes a progressive deterioration in the quality of peas and green beans due to genetic degeneration, which negatively influences the final price.[27] Additionally, seed production is not subject to any official control.

Pea and French green bean exports have experienced high rejection rates due to microbiological contamination and pesticide overuse. Insects and pests also affect the quality of the pods of snow peas and French beans for export, most notably in the case of thrips. These insects scrape the epidermis of the leaves, producing deformations and color changes in the leaf area,[28] causing a decrease in their commercial value or rejection for export.[29] In response, producers use large amounts of chemicals to ensure high standards of visual quality, even though some of these inputs are prohibited in international markets.[30] The primary reason the country's pea and green bean industry has had difficulty addressing sanitary and phytosanitary quality control concerns is the persistence of unregulated supply channels.

Recommendations

Increasing the supply of certified seeds and access to them by small producers is needed and would create new opportunities. This requires the development of nationally certified laboratories to improve and guarantee the quality of seeds, as well as the strengthening of supervision, inspection, and registration. Similarly, supervision and inspection of the types and quantities of pesticides used should be improved. Training programs for seed producers and marketers on the fulfillment of technical standards or on procedures and protocols can be used to promote production of enhanced plant varieties.

Application of new strategies for pest and disease control could allow Guatemala to achieve high crop quality standards, remain well positioned in export markets, and enter into new markets. Development and implementation of pest management programs that include support for producers and training on the use of approved chemical products, the importance of their adequate use for food security, and the fulfillment of sanitary and phytosanitary measures are necessary to reduce rejection rates. Additionally, more-sustainable options such as organic fertilizers and pesticides could be promoted and regulated.

Implementing controlled conditions could help increase productivity and reduce vulnerabilities. Cold storage, which could be fostered through associations or co-

operatives with enough space and resources, prevents damage to the pods from thermal shock. Macro-tunnels or greenhouses and efficient irrigation systems could better protect crops from climatic conditions and pests. Irrigation systems reduce water waste and water stress and improve fertilizer absorption, thereby reducing input costs and increasing productivity.

Finally, finding new markets for chopped or chunked green beans could help achieve high-value exports and reduce waste and rejection levels. There are opportunities in these value chains to produce by-products with rejected produce, such as frozen vegetables, freeze-dried products, fertilizer production, plant-based meat, and high-protein pea-based supplements. Substandard peas and green beans can be used in production of alternative food products, for example, soups, broths, frozen chopped vegetables, and chips through dehydration or baking. Lastly, wasted and discarded peas and French green beans can be processed as compost or vermicompost.

Recommendations for peas and green beans are summarized in table 4.3.

TABLE 4.3

Peas and Green Bean Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Low yields and quality of production.	Implement training programs and regulations on the use of approved chemical products and sanitary and phytosanitary measures.	MAGA, INTECAP	Short
	Develop national certified laboratories to improve and guarantee the quality of seeds. Strengthen supervision of certified seeds and inspection over pesticide use.	MAGA, academia	Medium
	Control conditions, such as by use of macro-tunnels or greenhouses, efficient irrigation system, and cold storage, to increase yields and productivity throughout the value chain.	MINECO, MAGA, ANADIE, cold storage companies	Medium
Limited market opportunities.	Find markets for chopped or chunked green beans, such as frozen vegetables, freeze-dried products, fertilizer production, or plant-based meat, to reduce rejection levels.	AGEXPORT, MAGA, cold storage and dehydrated-food companies	Medium

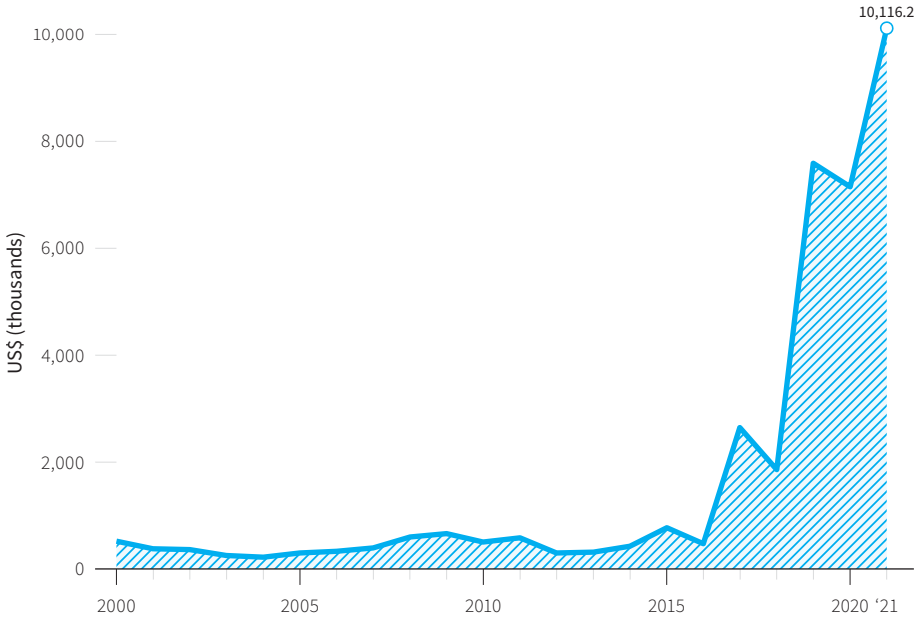
4.2.1.3 Avocado

Current State of Production

In Guatemala, avocado exports have been increasing in recent years (figure 4.2) as the product has gone from an exotic fruit to commonplace in several countries. Production is centered in the departments of San Marcos (15 percent), Chimaltenango (12 percent), Quiché (10 percent), Huehuetenango (7 percent), Sololá (7 percent), Sacatepéquez (7 percent), Alta Verapaz (6 percent), and Petén (6 percent). In 2015, 3,500 producers and 22 exporting farms were registered by the government.[31] Until 2016, Central America was the most important market for avocado exports from Guatemala, especially to Costa Rica, El Salvador, and Honduras. After 2016, Europe became the principal market, particularly the Netherlands and the United Kingdom.

FIGURE 4.2

Total Exports of Avocados from Guatemala, 2000–21



Source: Secretariat for the Economic Integration of Central America (SIECA), 2022, http://www.sec.sieca.int/.

Although small producers play a crucial role in the avocado export value chain, large traders are becoming increasingly important. Generally, small and medium producers have limited access to information, inputs, and training. To overcome these constraints, some small farmers establish verbal or written agreements with exporting companies, with the latter providing inputs such as fertilizers, chemicals, and technical training that are then deducted from the final payment to the producer. In other cases, producers buy the necessary inputs directly and do not receive financing credit, but the exporter details a list of permitted inputs and amounts that can be used to ensure that the product meets the quality requirements. However, according to interviews, larger producers prefer to control their own production and be more independent.

Intermediaries, or brokers, often oversee supplies to the domestic market and Central American buyers. Brokers are either wholesale or retail collectors. Wholesale collectors generally operate in the formal market, identify the product, ensure its quality, and typically provide less price variability to producers. Retail collectors, on the other hand, operate in the informal market, where negotiations generally take place at the plantation, quality and other requirements are lower, and prices are more variable. To skip intermediaries and secure higher profits, some producers supply avocados to wholesale buyers located in market centers or directly to restaurants, whereas in other cases producer cooperatives gather the products of affiliates to achieve greater volumes and negotiate directly with final buyers. In general, small producers do not have stable commercial relationships with large companies, so they sell their fresh produce to whomever offers the best price in the local market. This reduces their revenues and the commercial margins they could obtain if their production were focused on the foreign market. In sum, access to international markets is difficult for smallholders, restricting their ability to earn higher revenues through exports.

Avocado production requires abundant water supplies. With irrigation, ideally a drip system, fruit volume and vigor could be increased, but few smallholders have the means to invest in irrigation systems. However, improper irrigation management can harm the crop, causing deterioration of soil quality and reducing profits.[32] Furthermore, drought management techniques can increase resilience to climate change for small producers.

Quick postharvest handling is essential for avocados because it is a fruit that matures on the tree but ripens off the tree. Avocados are perishable, taking five to seven days after ripening for quality to begin deteriorating.[33] As a result, avocado harvesting and postharvest handling must be done in the shortest possible time, in order to extend shelf life. Postharvest losses can range from 10 to 60 percent of production.[34] The major causes of losses are mechanical injury during harvesting, field handling, and transportation; overripe or desiccated fruit; postharvest diseases (anthracnose and stem-end rots); pest damage; physiological disorders; chilling injury because of improper storage temperatures; and breakage of skin due to poor packaging. These factors affect the appearance, texture, taste, and nutritional value of the fruit. For example, during a simulation of shipping and handling of the fruit, loss of firmness and chilling injury were the main limitations in the retail quality of avocados subjected to fluctuating temperatures (too cold or too warm).[35]

Vulnerability to pests also constrains the capacity for export of Guatemala's avocados. There is an insufficient number of certified nurseries with pest-free avocado trees that guarantee high yields over time. This is important, since quality management systems are the only way to ensure the purity and quality of seedlings capable of producing large quantities of high-quality fruits. In turn, the resultant need for intensive use of pesticides hinders compliance with maximum residue limit regulations and makes rejection in destination countries more likely.

There is also a lack of knowledge of scientific criteria for crop management among small and medium producers. A structural bottleneck often mentioned by interviewees is the lack of standardization of harvest and postharvest processes. Most small and medium producers produce avocados with significant variations in size, appearance, and quality, which makes them unattractive to large exporters subject to long-term export agreements. Inconsistencies in quality also hamper exports to Europe because of noncompliance with multiple quality and safety standards there.[36]

Regional trade for fresh avocados is limited by logistical and phytosanitary challenges. Guatemala has a nontariff barrier for avocado exports to the United States. The main quarantine barrier that prevents Guatemala from exporting to the United States is the potential vulnerability to the seed borer (Conotrachelus persea Barber), an insect that is introduced to the avocado fruit in its larval stage and damages the pulp on its way to the seed. It is unknown whether this pest exists in Guatemala, yet the lack of evidence is enough to prevent exports. Since 2019, a technical roundtable with MAGA has been attempting to develop methodologies to inventory the pest. Intraregional trade is further constrained by weak trade facilitation measures. According to SIECA,[37] transport of avocados in the Pacific corridor of Central America[38] has an average speed of 18.5 kilometers per hour. In addition, delays at the border between Guatemala and El Salvador can be up to nine hours if the product needs verification by customs administrations or four hours if there is no need for verification.[39]

Recommendations

Training programs and traceable certification standards could help improve producers' compliance with multiple standards required by importing countries. The basic characteristics of Guatemalan avocado quality and standardization of harvest and postharvest processes should be agreed upon by input suppliers, producers, packers, traders, and consumers. Standardization at the national level could help the entire value chain by increasing productivity and reducing losses and transaction costs. Nursery plant certification programs, which can be carried out with MAGA, the private sector, and crop specialists, could guarantee farmers quality trees. Costa Rica's implementation of a certification program for avocado seeds and complementary phytosanitary oversight processes that guarantee the quality of the plants can serve as a basis for this strategy.[40] Technical accompaniment could be led by AGEXPORT so that large, medium, and small producers could meet international certifications required by European markets.

Some low-cost techniques, such as gravity irrigation systems, could be employed by small producers facing financial constraints to mitigate the impact of droughts on their crop yields. These systems basically consist of barrels or drums 1 or 2 meters above the ground, which is the height necessary to distribute water along bamboo or polyvinyl chloride pipes. This could help the soil-water-nutrient environment for optimum crop growth and increase crop yields. Extension services could promote the use of such low-cost systems.

Studies and programs to guarantee pest-free areas could help increase avocado exports, particularly to areas with strict pest management standards, such as the United States. Private enterprise could play a leading role in their development, but it is also necessary to involve and train small producers to perform field sampling to carry out laboratory diagnostics coordinated by the Plant Health Directorate of MAGA. This type of research requires large investments, in which the private sector can play a role through PPPs. International and national cooperation could also help finance research initiatives. Pest-free areas can be delineated through public programs such as Mexico's incentive program, which designated pest-free zones as focus points for studies and interventions to reduce the presence of pests.[41] This could improve the trade potential of local avocados and could additionally reap external economies of scale.

