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Cuba: a succession
of economic and
financial crises amid
the weakening of the
Cuban model

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Cuba: a succession of economic and financial crises amid the weakening of the Cuban model

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Summary: Cuba's economic model, characterized by low productivity and a lack of diversification, is no longer sustainable. The country is facing an economic, social, and energy crisis that rivals the aftermath of the collapse of the USSR in 1991. A series of shocks have contributed to this crisis, including the 2019 collapse of Venezuela (Cuba's key energy partner), the COVID-19 pandemic in 2020 (which devastated tourism, exports of medical services, and remittances), and the war in Ukraine in 2022 (which raised the cost of imported raw materials), all of which have rendered the country increasingly vulnerable both internally and externally. As its main foreign exchange inflows dry up, Cuba is struggling to finance its current account deficit. The country, subjected to a regime of commercial and financial sanctions by the United States, which had already been tightened during Donald Trump's first presidency (2017–2021), is undergoing a new crackdown. Trump's second term will likely result in a regime of maximum pressure on the island, with initial measures already adopted (ban on remittance transfers to the island through Western Union, re-listing as a state sponsor of terrorism, elimination of the CHNV humanitarian parole program). The steep decline in real wages—driven by the depreciation of the Cuban peso and the rising cost of basic goods—is deepening the country's poverty. In the absence of monitoring and statistical coverage by the International Monetary Fund (IMF), the Economist Intelligence Unit (EIU) has revised its economic growth projections for 2024, now estimating a new contraction of 2% in real GDP (compared to a growth projection of +1.2% in October 2024). For 2025, EIU projects growth of 0.9%, while Fitch anticipates a new year of recession (–3.5%). Cuba's primarily state-run economy suffers from deep structural inefficiencies, mainly due to regulatory constraints and the weight of government transfers to the public sector, which distort prices. **Additionally, US trade and financial sanctions greatly complicate i) the supply of consumer and capital goods, ii) access to external financing, and iii) the free circulation of financial flows (remittance inflows to the island), and iv) they erode investor confidence and harm the business environment.** In response, the Cuban government's reforms have been slow and insufficient. In 2021, the government took an ideological shift by legalizing new private economic actors—micro, small, and medium-sized enterprises (MSMEs)—which are intended to help offset the decay of the state's productive apparatus.

Cuba's structural budget deficit, which has averaged 6.3% of GDP since 2012, ballooned to 12.3% of GDP according to EIU in 2024. These successive budget deficits have been directly financed by Cuba's central bank and through bond issuance, leading to a rise in domestic debt (though the Cuban government does not publish data on this). External public debt is also difficult to estimate, but part of it is held by certain Paris Club creditors (the Group of Creditors of Cuba, or GCC) and benefited from a restructuring agreement in 2015. The downward revision of nominal GDP in USD following the monetary reform led to it being cut fivefold (estimated at USD 36.3 billion in 2024), which worsened Cuba's debt sustainability ratios. Public debt is therefore projected to reach 108.8% of GDP in 2024 (EIU). Given its financial isolation, Cuba has a very low level of debt tolerance and faces liquidity risks. The Cuban government is currently in arrears to both official and private creditors, as well as domestic suppliers.

Thematic area: **Macroeconomics**

Geographical area: **Cuba**

1. Severe, heightened sociopolitical risks as the country sinks into a multidimensional economic crisis

The post-1959 Cuban regime was built on anti-imperialist rhetoric whose legitimacy derived from revolutionary socialist ideals. After four centuries of Spanish colonial rule, Cuba gained its independence in 1902, following the Second War of Independence (1895–1898), during which it was backed by the United States. In return for this military support, the Cuban constitution of 1901 included the Platt Amendment, which granted the United States the land for the Guantánamo naval base and gave the US Army the right to intervene for “the preservation of Cuban independence [...], [and] the maintenance of a government adequate for the protection of life, property, and individual liberty.” **In the early twentieth century, the commercial and strategic ties between the two countries deepened:** the United States became the primary buyer of Cuba’s sugar exports, which benefited from preferential tariffs. In the 1920s, Cuba became the number-two destination for US investment in Latin America. American companies controlled three-quarters of Cuba’s sugar production, and their influence grew over time to include nickel, tobacco, tropical fruits, banking, and public services (electricity, telephone, railways, urban transport, etc.). On a political level, this period saw several coups d’état (by Gerardo Machado in 1933, then by Fulgencio Batista in 1934, with US backing), but these regimes were overthrown by popular uprisings. **Batista’s second regime, established by the 1952 coup, was overthrown by the revolution led by Fidel Castro in 1959. Castro established a socialist-inspired political regime based on a single party, the Communist Party of Cuba (PCC), with the state playing a central economic role through a highly centralized bureaucracy.** Hostility towards the United States became a cornerstone of the anti-imperialist discourse used to justify the Cuban Revolution and the communist regime that Castro and his followers implemented. The regime’s legitimacy was intimately bound up with Cuban anti-imperialism and the struggle for equality, social justice, and independence.

The regime’s expropriation and nationalization of American companies marked the beginning of the Cuban regime’s intense antagonism toward the United States.

The PCC plays a central role in Cuban political life. Elections by direct universal suffrage are held to appoint the members of the National Assembly, who in turn elect the executive leadership (President of the Republic and Council of State) every five years. Cuban citizens also elect members of municipal and provincial assemblies. All party candidates must receive official approval from the highest municipal, regional, or central party committee before they can run for office. **Presidential power is exercised in agreement with the PCC, which plays a guiding role in government decision-making.** Since 1975, the country’s economic and social development plans have been shaped by party congresses. **Cuba’s political system is highly centralized, vertical, and bureaucratic, with the Communist Party maintaining a strong presence throughout the country.** The Communist Party is also deeply integrated into civil society, with a foothold in various organizations such as professional associations, youth groups, women’s rights organizations, and farmers’ associations, giving the party significant influence at the local level.

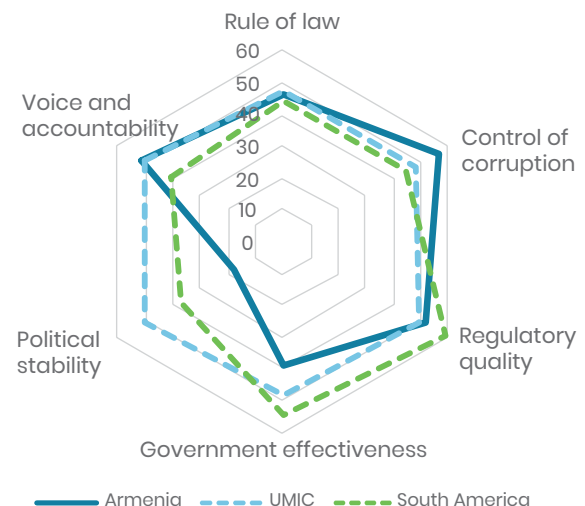
Though voting is not compulsory, voter turnout is high, although it has been declining sharply (75% in the last legislative election in March 2023, compared with 85% in 2018 and 91% in 2013). **According to the Bertelsmann Stiftung’s Transformation Index (BTI), lack of political choices and alternatives means that Cuban public institutions do not function democratically.** Civil and political freedoms are severely restricted: Amnesty International regularly reports arbitrary arrests, human rights abuses, and unduly harsh prison sentences. Freedom of the press is of particular concern: The Cuban Observatory of

Human Rights (OCDH) regularly denounces the government's attempts to intimidate independent journalists.

The World Bank's governance indicators note the country's good scores in political stability and control of corruption. However, in terms of regulatory quality, rule of law, and government effectiveness, the country is well behind its regional peers and lower-middle-income countries (LMICs) (see Figure 1). In 2022, the country ranked 135th out of 199 countries for overall governance quality. Control of corruption is one of the regime's central concerns, and the perception of corruption in Cuba is much lower than in its regional peers (it ranks 76th in the world), although this index has been worsening since 2012. Under Raúl Castro's presidency (2008–2018), the number of corruption cases in Cuba declined, particularly in the management of foreign direct investment (FDI). Cases of petty corruption are regularly brought to courts the courts. Nevertheless, the lack of transparency in Cuban public life remains cause for concern.

