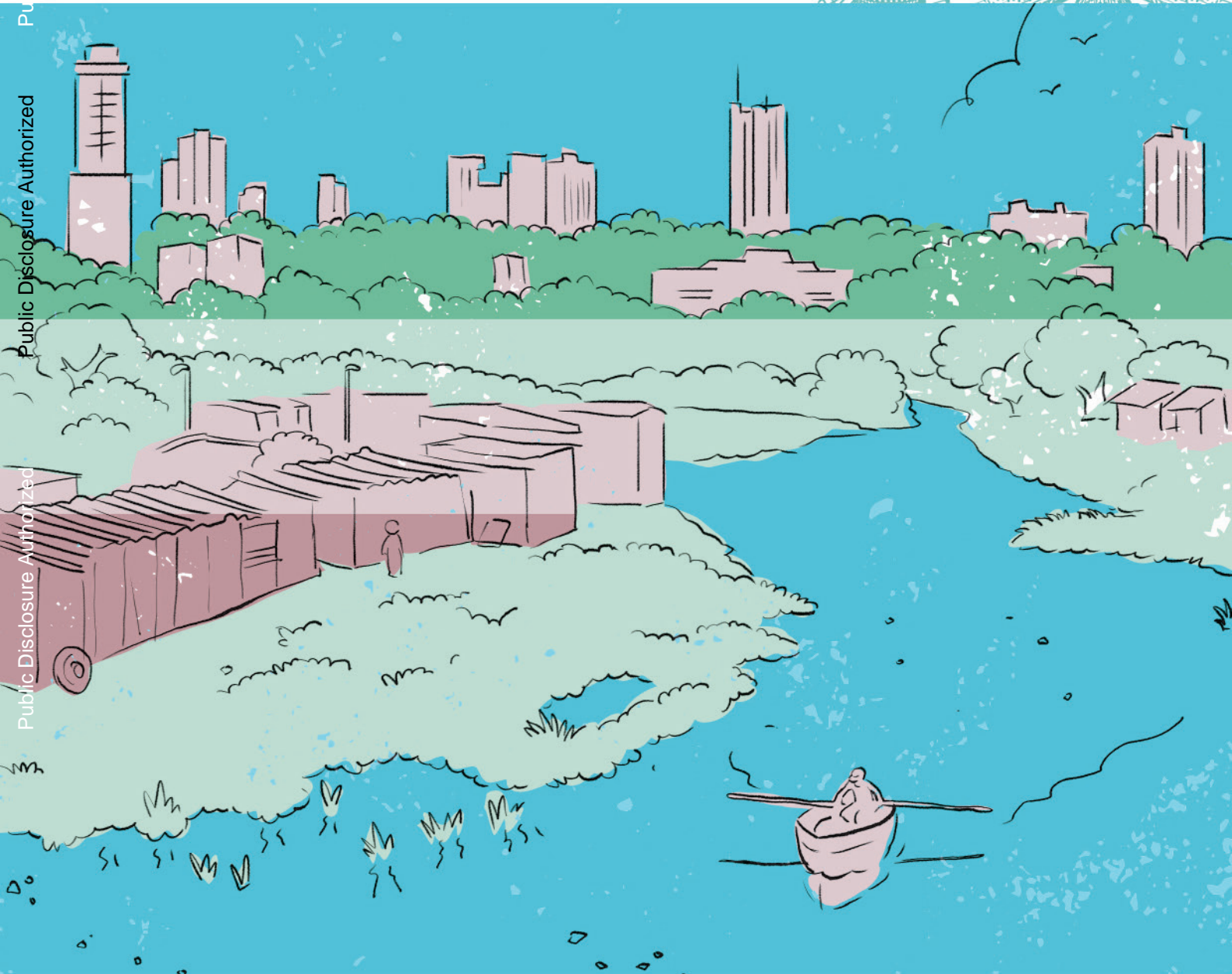


Paraguay Poverty and Equity Assessment

Strategies to boost inclusive growth and poverty reduction

October 2024



Paraguay Poverty
and Equity Assessment:
Strategies to Boost Inclusive
Growth and Poverty Reduction

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Abbreviations

ANDE	<i>Administración Nacional de Electricidad</i>
CCDR	Country Climate and Development Report
CEQ	Commitment to Equity
EPH	<i>Encuesta Permanente de Hogares</i>
EPHC	<i>Encuesta Permanente de Hogares Continua</i>
ERCE	<i>Estudio Regional Comparativo y Explicativo</i>
FDI	Foreign Direct Investment
FOICAH	<i>Fondo para el Fortalecimiento de la Infraestructura y Capital Humano</i>
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HCI	Human Capital Index
ICT	Information and Communication Technology
IDU	<i>Impuesto a los Dividendos y a las Utilidades</i>
INE	<i>Instituto Nacional de Estadística</i>
IPS	<i>Instituto de Previsión Social</i>
IRE	<i>Impuesto a la Renta Empresarial</i>
IRP	<i>impuesto a la Renta Personal</i>
ISC	<i>Impuesto Selectivo al Consumo</i>
JQI	Job Quality Index
LAC	Latin America and the Caribbean
MEF	<i>Ministerio de Economía y Finanzas</i>
MMR	Maternal Mortality Rate
MPI	Multidimensional Poverty Index
MSMEs	Micro, Small, and Medium Enterprises
MSPBS	Ministerio de Salud Pública y Bienestar Social
NCD	Noncommunicable Disease
ND-GAIN	Notre Dame Global Adaptation Initiative
NEET	Not in Employment, Education, or Training
OECD	Organisation for Economic Co-operation and Development
PISA	Programme for International Student Assessment
PPP	Purchasing Power Parity
SWIFT	Survey of Well-being via Instant and Frequent Tracking
UHC	Universal Health Coverage
VAT	Value Added Tax

Methodological note

The Paraguay Poverty and Equity Assessment analyzes the dynamics of poverty and inequality in the country during the period 2003-2022. This study examines the characteristics of the population living in poverty, the factors that have shaped socioeconomic changes, and proposes policy priorities to reduce poverty and improve equity.

The main data sources are two surveys implemented by the *Instituto Nacional de Estadística* (INE): *Encuesta Permanente de Hogares* (EPH), which has collected data since 2003, and *Encuesta Permanente de Hogares Continua* (EPHC), implemented since 2017. The EPHC continuously collects information and publishes quarterly labor indicators, with a brief interruption during the COVID-19 pandemic in 2020 and 2021.

It is important to note that the estimates in this report are based on expansion factors derived from national projections, 2015 revision. After this study's completion, INE published new databases for 2022 and 2023, using updated factors based on the 2022 Population and Housing Census. These new data are not directly comparable with the historical series used in this report. Furthermore, starting in 2023, official poverty figures are now based on annual data, rather than the last quarter of the year as was previously done. To maintain consistency in the analysis of long-term trends, this study focuses on the period 2003-2022, using the series based on population projections prior to the 2022 census.

The report is complemented by four technical notes covering: (1) the evolution of poverty and inequality between 2003 and 2022, (2) challenges and opportunities in human capital and the labor market, (3) distributive impacts of taxes and transfers, and (4) vulnerability to climate shocks. This report synthesizes the key findings from these studies, offering a comprehensive view of the current situation and prospects regarding poverty and equity in Paraguay.

Readers should consider these methodological aspects when interpreting the results and comparing them with subsequent publications that incorporate adjustments based on the 2022 census and the new annual estimation methodology.



Executive summary

Paraguay has achieved remarkable progress in reducing poverty over the past two decades. Through dedicated efforts and effective policies, the country halved its poverty rate from 51.4 percent in 2003 to 24.7 percent in 2022. Simultaneously, it cut extreme poverty by half—reaching 5.6 percent. According to World Bank estimates, Paraguay’s middle class has also experienced significant growth, expanding from 24.8 percent of the population in 2003 to 41.6 percent in 2022.

Since 2014, however, the pace of poverty reduction has slowed, with most gains concentrated in the 2003–13 period. Economic growth, the primary driver of Paraguay’s poverty reduction, has decelerated in recent years. This slowdown was accompanied by a decrease in job creation and stagnation in real labor incomes. Moreover, a series of adverse shocks between 2019 and 2022—including the COVID-19 pandemic, high inflation, and a sequence of droughts that affected the agricultural sector—further eroded some of the progress made. Despite these challenges, Paraguay has begun to show signs of recovery. In 2023, the country witnessed a 2.8 percentage point reduction in moderate poverty and a decrease of 1.2 percentage points in extreme poverty.¹

Despite the overall decline, poverty in Paraguay remains spatially concentrated, affecting certain groups disproportionately. This is partly reflected in the level of income inequality, with a Gini coefficient of 45 points in 2022, which is higher than that observed in structural peers such as Albania, Armenia, and Tunisia.² Although rural areas continue to have higher poverty rates, the share of the poor population living in these settings has declined, consistent with Paraguay’s urbanization trends.³ The young, women of peak productive age, those with low education levels, and informal workers face greater vulnerability to falling into poverty.⁴ Indigenous communities experience significantly higher poverty rates than the general population. This concentration of poverty underscores the persistent challenges faced by specific segments of society, despite broader economic trends.

1. The 2022 population census in Paraguay revealed a population of 6.1 million, nearly 1 million less than projected based on the 2002 Census. This discrepancy led to adjustments in expansion factors for national household surveys, affecting estimates of socioeconomic indicators such as poverty and inequality. Consequently, figures after 2022 are not directly comparable with the previous historical series. To maintain consistency in long-term trend analysis, this report uses data from 2003 to 2022 based on the 2015 revision projections. For more details on these methodological changes, refer to box 1.1.

2. Structural peers selected according to factors such as population, income, expenditure, rural/working-age population, density, and resource rents (World Bank 2018, 2024b) with respective Gini indices: Albania (0.29), Armenia (0.28), Guatemala (0.48), Tunisia (0.34). Aspirational peers: Costa Rica, Croatia, New Zealand, and Uruguay. Data from World Bank, Poverty and Inequality Platform, <https://pip.worldbank.org/#profile> (accessed April 2024).