Associations that include small producers could provide an opportunity to increase access to foreign markets. Whether horizontal, through cooperatives or associations of small producers, or vertical, through a close relationship with exporting companies, these associations are indispensable for inserting their members' products into more competitive markets. The public sector could also provide incentives for small and large producers and exporters to work together.

Promoting food products derived from avocados could increase the gains from fresh produce that cannot be exported. The production of such foods could reduce postharvest waste. Instead of simply exporting raw avocados, food products such as avocado oil, guacamole, and chips could be made from avocados.

Recommendations for avocados are summarized in table 4.4.

TABLE 4.4

Avocado Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Low yields and quality of production.	Promote refinement and adoption of low-cost gravity irrigation systems.	MAGA, producer co-ops and associations	Short
	Develop a technical certification standard to create a nursery plant certification program that guarantees quality trees for farmers.	Avocado-exporting companies, MAGA, academia, avocado crop specialists	Medium
	Improve harvest and postharvest processes by developing training programs with product specialists and avocado producers to increase knowledge and skills.	MAGA, AGEXPORT, INTECAP	Medium
	Implement systematic technical accompaniment to ensure compliance with international certifications, such as are required by European markets.	AGEXPORT, MAGA's Plant Health Directorate, large avocado producers	Medium
	Develop pest risk studies and train small producers to perform field sampling to carry out laboratory diagnostics.	MINECO, MAGA	Medium
Limited market opportunities.	Enact trade facilitation measures in the region through organizations such as SIECA.	MINECO, SIECA, MINEX	Short
	Promote the formation of horizontal cooperatives or associations of small producers and vertical associations between producers and exporting firms.	MINECO, MAGA	Medium
	Build storage centers (with cold rooms) in rural production zones or move processing centers closer to production zones.	MICIVI, MINECO, ANADIE, MAGA	Medium

Note: MINEX = Ministry of Foreign Affairs of Guatemala.

4.2.1.4 Papaya

Current State of Production

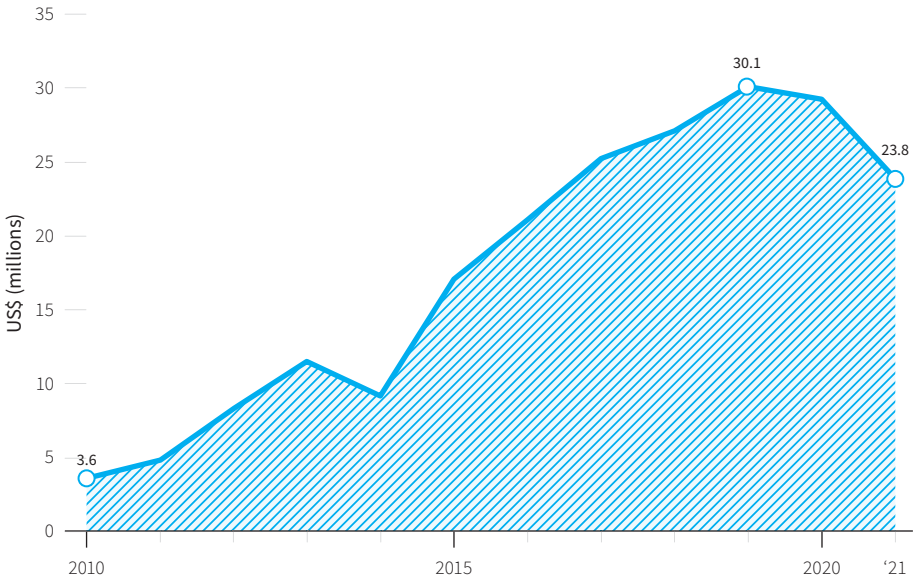
Recent growth in papaya exports has shown the product's export potential. Papaya exports grew from US$3.6 million to US$23.8 million between 2010 and 2021 (figure 4.3). The United States constitutes an important market for the product, accounting for 86.4 percent of all of Guatemala's papaya exports. Other main destinations are El Salvador (12.8 percent of total papaya exports), Honduras (0.8 percent), and Nicaragua (0.02 percent), highlighting the potential for regional trade.

Production of papaya is concentrated in the northern department of Petén. Papaya grows best in warm climates and locations less than 600 meters above sea level with frequent and moderate rains, for which Petén is well suited. The cultivated area in the country has increased dramatically, from 614 hectares in 2003 to 13,079 hectares in 2022. Since most deforestation in Guatemala occurs in this department, the expansion of cultivation in Petén raises some concerns, although at the time of writing there was no available evidence of a direct contribution of papaya expansion to deforestation.

Papaya prices differ between the domestic or regional markets and the US market. Domestic and regional prices in 2022 averaged Q12,208 (US$1,585) per ton.

FIGURE 4.3

Total Exports of Papayas from Guatemala, 2010–21



Source: SIECA 2022, http://www.sec.sieca.int/.

Prices of export to the United States are almost twice as high, averaging Q22,139 US$2,875) per ton in 2022. This considerable difference is a strong incentive to export most product to the United States and drives important profit differences between producers who export and those who do not.

Large-scale exporters of papaya in Guatemala have more direct access to international markets. Direct exports are done by four large enterprises that have the cold chain and logistics infrastructure that allows them to reduce postharvest losses and achieve desired export quality standards. These enterprises also have business contracts with foreign intermediaries and retailers. Medium-scale producers often sell their prime produce to medium and big intermediaries for export, whereas rejected produce is sold to domestic consumers. Exports to destinations such as other countries in Central America and the United States have been possible through compliance with sanitary requirements facilitated by the declaration of Petén as a pest-free zone for the Mediterranean fruit fly through the Mediterranean Fruit Fly Program.

Despite recent growth, there is limited marketing of Guatemalan production. Guatemalan papaya producers have a limited presence at international agricultural fairs, which limits export potential. Access to such fairs generally depends on resources from large-scale producers or international cooperation.

Papaya is susceptible to high temperatures. Papayas have a short shelf life (three to five days); hence, they require cold storage to ensure quality. The average temperature for storing papayas is 7° to 13°C, and relative humidity must be maintained between 85 and 90 percent. Higher temperatures accelerate the maturation of papayas and compromise product quality. Temperature also affects some features that are key to consumer preferences such as fruit size and color. In particular, consumers prefer papayas that don't have spots, are hard, and are not very ripe.

Temperature increases induced by climate change may result in lower-quality products and greater postharvest losses. The most important effect of climate change for papayas is related to higher temperatures because they accelerate maturation and compromise the quality of the product. As more fruit ripens at the same time, there are more postharvest losses alongside spikes in supply with resultant lower prices, followed by a cycle of smaller supply and higher prices. Moreover, abrupt changes in temperature create morphological problems such as carpellody (deformed papayas) that lead to significantly reduced commercial acceptance.

Diseases are also a major driver of losses in papaya production. The most damaging pathogen is the Brazilian meleira virus. The principal effect of this virus is a glueyness that makes the fruit hard and rough. This virus heavily affects the region of Petén, causing serious damage to production and reputation. The meleira virus disincentivizes cultivation of the fruit, and affected producers abandon the cultivation process, causing shortages in both the domestic and the export markets.

Recommendations

Strengthened producer organizations could enable growers to improve fruit quality and increase production and could increase access to international markets. Such organizations could take the form of cooperatives or associations of smaller producers, or farmers could work with anchor firms that can provide technical assistance, financing, and connection with external markets. AGEXPORT offers possibilities for producers to associate and benefit from technical support, focused on innovation and specialized-skill development opportunities. The benefits include market access as well as a platform to generate new businesses and to obtain adequate support to promote competitiveness and representation among public and private stakeholders. For example, Agropecuaria Popoyán, S.A., sells inputs to producers and serves as a cooperative through which producers export various fruits.

Training programs can bridge gaps in skills and harvesting techniques and thus can improve production quality and quantity, especially for medium-scale producers. At present, technical assistance to papaya producers, especially from MAGA, is scarce. Most technical assistance is provided by large-scale producers and intermediaries that often charge market prices or condition the training on a membership fee that can be prohibitive for producers. Training programs facilitated through PPPs would improve production. Training sessions for producers and technical-knowledge transfer forums between experienced and less experienced producers can serve as valuable learning experiences. Likewise, agricultural extension programs, usually provided by anchor companies or cooperatives, are important for communicating good practices. Universities can play a valuable role in researching good practices for disease management.

Development and enforcement of certifications could increase opportunities for export of papayas. Increased awareness and implementation of certifications, such as those offered by Global G.A.P., the Integral Program of Agricultural and Environmental Protection (PIPAA), and the International Organization for Standardization (ISO), could increase access to international markets, most importantly the United States.[42] This could reduce dependency on the few inter-

mediaries that have certifications, while also supporting compliance with phytosanitary requirements established in the General Treaty of Central American Economic Integration for trade within Central America. An official network of accredited laboratories (public or private) is essential to provide certifications. Universities also play an important role by providing technical expertise and infrastructure for these laboratories.

Papaya-based dietary supplements and health industry products provide an opportunity to develop higher-value products that can reduce postharvest losses. Because of its high nutritional value, dehydrated and processed papaya can be included in various dietary supplements, ranging from juices, papaya enzyme pills, and concentrated formulas to jams and jellies. Other food products could include flour, teas, meat tenderizers, and beer clarifiers. Papayas could also be used in health industry products such as shampoos, body lotions, soaps, hydrant oils, exfoliants, and depigmenting solutions.[43] Setting this production close to farms has the potential of reducing losses and/or the need for cold chain services. Local producers could use this opportunity to create new alliances with large-scale food companies such as Mahler (a Guatemalan food production company acquired by Nestle) that produce meat tenderizers and food complements.

Recommendations for papaya are summarized in table 4.5.

TABLE 4.5
Papaya Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Low yields and quality of production.	Provide training sessions to impart technical knowledge and skills to producers, while working with universities researching good practices for disease management.	MAGA, anchor companies or cooperatives, academia	Short
	Develop cold chain infrastructure and increase access to these services for medium-scale producers.	MICIVI, MINECO, ANADIE, MAGA	Medium
Limited market opportunities.	Promote formation of horizontal cooperatives or associations of small producers and vertical associations between producers and exporting firms.	MINECO, MAGA	Short
	Create an official network of accredited laboratories to create certifications that meet international sanitary and phytosanitary requirements for papayas.	Academia, AGEXPORT, laboratories, large agricultural producers	Medium
	Foster papaya demand through secondary products or subproducts, including oils and lotions.	Processed food companies, cosmetic companies, PRONACOM	Medium

4.2.2 Cross-Cutting Constraints in the Agriculture Sector

The agricultural regulatory environment is broadly adequate, but low levels of public investment in agricultural programs and research limit the sector's development. A 2019 World Bank report rated the quality of Guatemala's agricultural regulatory environment at 65.11, almost equal to that of Mexico (69.45) and well above the score of neighboring Honduras (49.13).[44] Nevertheless, Guatemala's regulatory framework could more effectively enable the growth of the agrifood sector. Public spending on agricultural R&D equals less than 0.2 percent of Guatemala's agricultural value added, far below both the levels of regional peers and the 1 percent recommended by the United Nations.[45] Significant information asymmetries in agricultural markets, lack of investment in on-farm and postharvest technologies, and a range of logistical and market access barriers (including low cluster interconnection)[46] lead to an abundance of intermediaries, who capture a large share of the agricultural value. Government investment and support to address the risks and challenges faced by producers, such as volatility in fertilizer prices, could reduce the negative impact of these constraints on production and food security.

Furthermore, according to the analysis described above for each value chain, several cross-cutting factors are hindering the competitiveness of agrifood products in Guatemala. These include access to finance, climate change, infrastructure and logistics, and technical knowledge and skills.