The new president has continued the opening up of the economy begun under Raúl Castro, but internal resistance within the state apparatus persists. After the "Triumph of the Revolution," from 1959 to 2018 the Cuban political system was dominated by the Castro family: first by Fidel, for almost five decades, and then by his brother Raúl. Since being elected president in 2018 by the 470-member National Assembly, Miguel Díaz-Canel, even though he was born after 1959, has continued the political legacy of Raúl Castro, who aspired to gradually open up Cuba's economy. In 2021, Díaz-Canel also replaced Raúl Castro in the key position of First Secretary of the Communist Party of Cuba, whose role is to guide government decisions. Díaz-Canel was re-elected to a second presidential term in April 2023.

Figure 1– Cuba's performance on governance indicators varies greatly from one indicator to the next, reflecting its unique political situation



Source: World Bank (Worldwide Governance Indicators)

With the Castros gone from the political landscape, the stability of the political system, which was heavily dependent on Fidel Castro, is being questioned. Despite the formal transfer of power to the current president, power seems in fact to be diffused throughout the PCC. The main holders of economic power, notably the military (GAESA, the financial arm of the Cuban armed forces), appear to play an important role in politics (key positions at the levels of the state, the PCC, and state-owned enterprises). Although various and sometimes contradictory ideologies are in play, some of the more reactionary factions put up considerable resistance to change and to reforms intended to open up the economy, particularly concerning strategic sectors. **Efforts to plan and articulate a genuine reform and development agenda are timid, and political decision-making is erratic.** The 2019 Constitution, which, notably, mentions private ownership of personal property and the means of production, authorizes "new economic actors" and initiates a decentralization movement, while nevertheless confirming the central role of the PCC as the "driving force of the society and the State."

Although the high levels of support in Cuba for the values of the revolution, especially in rural areas, mean that the PCC is still firmly rooted, the steep decline in socioeconomic conditions is eroding the government's credibility.

The growing number of power outages and food shortages in government-run stores led to major demonstrations in July 2021, which were facilitated by the Cuban people's newly acquired access to 3G. The violent repression of these protests (600 demonstrators, including minors, imprisoned) and the intimidation of political opponents has had a chilling effect on the opposition and forced many dissidents into exile. Still, sporadic protest movements again emerged across the country in March 2024.

The socioeconomic collapse that began in 2020 calls into question the social achievements of the Cuban Revolution. Until the 1990s, Cubans enjoyed the benefits of a generous social safety net, which led to a significant reduction in poverty and inequality. This system provided nearly guaranteed employment, universal access to free health care and education, and subsidized housing for certain workers. In addition, the *Libreta de Abastacimientos*, or ration book, was designed to ensure access to a basket of basic foodstuffs at highly subsidized prices.

Thanks to major investments in health and education, Cuba ranked 55th on the Human Development Index (HDI) in 2008, putting it in the top half globally. The excellent results of the country's fully public health system serve as an advertisement for the Cuban model. Cuba's infant mortality rate in 2022 (6 per 1,000 births) was well below the Latin American and Caribbean average of 14. Similarly, Cuban life expectancy is relatively high (78.1 years in 2022). According to WHO and Ministry of Public Health data, Cuba had 89 doctors per 10,000 inhabitants in 2018 (59 in 2000), compared with 33 in France, 22 in Mexico, 21 in Brazil, and 12 in Peru. Spending on public health and social welfare is also particularly high, averaging 18% of current expenditure over the 2008–2020 period and 11% of

GDP over the same period (in 2020–2021, during the COVID-19 period, health spending accounted for 28% of expenditure). Cuba has historically achieved excellent results in education too: it has 100% enrollment rates for primary and secondary school and is renowned for the quality of its training in the health professions.

In theory, the Cuban state still guarantees free, universal access to health and education services. However, its ability to provide these public services has deteriorated.

The gradual decline in Cuba's HDI ranking since the late 2000s reflects this fall from grace: In 2022, Cuba ranked 85th in the world. The recent deterioration in public finances (see below) has further reduced spending and caused the quality of its public services to fall. For example, the number of health care workers has declined over the past decade from almost 582,000 in 2009 to 479,000 in 2019. Food and medications shortages have intensified. Hospital quality is rapidly declining as a result both of outdated medical equipment and the fact that those in high value-added professions are the most likely to emigrate because they receive low remuneration: just CUP 8,000 per month for a doctor on average, or USD 26 at the prevailing informal exchange rate. According to official figures, this wave of emigration has resulted in 40,000 vacancies in the health care sector. The education budget has withered since 2005, from an average of 12% of GDP between 2005 and 2014 to 9.1% between 2015 and 2022, and 8.4% in 2022.

The war in Ukraine, which has led to increased prices for energy, food, and fertilizer and exacerbated the country's oil supply problems, has further strained the government's ability to provide high-quality public services.

Cuba is facing major gasoline shortages and frequent power outages, particularly outside Havana. In October 2024, a breakdown at Cuba's main thermoelectric station plunged the country into darkness for three days. The hike in the prices of electricity (for consumers of more than 500 kWh per month and for the distribution sector, while

keeping the price of liquefied gas unchanged), water, gasoline (up 500%), and public transport, which entered into effect on March 1, 2024, is having a significant impact on the Cuban population. These rates had benefited from significant government subsidies: The price of gasoline had been among the lowest in the world.

There are no studies or official statistics on poverty rates in Cuba, which makes it difficult to measure the extent of vulnerability across the population. **That said, the deterioration in the quality of public services, shortages of essential goods, and the spectacular erosion of real wages for a large majority of the population—caused, in particular, by the depreciation of the Cuban peso (CUP), which is contributing to significant inflation for food products—are all playing a part in Cuba’s impoverishment.** The *Tarea Ordenamiento*^[1] (monetary reform) led to a sharp devaluation of the CUP, the currency in which most Cubans are paid. Afterward, the CUP continued to lose value on the informal foreign currency market. This hastened the decline in living standards, even as the government raised the minimum monthly wage to CUP 2,100 and quintupled civil service salaries as part of the 2021 reforms. Despite these changes, the average monthly wage in Cuba was just CUP 4,219 in 2022 (ONEI), while the average monthly pension for retirees was CUP 1,800, affecting around 1.6 million pensioners, or 15% of the population. The Cuban Observatory of Human Rights (OCDH) estimates that by 2024, 72% of Cubans will be directly affected by the food crisis, a consequence not only of growing poverty but also of widespread food shortages. In April 2024, for the first time, the Cuban government requested

support from the World Food Programme to deal with the country’s food crisis, particularly for the supply of powdered milk for children.

Cuba’s concept of egalitarianism is thus becoming increasingly undermined, as the division between markets that are accessible in CUP and those that are accessible only in foreign currencies aggravates poverty and inequality. The small segment of the population that has access to foreign currency, such as workers in the tourism and taxi sectors, enjoys greater purchasing power as a result. Meanwhile, the majority of the population is paid in Cuban pesos, including civil servants, who account for 65% of total employment. The OCDH estimates that by 2024, only 24% of the population will receive remittances from the Cuban diaspora, which will exacerbate poverty for those who lack access to foreign currency. Remittances, furthermore, tend to go mainly to white and wealthier households, deepening Cuba’s socioeconomic and racial inequalities. Access to foreign currency has become all the more crucial since the Cuban authorities created a virtual currency, the “freely convertible currency” (MLC), which is pegged to the US dollar and is needed to purchase goods on the conventional market.

The redistributive role of the Cuban state is shrinking. On the occasion of the monetary reform, the authorities announced that they would be reducing the food subsidies provided through the *Libreta de Abastecimientos*. These subsidies are a key part of the Castro legacy, but they place a significant strain on the state budget. They will be scaled back to focus more on supporting vulnerable populations, marking a significant conceptual shift in Cuba’s socialist system.