3. Paraguay’s urbanization rate rose from 54 percent in the early 2000s to 64 percent in 2022, with a growing urban poor population (from 38.5 to 50.2 percent over the same period).

4. This report adopts the Instituto Nacional de Estadística’s definition of informal employment: informal employment includes public and private employees not contributing to pensions, employers and self-employed without Registro Único de Contribuyentes (RUC), unpaid family workers, and domestic workers not contributing to pensions.

Furthermore, World Bank estimates conducted for this report indicate an increase in the proportion of Paraguayans at risk of falling into poverty, considering both monetary factors and vulnerability to adverse shocks (Gayoso de Ervin and Rubiano-Matulevich, forthcoming). Paraguay's vulnerability rate exceeds the Latin American average and that of most countries in the region. This underscores the importance of adaptation measures, which the country has identified as a national priority, to reduce the population's susceptibility to adverse crises and strengthen its resilience to various risks.

What factors limit Paraguay's ability to accelerate poverty reduction?

This report identifies four main structural barriers hindering poverty reduction in Paraguay and proposes priority policy options that can be implemented to address the country's pressing socioeconomic challenges and disparities.⁵ This Paraguay Poverty Assessment, in conjunction with the Country Economic Memorandum (CEM) and the Country Climate and Development Report (CCDR), provides a comprehensive analysis of Paraguay's development challenges. By offering insights and policy recommendations based on this analysis, these reports collectively aim to promote inclusive and sustainable growth in Paraguay.

Levels of human capital. Paraguay, with one of the youngest populations in Latin America and the Caribbean (LAC), is at a critical juncture in its demographic transition. Despite a steep decline in the age dependency ratio, the country faces significant human capital deficits. Large gaps in education and health outcomes emerge early in life, with Paraguay ranking among the lowest-performing countries worldwide in mathematics, reading, and science according to results from the 2022 Programme for International Student Assessment (PISA). Disparities in access to quality education contribute to incomplete education trajectories, particularly for Indigenous and Guaraní-speaking students. The transition from school to the workforce is challenging, especially for rural, impoverished, and female youth, with 17 percent of those ages 15–24 not in employment, education, or training.

The public health system also faces challenges in ensuring universal coverage, generally lacking agreements between the various service provider networks that operate independently and overlap with each other. While there are some experiences of inter-institutional agreements, such as that of the Instituto de *Previsión Social* (IPS) with the military hospital and with some private medical study providers, these initiatives are limited. This segmentation results in territorial inequality: IPS covers 32 percent of the population in urban areas, compared to 14 percent in rural areas. High out-of-pocket expenses further exacerbate disparities in access to health services between geographic areas and income quintiles. It is important to note that, despite increases in public health expenditure, Paraguay has had mixed performance on key health outcomes, such as life expectancy, maternal mortality, and under-five mortality, compared to peers. Moreover, the burden of noncommunicable diseases has risen sharply, with those diseases accounting for 75 percent of total deaths in 2019, up from 61 percent in 2000.

5. The report is not meant to be a comprehensive analysis across all dimensions through which poverty may manifest; instead, it focuses on those factors identified as key drivers of poverty and inequality in Paraguay.

Access to and creation of quality jobs. Despite an increase in the proportion of workers in formal positions, this progress has been hampered by limitations in the generation of formal jobs across various economic sectors and restricted access to these jobs for specific segments of the population. With a labor informality rate of about 63 percent in 2022, access to quality employment remains limited. Paraguay ranked second from last in the Job Quality Index (JQI) across LAC countries in 2022, scoring 0.64 on a 0–1 scale. This composite metric incorporates the dimensions of income security, access to job benefits, contract-based security, and job satisfaction. The poor quality of jobs is mainly due to the low coverage of benefits, such as pension and health insurance. The gradual structural transformation of the economy, declining returns to education and to labor formalization, and the high prevalence of microenterprises contribute to the slow creation of quality jobs. Low-quality employment drives high job turnover and labor force exits and reentries, particularly among women and youth, as workers constantly seek better and more stable opportunities. These disparities in labor outcomes reflect and, in turn, exacerbate gaps in human capital, creating a vicious cycle.

Impacts of the fiscal system on poverty reduction. Paraguay's fiscal system has a limited effect on poverty reduction because of low tax collection, dependency on indirect taxes—despite the increasing prominence of direct taxes—and expenditure inefficiencies. These include leakages of social transfers to higher income quintiles, as well as opportunities for improvement in procurement processes (Pessino, Izquierdo and Vuletin 2018; World Bank 2022b). In 2021, the tax and transfer system contributed to a reduction in inequality of 2.4 Gini points, with most of the decline coming from the effect of direct transfers. In addition, fiscal policy contributed to a 1.3 percentage point reduction in moderate poverty. However, the redistributive capacity of the fiscal system is limited by low tax collection (taxes and social security as a share of gross domestic product [GDP] averaged 11.2 percent in 2021–23, one of the lowest rates in LAC) and the dependence on indirect taxes, which tend to be regressive. Additionally, inefficiencies in public spending further reduce the resources available for social investments and infrastructure, crucial for the country's development.

Exposure to climate shocks. Low-income households are more vulnerable to the impacts of climate change, particularly because of their greater dependence on agriculture and subsistence farming. Both short-term weather shocks and long-term climate change have significant impacts on income and poverty in Paraguay. Recognizing this vulnerability, the country has prioritized climate change adaptation policies. These measures are crucial to mitigate the long-term effects of climate change that could intensify poverty, mainly through reduced agricultural yields. Climate-related hazards, such as flooding and extreme heat, pose threats to poverty reduction, with approximately 25 percent of the population facing dual exposure to both pluvial and fluvial flooding and nearly 40 percent exposed to severe heat-related distress. This high level of flood risk exposure means that a substantial share of the population risks falling into poverty in the event of a flood. In urban areas, the proportion of poor people exposed to flood hazards is 1.2 times higher than for the nonpoor, highlighting the disproportionate vulnerability of low-income communities to the impacts of climate change.

How can Paraguay foster inclusive economic growth and accelerate poverty reduction?

There is no single solution to foster inclusive economic growth and accelerate poverty reduction in Paraguay. To foster inclusive growth and alleviate poverty, Paraguay needs to adopt a multidimensional approach that addresses the key challenges identified in this report (table ES.1). Recent reforms and policies aim to steer the country in this direction to accelerate the reduction of poverty and inequality. Notable examples include the *Plan Nacional de Reducción de la Pobreza Ñaime Porãvéta*, which outlines targeted strategies to lift vulnerable populations out of poverty and the extension of access to the social protection system for informal workers. But additional changes are needed. They include increasing and ensuring equitable opportunities in human capital accumulation, increasing access to and availability of quality jobs, improving the progressivity of the tax system, and enhancing resilience to climate shocks, together with continued diversification of the economy to reduce the dependence on a few agricultural commodities.

In terms of human capital accumulation, Paraguay needs to prioritize early childhood education and literacy programs to ensure that all children have access to quality learning opportunities from a young age. Addressing educational disparities, especially in rural and Indigenous communities, through targeted interventions such as bilingual education programs and culturally responsive curricula is crucial. Focusing on enhancing access to quality education and vocational training for young people not engaged in employment, education, or training (NEET) will help prepare them to meet the demands of the local and global job markets. Moving toward a universal health care system with improved coordination between service providers and strengthening the public procurement and distribution of essential medicines will improve access to health care, particularly for lower-income households.

To increase the access to and availability of quality jobs, Paraguay needs to employ a combination of demand- and supply-side policies. Policies that facilitate the entry and growth of new firms, and the exit of unproductive ones, would help to boost productivity, highly correlated with wages in Paraguay. Attracting foreign direct investment (FDI) in strategic sectors and fostering technology adoption and innovation can create new employment opportunities and upgrade Paraguay's technological capabilities. Creating a more inclusive and integrated agricultural sector by investing in rural infrastructure and offering tailored training programs will generate quality employment opportunities and foster the growth of modern agribusinesses. Enhancing skills and offering retraining opportunities aligned with market demands will help develop a skilled workforce that meets the needs of the evolving labor market.

Fiscal policy can play a bigger role in redistributing resources. On the spending side, Paraguay could enhance the targeting of transfers, subsidies, and social spending to effectively compensate lower-income households. Paraguay could, for instance, expand the coverage of *Tekoporã* and *Adulto Mayor* focused on the bottom deciles, and gradually improve the targeting of transportation subsidies. Addressing leakages in transfers and other inefficiencies in spending

could increase the resources available for social spending. On the tax side, Paraguay could take measures to improve the progressivity of the system, for example by reviewing and limiting the number of deductions and exemptions to personal income taxes and to the value added tax. Reduced rates for the value added tax (VAT) would ideally be maintained only for a limited number of products that are essential goods and services for lower-income households. Beyond these measures, Paraguay also needs to collect more public revenues to expand access to and improve the quality of public infrastructure, education, health, and other basic services on which the poor and vulnerable disproportionately rely. Such revenues, however, need to be collected in a fair, equitable, and accountable manner.

Increasing resilience to climate shocks is critical for protecting the poor and vulnerable from the impacts of climate change. Diversifying exports away from a few primary commodities will make Paraguay more resilient to external shocks, but this process will take time. In the meantime, maintaining macroeconomic stability and strengthening climate risk mitigation policies will increase resilience. Generating more and better information to identify the most vulnerable populations will facilitate predisaster planning and the targeting of adaptation and risk reduction measures. Enhancing the resilience of critical infrastructure to droughts and floods through integrated management plans and promoting efficient and sustainable water resource management will bolster resilience. Adopting a comprehensive approach to disaster risk management, including strengthening institutional and legal frameworks, will enable Paraguay to better prepare for and respond to climate-related hazards. Creating climate risk insurance and strengthening safety nets for family and small-scale farmers will provide financial protection and support in the face of weather shocks.