4.2.2.1 Finance

Access to finance for investment and working capital is a pressing issue for agriculture producers. Rural areas have limited access to finance, partly as a result of the scarcity of banks, since they remain concentrated in the metropolitan areas. Guatemala City accounted for 30 percent of total access points in the country in 2022. Credit for the agricultural sector amounts to less than 5 percent of the banking system´s total portfolio.[47] According to another study,[48] this paucity of access to banks, coupled with high transaction costs, lack of collateral (most notably real estate assets and trusts), and the documentation required to open a bank account, has led to the low rate of financial inclusion in rural areas.

Small and medium producers in particular have limited access to finance. These producers often cannot access formal financial services through banks because they lack the required collateral (namely, land and property), and alternative credit options have high interest rates. Apart from not having sufficient assets to serve as collateral, the tedious processing and paperwork involved in credit applications turns farmers off. Other reasons include not having access to banks in farflung areas and having no information on bank lending programs or procedures.[49]

As a result, microcredit institutions, savings, and credit cooperatives are important providers of banking services in rural areas and credit for agriculture producers. These institutions bridge the gap in access to finance for the sector, but they are not subject to regulation and supervision by SIB. In the case of savings accounts, they offer services with minimum opening requirements and without charges for account maintenance or debit card fees. Cooperatives and microcre-

dit institutions have been key to the development of agricultural value chains, as they offer annual interest rates as low as 10 percent. Because of the importance and presence of these microfinance companies in rural areas, international cooperation financing programs are often involved. As for payments, they offer transactional channels with internet, mobile banking, and remote access. However, the functionalities of these channels are limited, as they are not authorized entities for critical payment infrastructures, such as transfers to third parties outside the cooperative or microcredit system. In addition, alternative credit options for small and medium producers from associated exporters play an important role in supplying inputs and training.

Notwithstanding the above, informal providers play a prominent role in bridging the finance gap. Most demand for savings and credit services in rural areas is met by informal providers, such as family members, friends, value chain actors (for instance, input suppliers and exporters), and loan sharks.[50] The Global Findex 2021 indicates that 67 percent of adults who received a loan in 2017 in rural areas obtained it from a nonformalized agent.[51] According to FUNDESA,[52] the annual interest rate set by such nonformalized providers can reach 200 percent. In contrast, private banks offer interest rates of 80 to 120 percent for loans up to Q5,000 (US$650) and between 6 and 18 percent for loans above Q20,000 (US$2,597). Nongovernmental organizations offer rates of 80 percent for loans below US$649 and rates ranging between 36 and 52 percent for loans above that amount. Ensuring a preference for the formal over the informal financing sector will require that services be characterized by reasonable documentation requirements corresponding to the population's socioeconomic conditions, accelerated decision-making processes, convenient financing conditions (that is, amount, rate, term, and frequency of payment), long-term certainty of welfare gains from a good credit reputation, and long-term certainty of a sustainable supply of formal-sector financing.

Agricultural insurance in the country is also poorly developed. The main agricultural insurance is provided by MAGA and Crédito Hipotecario Nacional de Guatemala and is activated in case of catastrophes associated with extreme drought or storms (for example, storms Eta and Iota). An estimated 40,000 small staple crop producers will be covered by MAGA's agricultural insurance in 2022, with the aim of adding another 20,000 by 2023.[53]

4.2.2.2 Climate Change

Climate change vulnerability poses a major threat to Guatemala's agricultural production. The country ranks 14th in the world among the countries most at risk from climate-related events, such as temperature variation, floods, and droughts.[54] New patterns in temperature and rainfall and the recurrence of extreme events will make it difficult to maintain productivity.[55] Excess water can lead to fungi and diseases, as well as plant wilt, water fungus, root rot, and silver or brown spots, which can cause death or wilt. On the other hand, lack of water can reduce productivity by causing sterility (no plant flowering) and can make plants more prone to pests. Net water availability is expected to decrease between 5 and 29 percent by 2050 and rainfall by 17 percent.[56] The impact on

monoculture farms would be more pronounced than on agro-forestry farms. Reduced rainfall and higher temperatures are already leading to steady declines or stagnation in productivity for smallholders. Key staple crop yields are expected to see declines of up to 14 percent by 2050, as is the case for maize and beans.[57]

Large, export-oriented commercial producers will face challenges adapting to new climate conditions, placing Guatemala's export market in a vulnerable position. A previous study found that by 2030, temperatures will increase more in the department of Petén and coastal areas (1.6°C) and less in the highlands (Sierra Madre and Cuchumatanes) and the east of the country (1.4°C). Along with the intensification of dry and hot periods and less precipitation, this may cause water deficits and changes in suitable crop areas. The areas most affected are expected to be the Atlantic coast, the Pacific coastal plain, and the eastern parts of the Dry Corridor (which includes parts of Quiché, Baja Verapaz, El Progreso, Zacapa, Chiquimula, and Jutiapa). Areas suitable for crops in these regions are expected to shift to the Sierra Madre, the Cuchumatanes, the eastern part of the Pacific coastal plain, and Petén. Since the country's key agricultural exports are climate sensitive, this would leave large producers in a vulnerable position. The crops most sensitive to the expected changes in Guatemala are beans and coffee, and areas suitable for their cultivation are expected to decrease.

Natural disasters are causing considerable losses in the agricultural sector. An estimated 136,761.20 hectares and 204,500 families were affected by the rains and winds of storms Eta and Iota in fall 2020, with economic losses of US$119.6 million. The crops most affected by these storms were corn, beans, bananas, tomatoes, onions, and broccoli, in addition to cardamom and coffee.[58]

Climate resilience in the sector is low, as few farmers have access to controlled production environments such as irrigation, greenhouses, and other technologies. This leaves producers vulnerable to crop losses due to reduced or excessive rainfall, increased hailstorms, and extreme temperatures.[59] For example, only 15 percent of the country's irrigation potential has been developed.[60] In this regard, MAGA is updating the national irrigation policy 2022–2032 and investment plan in order to make strategic investment decisions.[61]

4.2.2.3 Infrastructure and Logistics

As noted previously, poor connectivity between cities and rural areas, as well as poor road quality, is a major barrier affecting the competitiveness and quality of the agrifood sector. Much of the rural population (70 percent) does not have access to all-season roads. The worst rural accessibility is found in the center and north of the country, where for 64 percent of the population it takes more than an hour to reach a city of 50,000 or more inhabitants. Difficulties in accessing main agricultural production areas lead to the creation and predominance of intermediaries in the marketing process, which appropriate some of the value produced by small farmers. Low connectivity also limits the participation of small producers in implementing strategies for linking up with international markets. In addition, problems associated with inadequate and delayed transport to processing plants have an impact on the quality of perishables such as fruits and vegetables, making it difficult to achieve high export standards.

Guatemala also has one of the lowest installed cold chain infrastructure capacities in Latin America. The country´s refrigerated-warehouse capacity is around 0.012 m^3 per urban resident, 11.5 times lower than Mexico's (0.138 m^3).[62] The lack of cooling facilities for storage and transportation leads to lower product quality, barriers to accessing local and foreign markets, and food safety hazards (see box 4.2). Apart from the cost of this infrastructure, the lack of electricity is an important barrier for the development of cold chain storage capacity. In the departments of Petén and Alta Verapaz, electricity coverage is less than 70 percent, and in 17 municipalities the coverage rate is between 20 and 50 percent.[63] The two departments combined represent 27 percent of the total national agricultural area. Additionally, 220V three-phase power systems are unavailable in some relatively isolated regions.[64]

Storage facilities and infrastructure are also insufficient, creating major losses and waste for the sector. Guatemala's losses and waste make up 38 percent of its total food production each year and contribute 9.1 percent of the country's greenhouse gas emissions.[65] Losses are due mainly to postharvest mishandling associated with lack of adequate storage facilities (particularly cold storage), transportation problems due to inadequate roads and cold services, and the distance from the field to logistics centers, which are usually located in industrial zones and free economic zones. MAGA has built several collection and

BOX 4.2

Cold Chain Infrastructure in Guatemala

A product's shelf life after harvest depends on the correct management of precooling temperatures and the product's conservation. The cold chain is a preservative agent that inhibits the growth of microorganisms and enzymatic action.[a] This infrastructure is key to maintaining the quality of the product until it reaches the consumer and to preserving a product's shelf life.[a] Guatemala does not have adequate logistics centers dedicated exclusively to cold storage and cold transportation services. Logistics centers are located in industrial zones and especially in SEZs. Furthermore, the high cost of refrigerated transport is unaffordable for many producers, forcing them to transport their products at night or early in the morning, when the temperature is low. The lack of cold chain infrastructure limits development of a cold chain per crop per market combination. Developing this infrastructure would involve storage of seasonally produced foods to allow them to be available year-round, short-term storage staged in strategic locations to meet retail distribution needs, and import-export logistics facilities along global transportation routes.[b]

In Guatemala, the supply of cold chain infrastructure is private, but there is an opportunity for PPPs to play a role in reducing costs and increasing cold storage capacity. According to Eduardo Solares, CEO of Polartika, one of the main cold storage enterprises in Guatemala, there is an increased need to guarantee the cold chain in strategic departments of the country where agriculture is predominant, such as Chimaltenango. The average cost of a cold room is estimated at US$40,000, which is prohibitive for small and medium producers without access to finance. According to Solares, a soft financing agreement from the government could encourage an increase in this type of business and reduce the cost for the service. These services could be offered in municipal markets to avoid losses and waste generated at that level of the agricultural chain.

For this, building small storage centers in rural production zones or moving processing centers closer to production zones is crucial to minimize losses suffered by farmers without cold storage or access to electricity. Market solutions that bring farmers together into cooperatives to share refrigerated facilities can minimize losses en route to distribution centers.

a. World Bank, "Guatemala: Food Smart Country Diagnostic," 2020.
b. Victoria Salin, "2018 GCCA Global Cold Storage Capacity Report" (Arlington, VA: Global Cold Chain Alliance, 2018), https://www.gcca.org/legacy-system/2018%20GCCA%20Cold%20Storage%20Capacity%20Report%20final.pdf.

distribution centers in various areas of the country, some of which have cold storage facilities. However, their use has been hampered by the difficulties producers face when transporting their products through the tertiary road network and by the distrust of buyers, sellers, and intermediaries in the government management of this service.

4.2.2.4 Technical Knowledge and Skills

A lack of training and technical assistance is affecting productivity and resilience in the agriculture sector. Guatemala ranks 74th of 141 countries on the relative ease of finding skilled workers, as well as in the skills and abilities of high school graduates. The low quality of Guatemala's vocational training system, which ranked 48th of 141 countries in 2019, also hinders the development of the country's labor productivity. Almost half of agricultural heads of household have no education and 97 percent of adults in these households have not received any training, yet 72 percent express an interest in developing other skills.[66]

Cooperatives and government institutions have programs to improve technical knowledge and skills in the field; however, capacity and coverage remain highly insufficient. Although MAGA has training programs, there is still insufficient training in integrated pest management, selection of quality seeds or plants, food loss and waste, climate change, pollution, and business development. Many cooperatives have developed training activities to meet the needs of their members. However, training programs are not customizable and are often delivered in Spanish rather than in Indigenous languages, limiting the participation of a large segment of Indigenous producers who do not speak Spanish. Also, cooperatives usually lack detailed data on agronomic practices used by their members, making it difficult to identify areas of strength or areas for improvement.

4.2.3 Recommendations

Table 4.6 presents recommendations designed to address cross-cutting constraints for agribusiness, to accelerate private sector development in the agrifood sector. Several actions to increase agribusiness competitiveness across value chains, by focusing on productivity, finance, trade promotion, institutional development, and social inclusion, are proposed. A possible set of stakeholders that could be engaged in moving these changes forward and the time frame to achieve it are also suggested.