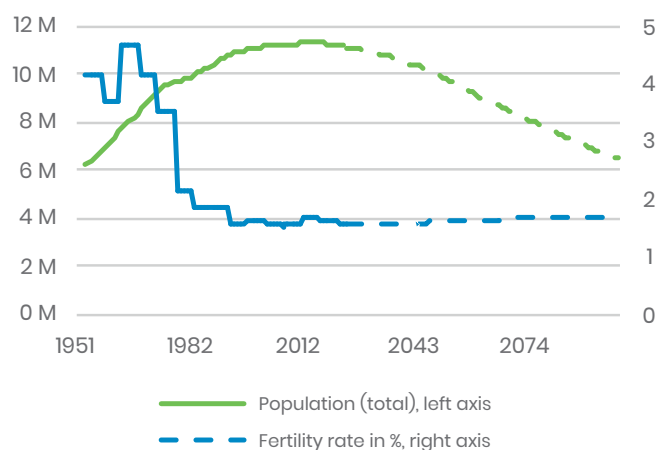
Due to unfavorable socioeconomic conditions, emigration is increasing, and the country’s historic strength—its human capital—is decaying. The country’s demographic growth rate is negative (–1.6% per year between 2014 and 2024), and the country currently has 11.1 million

[1] As the Cuban economy became increasingly dollarized in the 1990s as a result of its dependence on the outside world, Cuba officially introduced a second currency in 1994: the CUC, or convertible peso, which served as an intermediary for dollar transactions and prevented the value of the Cuban peso (CUP) from falling too far. Cuba thus had two official currencies: the convertible peso (CUC) for investment activities and foreign trade, at a rate of 1 USD = 1 CUC = 1 CUP, and the Cuban peso (CUP) for domestic activities, at a rate of 1 USD = 1 CUC = 24 CUP. This two-tiered monetary and exchange rate policy resulted in price distortions (exchange rate overvaluation) that had serious socioeconomic consequences (loss of economic competitiveness, inequalities in purchasing power, dysfunctional price signals, etc.). The authorities attempted to unify the two currencies by abolishing the CUC and devaluing the CUP by 96%, at a rate of 24 CUP = 1 USD.

inhabitants. United Nations projections predict a significant decline in population by 2050 (-11.6% from today, down to 9.8 million) and a halving of the population by 2100 (see Figure 2). The demographic aging underway in Cuba (24% of the population were over 60 in 2023, compared to 14.7% in 2002), along with rising life expectancy and a declining fertility rate (1.65 children per woman in 2022), raises concerns about the future sustainability of the country's social protection system.

Official data show a low unemployment rate of 1.8% in 2023, but this is largely due to overemployment in the public sector, which masks the widespread poverty among those working in public and parapublic jobs. By 2022, 17.8% of the population was employed in the agricultural sector, while 21.5% worked in education and health care. Emigration, particularly among young and educated populations, has accelerated sharply due to the economic crisis the country is experiencing – accounting for more than 10% of the population between 2021 and 2024 – and is leading to a loss of human capital for the country.

Figure 2 - Cuba's population will continue to decline rapidly



Source: United Nations

2. The Cuban economic model, centralized and unproductive, is being undermined by a profound economic and financial crisis

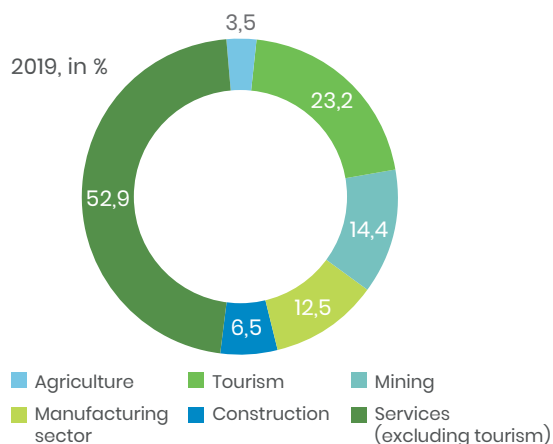
Cuba's production model, which still depends largely on state and parastatal structures, has been significantly weakened by low investment and severe productivity constraints. These include a historically limited private sector, logistical challenges, and distortions caused by overvalued exchange rates, among other factors.

Cuba has strategically prioritized its tourism industry and is renowned for the quality of its medical industry. Its research centers and vaccine production facilities (for meningitis) have been exported internationally. The country is especially known for exporting health care professionals to countries with doctor shortages, often in exchange for commercial services such as energy. However, the share of the secondary/manufacturing sector in Cuba's GDP has remained stagnant for the past decade, holding steady at around 33% (see Figure 3).

As a result of decades of underinvestment, Cuba is significantly behind in physical capital accumulation. This underinvestment results not

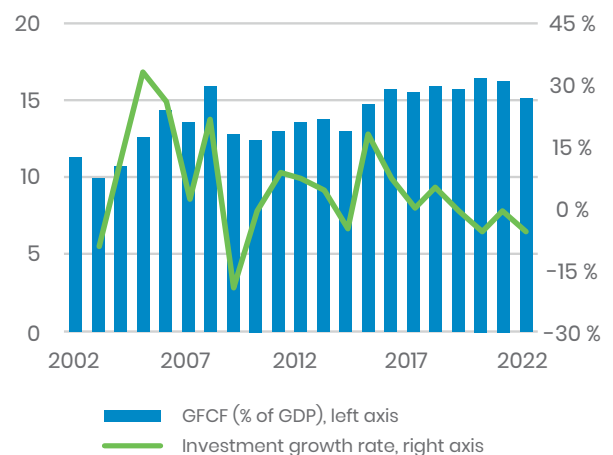
only from the strategic choices of the Cuban state and the lack of private investment incentives and opportunities, but also from the collapse of the USSR, which made it harder to maintain the capital built up during the Soviet era amid severe shortages of parts. According to the ONEI, the rate of gross fixed capital formation averaged 13.9% of GDP over the 2002–2022 period, reaching 15% in 2022 (see Figure 4). The average annual growth rate (AAGR) of physical capital over these two decades has been erratic, with a notable surge in investment in 2005 (up 33%) following the end of the "Special Period" (1990–2000) caused by the collapse of the Soviet Union, during which investment sharply declined. Similarly, the momentum from the Obama era drove an 18% increase in investment in 2015. Since then, however, the investment rate has steadily declined and has been negative since 2019 (–6% in 2022). This trend is reflected in the shrinking share of capital goods in Cuba's total imports, which dropped from 12% in 2013 to 9% in 2021 (ONEI). Through the *proceso inversionista* (investment process), regulated by decree, the state approves corporate investments to ensure

Figure 3 – Cuba's economy is predominantly service-based



Source: UNCTAD

Figure 4 – Cuba's investment growth rate has been erratic and negative since 2019



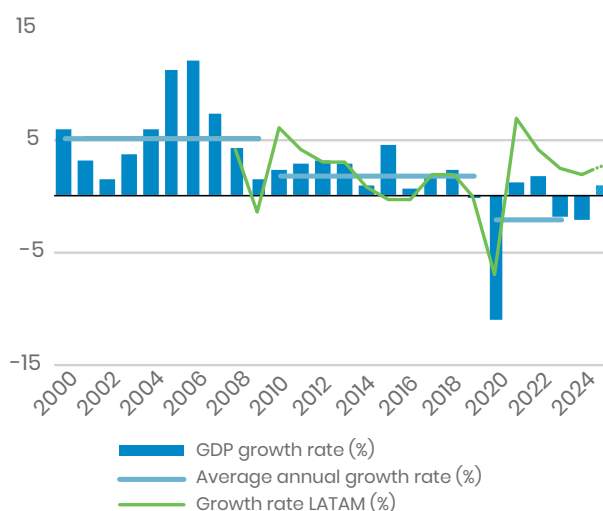
Source: ONEI – series ends in 2022

that they are in line with national priorities. As a result, Cuba ranks far behind its regional peers in terms of logistics performance, with a score of 2.2 on CEPAL's logistics performance index, compared to a regional average of 2.6 (on a scale from 1 to 5). The country's customs efficiency index places it last in the region, behind Haiti and Venezuela, with a score of 2, compared to Chile's 3, Mexico's 2.5, and the Dominican Republic's 2.6.