By implementing this multidimensional set of policies and interventions, Paraguay can address the challenges identified in this report and promote inclusive economic growth that reduces poverty and inequality at a faster pace. Maintaining macroeconomic stability, sustaining growth, enhancing institutional capacities, building resilience to climate shocks, and promoting economic diversification will be crucial in the years to come. Through a coordinated and targeted approach, Paraguay can unlock its potential and pave the way for a more prosperous and equitable future for all its citizens.



Table ES. 1. Proposed sequencing of policies and interventions

Policy area	Short-term policies	Medium- to long-term policies
Human capital accumulation	<ul style="list-style-type: none"> • Prioritize early childhood education and literacy programs. • Invest in teacher training to manage diverse classrooms and provide instruction in indigenous languages. • Review the contents and methods for the acquisition of 21st-century labor market skills. • Expand second-chance programs for people who are NEET. • Provide financial support to impoverished families to encourage school attendance. • Enhance data management systems to monitor learning progress. • Implement early warning systems to reduce dropout rates. • Establish framework for evaluating educational quality across regions. 	<ul style="list-style-type: none"> • Address educational disparities through targeted interventions like bilingual education. • Develop culturally responsive teaching methods and curricula. • Enhance vocational training aligned with industry needs. • Upgrade educational infrastructure equitably. • Prioritize the integration of the fragmented health system through improved coordination. • Strengthen centralized procurement of essential medicines.
Creation and Access to Quality Jobs	<ul style="list-style-type: none"> • Stimulate job creation in MSMEs through targeted financial support and demand-driven business training. • Develop export promotion programs and market intelligence services. • Develop a comprehensive investment promotion strategy. • Provide training and extension services to small-scale farmers. • Enhance skills and offer vocational training in line with market demands, including through short-cycle programs. • Address social norms that restrict women's roles to the household through media campaigns and community activities. • Conduct regular economic censuses with follow-up surveys. 	<ul style="list-style-type: none"> • Attract FDI in sectors with potential for job creation and technology spillovers. • Foster technology adoption and innovation through partnerships and training initiatives. • Invest in rural infrastructure (roads, irrigation, storage). • Expand and upgrade key activities in the services sector (ICT, finance, ecotourism). • Develop inclusive agricultural value chains. • Promote collaboration between foreign companies, local businesses, and educational institutions to develop industry-relevant curricula and apprenticeship programs. • Implement flexible work arrangements and leadership training for women. • Invest in a national system of subsidized, high-quality childcare facilities.

<p>Tax system progressivity and revenue generation</p>	<ul style="list-style-type: none"> • Expand the number of people contributing to direct taxes. • Streamline or reduce tax incentives and expenditures for top income earners. • Consider horizontal expansion of <i>Tekoporã</i> and <i>Adulto Mayor</i> focused on bottom three deciles. 	<ul style="list-style-type: none"> • Enhance targeting of transfers, subsidies, and structural spending to compensate lower-income households. • Gradually improve targeting of transportation subsidies, formulating comprehensive communication strategy. • Improve the quality of governance and transparency.
<p>Climate shocks resilience</p>	<ul style="list-style-type: none"> • Implement risk financing strategy combining climate risk insurance with targeted social protection. • Develop and enforce regulations on waste management. • Adopt comprehensive disaster risk management strategy encompassing risk identification, management, and adaptation. • Strengthen institutional coordination for effective climate risk management. • Improve data collection and analysis to identify the most vulnerable to climate impacts. • Use geo-referenced data for precise beneficiary targeting. 	<ul style="list-style-type: none"> • Invest in resilient infrastructure (for example, flood control systems, drought-resistant crops, early warning systems). • Establish legal frameworks and build technical capabilities at all government levels for promoting resilient infrastructure. • Develop monitoring and early warning systems for droughts, flooding, and disease outbreaks. • Invest in robust social protection systems tailored to those exposed to shocks. • Invest in expansion of clean cooking fuel infrastructure with improved targeting of subsidies for low-income households. • Adopt a building code and establish a regulatory authority for resilient infrastructure solutions.

Source: Original table compiled for this report.

Note: FDI = foreign direct investment; ICT = information and communication technology; MSMEs = micro, small, and medium enterprises; NEET = not engaged in employment, education, or training.



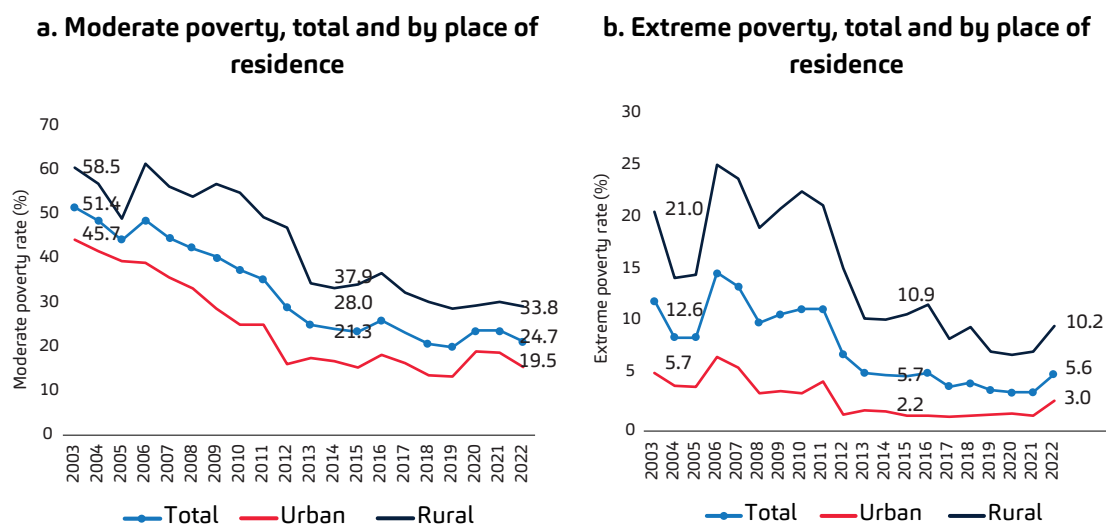
1. Overview of the challenge



Paraguay has made significant strides in reducing poverty, cutting in half the share of people living in poverty in the last two decades. By the end of 2022, 24.7 percent of the Paraguayan population lived below the national poverty line,⁶ nearly half the share of the population living in poverty in 2003 (51.4 percent).⁷ Similar patterns were observed across locations, although poverty declined more in rural than in urban areas. In 2022, 33.8 percent of Paraguayans living in rural areas were poor, compared to 58.5 percent in 2003. In urban areas, the poverty rate diminished from 45.7 percent to 19.5 percent over the same period (figure 1.1, panel a). Extreme poverty was also cut in half in the last two decades and stood at 5.6 percent in 2022 (down from 12.6 in 2003), with similar reductions in both rural and urban areas (figure 1.1, panel b).

Despite that progress, and coinciding with the onset of declining commodity prices, the pace of poverty reduction has slowed since 2014. Most gains in poverty alleviation corresponded to the 2003–13 period,⁸ when the share of the population living below the moderate poverty line dropped by 23.4 percentage points. In the following nine years, between 2013 and 2022, poverty decreased only by an additional 2.5 percentage points. Extreme poverty also decreased the most between 2003 and 2013 (by 6.9 percentage points), compared to a reduction of 0.1 percentage point between 2013 and 2022. Patterns in rural and urban poverty resembled those at the national level, with most of the progress observed between 2003 and 2013.

Figure 1.1. Moderate and extreme poverty were cut in half between 2003 and 2022



Source: Paraguay, Instituto Nacional de Estadística.

6. National poverty lines from the Instituto Nacional de Estadística (INE): urban poverty line 2022 = 825,373 guaraníes (G) per capita/month (G27,512 per capita/day); rural poverty line = G597,890 per capita/month (G19,930 per capita/day); extreme urban poverty line = G346,195 per capita/month (G11,540 per capita/day); and extreme rural poverty line = G316,157 per capita/month (G10,539 per capita/day).

7. The starting point for the poverty analysis is 2003, the first year in which data collection for the Encuesta Permanente de Hogares Continua (EPHC) was conducted between October and December (when detailed income data used to estimate poverty are collected).

8. The 2014 Paraguay Poverty Assessment found that, although poverty declined significantly between 2003 and 2013, rural areas continued to have a disproportionate concentration of the poor. The report attributed drivers of national poverty reduction since 2003 to growth in services, construction, and agriculture, which increased labor incomes for the bottom 40 percent.

Between 2013 and 2019, moderate poverty decreased by 4.5 percentage points whereas extreme poverty fell by 1.7 percentage points. In the case of both moderate and extreme poverty, most of the change came from reductions in rural poverty. Multiple factors appear to explain this trend. First, GDP growth was not as high as observed once population growth is considered. Second, after a decade of continued growth, the share of household members at the bottom of the distribution who reported earning labor income fell, primarily driven by a decline in earnings for youth and women. Third, labor earnings growth came to a halt, particularly for those at the bottom of the distribution (World Bank 2018a). The stagnation of labor incomes during this period is evident when comparing growth rates with the previous decade. Agricultural workers' incomes, which had grown by an average of 2.0 percent annually between 2003 and 2013, saw this growth reduced to 0.8 percent annually in the 2013-2019 period. The situation was more complex for non-agricultural workers, whose incomes went from an annual growth of 6.2 percent in 2003-2013 to a slight contraction of 0.04 percent in 2013-2019.