TABLE 4.6

Agribusiness Cross-Cutting Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
Small farmers lack access to profitable markets.	Improve and expand the productive alliances model (small farmers and exporters) that shifts the nature of intermediary relationships and the degree of contractual uncertainty.	MAGA, MINECO, AGEXPORT	Short
	Explore the possibility of expanding digital platforms to connect producers, off-takers, and end markets. One initiative that can be extended to the participation of small producers is the Connecting Best Markets platform developed by AGEXPORT, which serves as a space for linking Central America's export supply with international buyers from different markets.	MAGA, AGEXPORT	Short
	Support integration of small farmers into cooperatives which can increase farmers' access to finance, as well as allow them to increase exports and reach new markets by sharing the costs of these among small- and medium-scale producers.	MAGA, COCODES, ICTA, AGREQUIMA, academia such as IARNA and CEAA	Medium
Low technical capacity weakens export competitiveness.	Technically and financially support initiatives of climate-smart technologies and practices associated with soil management, fertilization, irrigation systems, efficient use of resources, and production models that improve productivity and build climate resilience. Currently, these initiatives are supported mainly by academia along with international cooperation funds such as the plan developed by IARNA[a]	Telecommunication companies, MICIVI	Short
	Improve agronomic capacity in terms of soil management, genetic material, plant nutrition, pest and disease control, and postharvest handling through training courses.	Exporters, INTECAP, international cooperation	Medium
	Provide training in agricultural and business practices and technologies.	MINECO, AGEXPORT	Medium
	Provide training to MSMEs to ensure access to external markets, especially in food safety standards and import requirements of destination markets such as sanitary and phytosanitary measures and safe disposal procedures for agrichemicals.	MAGA, cooperatives, IARNA, CEAA, international cooperation	Medium
	Create private partnerships to provide extension services enabled by information and communication technology, especially in rural areas.	MICIVI	Medium
Inadequate infrastructure limits production, quality, transport, and market access.	Promote and implement MAGA's National Policy of Irrigation to facilitate small producers' access to investment strategies in the field.	MAGA	Short
	Improve and expand the coverage of information and communication technologies to provide access to market and price conditions in real time.	MINECO	Medium
	Design a cold storage capacity and transportation investment program between farms and processing plants through PPPs. This program should include cold storage at ports and airports. To support cold storage, the investment program must also consider a productive development plan for complementary cold chain equipment across industries, such as cold boxes, thermos flasks, cold packs, and thermometers, among others, to support the investment plan for refrigerated storage and transportation.	MINECO, ANADIE, cold storage companies and complementary equipment companies	Medium

(Table continues next page)

TABLE 4.6

Agribusiness Cross-Cutting Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
Productivity of the agricultural sector is affected by lack of access to finance.	Promote access and usage of savings and checking accounts in productive rural areas through transactional cost simplifications, financial education programs, and development of digital financial services adapted to the technologies used by the unbanked.	SIB, Banguat, microcredit institution	Short
	Provide accurate information to farmers on formal credit institutions, especially those associated with cooperatives or microcredit to reduce information asymmetries and prevent overindebtedness.	SIB, Banguat, FENACOAC	Short
	Design agricultural insurance products or schemes for small farmers and extend them to biological risks, such as pests and diseases. In addition, encourage private participation in agricultural insurance by addressing such provisions or policies.	SIB, MAGA, insurance companies	Medium
Lack of R&D hampers the development of adequate vegetative material, pest control and compliance with phytosanitary requirements.	Identify potential climate change impacts on existing cultivations and climate-smart agriculture techniques to mitigate and adapt to such impacts.	MAGA, CRIA, SENACYT, academia such as CEAB, CEAA, and IARNA	Short
	Establish public and private laboratories to improve genetic material, provide phytosanitary certificates, foster transformation opportunities for industry, and establish safety and quality standards.	SIB, Banguat, FENACOAC	Medium
	Create a national seed institute specializing in seed development and improvement as a joint public-private venture to take advantage of resource pooling.	MAGA, ICTA, OIRSA	Medium
	Develop a native variety archive documenting the conservation and productive potential of these plant varieties.	MAGA, CRIA, and academia such as CEAB and CEAA	Medium
	Develop a preventive strategy to identify and mitigate pests and diseases.	CRIA, ICTA, OIRSA, CEAB, and CEAA	Medium
	Undertake periodic analysis and delimitations of suitable areas for the strategic cultivation of agricultural goods, anticipating climate change effects, with updated information on expected yields and costs for investors, policy makers, and financial institutions.	MAGA, CRIA, ICTA, OIRSA, academia such as CEAB and CEAA	Medium
Fragile institutional and regulatory systems undermine the efficiency and efficacy of public spending and public policy design.	Increase national funding for MAGA to provide technical support programs to strategic traditional and nontraditional crops.	MAGA, Ministry of Finance, Congress	Short
	Establish long-term agriculture and agribusiness policies for strategic products, with a specific attention to climate change.	MAGA, MINECO, PRONACOM	Short
	Develop a regular schedule of disaggregated statistics on agriculture to provide accurate information to stakeholders. Focus mainly on publishing a yearly “Agro en Cifras” report that provides information on cultivated area, production, national distribution, yields, trade, and prices. This has not been updated since 2017.	MAGA	Short

(Table continues next page)

TABLE 4.6
Agribusiness Cross-Cutting Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
	Promote market access by supporting and increasing the presence of producers at international events and fairs, and help bridge small- and medium-scale producers with international export markets along with compliance on the required product standards and certifications.	PRONACOM, MINECO, MINEX	Short
	Improve the regulatory environment in the agricultural sector by accelerating the harmonization of national legislation with Central American Technical Regulation in areas including pest and disease management and use of fertilizers and agricultural amendments, certified seeds, and nutritional labeling.	MINECO, MAGA	Medium
	Enhance regulation and compliance regarding pesticide use in accordance with export markets and provide alternative products alongside restrictions.	MAGA, OIRSA, AGREQUIMA	Medium
	Enact a water law that establishes responsibilities and competencies of private and public actors related to water.	MARN, Congress	Medium

Note: Short term = 1–2 years; medium term = 3–5 years. AGREQUIMA = Association of Agricultural Chemical Guilds; CEAA = Center for Agricultural and Food Studies; CEAB = Center for Environmental Studies and Biodiversity; COCODES = Community Urban and Rural Development Councils; CRIA = Regional Agricultural Research Consortia; FENACOAC = Federation of Savings and Credit Cooperatives of Guatemala; ICTA = Institute of Agricultural Science and Technology; MARN = Ministry of Environment and Natural Resources of Guatemala; MINEX = Ministry of Foreign Affairs of Guatemala; NTECAP = Technical Institute of Training and Productivity; OIRSA = International Regional Organization for Animal and Plant Health; SENACYT = National Secretariat of Science and Technology; SIT = Superintendency of Communications.
a. IARNA, "Creation of Research-Action Networks for Territorial Development and Adaptation to Climate Change in Guatemala," IARNA, Rafael Landívar University, Guatemala City, Guatemala.

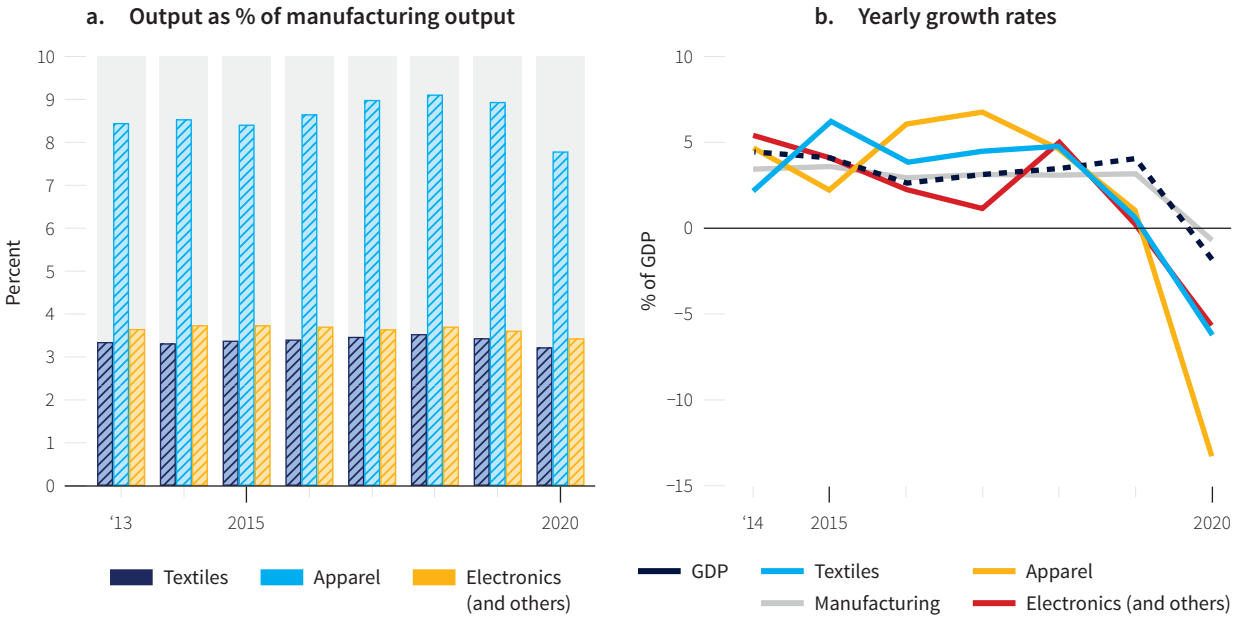
4.3 Light Manufacturing

4.3.1 Market Overview

The manufacturing sector is Guatemala's second largest economic activity and shows significant growth potential. The development of the manufacturing sector has followed a series of industrialization periods since the 1940s. These periods were triggered, or at least catalyzed, by legislation and reforms aimed at improving the business environment and attracting foreign investment, as well as trade policies facilitated by other Central American countries and the United States. However, the sector has also been affected by internal crises and growing international competition. The manufacturing sector accounted for 14 percent of GDP in 2021, behind only retail[67] despite falling 2 percentage points since 2001. The largest manufacturing sector is food products, which accounts for 42 percent of total manufacturing output, while apparel makes up 8 percent, textiles represent 3.5 percent, and the broad electronics sector[68] makes 3.5 percent (see figure 4.4, panel a). Manufacturing exports are relatively dynamic, growing at an annual rate of 5 percent between 2002 and 2021 to reach US$8.6 billion, or 59 percent of total exports (figure 4.4, panel b). As a percentage of GDP, however, manufactured exports have stagnated at around 15 percent. Most manufacturing activities are concentrated in the Guatemala department, which houses the Guatemala City metropolitan area, although some decentralization has been enabled by infrastructure improvements and industrial parks in other parts of the country.

FIGURE 4.4

Size and Recent Economic Performance of the Textiles, Apparel, and Electronics Sectors over Time, 2013–20



Source: World Bank with data from the Central Bank of Guatemala.
Note: Based on Guatemala's national accounts classification of economic sectors, textiles correspond to code AE038, apparel to AE039, and electronics to AE053 (other activities are grouped as well). The original data are expressed in local currency for base year 2013.

The manufacturing sector has been key in including traditionally marginalized groups in the economy, although it employs only a small fraction of the labor force. Employment in the manufacturing sector has historically accounted for 12 to 14 percent of the total workforce, which contrasts with close to 30 percent in sectors such as agriculture and retail. However, about 53 percent of workers in manufacturing activities are women and 46 percent of workers identify as Indigenous (Maya, Xinca, or Garífuna), greater proportions than those observed for the rest of the economy. In recent decades, the distribution of manufacturing workers has shifted away from urban to rural areas, which suggests that more jobs are reaching areas beyond the Guatemala City metropolitan area. The country's textile and apparel association estimates that those sectors employ about 107,000 workers, of whom 51 percent are women, which is not atypical in this sector. Average wages in manufacturing and the rest of the economy are roughly the same.