The agricultural sector, which is crucial for Cuba's food security, is relatively unproductive, and Cuba is forced to import 80% of its food. Despite the agrarian reforms and land collectivization that took place following the revolution, as well as the reforms implemented since 1993 (redistribution of unused state-owned agricultural land in usufruct to private individuals and cooperatives; introduction of a tax on fallow land; provision of tools and inputs to farmers), these measures have had little impact on agricultural productivity. The sector is struggling because of underdevelopment in the seed and input industries. Of the country's 6.3 million hectares of agricultural land, 44% was under cultivation in 2021, 15% was fallow, and 41% was not being used (Spanish Embassy). Still largely state-controlled, the agricultural sector appears to be in decline, contributing just 2.2% of GDP in 2022, down from 3.7% in 2018—a 40% reduction in the sector's added value.

Cuba's economic growth has been highly volatile over the long term, reflecting its heavy reliance on trading partners and their economic cycles (see Figure 5). From 1970 to 1990, Cuba's AAGR was 4.8%, largely driven by trade with the USSR, which became Cuba's main economic partner after the country joined the Council for Mutual Economic Assistance (COMECON) in 1972. This partnership provided Cuba with low-cost hydrocarbons and a preferential market for its sugar exports, helping to offset the impact of the US embargo imposed in 1961. However, with the collapse of the USSR, Cuba's economy suffered a dramatic downturn, with GDP contracting by 11% to 13% annually for three consecutive years. This led to a sharp drop

Figure 5 - Cuba's growth rate is highly volatile, reflecting its dependence on the outside world



Source: ONEI, EIU

in per capita income, from USD 13,694 to USD 9,021 (Atlas method) between 1990 and 1993. This "Special Period in the Time of Peace," marked by severe shortages of energy supplies and essential goods (import-led recessionary adjustment) and an abrupt halt to industrialization, was considered the worst economic crisis in Cuba's history. Although the crisis had a lasting impact on the country's productive base, Cuba's economy rebounded in the 2000s, largely thanks to the arrival of Venezuela as a key energy partner through the Petrocaribe program. Between 1999 and 2009, Cuba's AAGR was 4.9%, fueled by new trade relationships. However, growth slowed significantly during the 2010–2018 period, with an AAGR of just 1.8%, though 2016 saw a particularly strong surge due to the thaw in relations with the United States under President Barack Obama.

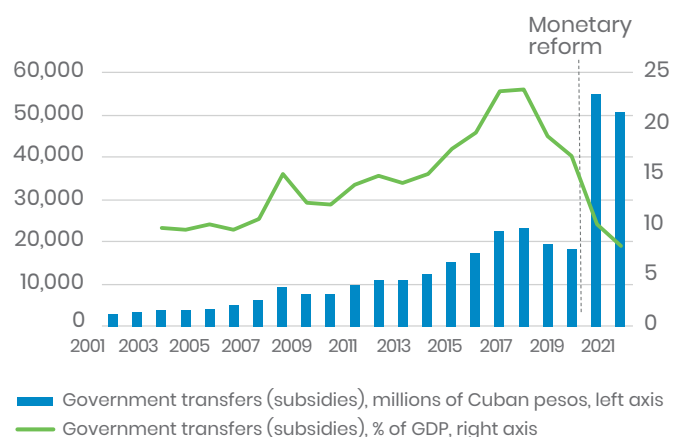
Since 2019, the Cuban economy has been sinking into one of the most severe economic crises in its history. Even before the COVID-19 pandemic, the economy was already in a mild recession, driven by intensified US sanctions and the collapse of Venezuela. In 2020, the pandemic and the resulting halt in tourism—an industry that has yet to recover—had a devastating impact on the Cuban economy, causing it to shrink by 11.3%. The subsequent recovery has been slow and modest, with growth of just 1.3% in 2021 and 1.8% in 2022.

The post-pandemic economic recovery has been extremely slow, and 2023 was marked by a further recession. In June 2024, EIU revised its growth forecast, now estimating a 1.9% drop in GDP for 2023, down from its earlier projection of a 2% increase in September 2023. EIU expects a new recession of 2.0% in 2024. EIU projects 0.9% growth for 2025, while Fitch anticipates a new recession (-2.8%). The weak recovery in tourism (4 million visitors in 2018, compared to 1.6 million in 2022 and 2.6 million in 2023) and the decline in health care service exports (USD 6 billion in 2018, compared to USD 5 billion in 2022) are major contributing factors, as both sectors are critical for generating foreign currency for the Cuban economy and state. In addition, the agricultural and manufacturing sectors, which have historically driven growth, are in significant structural decline. Manufacturing output fell by 30% between 2019 and 2021. The disruption of fossil fuel supplies has heavily impacted industrial production, while soaring chemical input prices linked to the war in Ukraine have further hampered agricultural productivity. **The ongoing economic crisis is aggravated by the US embargo, which increases the legal, economic, and financial costs of foreign trade.** The Cuban authorities are counting on a recovery in tourism, especially from Russia, with a targeted strategy to attract Russian visitors.

Economic activity in Cuba remains predominantly centrally planned, guided by the 201 economic and social policy guidelines (*Lineamientos*) for the 2021–2026 period.

The distortions in the Cuban economy are primarily due to the substantial subsidies provided by the government to state-owned enterprises, mainly to compensate for the lack of competitiveness of export products. Until 2018, these subsidies accounted for nearly 22.5% of GDP (see Figure 6). However, despite these subsidies, Cuban exports have continued to decline, reflecting the ongoing loss of competitiveness among Cuban companies. In 2015, 36% of subsidies were allocated to the manufacturing sector (half of which went to the sugar industry), and 27% went to the agricultural sector. **Since 2019, with the state facing an acute budget crisis, there has been a sharp reduction (as a percentage of GDP) in government transfers to state-owned enterprises,** as the government has been forced to scale back its financial support to various sectors, including resizing state-owned enterprises and cutting subsidies and transfers.

Figure 6 – The share (% of GDP) of government transfers to state-owned enterprises has only declined since 2018



Source: ONEI – series ends in 2022

However, the Macroeconomic Stabilization Plan announced at the end of December 2023 reiterates the central role that the state must play in responding to the current crisis. In line with the National Economic Development Plan 2030, it outlines the following priorities: i) restoring foreign currency inflows by boosting exports of goods and services (such as tourism and health care), while simultaneously pursuing an import substitution policy amid the dramatic depreciation in the (real) value of the CUP; ii) increasing FDI inflows while maintaining control over the choice of trading partners; iii) boosting food production to achieve food sovereignty; and (iv) advancing macroeconomic stabilization through customs and tax reforms. **However, the plan fails to identify clear and detailed public policy measures to effectively address these challenges.**

FDI has not taken up the slack, largely because of the strict investment restrictions imposed by the Cuban state as well as because of the U.S. sanctions regime, which discourages investment in Cuba. Cuba introduced its first FDI law (*Ley de Inversión Extranjera*) in 1995, and the legal framework is now governed by the 2014 version. This law permits FDI in state-owned enterprises, but negotiations with the Cuban authorities can be slow, and there are numerous restrictions, such as requirements for employing Cubans through state-run recruitment agencies. The free movement of financial flows is also hindered by the numerous authorizations that must be obtained from the central bank, which significantly increases transfer and convertibility risk.