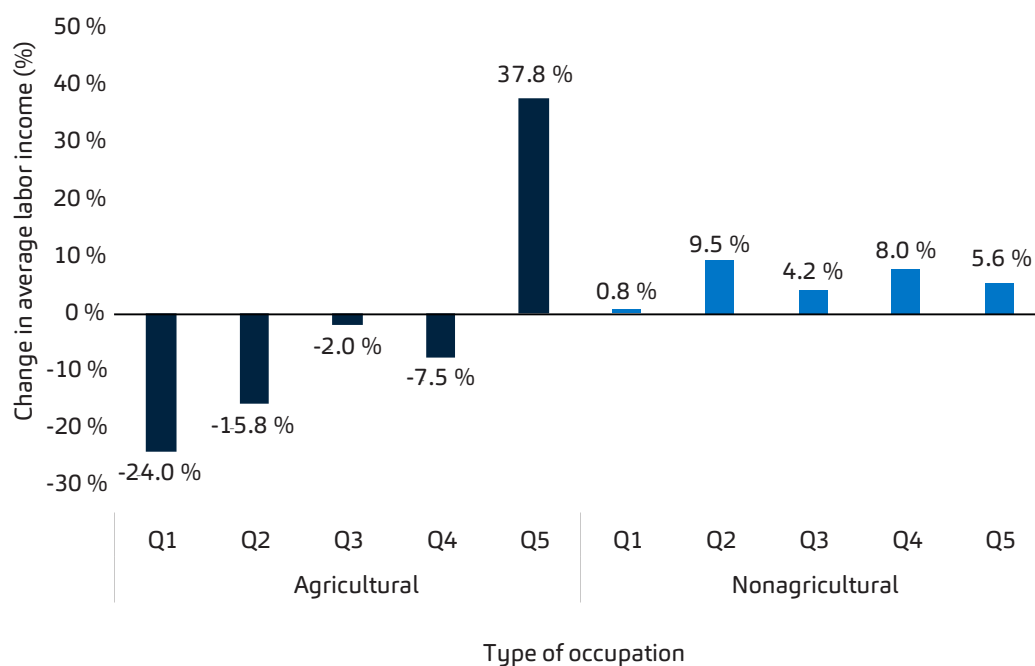
Since 2019, Paraguay's progress in reducing poverty has been uneven, partly because of the impact of adverse shocks on labor incomes. Though less steep than the average economic decline across the LAC region during the COVID-19 pandemic (a drop of 7.0 percent in 2020), Paraguay's GDP also contracted in both 2019 and 2020 (by 0.4 percent and 0.8 percent, respectively). Moderate poverty increased from 23.5 percent to 26.9 percent within one year, driven by a 12.9 percent decline in labor market incomes. The pandemic's impact proved more pronounced in urban areas, with poverty climbing by 5.1 percentage points, compared to a 0.5 percentage point increase in rural areas. Notably, the impacts of the crisis on poverty in Paraguay were less severe than in peer countries, largely because of the government's response in terms of social assistance. Estimates from the *Instituto Nacional de Estadística* (INE) indicate that the strengthening of *Adulto Mayor* and *Tekoporã* together with emergency provisions like *Pytyvõ*,⁹ which was phased out in 2021, prevented moderate and extreme poverty rates from escalating to 30.0 percent and 6.4 percent, respectively, during the pandemic.

As Paraguay's economy recovered from the pandemic's impact, high inflation combined with a drought reversed some of the progress in extreme poverty reduction. In 2021, moderate and extreme poverty remained virtually unchanged from 2020 levels. However, in the following years, the economic situation was affected by economic factors. Inflation caused by a series of global conflicts and climate shocks deteriorated real incomes, disproportionately affecting the country's lowest-income households. Simultaneously, the multiyear drought that affected La Plata Basin since 2019 induced damages to agriculture and reduced crop production, negatively impacting agricultural labor earnings of the most vulnerable households (figure 1.2). Consequently, extreme poverty increased from 3.9 percent to 5.6 percent within one year. In contrast, moderate poverty experienced a 2.2 percentage point decrease in 2022. This reduction was mainly driven by increases in labor income from nonagricultural activities associated with the recovery of labor markets in the aftermath of the pandemic. Social transfers have been crucial in mitigating the impact of adverse shocks on poverty. The INE estimates that *Tekoporã* and *Adulto Mayor* prevented moderate poverty from rising to 26.9 percent and extreme poverty from further increasing to 7.3 percent in 2022.

9. *Adulto Mayor* provides a monthly pension to adults over 65 years old who do not have a retirement pension or other assistance to help ensure basic income security. *Tekoporã* offers a cash transfer to families living in poverty conditional on school attendance and health checkups for children. *Pytyvõ* was a cash transfer for informal sector workers who lost their jobs during the pandemic; the program was phased out in 2021.

Figure 1.2. The recent rise in extreme poverty was mainly due to decreased agricultural labor income

Change in average labor income, by income quintile 2021-22



Source: World Bank based on data from Paraguay, Instituto Nacional de Estadística.

In 2023, Paraguay displayed remarkable resilience and made important strides in reducing poverty, despite the challenges encountered in previous years. According to new estimates based on updated expansion factors from the 2022 census, within a single year, the country achieved a decrease in moderate poverty of 2.9 percentage points, and extreme poverty witnessed a decline of 1.2 percentage points. The easing of inflationary pressures played a pivotal role in facilitating poverty reduction efforts nationwide, particularly in urban areas. Furthermore, economic growth, driven by increased labor incomes, proved instrumental in alleviating poverty, especially in rural settings (see box 1.1 for more details on methodological changes and new estimates).



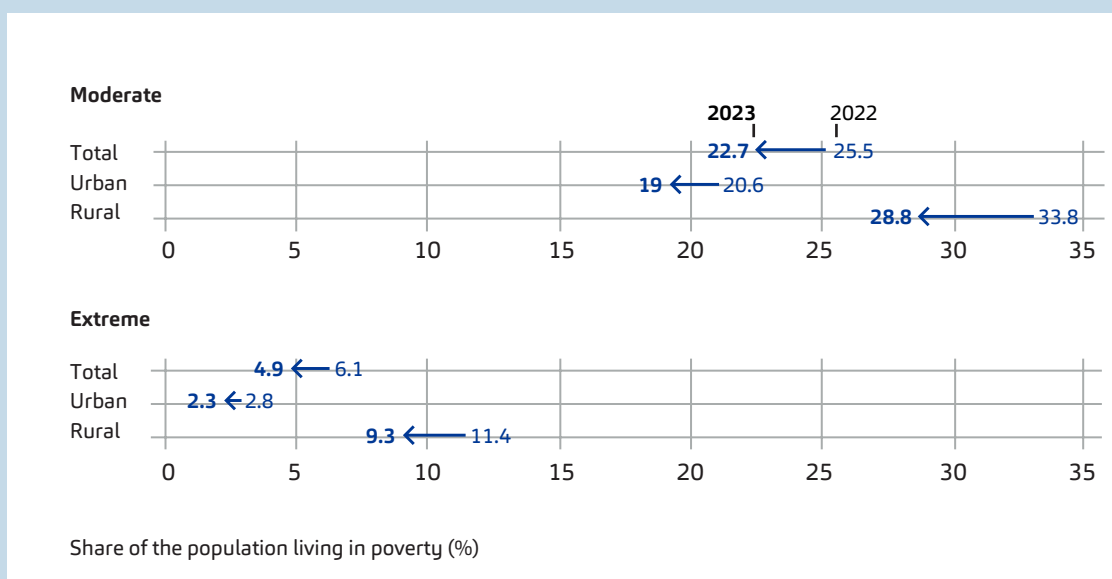
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Box 1.1. Paraguay's new census and 2023 poverty figures

Paraguay's 2022 national census provided crucial insights into the country's demographic landscape, estimating a population of approximately 6.1 million. This figure marked a decline from previous projections based on the 2012 population estimates, suggesting a reduction of about 1 million people. The demographic shift was chiefly attributed to decreased fertility rates and migration patterns; however, the implications of the census extended beyond demographic shifts. It entailed adjustments in expansion factors for national surveys preceding 2022, affecting the comparability of socioeconomic indicators. Because of these adjustments, indicators presented in this report (based on the surveys available during its preparation) are not directly comparable to those from 2022 onward. With few exceptions, the analysis does not include 2023 data.

Moderate poverty in Paraguay experienced a significant decrease in 2023, with rates dropping by 2.9 percentage points compared to the previous year (figure B1.1.1). The most recent update by the *Instituto Nacional de Estadística* indicates that, by the end of 2023, 22.7 percent of the population was living below the national poverty line, down from 25.5 percent in 2022. Similarly, extreme poverty witnessed a decline, falling from 6.1 percent in 2022 to 4.9 percent in 2023.

Figure B1.1 Decrease in moderate and extreme poverty, 2022–23



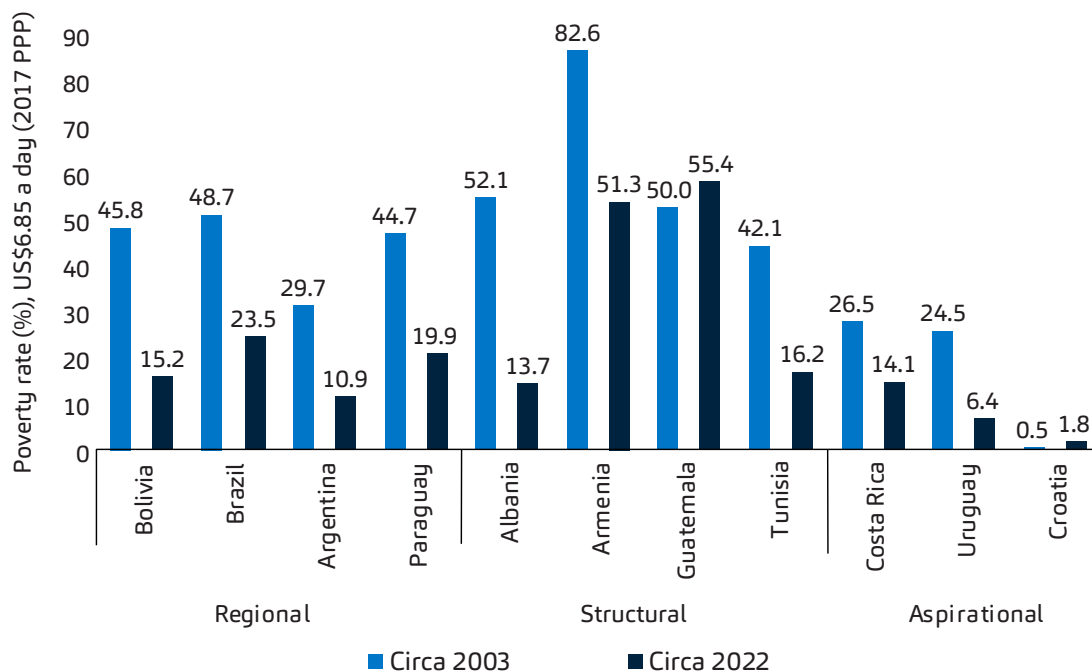
Source: Paraguay, Instituto Nacional de Estadística.