Guatemala's light manufacturing benefits from preferential trade agreements, proximity to the United States, and recent reforms to improve the overall business environment. The Mercado Común Centroamericano was a Central American integration project aimed at developing a regional economy by providing a larger market and incentives to stimulate the manufacturing sector. Regional integration continues to benefit Guatemala, as 44 percent of the country's manufacturing exports go to Central America. The United States is the destination for 23 percent of Guatemala's manufacturing exports, and it remains a strategic partner. The United States has promoted and continues to promote the development of Central America, with trade preference programs such as the Caribbean Basin Initiative, later replaced by the Dominican Republic–Central America Free Trade Agreement (CAFTA-DR), which stimulates export-oriented manufacturing.

At present, 73 percent of Guatemala's manufacturing exports go to CAFTA-DR members. In addition to trade programs, Guatemala has implemented domestic policies to promote the development of light manufacturing. Its liberalized electricity market enables Guatemala to offer energy prices that are competitive by regional standards. Various frameworks to develop industrial parks, SEZs and equivalents,[69] and maquilas (typically foreign-owned factories that produce and/or assemble products primarily for export) have fostered export-oriented manufacturing, particularly of textiles and apparel. Between 2010 and 2020, the manufacturing sector was the most attractive sector for FDI in Guatemala, averaging 20.6 percent of the total FDI.[70] Recent reforms to reduce administrative burdens and add more flexibility to Guatemala's SEZ regimes are expected to attract more manufacturing investments, leveraging the current nearshoring opportunity and Guatemala's proximity to North America.

Most of Guatemala's exports are of low complexity, but the country has a strong comparative advantage in some of its light manufacturing exports. Between 2000 and 2020, Guatemala's economic complexity index remained practically unchanged at around 0.35, but its ranking fell from 77 to 82 worldwide (of 133 countries). The country's export basket comprises mainly low- to medium-complexity products, a trend that is mirrored when only textiles and apparel are considered. In 2020, only a small share (1.8 percent) of Guatemala's textiles and apparel exports had relatively high complexity.[71] On the other hand, all of Guatemala's electronics exports had relatively high complexity, but they account for less than 1 percent of the country's exports. However, Guatemala had a revealed comparative advantage for two electronics products—namely, primary cells and primary batteries. In contrast, among its textiles and apparel exports, Guatemala had a revealed comparative advantage for 47 products (of 119). There is an ongoing public-private effort to increase the complexity of exports under the GNSD program.

The GNSD program provides the framework for public-private collaboration to boost growth in light manufacturing. The GNSD brings together governments and the private sector to address challenges facing Guatemala with a long-term vision. Among other sectors, it supports the development of textiles, apparel, and electronics with measures aimed at attracting investment and growing exports. By 2030, the program expects that apparel exports will increase by up to US$3.5 billion and will create 472,000 additional jobs. For electronics, with firms already operating in the country, an increase in exports of up to US$47 million and 6,300 additional jobs are expected. Additionally, a leapfrogging proposal to introduce more-sophisticated exports in Guatemala, including medical equipment and electronics, could generate up to 25,000 additional jobs.

Industrial park and maquila regimes have an over-30-year policy history in attracting investment and fostering a more export-oriented economy. Guatemala has five legal regimes supporting the development of industrial parks (see box 4.3). However, only three of them are key in the development of light manufacturing and the country's export-oriented economy, and each offers some fiscal incentives: free zones (zonas francas), special public economic development zones (ZDEEP), and maquilas (regime 29-89s). While slightly different, these regimes provide 100 percent income tax exemption for 10 years for export activities, re-

fund export VAT (as is the case for all exports), and offer a one-year suspension of VAT and tariffs on imported inputs, among other benefits. Ventures under these regimes have proven to be successful in creating growth opportunities for Guatemala's private sector, as they provide land and most infrastructure services for participating firms, proximity to workers, and direct access to intermediate and final markets, while facilitating the development of clusters and economies of scale. The industrial land now under export-oriented regimes is estimated at 70 hectares and is expected to rise to 420 hectares in the coming years.

Further developing the light manufacturing sector could help unleash Guatemala's growth. A sector that has employment generation potential and positive impacts on marginalized and vulnerable groups, Guatemala's light manufacturing pres-

BOX 4.3

Economic Zone Regimes and Industrial Parks in Guatemala

Guatemala has 50 years of history in developing special regimes to attract foreign direct investment and foster an export-oriented economy. The country offers five regimes under which firms can carry out economic activities and benefit from tax incentives and a special customs regime. Some of them have been modified and restricted in scope, which affected the private sector's perception of the country's commitment to these regimes. However, many of the changes, particularly those affecting zonas francas, were reversed, and the government has been promoting the various regimes to position Guatemala as an attractive destination amid the nearshoring trend. While it is too early to assess the impact of these efforts, there is already one success story of a firm that is relocating some of its production to the Western Hemisphere: automotive components producer Yazaki North America, which started operations early in 2023, is installed in an industrial zone established under a special regime. Each regime is described below.

1. **Régimen de Zona Libre de Industria y Comercio (ZOLIC) "Santo Tomás de Castilla,"** Decree no. 22-1973. This is the oldest of the existing regimes. It is a public free trade zone located next to the port Santo Tomás de Castilla. ZOLIC is governed by a public-private board.
2. **Régimen de Maquila**, Decree no. 29-1989. This regime has three key advantages that made it the preferred alternative for the garment and textile sectors until the 2016 reform: first, location flexibility without having to be installed in an industrial park; second, VAT exemption on locally produced inputs; and third, a more agile mechanism for incorporating locally produced inputs and for carrying out coproduction or complement operations with other companies, which do not require the physical presence of the tax authority (SAT) to verify each input entering the factory, unlike zonas francas and ZDEEP. The 29-1989 regime also suffered following the 2016 reform, which limited the income tax exemption to only three sectors: apparel, textiles, and BPO.
3. **Régimen de Zonas Francas**, Decree no. 65-1989. *Zonas francas,* or free zones, in Guatemala did not get the same traction as in other Central American countries, partly because the existing 29-1989 regime was so flexible, allowing companies to operate anywhere, as long as they owned or rented the land. Following the reform in 2016, many firms relocated elsewhere in the CAFTA-DR region, and some free zones closed. In 2021, however, another reform reversed the 2016 changes[a] and gave SAT a more active role in authorizing users, unlike ZDEEP and 29-1989.
4. **Régimen de Zona de Desarrollo Económico Especial Público, or ZDEEP**, Decree no. 30-2008. A reform in 2008 enabled ZOLIC to expand its influence by creating similar developments without geographic restrictions.[b] These developments (ZDEEP) carry the same benefits offered at ZOLIC.
5. **Zona Franca Champerico**, Decree no. 27-1996. The port of Champerico was one of Guatemala's main export ports in the Pacific Ocean in the late 19th century. Authorities tried to replicate the ZOLIC model in this port in the 1990s and 2000s, but efforts to improve the port overlooked key design aspects and it is now unusable.[c] In August 2022, the Ministry of Economy approved the zone's regulation, which, among other items, establishes specific guidelines for the operations and development of the zone.[d]

a. The sectors that qualify for zona franca regime incentives now include the following: processed foods, cookies, oils, margarine, pasta, sauces, dairy products, soups, and beverages; animal feed; leather and footwear; plastics and articles thereof; medicines; cosmetic industries; paints; furniture; toys; and electronics and household appliances.
b. Only ZDEEP legislation has included the possibility of benefiting from local government support, by allowing them to open a ZDEEP in local government land (art. 5). Also, the national government is allowed to do it. A public zona franca needs a law enacted by Congress, as is the case of Zona Franca Champerico. As of now, there is no ZDEEP using national or local government land. For 29-1989, the legislation does not provide a mechanism for the local or the central government to provide land to install factories.
c. The risk of sedimentation was not adequately considered during the design phase. For more information, see Niek de Jong et al., "El Puerto Que No Debió Construirse. ORET Evaluation 2007–2012—Case Study of Project 'Champerico Fishery Port, Guatemala'" (ORET Transactions GT00017 and GT00018).
d. This is an entirely public zona franca. The port does not support cargo operations, so firms in the region export via Puerto Quetzal. The zona franca in this case consists of land, with no industrial shells available for rent, lease, or purchase.

ents significant room for growth. While the sector has been pivotal in positioning Guatemala as a strategic actor in regional value chains (namely, the CAFTA-DR region), there are areas of opportunity for further integration into global value chains, as evidenced by a relatively low manufacturing-exports-to-GDP ratio.[72] Guatemala is in a unique position to expand its light manufacturing sector, building on government reforms and policy priorities and leveraging the ongoing nearshoring trend. By stimulating the development of industrial parks, Guatemala could attract new investments, especially those that are mindful of environmental and social standards. Some industrial parks can help firms meet these performance standards, as compliance tends to be facilitated by the park's management (for example, eco-industrial park operators play a pivotal role in promoting and incorporating principles of the circular economy and green technologies).[73]

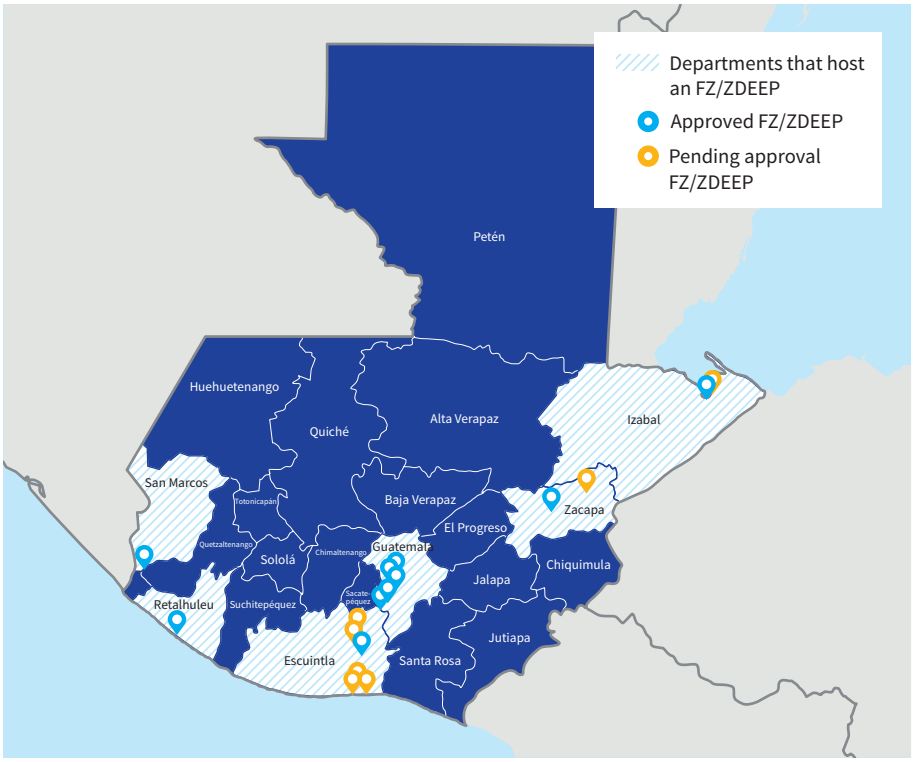
The supply of industrial parks in Guatemala is geographically tied to two main corridors. Most industrial parks are located along the corridor that connects Puerto Santo Tomás de Castilla (Atlantic) and Puerto Quetzal (Pacific), crossing through Guatemala City. A few others are in the corridor that connects the Mexican and Salvadorean border crossings. Industrial parks along these corridors offer direct access to infrastructure, proximity to intermediate and final markets, and access to a relatively large labor force. There are five zonas francas hosting 132 users, three fully approved ZDEEP with one active user and another expected to start operations in 2023, and ZOLIC, which hosts 46 users. Among sectors benefiting from these regimes are textiles, apparel, and electronics. At the time of writing, there are plans for developing 11 additional ZDEEP with various degrees of readiness. Most of these developments are private sector initiatives and are located along the port-to-port corridor (see map 4.1).