The private sector in Cuba has developed in fits and starts, in response to crises that exposed the shortcomings of the Cuban state. The first steps toward opening up to the private sector occurred during the "Special Period," and certain reforms were expanded under Raúl Castro, who, starting in 2008, extended the *Cuentapropista* (self-employed) status to cover 200 different activities. This relaxation also extended to import/export activities: In the past,

only state-owned enterprises and foreign joint ventures with state-owned enterprises could trade internationally, but regulations were amended in 2020 to allow small private companies to engage in foreign trade. Despite these changes, the state maintains a monopoly on foreign trade and requires these private entities to rely on state-run intermediaries for international transactions.

Until 2021, the pace of reforms to open Cuba's economy up to a mixed model was extremely slow. In 2021, however, the government shifted gears by legalizing micro, small, and medium-sized enterprises (MSMEs). This new legal status marked a significant step forward: it grants MSMEs the right, in principle, to operate in all economic sectors (except for a list of exclusions covering 125 activities such as education, health, pharmaceuticals, and manufacturing industries) and allows companies to employ up to 100 people. This move effectively legalized part of Cuba's informal economy, aiming to create a balance between state-run economic activity and private enterprises. By 2024, there were more than 11,000 MSMEs on the island, including 4,000 previously self-employed individuals who had formalized their status. These businesses now account for around 10% of employment in Havana and between 2% and 6% in other regions. While many are concentrated in low value-added sectors such as gastronomy (22%) and retail (5%), MSMEs are also active in potentially more productive sectors such as manufacturing and construction (20% each). In 2024, the government took steps to allow these businesses to be approved at the local level and established a national institute dedicated to supporting the private sector.

There are still significant challenges to the effective development of the private sector in Cuba, including: (i) a lack of training in key areas such as marketing, business, finance, and management; (ii) limited access to financing, as only three banks (BPA, BANDEC, and Banco Metropolitano) provide credit to MSMEs in CUP, and the proportion of MSMEs receiving loans is very low (38,9%); (iii) difficulty accessing foreign currency (and particularly US dollars, due to the sanctions regime) to pay international suppliers,

compounded by the Cuban state's ongoing foreign currency liquidity crisis and strict control over foreign exchange reserves; and (iv) logistical constraints, including the effects of the US embargo, which drive up operational costs for businesses. **Furthermore, the ongoing economic crisis is shrinking the domestic market, as the purchasing power of most Cubans has shrunk.**

This push for reform is also evident in the decentralization efforts initiated by the state.

Historically highly centralized, the state is now taking its first steps toward decentralization and territorial development, especially in response to challenges such as food security, as part of the new food sovereignty plans. The new non-legal status of "local development project" (*proyecto de desarrollo local*, or PDL), introduced in 2021, provides a framework for collaboration among various stakeholders (agricultural, economic, artisanal, cultural, environmental) at the municipal level, with the aim of developing local value chains.

3. Growing macroeconomic imbalances

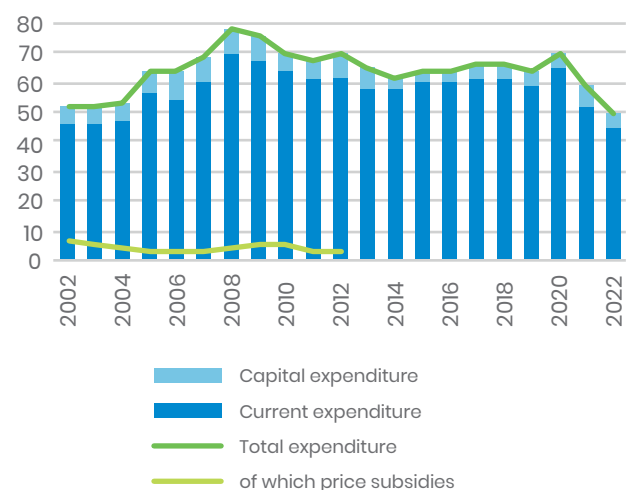
A widespread bankruptcy of Cuban public finances

The Cuban state plays a central role in the country's economy, and government expenditure is disproportionately large relative to the government's ability to generate revenue. After peaking at 78.1% of GDP in 2008, government expenditure declined during an initial phase of state cutbacks and fiscal adjustments, averaging 65.7% of GDP from 2013 to 2020, largely driven by current expenditure (see Figure 7). Since 2020, the share of government expenditure in GDP has continued to shrink, dropping to 49.6% of GDP in 2022, reflecting the state's ongoing financial struggles amid a sharp decline in revenue. Capital expenditure has consistently been low and is on the decline, averaging 7.2% of GDP between 2002 and 2012, and falling to just 4.8% of GDP from 2013 to 2022.

The country's tax system is under-developed, and government revenue remains fragile. Since 2008, Cuba's government revenue has sharply declined, reflecting growing economic challenges. After peaking at 71.2% of GDP in 2008, government revenue gradually fell to 56.7% of GDP in 2018 and 38.5% in 2022. Historically, tax revenue (*tributarios*) has made up the bulk of government revenue. **However, since the 2020s, the structure of**

government revenue has shifted significantly. Tax revenue now accounts for just 47% of total revenue, compared to an average of about 70% between 1996 and 2016. The rest comes from non-tax sources (*no tributarios*), including contributions from state-owned enterprises (*aportes de empresas estatales*), which make up about one-fifth of total revenue, as well as tariffs on non-market services. Within tax revenue,

Figure 7 - The share of current expenditure (as a % of GDP) is very high, at the expense of capital expenditure

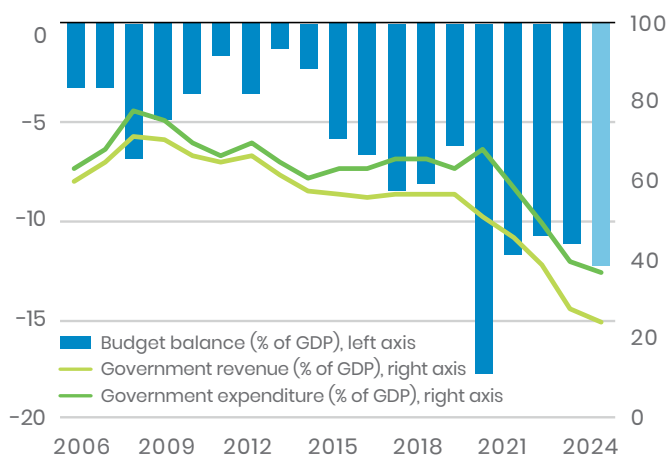


Source: ONEI – series ends in 2022 and in 2012 for data relating to price subsidies

the largest sources are income tax (*utilidades*) (40% of total tax revenue), social security contributions (14%), and traffic and sales taxes (6%). **The growth of MSMEs could represent a significant new source of tax income for the state, though it has not yet managed to capture this potential** (they benefit from a tax exemption during their first year of operation).

As a result, the budget has been structurally in deficit, averaging -6.3% of GDP since 2012, with the gap widening significantly since 2014 because of a growing mismatch between government revenue and government expenditure (see Figure 8). **Cuba recorded a historic budget deficit of 17.7% of GDP in 2020, and fiscal consolidation has been slow.** According to EIU, the budget deficit reached 10.9% of GDP in 2023 and 12.3% in 2024, with a projection of 11.4% in 2025. However, these figures do not account for the massive backlog of unpaid debts to suppliers, which remains difficult to quantify.

Figure 8 – Collapse of government revenue and drastic increase in the public deficit

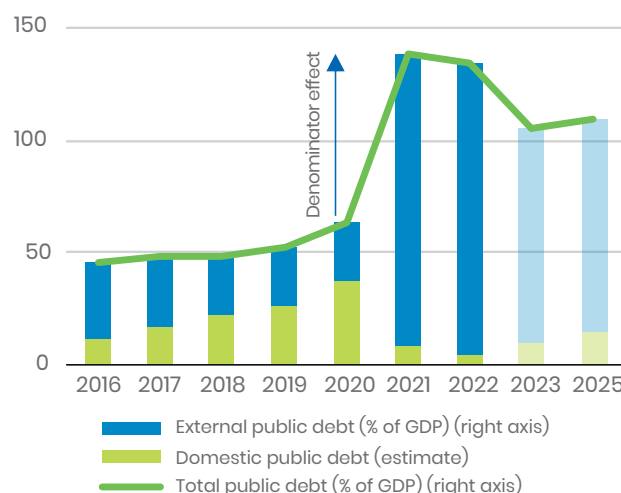


Source: ONEI (2006–2020), EIU (2021–2024)

Public debt has risen dramatically and presents a number of vulnerabilities. The lack of reliable, up-to-date data on both external public debt and its servicing, combined with the absence of national data on domestic public debt, makes it difficult to assess the country's debt sustainability.