Economic factors played a pivotal role in driving these poverty trends. Lower inflation rates supported moderate poverty reduction nationally and in urban areas, and economic growth—through increased labor incomes—was instrumental in alleviating poverty, particularly in rural settings. Notably, income growth among the bottom 40 percent of the population outpaced the national average during the 2022–23 period. Consequently, income inequality fell, as evidenced by a decrease in the Gini coefficient from 0.45 to 0.44 between 2022 and 2023.

When put into perspective at the international level, the pace of poverty reduction in Paraguay since 2003 has been comparable to that of regional peers but below that of structural comparators¹⁰. In Paraguay, the share of the poor defined as living below the poverty line for upper-middle-income countries—US\$6.85 a day, 2017 purchasing power parity, or PPP (for cross-country comparisons)—declined from 44.7 percent in 2003 to 20 percent in 2022 (box 1.2). Although Paraguay had a pace of poverty reduction comparable to that of regional peers such as Argentina or Brazil, and similar to the LAC average, the poverty rate in 2022 was above other countries with a similar GDP per capita such as Albania or Tunisia and higher than that for its aspirational peers—which started with lower poverty rates (Figure 1.3).

Figure 1.3. Between 2003 and 2022, poverty reduction in Paraguay was comparable to that of regional peers

Poverty rate, Paraguay and selected comparators, 2003 vs. 2022



Source: World Bank.

Note: Based on internationally comparable poverty line of US\$6.85/day in 2017 purchasing power parity (PPP). Figures for 2022 are the most recent for cross-country comparison purposes.

¹⁰ See footnote 2 for list of structural and aspirational comparators, and an explanation for their selection.

Box 1.2. Understanding poverty lines: National and international measures

Poverty lines are monetary thresholds that reflect the minimum income or consumption needed to meet basic needs, considering a country's economic and social circumstances. These lines serve two main purposes: national poverty monitoring and international poverty comparisons. National governments use their own poverty lines to track progress on Sustainable Development Goal 1, which aims to end poverty in all its forms. This report's analysis of poverty and inequality refers to official estimates using the national poverty line, as reported by Paraguay's *Instituto Nacional de Estadística*, unless otherwise stated.

The World Bank employs internationally comparable poverty lines to aggregate and compare poverty rates across countries, expressed in US dollars using purchasing power parity exchange rates. The following internationally comparable poverty lines (in 2017 purchasing power parity) are used in this report for cross-country poverty rate comparisons, with the vulnerability and middle class measures following the definition proposed by Fernández et al. (2023):

- Lower-middle-income poverty line: Set at US\$3.65 per person per day, used for lower-middle-income countries.
- Upper-middle-income poverty line: Set at US\$6.85 per person per day, used for upper-middle-income countries and serving as the basis for cross-country comparisons in this report.
- Vulnerability to poverty: Set at US\$6.85–US\$14.00 per day, capturing individuals at risk of falling into poverty.
- Middle class: Set at US\$14–US\$81 per day, used to identify the emergence of a middle class in developing countries.

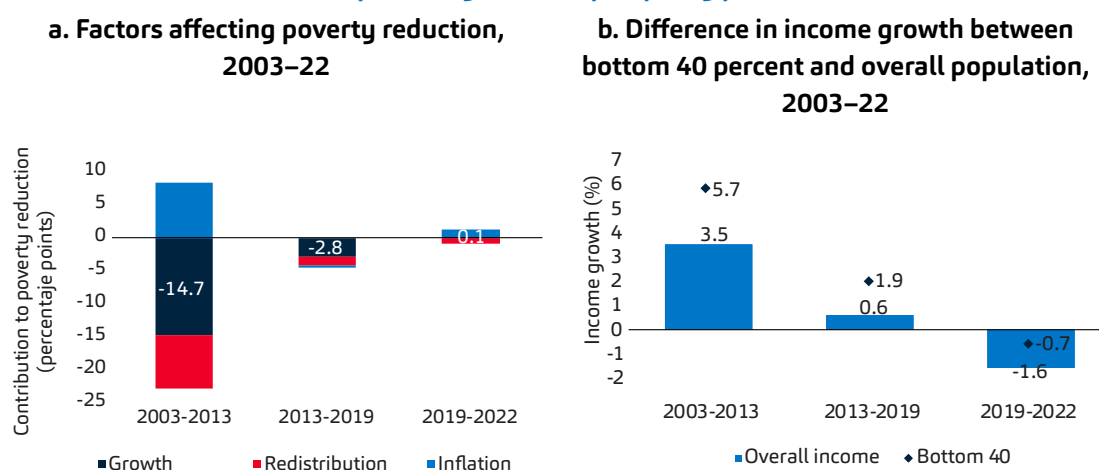
Economic growth supported the process of substantial poverty reduction, mainly between 2003 and 2013. During the 2003–22 period, economic growth accounted for two-thirds of the poverty reduction, with the remaining third attributed to redistribution.¹¹ However, rising prices, particularly spikes in food prices in certain years, acted against poverty reduction over this period (figure 1.4, panel a). For instance, in December 2006, food inflation soared to 28 percent and overall inflation was 12.5 percent. This inflation disproportionately affected lower-income households, who allocate a larger share of their income to essential goods. The most significant contribution of economic growth to poverty reduction occurred between 2003 and 2013, coinciding with the economy's fastest growth period. In the following years, until 2019, economic growth remained the primary driver of poverty alleviation, albeit with marginal effects. During the 2019–22 period, the economy experienced minimal growth, resulting in a limited impact on poverty reduction.¹²

11. Analysis based on a decomposition technique that attributes the changes in observed poverty to changes in income growth, income distribution (redistribution effect), and prices (Kolenikov and Shorrocks 2003).

12. GDP growth rates (in local currency) based on economic reports from the Ministerio de Economía y Finanzas (MEF): 4.5 percent (2003–13), 3.4 percent (2014–19) and 1.1 (2019–22).

Paraguay's economic growth during these years not only lifted many out of poverty but also contributed to reducing inequality. The shared prosperity premium, which measures the difference in income growth between the bottom 40 percent and the total population, remained positive during this period, indicating that the poorest segments of society experienced relatively higher income growth rates compared to the overall population. From 2003 to 2013, the bottom 40 percent enjoyed an average per capita household income growth of 5.8 percent, surpassing the annualized average growth of 4.1 percent for the entire population (figure 1.4, panel b). This trend persisted even during the slower growth period of 2013–19, with the bottom 40 percent experiencing a higher income growth rate of 1.9 percent compared to the overall per capita income growth of 0.6 percent.

Figure 1.4. Economic growth, a key driver of poverty reduction in Paraguay, was accompanied by a shared prosperity premium



Source: World Bank estimates using Kolenikov and Shorrocks (2003) decomposition, data from the Paraguay Encuesta Permanente de Hogares Continua, and national poverty lines (panel a); World Bank estimates based on data from the Paraguay Encuesta Permanente de Hogares Continua.

Note: In panel a, labels show the contribution of labor market incomes in percentage points

This progressive distributional effect is confirmed by the growth incidence curves, which show higher income growth rates among the lower percentiles of the income distribution (figure 1.5). Both labor and nonlabor income (including public transfers) grew faster for the bottom deciles, particularly between 2003 and 2019 (figure 1.6). Consequently, the Gini coefficient, a measure of inequality, declined from 55 to 45 between 2003 and 2022. However, progress in reducing inequality was marked by significant year-to-year variations, occurring more frequently than in other countries in the region. This volatility is consistent with fluctuations in Paraguay's GDP, which can be partly attributed to the country's dependence on natural resources that are vulnerable to external shocks (World Bank 2018a).

Figure 1.5. Per capita household income grew at a higher rate among the poorest

Per capita income growth, by income percentile, 2003–22

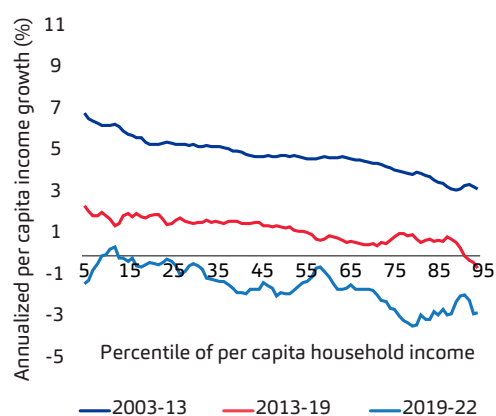
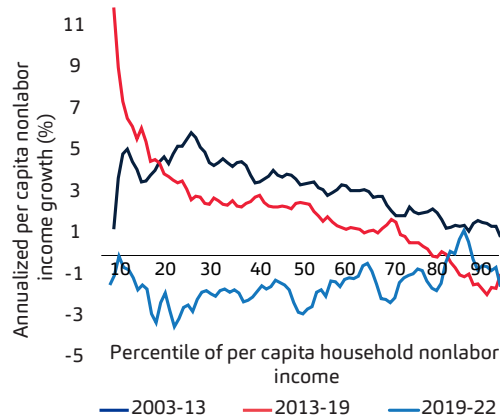


Figure 1.6. Nonlabor income played a significant role in reducing inequality

Per capita nonlabor income growth, by income percentile, 2003–22



Source: World Bank using data from the Paraguay Encuesta Permanente de Hogares Continua (EPHC).