The Guatemalan private sector sees access to industrial land as a constraint for their investments. A short survey undertaken to understand local firms' perception of industrial parks suggests that these developments can indeed be attractive for businesses but must have certain characteristics. Location near key infrastructure, affordable land prices, and tax incentives are the top factors highlighted by firms. Other important features include support for environmental standards and going beyond *maquila*-oriented industrial parks toward more R&D and high-tech industrial parks.

While the light manufacturing sector has grown without much attachment to industrial parks, the lack of them can be a constraint for future growth. Companies in the apparel sector that have no vertical integration with textiles can continue to rely on the maquila regime (29-1989) since it provides location flexibility and such firms do not have specific infrastructure needs. These companies do not need to operate under a special regime other than 29-1989, but the infrastructure is essential for their operation.[74] Reliable access to such infrastructure becomes a problem when firms consider migrating away from Guatemala City, where it is difficult to secure land and guaranteed access to water and electricity. Firms producing synthetic fibers benefit greatly from the shared infrastructure and other value-added services provided at an industrial park. Firms in the electronics sector also require large amounts of land which are not usually readily available in areas beyond the capital or the two main ports. For many of these firms, espe-

MAP 4.1

Location of Free Zones and ZDEEP, Current and Expected



Source: World Bank, based on publicly available information.
Note: FZ = free zones; ZDEEP = special public economic development zones. Only FZs and ZDEEPs that host manufacturing activities are included.

cially foreign ones, access to an industrial park could be the difference between starting operations in Guatemala or setting up somewhere else.

Industrial parks can provide the appropriate infrastructure for the light manufacturing sector to comply with environmental performance standards. Vertically integrated textile and apparel firms benefit from the infrastructure services provided in an industrial park, including water treatment plants to comply with environmental standards at lower cost to firms due to economies of scale and reliable access to electricity. In fact, many firms seek to locate in industrial parks where the developer has certain environmental performance standards in place (for example, eco-industrial parks).

4.3.2 Apparel and Textiles

Guatemala is a strategic country for Central America in the textiles sector, acting as a key supplier to the region. Guatemala's textile exports are estimated at US$354 million, and about 87 percent goes to members of CAFTA-DR while only 5 percent reaches the United States. Rising demand in the United States for apparel manufactured in Central America, especially from El Salvador and Honduras, led to an increase in demand for Guatemala's textiles. Guatemala has been able to satisfy the demand for its textiles, enabled largely by increasingly competitive electricity prices in the country. Following supply chain disruptions associ-

ated with COVID-19, many firms shifted their purchases from Asia to Central America,[75] and as the largest economy in the region,[76] Guatemala can harness this opportunity. Guatemala's textile inputs are valued in Central America because they fulfill CAFTA-DR's rule of origin (yarn forward) and are exempt from the 32 percent ad valorem tariff when exported to the United States.

Guatemala is well integrated in global value chains through its apparel exports, but it still has potential to grow its market share. Guatemala's apparel exports reached US$1.46 billion in 2021, with over 90 percent going to the United States. Nonetheless, Guatemala's apparel exports to the United States lag those of its regional peers, including El Salvador, Honduras, and Nicaragua. Guatemala's main apparel exports are knitted clothing. Top garments exported include the following: (a) jerseys, pullovers, cardigans, and waistcoats; (b) shirts; (c) T-shirts; and (d) blouses. The sector boasts a well-integrated value chain, including accessories, finish, and services, as well as the presence of renowned American brands and Korean firms, which have been key in driving technological improvements over the years. The apparel sector was key in absorbing the shocks associated with the COVID-19 crisis, as Guatemala was well positioned to manufacture and export personal protective equipment.

Although cotton was once abundant in the country, Guatemala now imports most of it, in addition to synthetic fibers. Cotton was an abundant product in Guatemala in pre-Hispanic times, but the commercial benefits of using American cotton granted by the Caribbean Basin Initiative led to a halt in its production in the 1990s. Guatemala imports most of its cotton from the United States and produces large amounts of cotton yarn, which it exports to other Central American countries. Synthetic fibers are imported mainly from China, India, Mexico, and Türkiye, while less than 1 percent comes from Central America. The synthetic fiber with the greatest import value is polyester not processed for spinning (81 percent), followed by filament tow of acrylic (16 percent). Smaller amounts of synthetic fiber (nylon and polyester) are produced in Guatemala by a few firms using recycled polyester. Representatives from the apparel sector cite the low supply of synthetic fiber in Guatemala, and in the broader CAFTA-DR region, as a growth constraint. Guatemala could produce semisynthetic fibers, given its access to wood from rubber, cacao, and pine trees and seaweed from both coasts.

Guatemala's textile and apparel association supports firms in meeting labor and environmental standards. The textile and apparel sectors are subject to labor and, increasingly, environmental standards required by international retailers and consumer awareness. Auditing companies visit factories in Guatemala and produce reports that determine whether the factories can supply particular brands. VESTEX, the textiles and apparel association, provides training, guidelines, and assistance to its affiliates to improve and fulfill these and other standards.[77] Interviews with local stakeholders in the context of the CPSD suggest that there has been significant progress in satisfying labor standards. However, complying with environmental standards has been more challenging, since firms are required to improve and invest in wastewater quality. Setting up shop in industrial parks can help firms comply with environmental standards, as the park developer can undertake the investments required to fulfill environmental standards for firms that would otherwise struggle to fulfill them.

4.3.3 Electronics

Guatemala is well positioned to build on its established base of electronics manufacturing. Although small and relatively new, the electronics sector in Guatemala comprises various subsectors, including the manufacture of electronic components and boards for computers and peripheral equipment and communication equipment.[78] The sector is focused predominantly on the domestic market, supplying inputs to other sectors, such as agribusiness and health care, as well as to other manufacturing industries.[79] Sectoral exports are modest and amount to only US$137.5 million, with El Salvador and Honduras being the country's main trade partners (each absorbs about 16 percent of these exports). A small number of companies is responsible for the lion's share of electronics exports. As the ongoing nearshoring trend calls for greater production of electronics inputs in Latin America, the country's revealed comparative advantage in primary cells and batteries is a signal in favor of Guatemala's electronics sector.

Few firms spearhead the development of the electronics sector in Guatemala, and there is potential to develop inputs domestically. Firms in the sector import most of their inputs, so they are unlikely to have business ties with local firms. One of these firms, a foreign refrigerated-equipment manufacturing company, relies primarily on imports from China, Türkiye, and the United States and exports final goods to countries in the Western Hemisphere and Europe. Another firm—in the process of starting operations at the time of writing—will be manufacturing wire harnesses for export to the North American market but will also rely on imported inputs. Campus TEC hosts a cluster of SMEs that design electronics that are prototyped and produced in China.[80] This private platform stands out for having palpable ties with local firms, but the companies lack the equipment required to start prototyping or manufacturing products on their own.

The COVID-19 crisis shook the electronics landscape in the country. The largest electronics producer in the country expanded and consolidated operations in Guatemala after closing its factory in Colombia in 2021 for reasons associated with the pandemic. However, after 60 years in Guatemala, a zinc-carbon battery manufacturing plant ended operations in December 2020 and relocated to Brazil and Indonesia. While the pandemic was a key reason behind closing, it is likely that increasing international competition also contributed to this decision.[81]

4.3.4 Key Barriers and Constraints

A minimum wage, at present set at a level higher than average labor productivity, has been noted as limiting the pace of formal job creation across all manufacturing activities.[82] Guatemala's minimum wage has historically been higher than its market median wage, which has resulted in a segmented labor market with few medium to large firms able to afford the minimum wage and numerous smaller and informal firms paying below minimum wage.[83] Average wage levels also vary by region, with that of Guatemala City greatly exceeding those of other urban and rural areas.[84] Furthermore, Guatemala's minimum wage exceeds the average wage, which, in tandem with a high ratio of minimum wage to GDP per capita,[85] has increased the competitiveness gap between Guatemala

and other countries in Central America. This has been identified as a core issue behind the lack of dynamism of the manufacturing sector, especially for apparel, which has not been able to fully benefit from Guatemala's strategic location and trade agreements. While many firms supplying the domestic market do not always comply with the minimum wage, export-oriented light manufacturing firms and their suppliers are more likely to comply, largely because of increasing awareness among consumers about labor conditions in more advanced economies.

Trade logistics are affected by road and port congestion, as well as by prolonged port inspections. Guatemala's strategic location advantages are partially offset by infrastructure shortcomings, with road and port congestion increasingly of concern to manufacturers. Areas along the border-to-border and port-to-port corridors offer appealing locations for manufacturing operations, but frequent road and port congestion leads to delays and costs. These issues are especially common in the corridor from Guatemala City to Puerto Quetzal, where traffic in and around Guatemala City often results in delays. Inspections done at ports, on the import side, can delay merchandise by about four days, according to interviews made in the context of the CPSD. For example, the textile sector is prone to delays, as some chemicals imported for the production process are frequently subject to drug inspections.

Administrative difficulties hinder the competitiveness of Guatemala's exporters and importers. Firms often face delays and additional costs due to issues with the tax authority (SAT). Discrepancies often arise when firms purchase goods at a discount and the tax authority contests how the goods are priced. According to some interviewees, auditors' criteria are not uniform, and firms do not always keep orderly accounting books. In some cases, the capacity of firms to export and import is also affected by the lack of documentation, such as a missing supplier's invoice, as the companies are often not aware of all SAT requirements. Discrepancies also occur because of the time-sensitive tax exemption window set in the 29-1989 *maquila* regime for imported inputs, since exports do not get registered right after the coexporter has sent the goods to the exporting firm, so any delay from the first step affects the second. These issues disproportionately affect small firms, which often lack economic and human resources to cover administrative penalties, and suppliers of exporters who are subject to tight delivery dates.

Skills needed for more-sophisticated manufacturing activities are limited. World Bank Enterprise Surveys found that 40 percent of manufacturing firms think that the inadequately educated workforce is a major constraint. Education outcomes vary considerably across administrative departments, ethnicities, and urban versus rural areas because of high levels of segregation.[86] The average adult worker in Guatemala has 7 years of schooling, not enough to be eligible to start vocational training. Although INTECAP, the country's technical training agency, has done an important job training part of the workforce, companies note that there are still skill gaps associated with an unawareness of technical skills required by manufacturing industries. This has been especially challenging in the electronics and synthetic-textile sectors, in which firms rely on foreign expertise and little skill transfer has permeated to Guatemala's entrepreneurs and workers.

Governance issues and uncertainty have hindered the growth and availability of industrial parks. While legal and regulatory constraints were a problem before 2020 for both zonas francas and ZDEEP, the main bottleneck at present is SAT, the tax authority. SAT authorizes industrial land (ZDEEP or zonas francas) and approves the users of the various regimes, but the approvals are usually delayed. These holdups affect industrial land developers, who often liaise with authorities on behalf of users, take on loans to develop the industrial facility, and require permits to develop the land and start construction. Although most regulatory uncertainty was addressed through recent reforms, the impact has yet to be seen. At present, depending on the sector, firms still prefer to apply to the 29-1989 regime because it allows them to start operations faster and to interact with fewer government entities.

Firms' access to finance appears to be constrained by lack of knowledge or preference around financial instruments and a conservative banking system. The latest Enterprise Surveys found that almost one-quarter of manufacturing firms in Guatemala identify access to finance as a major constraint, more than any other sector. Interviews suggest that the banking sector has perceived the apparel sector as too risky after some companies facing financial issues left the country in 2005. Since then, firms in the sector have not engaged much with banks or vice versa. Authorities have revamped the legal framework governing factoring and leasing in recent years as part of a broader effort to improve the business environment. While it is too early to determine the effect of these changes, the average number of leasing contracts registered (for all sectors) each month between January and June of 2022 was 65, well above the 15 from the same period in 2021. Given the significant working capital needs of sectors like apparel and electronics, the number of contracts seems low. SMEs often lack the resources and expertise to put together their projects' technical information, which leads to rejections from banks. Foreign firms face an additional hurdle, since local banks require domestic guarantees even if a firm owns assets abroad.