Cuba's total public debt rose sharply in the wake of the monetary reform as a result of an exchange rate shock to which Cuba was highly exposed (see Figure 9). When the CUP was devalued, the value of Cuba's GDP in USD was cut fivefold, which automatically increased the debt-to-GDP ratio. According to EIU, the debt-to-GDP ratio was 51.7% of GDP in 2019, increased to 62.6% in 2020 because of the impact of the COVID-19 pandemic (a combination of recession and a sharp rise in government expenditure), and soared to 138.8% in 2021 after the monetary reform. EIU now estimates that the debt-to-GDP ratio will be 108.8% in 2024.

Figure 9 – The public debt ratio has exploded post-monetary reform



Source: EIU (estimates)

Cuba has a poor track record when it comes to servicing sovereign debt, which has hurt the state's credibility as a borrower. In the 2010s, Cuba has indeed the recipient of several debt cancellations that significantly reduced its external debt to its five largest bilateral creditors (Spain, France, Japan, Russia, and China) from nearly USD 50 billion to USD 9.2 billion—an 81.2% reduction in the initial debt.

Despite this, external public debt remains high, due to the sluggish pace of the economy and its limited ability to generate foreign currency. According to the debt sustainability indicators from EIU, the situation has worsened significantly since 2019, with the external debt-to-exports ratio rising to 206% in 2023, up from 98% in 2019.

The reliability and transparency of data make it difficult to fully understand the state of public finances. According to EIU, Cuba's external public debt was USD 34.8 billion in 2024, while national figures report a total external debt of USD 20 billion in 2020 (with no more recent data available). According to the ONEI, most of this debt in 2020 was owed to official creditors (USD 11.2 billion), suppliers (USD 5.8 billion), and commercial banks (USD 2.7 billion). By 2024, debt to French companies is expected to reach 140 million euros, and 300 million euros to Spanish companies. The high share of short-term external debt (USD 5.8 billion in 2020) suggests that Cuba has a limited strategy for managing its debt.

Cuba is excluded from the international financial system (World Bank, International Monetary Fund), which makes refinancing its external public debt extremely challenging. When it comes to multilateral lenders, Cuba is only a member of the CABEL (Central American Bank for Economic Integration), with which it secured its first loan in 2022 (USD 45 million). As a result, Cuba's primary creditors are bilateral, and geopolitics plays a significant role in diversifying its financial partners.

Given the Cuban government's trouble accessing foreign currency financing (US sanctions, lack of access to the IFC), the country has very low debt tolerance, which complicates its ability to remain solvent. The exact level of Cuba's foreign currency reserves is not publicly available and is hard to estimate. Cuba's ongoing payment issues with its main bilateral creditors and suppliers are more indicative of the materialization of liquidity risks than of a reluctance to meet its financial obligations.

Cuba's domestic public debt, which is difficult to measure, is a source of vulnerability, particularly for the domestic financial system, in the absence of a secondary market for government securities. Since 2014, the state has been issuing treasury bills (with maturities ranging from 1 to 20 years at an average interest rate of 2.5%) that are purchased by commercial banks and the central bank (BCC) to finance its budget deficit. However, the low yields on these bills prompted commercial banks to stop buying them on the primary market, and since 2018 the BCC has been the sole buyer of sovereign securities, raising concerns about excessive monetization of the deficit. Rising budget deficits since 2015 have directly contributed to the growth of domestic public debt.

While Cuba is structurally dependent on the outside world, the succession of external shocks since 2021 has plunged it into a balance-of-payments crisis.

Cuba remains heavily reliant on imports of raw materials, processed goods, and equipment, including essential items like food. As a result, the country's balance of trade in goods shows a significant deficit (28% of GDP in 2023), which is not offset by a surplus in the balance of trade in services. **Cuba's external accounts are vulnerable due to the limited diversification of its export basket.** The country's exports are concentrated in a few sectors, primarily medical services (such as sending doctors abroad and vaccine production) and tourism. Cuba also exports some goods, including nickel, biotechnology, light manufacturing, and agricultural products like rum, cigars, and sugar.

The US embargo has a structural impact on the island's foreign trade by exposing any American company or individual exporting restricted goods to Cuba to sanctions. Certain goods deemed "essential," such as food and medicines, are excluded from these restrictions. Trump's second term is expected to further increase Cuba's financial and commercial isolation.

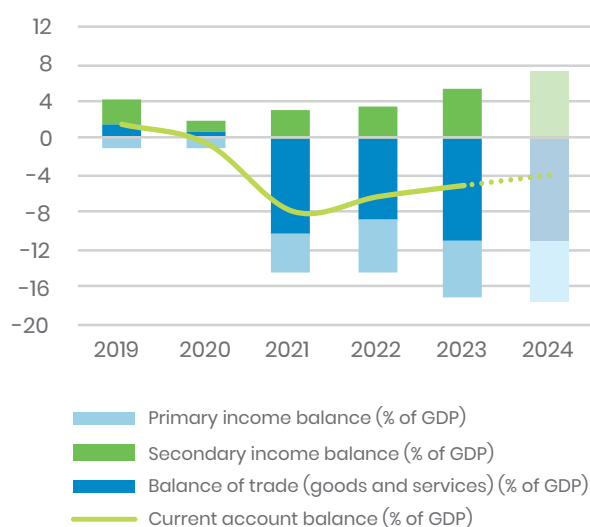
Because it has limited foreign currency reserves, Cuba is regularly forced to adjust its imports downward in the event of poor export performance. To address its structural balance-of-payments vulnerabilities (such as a fragile export base, low FDI, limited access to international loans, and the impact of US sanctions), the government relies on strict controls on foreign currency liquidity and exchange rates.

The surplus on the balance of secondary income has fallen. Remittances fell from USD 6.6 billion in 2019 to USD 2.9 billion in 2020 and then to USD 1 billion in 2021 (relying on both formal and informal sources for data) because of travel restrictions.

The Trump administration's policies toward Cuba also led to the withdrawal of Western Union from the island, although the company resumed services between the United States and Cuba in 2024 under the Biden administration. The new sanctions imposed following Donald Trump's return to the White House further harden the stance, banning remittance transfers to the island through Western Union. Additionally, the ongoing emigration of Cuban families contributes to a decline in these remittance flows.

The low level of investment flows does not compensate for the country's current account deficit (see Figure 10). The Cuban government does not release data on the financial account of the balance of payments, making it difficult to get an accurate picture of FDI flows. According to EIU, net FDI flows are expected to rise again in 2023 (USD 1.2 billion) and 2024 (USD 1.3 billion) after a sharp drop in 2020. However, these figures are still lower than those of peer countries in the region (4.6% of GDP in 2023, compared to 5.3% in Costa Rica and 6.9% in Chile) and almost half the target set by the Cuban government (USD 2.5 billion). Despite the authorities' efforts to open up the economy, such as the creation

Figure 10 – The current account deficit is growing, as a % of GDP



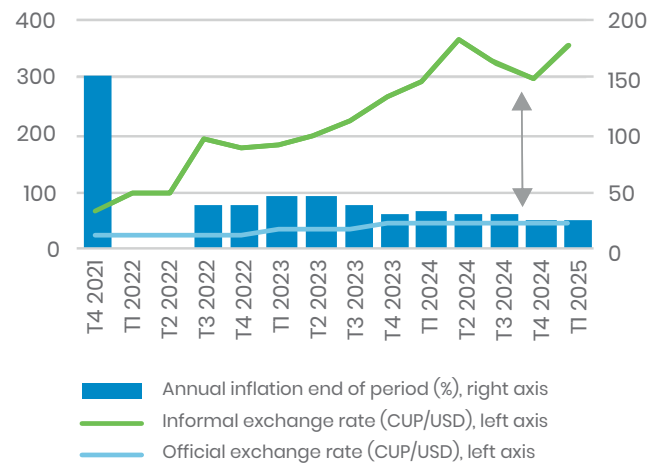
Source: EIU (estimates)

of the Mariel free trade zone, FDI remains structurally limited because the United States designates Cuba as a state sponsor of terrorism. Furthermore, the worsening economic situation has led many foreign companies to leave the country. Notably, the current FDI law does not allow foreign investment in MSMEs.