Note: The growth incidence curve is calculated as the annualized growth rate of per capita income for every percentile of the income distribution.

In line with poverty dynamics, the middle class in Paraguay experienced significant growth over the past two decades, particularly between 2003 and 2013. The proportion of the population earning a daily income between US\$14 and US\$81 (2017 PPP), considered middle class following the definition by Fernández et al. (2023), increased from 24.8 percent in 2003 to 41.6 percent in 2022. This growth was more rapid than the regional average, which saw an increase from 22.4 percent to 35.7 percent during the same period. However, the expansion of this group in Paraguay, along with the reduction in poverty and inequality, was more pronounced in the first decade (2003–13) and slowed in the last four years after reaching its peak before the COVID-19 pandemic. The pandemic had a significant impact on the middle class, mirroring regional trends. The shock triggered a 3.5 percentage point decrease in the size of Paraguay's middle class, compared to a 4.0 percentage point decrease at the regional level. Furthermore, the subsequent rise in inflation has hindered the middle class from recovering to its prepandemic levels, with household per capita incomes growing at a slower pace than in previous years.

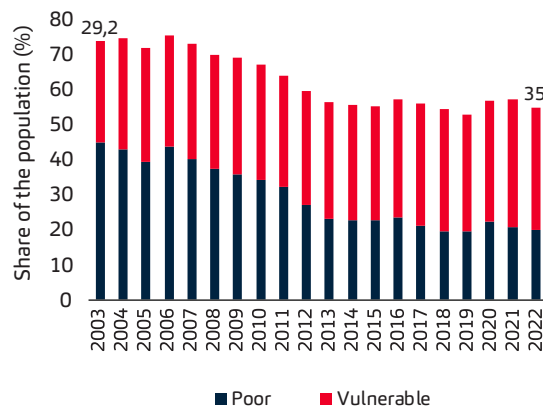
Although economic growth and social policies have contributed to poverty reduction in Paraguay, structural factors such as the low quality of jobs and susceptibility to adverse shocks can leave many people vulnerable to falling back into poverty. The proportion of Paraguayans vulnerable to poverty, defined as the share of the population with per capita income levels between US\$6.85 and US\$14.00 a day (2017 PPP), rose from 29.2 percent in 2003 to 35 percent in 2022 (figure 1.7).¹³ Furthermore, in 2021, Paraguay's vulnerability was higher than that of its peers and above the average for LAC and for the Southern Cone (figure 1.8). A forward-looking measure of vulnerability to poverty estimated for Paraguay in this report confirms similar patterns indicating that 39 percent of the population is at risk of becoming poor in the event of a negative shock,

¹³ Following the definition proposed by Fernández et al. (2023) for the LAC region.

regardless of their current or past poverty status. Vulnerability rates in rural and urban areas (48.3 percent and 32.8 percent, respectively) are higher than the observed poverty rates.¹⁴ This vulnerability is concerning because economically insecure households may anticipate shocks and adopt strategies to lower consumption and investments, including in human capital, even before a shock occurs (refer to, for example, Alderman et al. 2006; Gubert and Robilliard 2007; Klasen and Waibel 2013).

Figure 1.7. Despite poverty reductions, the share of vulnerable population has seen an upward trend

Share of the population that is poor or vulnerable, 2003–22

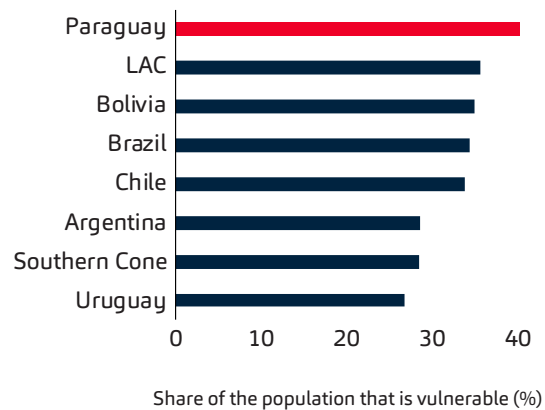


Source: World Bank calculations using data from the Socio-Economic Database for Latin America and the Caribbean.

Note: Poor is defined as having per capita income of US\$6.85 or less per day. Vulnerable is defined as having per capita income between US\$6.85 and US\$14 per day.

Figure 1.8. Paraguay has greater vulnerability to poverty than its regional peers

Share of the population that is vulnerable, Paraguay and regional comparators



Source: World Bank calculations using data from the Socio-Economic Database for Latin America and the Caribbean. Note: Data correspond to 2021, except for Chile (2020). LAC = Latin America and the Caribbean.

In this context, the availability of high-frequency data cannot be overstated. The ability to predict poverty and vulnerability using quarterly data allows for the identification of emerging trends and the development of targeted interventions to support those at risk (Appendix A). This ability is particularly relevant in Paraguay, where vulnerability rates in rural and urban areas (48.3 percent and 32.8 percent, respectively) exceed the observed poverty rates



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14. The standard threshold identifies a household as vulnerable to poverty if its likelihood of falling below the poverty line in the next two years is ≥ 50 percent (implying ≥ 29 percent probability of becoming poor in any given year). This threshold is commonly adopted in literature and used in this section.

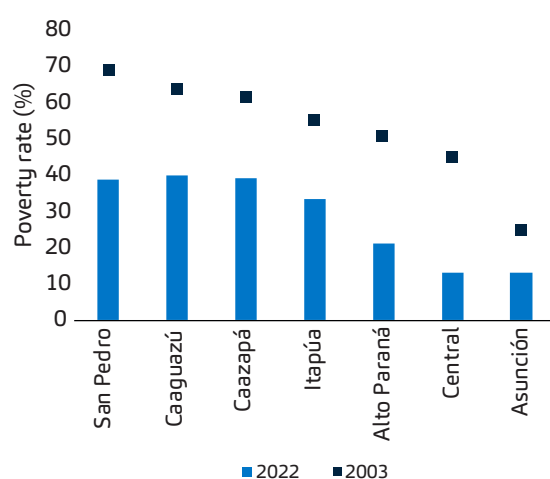
Spatial and horizontal disparities prevail despite poverty reduction efforts

Poverty rates in all regions are lower today than they were two decades ago, but disparities remain.¹⁵ Most departments halved poverty rates between 2003 and 2022, mirroring the national trend; however, the areas that had the highest incidence of poverty two decades ago remain the poorest today (figure 1.9). For example, in 2022, the poverty rate was roughly 40 percent in Caaguazú, Caazapá, and San Pedro—compared to more than 60 percent in 2003 in all three departments. In contrast, the capital city of Asunción experienced a much lower poverty rate of 13.0 percent in 2022, falling from an already lower rate of 24.6 percent in 2003.

The forward-looking measure of vulnerability to poverty introduced in the previous section reveals even more pronounced disparities between departments. Vulnerability rates vary significantly, ranging from 23.2 percent in Asunción to 64 percent in Caazapá (figure 1.10). Notably, vulnerability in all departments is higher than their respective poverty incidence, typically by a factor of 1.5. The disparity is more pronounced in the main soy-producing regions, such as Caaguazú, Caazapá, and Itapúa. These departments not only grapple with the highest poverty rates but also exemplify the capital-intensive nature of the soy sector, which has limited capacity to generate good-quality jobs for most of the population.

Figure 1.9. Poverty rates have decreased in all departments, but large disparities across them remain

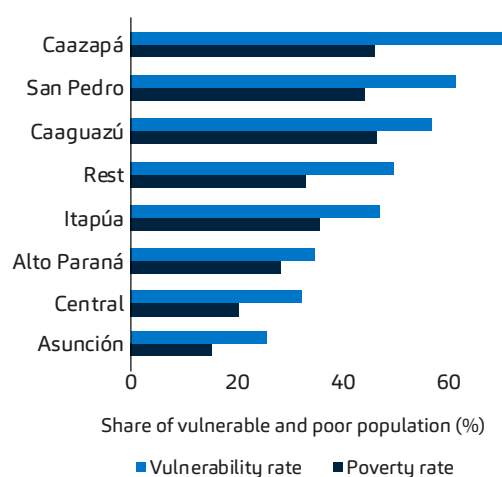
Poverty rate, by department, 2022 vs. 2023



Source: Paraguay, Instituto Nacional de Estadística.
Note: Data are shown for departments for which surveys are representative.

Figure 1.10. At the department level, vulnerability to poverty mirrors the variation in poverty rates

Share of vulnerable and poor population, by department



Source: World Bank using data from the Paraguay Encuesta Permanente de Hogares Continua.
Note: Data are shown for departments for which surveys are representative.

¹⁵ Household survey data for Alto Paraguay and Boquerón are not available.

Paraguay's urbanization rate has surged from 54 percent in the early 2000s to 64 percent in 2022, transforming the poverty landscape.¹⁶ This demographic shift has led to a proportional increase in the urban poor population. In the early 2000s, 38.5 percent of the moderately poor lived in urban areas. By 2022, slightly more than half of the poor (50.2 percent) were estimated to reside in urban areas. Although this trend has fluctuated during periods of economic slowdown and climate crises, it reflects a structural change in the distribution of poverty. The share of the extreme poor living in urban areas has also more than doubled over the last two decades, from 15.8 percent in 2000 to 34.1 percent in 2022. However, the geographical distribution of poverty remains heterogeneous: urban poverty is concentrated in the departments of Central (28 percent) and Alto Paraná (nearly 17 percent), whereas most of the rural poor live in San Pedro (17 percent), Caaguazú, and Itapúa (over 14 percent each).