4.3.5 Opportunities and Recommendations

The ongoing nearshoring trend presents an opportunity for growth in the light manufacturing sector. As companies try to consolidate their supply chains close to their assembly plants and final markets, Guatemala has lowered its energy costs and introduced various reforms to improve the business environment. Companies in the sector are looking at Guatemala as an appealing investment destination, given its strategic location. To leverage the country's geographic advantages, authorities should continue to support initiatives aimed at attracting new investments and retaining existing ones. It is important to tackle the barriers and constraints identified above, as overcoming them could lead to a new period of sustained growth in Guatemala's manufacturing sector.

Fostering the development of domestic inputs for the light manufacturing sector could enhance Guatemala's strategic relation with North America. Production of higher-value textiles and apparel is an opportunity for growth in Guatemala and in the CAFTA-DR region. This would allow for an increase in the variety of apparel designs being produced while fulfilling the CAFTA-DR's yarn-forward

rule of origin benefit of the region. Guatemala's electronics sector relies on imported products, leaving firms vulnerable to supply chain disruptions. Local-supplier development strategies could enable firms in the sector to replenish their stock as needed. For the SME cluster hosted at Campus TEC, the lack of domestic inputs limits their ability to scale up, making them dependent on imports from Asia. Developing an R&D laboratory could boost the electronics sector's competitiveness and signal the country's commitment to further develop the sector.[87] Efforts such as the Investment and Construction One-Stop Shops[88] should be leveraged to attract new investments in these sectors, which could be hosted in industrial parks that facilitate vertical integration and economies of scale.

Flexibility in the minimum wage, particularly to reflect the significant differences in productivity across Guatemala, could help increase the competitiveness of regions beyond Guatemala City. The government could consider institutional and legislative reforms that prevent future increases in minimum wage from being set above labor productivity growth. This will ensure that minimum wage revisions do not further deteriorate firm competitiveness or disincentivize formalization. The government should also explore how previous efforts to allow for regional differentiation in minimum wages could be aligned with constitutional provisions of equal pay to reflect differences in labor productivity across the country.

Alleviating congestion along key trade routes would reinforce Guatemala's commitment as a nearshoring partner. As companies look for potential places to relocate suppliers, delivery times become increasingly important. To exploit its strategic location close to North America, Guatemala should make its infrastructure ready to accommodate increased movement of goods and people. Specific actions to address infrastructure deficiencies are already contained in the GNSD program. A good starting point would be to expand road capacity along the port-to-port and border-to-border corridors, which are key international trade routes in the country, as well as to maintain and expand the ports of Quetzal and Santo Tomás de Castilla. Modernizing the inspections by the Division of Ports, Airports and Border Areas (DIPAFRONT) at ports to expedite the flow of goods is also recommended.

Introducing measures to help firms comply with SAT's requirements would help smaller firms be more productive and competitive. The tax authority could introduce guidelines and training to create uniform criteria for auditors for aspects such as documentation required to comply with audits in general and specific issues such as coexporting and purchasing goods at a discount. The online electronic invoicing system is a step in the right direction because it allows firms to keep track of all issued invoices, which also facilitates tax return filings. However, interviews with stakeholders suggest that many firms still grapple with their records and tax returns. SAT could also organize training for entrepreneurs and MSMEs, as well as university students, to help them navigate the invoicing platform and use it to prepare their own tax returns. More compliant firms would help increase the appeal of engaging with domestic firms as suppliers among large multinational firms.

Advancing workers' skills would help attract new investment in more-sophisticated stages of the light manufacturing value chains. Three strategies can help move

the needle regarding worker skills. First, the government could introduce a scholarship program to support youth, using existing efforts such as Oportunidad[89] to stimulate young people and professionals to learn English (or other foreign languages) and develop technical skills. Second, worker skills could be developed to meet the demands of more-sophisticated economic activities along the textile, apparel, and electronics value chains. INTECAP, universities with a more technical focus, and leading firms in the sectors could develop a time-framed plan to define goals and shared commitments to update and expand the current supply of technical and professional training. Third, attainment and quality of schooling could be improved as a long-run policy but with periodic revisions, focusing on middle- and high-school education while closing the rural-urban gap in education.

The various industrial land regimes could benefit from greater clarity and transparency regarding the regulations governing them. Interviews with stakeholders revealed concerns over lengthy delays and insufficient information on the requisites for obtaining SAT clearance to operate as a *zona franca* or ZDEEP. Greater clarity on the expectations and requirements could enable industrial land developers to fulfill the requirements faster and increase the appeal of these regimes to investors. This would support government efforts to attract foreign investment in manufacturing amid the ongoing nearshoring trend.

Greater banking sector engagement with light manufacturing (especially apparel) firms could help unleash greater growth. Interviews with local companies revealed that banks are concerned about the lack of long-term contracts between international brands and domestic manufacturers. Introducing instruments that allow banks to share the risk with international brands, or with export trading companies, could help alleviate some of the bank's concerns about the riskiness of the apparel sector. While this perception appears to be improving, according to consultations, only a few banks of foreign origin are proactive in offering credit to firms in the sector. Ensuring that the Insolvency Act is effectively implemented, including the corresponding registry and specialized courts, will also help increase banks' confidence in light manufacturing firms and more. Universities and business associations could offer training aimed at developing financial skills and knowledge to construct financial statements and credit applications for firms and entrepreneurs seeking finance.

The government of Guatemala will need to continue supporting a shared framework and workspace for the public and private sectors to overcome growth constraints. Since 2020, the national government, the city of Guatemala, and the private sector embarked on a project to identify and address growth constraints. Public and private efforts are coordinated under the GNSD framework, which promotes specific proposals to unleash Guatemala's growth. Maintaining the continuity of this program, or a successor that builds on this public-private dialogue, will be key to gathering support to harness the opportunities and advance the policies required to overcome growth constraints. The country's investment promotion agencies (namely, PRONACOM [public] and Invest Guatemala [private]) have an important role to play and should be better resourced and engaged.

Table 4.7 lists recommended actions to address challenges in the light manufacturing sector in Guatemala.

TABLE 4.7

Light Manufacturing Recommendations

Challenge	Recommendations	Implementing agencies	Short or medium term
KEY DOMESTIC INPUT BARRIERS			
Limited domestic production of key inputs	Ensure that the GNSD or a similar public-private dialogue remains in place to attract private investment.	MINECO, MINFIN	Short
	Create local-supplier development programs to link local suppliers with foreign investors and top firms in Guatemala.	MINFIN	Short
Insufficient synthetic yarn and textile production for apparel potential in the CAFTA-DR region	Consider textile and apparel leapfrogging, including local production of synthetic fibers.	Congress, MINECO	Short and medium
Lack of an ecosystem to foster the development of the electronics sector	Develop a public-private R&D lab for electronics.	Congress, MINECO	Medium
	Simplify and streamline the bureaucratic process for development of state-of-the-art industrial parks.	Congress, MINECO	Medium
LABOR CONSTRAINTS			
Due to a high minimum wage, high labor costs compared to the productivity of the average Guatemalan worker	Review and revise the minimum wage to reflect the significant differences in productivity across Guatemala.	Ministerio de Trabajo	Short
TRADE LOGISTICS AND INFRASTRUCTURE BARRIERS SPECIFIC TO LIGHT MANUFACTURING			
High logistics and tax compliance costs and delays involving international trade	Modernize DIPAFRONT's drug inspections.	Ministerio de Gobernación, Congress	Medium
Road congestion	Expand road capacity, port to port and Mexico to El Salvador, including the Regional Beltway.	Congress	Medium
Port congestion	Maintain and expand Puerto Quetzal and Puerto Santo Tomás de Castilla.	Empresa Santo Tomás de Castilla	Medium
ADMINISTRATIVE CONSTRAINTS			
Administrative hurdles affecting exporters' and smaller firms' competitiveness	Introduce uniform criteria that firms can follow with regards to purchasing goods at discount and coexporting.	SAT, MINFIN	Short
	Organize training for entrepreneurs, MSMEs, and university students to help them use the electronic invoicing system to prepare their own tax returns.	SAT	Short
SKILL CONSTRAINTS			
Insufficient technical skills across the workforce for increasingly sophisticated manufacturing sectors	Develop worker skills in the electronics sector via makerspaces, a technology transfer program, and a program to rent INTECAP machinery to start-ups to help workers develop skills required to build products and prototypes.	INTECAP, MINECO	Short

(Table continues next page)

TABLE 4.7

Light Manufacturing Recommendations *(continued)*

Challenge	Recommendations	Implementing agencies	Short or medium term
Low education attainment and poor quality of education	Build a scholarship program to develop technical skills responsive to sophisticated manufacturing sectors.	INTECAP, MINECO	Short
	Approach universities to adjust their curricula in consideration of knowledge and skills required to either finance or seek finance for new projects.	MINECO, SIB, Banguat	Short
	Invest in higher technical skills via international scholarships with a clear focus on manufacturing engineering.	MINECO, MINFIN, Congreso	Medium
	Continue improving education attainment and quality.	Ministerio de Educación	Medium
Firms' lack of knowledge to present bankable projects when seeking finance	Approach business associations to suggest sharing with their associates the skills required to finance new projects.	MINECO, SIB, Banguat	Short
REGULATORY BARRIERS TO DEVELOPING INDUSTRIAL LAND			
Long delays to approve ZDEEP and *zonas francas*	Develop clear, transparent, and comprehensive guidelines on the requirements to become a *zona franca* or ZDEEP user and developer.	MINFIN, SAT	Short
FINANCIAL BARRIERS SPECIFIC TO LIGHT MANUFACTURING			
Insufficient knowledge of financial instruments by banks in the MSME sector	Identify nongovernment risk management financial instruments for banks to provide financing options to the light manufacturing subsectors.	MINECO, SIB, Banguat	Short

Note: MINFIN = Ministry of Finance.

Notes

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69. Zonas francas, ZOLIC, and ZDEEP.
70. With figures from the Central Bank of Guatemala, which classifies sectors according to the International Standard Industrial Classification, 4th revision. The database does not disaggregate beyond the broad sector of manufacturing, so no data are available for textiles, apparel, or electronics. Data for 2020 are preliminary.
71. Greater than 50 when normalized to a scale of 0–100.
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80. Campus TEC is a private platform that provides space, makerspace, and an entrepreneurial community to software and hardware start-ups. The community of firms includes agricultural drones, decentralized solar energy services, telemedicine via cabins with sensors, and consumer electronics, such as smartwatches, earphones, and digital cameras.
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82. For a more detailed discussion on jobs, wages, and formality, see Andreas Eberhard-Ruiz, "Jobs Diagnostic Guatemala," Job Series (Washington, DC: International Bank for Reconstruction and Development/World Bank, 2021).
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84. Information from Encuesa Nacional de Empleo e Ingresos (ENEI).
85. For a more in-depth discussion of the relationship between the minimum wage and GDP per capita, see IMF Country Report 22/165, Guatemala (Washington, DC: International Monetary Fund, 2022).
86. For example, the department of Quiche, with one of the highest concentrations of Indigenous populations, has the lowest literacy rate (62.9 percent), compared with 91.4 percent in the department of Guatemala. Years of schooling for poor students and those from rural areas are approximately half of those for students from urban areas and the wealthy. Ulku and Zaourak, *Unleashing Central America's Growth Potential.*
87. A study published by Deloitte highlights the relevance of R&D investments to foster the development of an innovative ecosystem that facilitates advanced manufacturing. See https://www2.deloitte.com/us/en/pages/manufacturing/articles/advanced-manufacturing-technologies-report.html.
88. The Investment One-Stop Shop is an effort to simplify and convey all operational requirements for investments and to provide up-to-date information for investors' decision making. The Construction One-Stop Shop aims to simplify and digitize all administrative procedures to carry out an investment in the construction sector.
89. Oportunidad is a government-sponsored program that provides scholarships to those interested in learning English and nursing. The program includes financial support for tuition and other learning-related expenses, as well as for purchasing an electronic device and internet access.