Transfer and convertibility risk is very high in Cuba (see Diagram 1). Any transaction with the outside world must go through the MLC (which replaced the CUC) at the exchange rate set by the Cuban authorities (1 USD = 1 MLC = 24 CUP), and the ongoing strain on foreign currency liquidity complicates convertibility. In terms of transfer restrictions, the use of foreign currency by any entity requires approval from a specific commission. This is why companies with foreign or mixed capital often run into problems when trying to transfer part of their profits, converted into foreign currency, to their parent companies.

Inflation has been particularly high in recent years following the monetary and exchange rate reforms (see Figure 11). The Cuban government has relied heavily on deficit monetization, and given Cuba's high public debt, the money supply has increased dramatically (by 228% in 2021 and by 136% in 2023), which puts upward pressure on prices. Inflationary pressures are also intensified by supply constraints,

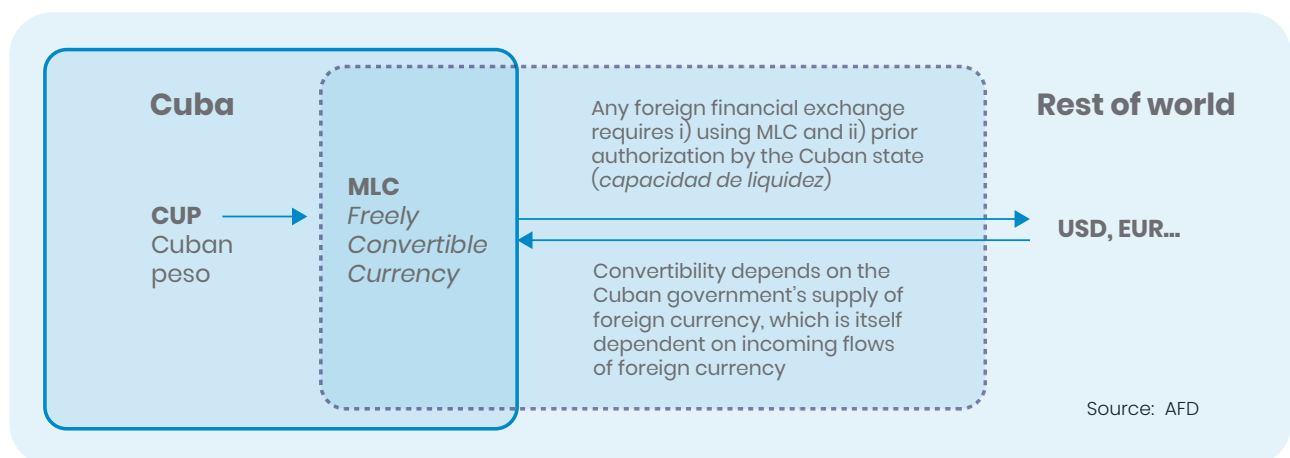
Figure 11 - From hyperinflation to high inflation



Source: EIU, El Toque

such as US sanctions, domestic production limitations, and the disruptions caused by COVID-19. Furthermore, the erosion of public policy credibility has contributed to inflation, as poor anchoring of inflation expectations fuels further price increases (Lage and Cruz 2023). In 2021, EIU estimated that inflation would reach 77.3%, before cooling to still-high levels of over 30%. For 2024, EIU projects inflation at around 29.1%, with a reduction to 6.1% in 2025.

Diagram 1 - Transfer and convertibility risk is very high



4. Adapting to climate change: a key challenge for the island of cuba

The island of Cuba is highly exposed to the effects of climate change, making adaptation a priority.

The effects of climate change on Cuba are enormous: the island sits on the border of the tropical and subtropical climate zones. The increasing frequency and intensity of climate events are taking a heavy toll, with Cuba ranked 110th in the ND-Gain index, which measures the country's capacity to adapt and prepare for climate risks. On average, Cuba experiences six to seven cyclones a year, and the western part of the island is particularly vulnerable. The country is also facing more frequent droughts, particularly due to El Niño, and, as an island nation, it is highly exposed to rising sea levels that are accelerating coastal erosion. These extreme and increasingly frequent climate events cause significant damage to habitats, put pressure on the agricultural sector (with reduced yields, especially for crops like tobacco and sugarcane), and hurt tourism, a key source of foreign currency for the economy. All

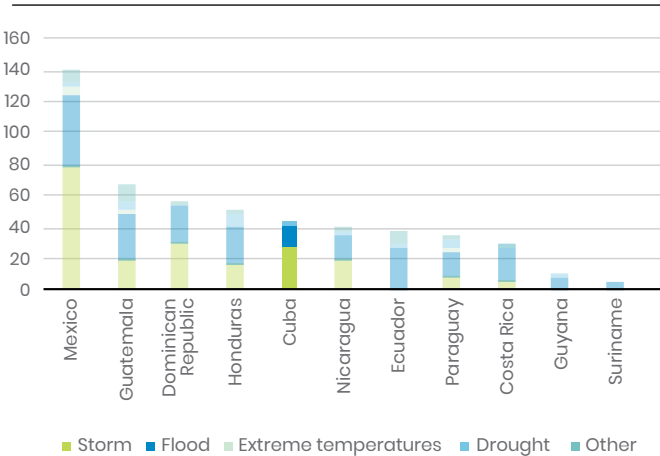
of these challenges exacerbate the risk of food insecurity, which is already a critical issue for the country.

Adaptation is a top priority for Cuba, as outlined in its Nationally Determined Contribution (NDC). The government has recognized the urgency of the situation and developed a multi-sector action plan (*Tarea Vida*), which is coordinated by the Ministry of Science, Technology, and the Environment (CITMA). However, the country still lacks the capacity to fully measure the economic impact of climate change.

Cuba has low greenhouse gas emissions, but energy independence is a strategic necessity.

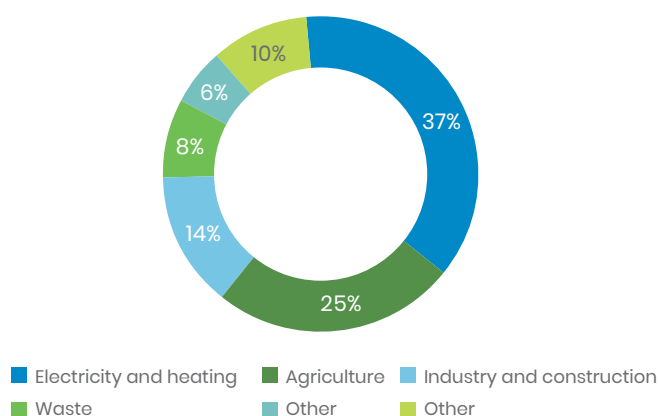
The slow pace of economic development in Cuba since the 1990s has led to a decline in its greenhouse gas (GHG) emissions. In 2021, Cuba accounted for just 0.06% of global emissions (22.06 MTCO₂e). The largest source of emissions comes from the energy sector, particularly electricity generation (37% of GHG emissions), followed by

Figure 12 - Climate-related natural disasters, by number between 2000–2023, regional comparison



Source: EM-DAT international disaster database

Figure 13 - Origin of GHG emissions, by economic sector



Source: Climate Watch

agriculture (25%). Overall, GHG emissions have been on a downward trajectory, with a 35.5% reduction between 2010 and 2021. The carbon intensity of Cuba's GDP per capita is low compared to regional averages.