A significant share of Paraguay's rural population still relies on family agriculture, which is associated with a higher risk of poverty compared to the risk for rural households not engaged in this activity. The 2022 *Censo Agropecuario Nacional* revealed that, out of the 259,188 family agriculture farms in Paraguay, 56 percent were smaller than 5 hectares, with nearly 80 percent relying exclusively on agriculture, fishing, and forestry as their primary income source.¹⁷ From 2003 to 2022, the percentage of rural households dependent on family agriculture¹⁸ decreased from 80 percent to 67 percent, reflecting the country's gradual economic diversification towards services. However, the difference in poverty rates between households engaged in family agriculture and those in rural areas not involved in this activity increased from 1.5 times in 2003 to 1.8 times in 2022. Family farmers are more than twice as likely to report an adverse event, highlighting their high exposure to shocks and limited capacity to mitigate or manage risks. Various constraints—such as limited access to markets, finance, technology, land, and human capital—hinder the income-generating potential and diversification ability of family agriculture households (World Bank 2018a).

Despite changes in the urban-rural distribution of poverty over time, the disproportionate impact on specific groups remains a persistent trend. Factors such as age, sex, and ethnicity create overlapping disadvantages that heighten the risk of poverty for specific segments of the population, a reality often obscured by national averages. One example is the high incidence of child poverty, a longstanding issue in Paraguay, particularly in rural areas. In 2022, the poverty rate among children and adolescents in rural regions exceeded 42 percent, a figure substantially higher than the national poverty rate of 24.7 percent (Serafini 2019).

16. The data presented in this paragraph do not consider the preliminary findings from the 2022 population census. By 2022, 36 percent of the Paraguayan population resided in rural areas.

17. They play a key role in producing cassava, corn, beans, soybean, sesame, yerba mate, peanuts, tomatoes, sugarcane, sweet potatoes, bananas, watermelon, lima beans, pineapple, butter beans, and livestock like cattle, pigs, sheep, goats, fish, poultry.

18. Figures employ the EPHC definition of households relying on family agriculture as those with ≥ 50 percent of their income from agriculture, which differs from the definition in the 2022 *Censo Agropecuario Nacional*.

Women in Paraguay are more likely than men to live in poor households. With a few exceptions, poverty rates for women tend to be higher than those for men up until age 45. The gender poverty gap, however, is statistically significant only for ages 20–29. During this period, when women typically transition from education to the labor market, they are on average 6.3 percentage points more likely than their male counterparts to live in poor households (figure 1.11). This higher poverty rate among women ages 20–29 can be attributed to a combination of factors, including disproportionate childcare and household responsibilities, gender norms prioritizing women’s role as caregivers over their economic empowerment, and comparatively lower access to assets, credit, and other economic resources (Deere, Alvarado, and Twyman 2012; Grown 2014; Muñoz Boudet et al. 2018, 2021; Quisumbing 2010). The presence of children in a household and having few potential earners also increase the likelihood of poverty, particularly for women. The highest poverty rates are observed in households consisting of a single woman with children (49 percent), followed by couples with children and a single man with children (33 percent); single-person households have the lowest poverty rates, regardless of the individual’s sex (figure 1.12).

Figure 1.11. Gender gaps in poverty widen during the school-to-work transition

Share of population in poor households, by gender and age cohort

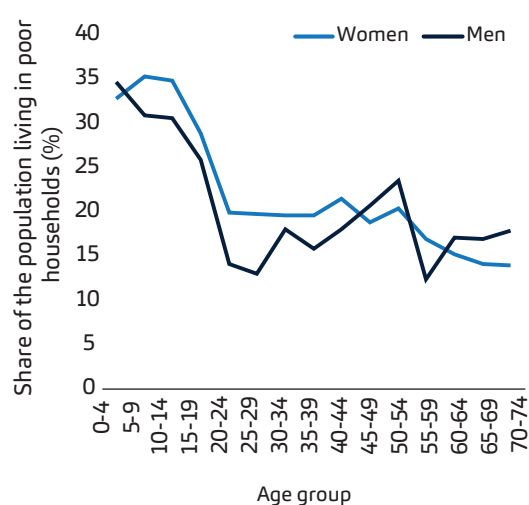
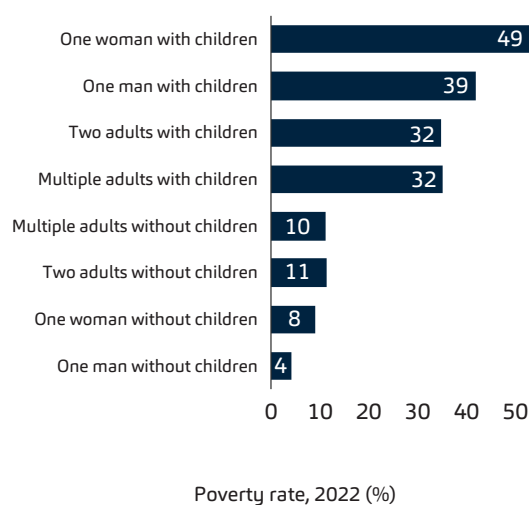


Figure 1.12. Presence of children in the household increases the risk of poverty

Poverty rate, by type of household, 2022



Source: World Bank using data from the Paraguay *Encuesta Permanente de Hogares Continua*.

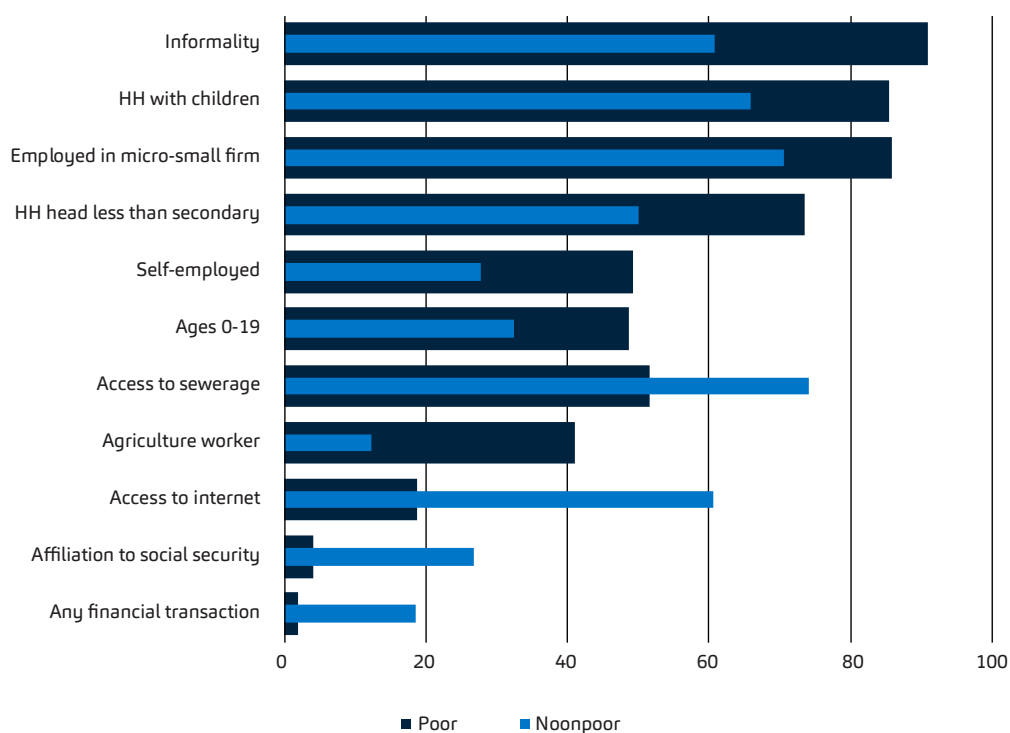
Indigenous populations in Paraguay face higher poverty rates relative to the rest of the population. Measuring welfare and poverty among ethnic minorities is challenging because of the limited coverage in national surveys, cultural and linguistic barriers, the need to adapt methodologies to capture their unique circumstances, and geographic remoteness. Although Guaraní is widely spoken in Paraguay, it is not an indicator of Indigenous status. A large share of the non-Indigenous population is bilingual, speaking Spanish and Guaraní, which are both official languages. Despite these challenges, the 2022 *Censo Nacional de Población y Viviendas* and a 2017 survey focused on Indigenous communities provide insights into the disparities

faced by Indigenous populations. According to the 2022 census, 140,039 Paraguayans—or 2.3 percent of the population of 6.1 million—self-identified as belonging to one of the 19 Indigenous communities (*pueblos indígenas*). The largest Indigenous populations are in the departments of Boquerón and Presidente Hayes, each comprising approximately 30,000 people. The latest data available indicate that, in 2017, 66.2 percent of the Indigenous population was poor, with 34.4 percent living in extreme poverty, in contrast to national figures of 26.4 and 4.4 percent, respectively, for the same year.¹⁹

The face of poverty in Paraguay: Young, informal, and with low levels of education

Poverty in Paraguay affects young people most heavily, especially those with low levels of education, and informal workers. Poverty is concentrated among individuals ages 0–19, with 50 percent falling below the poverty line. Furthermore, 91 percent of the poor belong to families whose household head works informally, and 74 percent of those households are led by individuals with less than secondary education. Five of every 10 adults living in poor households are self-employed. Regarding the sector of employment, poverty is concentrated in the agriculture sector (41 percent) and among workers in micro and small firms (figure 1.13). Most of the poor live in households with children, and only 19 percent have access to the internet. Few adults living in poverty engage in financial transactions, and less than 5 percent have access to social security.

Figure 1.13. Profile of the poor in 2022: Young, informal, and with low levels of education



Source: World Bank using data from the Paraguay Encuesta Permanente de Hogares Continua, 2022.

Note: These figures are not comparable with previous series because of the changes explained in box 1.1. HH = household.

19. The most recent poverty data for Indigenous communities come from 2017, when a specialized survey was conducted in their territories.

The socioeconomic profile of poor households in Paraguay differs between urban and rural areas. In 2022, 13.3 percent of urban poor household heads had completed secondary education, versus 7.6 percent of rural poor household heads. More urban poor adults were employees (36 percent) than rural poor adults (13 percent); about two-thirds (62.4 percent) worked in commerce and personal services, whereas only 22 percent of the rural poor did. In fact, most rural poor worked in agriculture (69.0 percent) and were less likely than the urban poor to have social security. The rural poor were more likely to be self-employed (56.7 percent) than the urban poor (40.8 percent) and to work as domestic workers (22.7 percent vs. 7.6 percent).