APPENDIXES

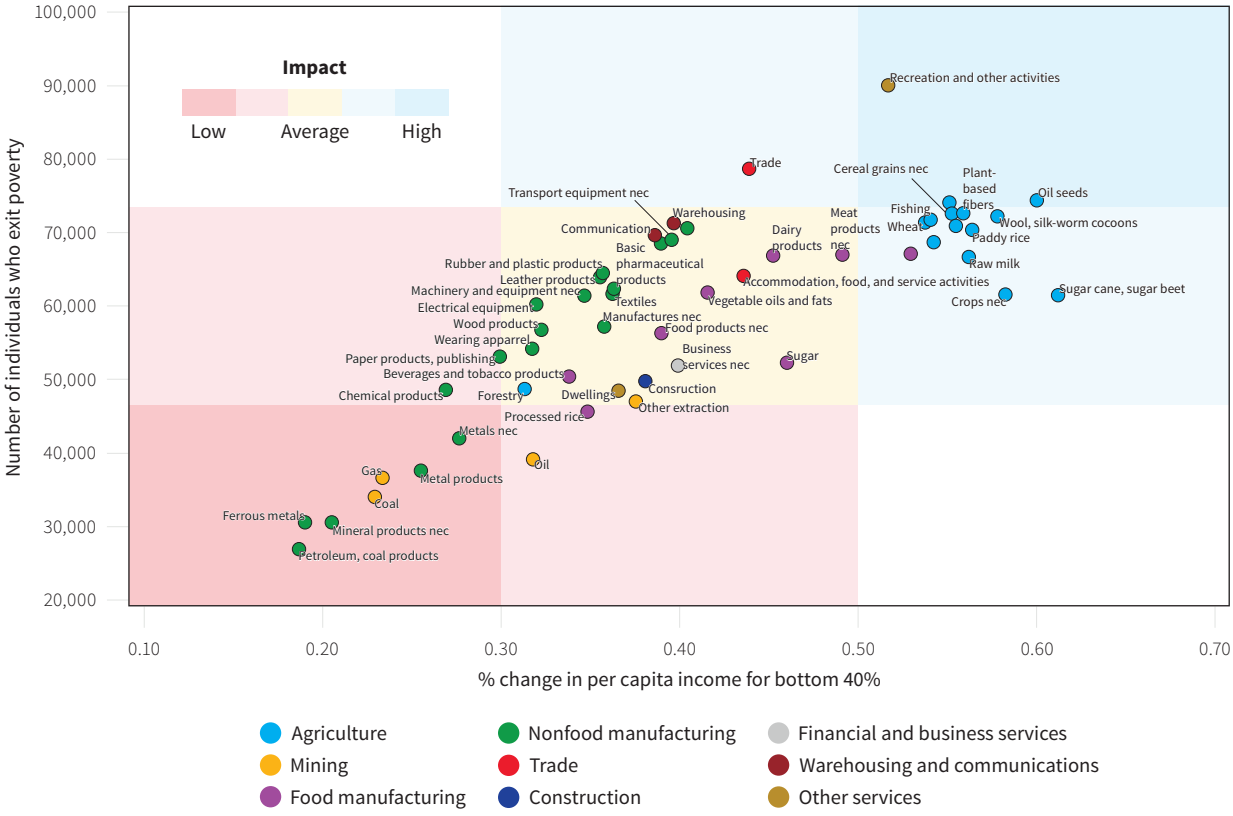
APPENDIX A SECTOR SELECTION OUTCOMES

Investment in agriculture and recreational services was estimated to generate the largest gains in terms of poverty reduction and inequality reduction. A macro-microsimulation model that imitates the effect of a US$100 million investment in each sector was used (figure A.1). A US$100 million investment in agriculture, such as vegetables, fruits, and nuts or oil seeds, directly creates opportunities and income benefits for poor households and reduces poverty by around 70,000 individuals while also increasing per capita household income for the bottom 40 percent by an average of 0.5 to 0.6 percent. A significant impact on poverty is also observed for investments in recreation and other activities and in trade sectors (around 90,000 and 80,000 individuals moving out of poverty, respectively), but with smaller income gains for the bottom 40 percent (around 0.4–0.5 percent). Mining sectors such as coal, gas, and oil are among the industries with the lowest welfare gains, with an estimated poverty reduction of fewer than 40,000 individuals and average income gains for the bottom 40 percent of below 0.35 percent.

The largest contributor to income gains for the bottom 40 percent and poverty reduction is sectorwide wage increases, followed by job creation for previously unemployed workers and provision of better jobs for currently employed low-income individuals. New jobs for previously inactive workers would contribute to about 30 percent of the per capita income increase across all sector investments, ranging from 20 percent in agriculture sectors to 35 to 40 percent in mining, manufacturing, and service sectors. Job creation also allows active workers to move from low-income employment to higher-paid jobs either in formal sectors such as business services and mining or in informal but better-paid subsectors such as communications. Finally, sectorwide wage increases due to labor productivity improvements have the greatest impact: about 55 percent on the per capita income increase across all sector investments, accounting for 70 per-

FIGURE A.1

Number of Individuals Who Exit Poverty and Income Gains for Bottom 40 Percent by Investment Sector



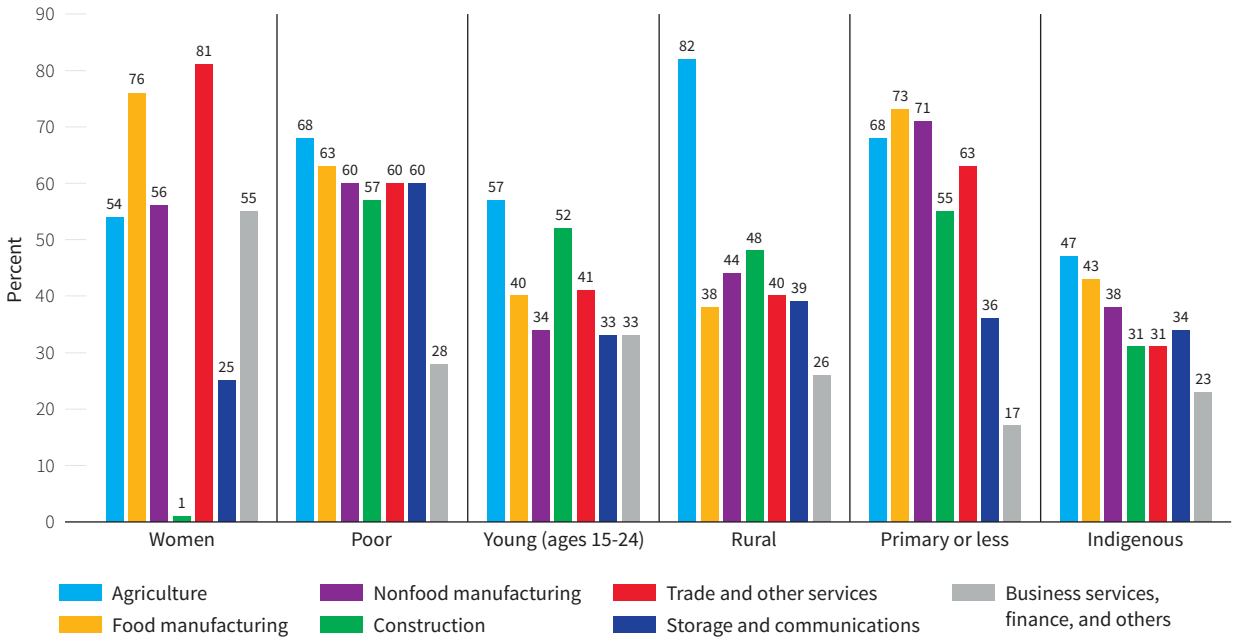
Source: World Bank.
Note: Each marker represents the total impact on poverty and income after a $100 million investment in that sector increases the domestic output in the sector. This sector-specific output increase leads to job creation and wage increases across all sectors of the economy through backward and forward production linkages and increased household consumption. nec = not elsewhere classified.

cent in agriculture and 35 to 50 percent in most manufacturing and service sectors. Overall, the wage channel contributes more than 80 percent of the effect on poverty across various sectors, with investments in recreation services and trade having the largest impact.

In addition to poverty reduction and increased income for the bottom 40 percent of the population, private sector investments benefit disadvantaged groups, such as women and youth (figure A.2). These groups benefit from economywide job creation because most new jobs (77 percent on average) are allocated to previously unemployed individuals who are likely to be women, young, and/or poor. Women take advantage of close to 60 to 70 percent of jobs newly created jobs following investments in most sectors. Specifically, they benefit the most from investment in trade and other services, taking 81 percent of new jobs, followed by light manufacturing sectors, such as food manufacturing, with women taking 76 percent of new jobs. Finally, other disadvantaged groups such as Indigenous people, rural dwellers, and individuals with primary education or less take advantage of 35, 39, and 50 percent of new jobs, respectively. Finally, there is also substantial variation across sectors among Indigenous groups and individuals with primary or less education (ranging from 17 to 73 percent), with the lowest shares observed in the finance and business service sectors.

FIGURE A.2

Demographics of Job Takers by Sector and Job



Source: World Bank.
Note: Each US$100 million investment in a sector creates jobs across the labor force. The shares shown are for individuals with the respective characteristic among job takers in each of the broad sectors, on average, for the jobs created in that sector. Percentages can exceed 100 since an individual can be represented by more than one characteristic; for example, data for a young Indigenous woman with primary or less education would appear in several categories. Bus. = business; Comm. = communications; Fin = finance; Manuf. = manufacturing; Serv. = services.

The selection process was further supported by two quantitative tools and a desk review of key World Bank analytical work on export competitiveness in Guatemala. The IFC Global Unit conducted a sector scan[1] to identify tradeable sectors that present opportunities for private investments. The scan evaluated six dimensions of opportunity—capability, demand, scale, pricing, green benefits, and spillovers—according to a standard methodology. According to an analysis of each sector's performance, Guatemala has gained market shares globally in sectors such as information technology, communications, and tourism, while the textile and agrifood sectors have experienced robust domestic growth. The agriculture, forestry, and paper sectors present strong growth opportunities, while food products and beverages hold the greatest export potential.[2] The textile sector scores high in all categories except pricing. The sector scan was used as a starting point to inform the identification of export promotion opportunities.

The team combined the sector scan with a distributional impact assessment of private sector interventions. From the results, selected investments in warehousing and support services, water and transport equipment, and activities that can be developed within the light manufacturing sector are identified as having the potential to generate high levels of employment and strong effects on income. Similarly, the production of vegetable oil, fats, and food products could have a significant effect on development, as boosting productivity would increase earnings for farming households in rural areas.

Selected World Bank analytical work in Guatemala further informed the sector selection process, including "Central America SME Competitiveness and Global

Value Chain Upgrading,"[3] *Guatemala: Policies for Business Recovery, Jobs and Economic Transformation*,[4] and "Guatemala: Food Smart Country Diagnostic."[5] These studies concluded that improving competitiveness and export diversification is a key priority for Guatemala, where agricultural products account for 65 percent of total export value for the country's 20 most exported products. Opportunities to leverage revealed comparative advantages in the spice and fruit subsectors, as well as in textiles. Moreover, agricultural, textile, and apparel value chains contribute heavily to job creation, especially for less skilled workers.

Notes

1. The sector scan does not provide an exhaustive assessment of trade opportunities, either at the sector or the product level. Instead, it is a starting point in an export promotion decision-making process that was followed up with further desk research and consultations with public and private sector stakeholders in the country.
2. The Information and Telecommunications export potential map indicates that additional exports could total $958.7 million.
3. Criscuolo, Saraf, Ho, and Rudolph, "Central America SME Competitiveness and Global Value Chain Upgrading," 2019.
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