The blackout at Cuba's main thermo-electric station in October 2024 underscored just how fragile Cuba's electricity grid is. Currently, 90% of Cuba's electricity comes from carbon-based sources, with half of the electricity generated by eight gas- and oil-fired thermoelectric plants. These plants frequently require maintenance because of 1) chronic underinvestment in the energy sector and 2) the island's energy supply difficulties, which results in frequent power outages. Cuba aims to generate 37% of its electricity from renewable sources by 2030.

The Cuban economy is moderately exposed to the risk of a low-carbon transition. Industries that are considered "declining" as a result of high GHG emissions account for only a small portion of the country's GDP and are mainly concentrated in the mining sector, including metals and ores. The share of export revenue in goods from these sectors is relatively moderate, accounting for 19%, with most of the exports coming from mining products (zinc, oil, precious stones) and metals (nickel). Cuba's public finances are moderately exposed to the risk of a low-carbon transition as well: declining industries generate only 3.3% of tax revenue, mostly through taxes on goods and services and corporate contributions.

Cuba faces high physical and transition risks related to biodiversity. Cuba is rich in vegetation and diverse terrestrial species: It is one of four islands with the greatest diversity of plants, 50% of which are endemic (BIOFIN). Land use data show that a high proportion of the island is devoted to agricultural crops (36%). In regional comparison, and alongside similar countries in terms of biome (such as Sri Lanka, Cambodia, Thailand, and India), Cuba's mangroves—which are potential biodiversity hotspots—make up a

notable part of the territory (9%). Woodlands and forests cover almost 39% of the land area. Since 1992, the island's vegetation cover has shown a slight increase.

Nevertheless, as in many countries, biodiversity in Cuba is under threat. The country is facing a worrying loss of biodiversity, as evidenced by its Biodiversity Intactness Index^[2] score of 59% (2014), which indicates that nearly half of its natural species have declined due to land use changes driven by human activity. Its Red List Index^[3] is also relatively low, with a score of 66% (compared with 76% for regional peers), and it has remained stable over the past two decades.

Environmental governance efforts in Cuba are increasing, but they remain inadequate. The proportion of forests under long-term management plans is notably high by regional standards and has been growing (80% in 2020, compared to 41% in 2000). On the other hand, the share of the country's territory designated as protected areas remains low, at just 7% in 2022, even though Cuba is one of the few nations to have nearly all (98%) of its marine areas under protection (UNSDG).

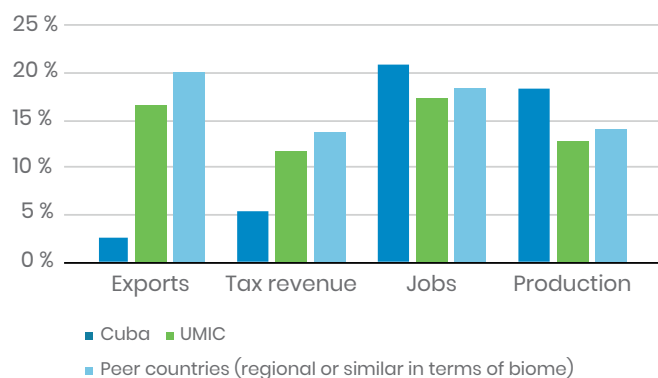
According to AFD's screening tool on risks related to biodiversity,^[4] eleven economic activities are exposed, many of them in the primary sector. These include forestry, fruit and nut farming, tobacco, rice, beverages, cereal production, and cattle ranching. This reflects the threats these sectors pose to threatened species and the ways they contribute to the erosion of biodiversity (through global warming, water

[2] The Biodiversity Intactness Index measures the average loss of species originally present on a country's national territory, on a scale ranging from 100% (biodiversity remains intact) to 0% (none of the species naturally present remain on the territory).

[3] The Red List Index shows trends in global extinction risk for groups of species. A value of 100% indicates that there is currently no extinction risk for any of the species included. A value of 0% means that all the species included are extinct.

[4] Transition biodiversity risk is based on an analysis of the impact of human activities on biodiversity. It encompasses the risks associated with any public policy, change of preference, behavior, or technology aimed at mitigating the impact of human activity on biodiversity, and therefore the associated effects on economic activity and asset values.

Figure 14 – Potential exposure to transition biodiversity risk, by economic aggregates (%), 2019



Source: AFD

consumption, land use, pollution, etc.). The electricity sector (including generation, transmission, and distribution) and the civil engineering construction sector are also exposed to transition risk. Together, these eleven activities are responsible for 59% of the threats to endangered species in Cuba, 84% of the pressure on biodiversity from land use, and 79% of the pressure from water resource use. They could therefore be key targets for any sectoral policy aimed at reducing the impact of human activities

on biodiversity in Cuba. Cuba's macroeconomic exposure to biodiversity transition risk is moderate (see Figure 14), as these sectors account for just 3% of the country's exports and 6% of tax revenue. However, they do account for 21% of jobs and 18% of production.

AFD's screening tool on risks related to biodiversity^[5] shows that 58% of exports, 20% of tax revenue, 47% of jobs, and 45% of production are highly or very highly dependent on the supply of at least one ecosystem service, the most important of which are water supply and regulating services (such as rainfall, climate, and soil quality). The economic sectors that are directly reliant on these ecosystem services are manufacturing (pharmaceuticals), mining (lead, zinc, oil), and agriculture. Given the decline in the supply of these ecosystem services—Cuba ranks 66th for water supply and 42nd for climate regulation—these sectors are likely to face increasing instability as a result of disruptions in the supply of ecosystem services that are essential for Cuba.

[5] Physical biodiversity risk is based on an analysis of the dependence of economies on ecosystem services. Risk arises when a decline in biodiversity or a change in its availability affects economic activities.

Reference list

Bertelsmann Stiftung. (BTI 2022). Country Report – Cuba. Gütersloh: Bertelsmann Stiftung, 2022.

Economic Intelligence Unit. (EIU 2024). Country Report – Cuba.

González Águila R. (2021). Budget Transfers to the Business Sector in Cuba: Foreign Exchange Subsidy or Subsidy for Inefficiency? *Economía y Desarrollo*.

Hidalgo, V. (2021). Sostenibilidad fiscal en Cuba: una perspectiva institucional. *Economía y Desarrollo*

Lage, C. and Cruz, K. (2023). Inflación en Cuba: un acercamiento a sus causas. Friedrich-Ebert-Stiftung, Cuba.

Oficina Económica y Comercial de España en La Habana. (2023). Informe Económico y Comercial. Cuba.

ONEI. (1996–2022). Anuario Estadístico de Cuba. La Habana. Oficina Nacional de Estadística e Información.

Palacios, J. C. (2013). Structural Constraints and Determinants of Economic Growth in Cuba, CEPAL review.

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List of acronyms and abbreviations

BMI	Business Monitor International (Fitch)	GFCF	Gross fixed capital formation
CABEI	Central American Bank for Economic Integration	GHG	Greenhouse gases
		LMIC	Lower-middle-income countries
CHNV	Humanitarian parole for Cuban, Honduran, Nicaraguan and Venezuelan citizens (US Department of Homeland Security program)	MLC	Freely convertible currency
		MSME	Micro, small, and medium-sized enterprises
CITMA	Cuban Ministry of Science, Technology, and the Environment	NDC	Nationally Determined Contribution
EIU	Economist Intelligence Unit	OCDH	Cuban Observatory of Human Rights
GDP	Gross domestic product	ONEI	Cuban National Statistics and Information Office
GCC	Group of Creditors of Cuba	UMIC	Upper middle-income country

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