Beyond income: Multidimensional poverty, access to services, and assets

Along with monetary poverty, multidimensional poverty has experienced a decline in Paraguay; however, inequalities persist.²⁰ The incidence of multidimensional poverty declined from 34.3 percent in 2016 to 17.6 in 2022 (figure 1.14). Like the patterns observed in monetary poverty, multidimensional poverty consistently registers higher rates in rural areas than in urban settings. In 2022, the incidence of multidimensional poverty in rural areas was five times higher than that recorded in urban areas (35.6 percent vs. 7.4 percent, respectively). Multidimensional poverty also varies by department. Whereas only 4 percent of residents in Asunción were considered multidimensionally poor in 2022, the incidence in San Pedro and Caazapá, two of the departments with the highest monetary poverty, was more than 35 percent.

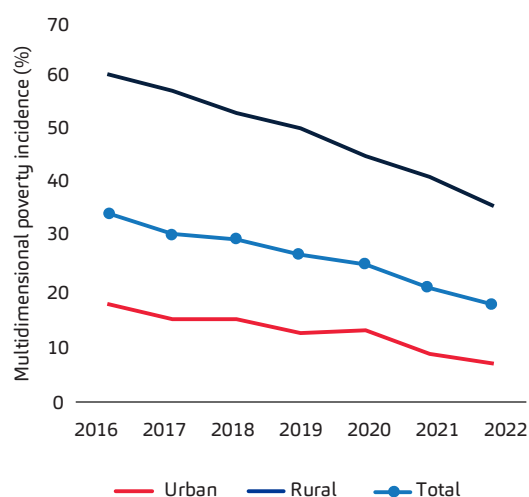
An important finding is that many Paraguayans are multidimensionally poor without being monetarily poor, facing deprivations that may prevent human capital accumulation.²¹ In 2022, 44.6 percent of the multidimensionally poor were not identified as monetarily poor, highlighting the relevance of complementing traditional measures with the analysis of nonmonetary dimensions. Several factors contribute to this discrepancy: for example, despite having access to monetary resources, individuals may lack access to essential services or may face geographical disparities or gender inequalities that limit women's opportunities in education, health, decision-making, or employment. Intergenerational factors, like coming from families with limited educational attainment or poor health, can also affect long-term opportunities. For example, 93.5 percent of the multidimensionally (but nonmonetarily) poor population lacked contributions to any pension fund, leaving them vulnerable in old age. Nine out of 10 individuals suffered from inadequate waste management services, affecting sanitation and health; and roughly 6 out of 10 relied on polluting charcoal or firewood as cooking fuel. In most cases, deprivation rates are highest in rural areas (figure 1.15).

20. The INE's Multidimensional Poverty Index (MPI) measures deprivation across four equally weighted dimensions: (1) employment/social security, (2) housing/services, (3) health/environment, and (4) education. It includes indicators like inactivity, lack of contribution to a pension fund, inadequate housing, lack of medical access, lack of water access, school nonattendance, illiteracy, and delayed schooling.

21. Delayed schooling (students ages 8–19 attending school with a 2+ year delay), lack of pension fund contributions (employed people ages 18–64), and absence of retirement or pension access (people ages 65 and older receiving no contributory or noncontributory pension) have a higher weight in Paraguay's MPI than in other countries in the region such as Mexico or Colombia.

Figure 1.14. Multidimensional poverty in rural areas is five times higher than in urban areas

Multidimensional poverty, 2016–22



Source: Paraguay, Instituto Nacional de Estadística.
Note: Official Multidimensional Poverty Index estimates are available only since 2016.

Figure 1.15. Deprivations are highest in pension contributions, garbage disposal, and cooking fuel

Incidence of deprivations, by place of residence, 2022

	Total	Urban	Rural
Lack of contribution to a pension fund	93	94	93
Inadequate waste management	89	69	97
Coal/firewood for cooking	58	41	65
Lack of improved sanitation	33	13	41
Incomplete education/illiteracy	30	26	31
Delayed schooling	29	49	21
Ill/injured without medical care	28	29	28
Overcrowding	27	37	23
Inadequate housing materials	26	18	29
Lack of access to improved water	22	15	25
School nonattendance	19	17	19
Child labor	19	20	18
Unemployment	15	29	9
Unemployment due to insufficient time	14	22	10
Lack of pension	6	6	7

Source: Paraguay, Instituto Nacional de Estadística.
Note: Data show the share of deprived population among the multidimensionally poor (without being monetarily poor).

Although individuals who are monetarily poor but not multidimensionally deprived may have access to essential services, their low levels of income can still hinder their ability to escape poverty. Limited financial resources can affect educational attainment, health outcomes, and the ability to invest in productive assets, perpetuating the cycle of poverty. The constant stress associated with living on a low income can also take a toll on mental health and overall well-being. As such, addressing the needs of the monetarily poor remains crucial for promoting inclusive growth and reducing inequality in Paraguay. A more detailed analysis of the challenges faced by the monetarily poor and their implications for human capital development (and vice versa) is presented later in the section titled “Levels of human capital.”

Consistent with improvements in the Multidimensional Poverty Index (MPI), Paraguay has made progress in expanding the provision of basic services; however, poor households continue to have lower access. As of 2022, moderately and extremely poor households were less likely to have access to water supply and sewerage services than their nonpoor counterparts, with gaps of 5 percentage points and 30 percentage points, respectively. Poor households had lower rates of in-home water piping access compared to nonpoor households, at 77 percent versus 94 percent. Similarly, the internet access gap between poor and nonpoor households was over 40 percentage points in 2022, and this digital divide widens even further when looking at rural versus urban areas. Access to electricity, by contrast, was high for all groups, remaining above 95 percent regardless of poverty status.²²

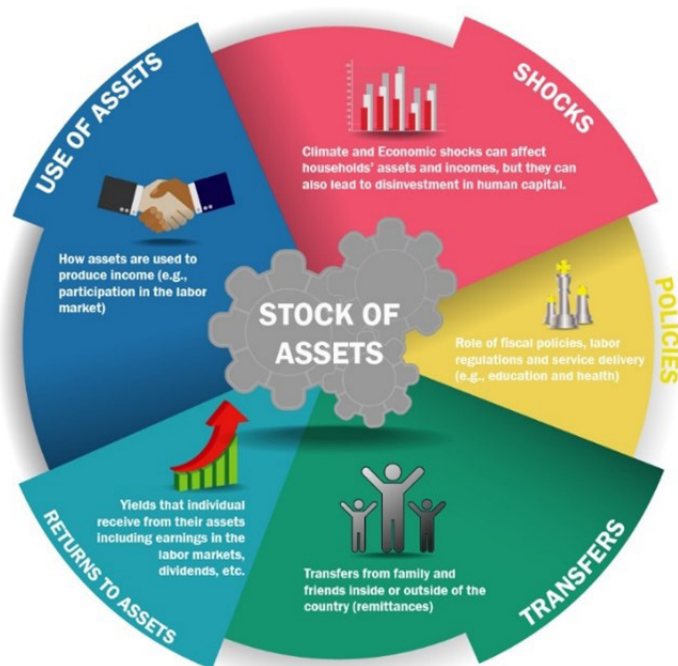
22. The EPHC does not include questions to capture the quality of these services, but other evidence suggests that quality tends to be lower for poorer households (refer to, for instance, Serafini 2019).

2. Which factors limit Paraguay's ability to accelerate poverty reduction?



This section addresses the drivers of poverty and inequality in Paraguay. To explore the factors that represent a barrier to the acceleration of poverty reduction in Paraguay, this section relies on the assets-based framework (Attanasio and Székely 1999; Bussolo and Lopez-Calva 2014). The framework is centered on the elements that determine the capacity of an individual or a household to generate market income, going from the assets they possess and accumulate to the uses and returns they obtain from those assets. It also describes how shocks and policies can affect that market income (figure 2.1). Although poverty may materialize through many dimensions, the analysis in this report focuses on those that have been identified as key in determining poverty and inequality in Paraguay, including levels of human capital, access to quality jobs, the effects of the fiscal system, and the exposure to climate shocks. Spatial and horizontal (for example, between groups) inequalities are integrated in the analysis as cross-cutting themes.²³

Figure 2.1. Understanding the factors affecting household income in Paraguay



Source: Adapted from Bussolo and Lopez-Calva 2014 and World Bank 2021a.

23. This Poverty Assessment draws on four background notes analyzing (1) monetary poverty and inequality trends; (1) human capital and quality jobs; (3) fiscal incidence; and (4) vulnerability to climate shocks and poverty. The notes include new analysis, such as the SWIFT approach for quarterly poverty estimation (refer to appendix A for details on the SWIFT methodology).

Levels of human capital

In Paraguay, large gaps in education and health outcomes emerge early in life, before people enter the workforce. These disparities are mainly observed between urban and rural areas, socioeconomic levels, and ethnic groups. Despite the country's linguistic wealth, with a significant portion of the non-Indigenous population speaking Guaraní, an indigenous language, inequalities in human capital accumulation persist, particularly in education.²⁴ Initial disparities in access to quality education, health care, and other opportunities to acquire skills and productive assets result in differences in wages and job opportunities later in life. As shown in Paraguay's poverty profile in the previous section, poor households tend to have fewer productive assets and less human capital overall, highlighting how the roots of income inequality stem from early disparities in human capital development.

Despite increasing intergenerational mobility in education in Paraguay, the country still trails behind some of its structural peers in this regard. For individuals born in the 1950s and 1960s, Paraguay's average absolute mobility, defined as the share of individuals with more education than the maximum educational attainment of their parents (excluding adults whose parents have tertiary education), surpassed that in Guatemala and Tunisia but fell short of that in Albania (figure 2.2).²⁵ The gap was more pronounced for the 1950s generation and has narrowed over time, primarily because of a rise in absolute mobility in Paraguay since the 1960s. The less steep increase in average absolute mobility compared to other countries is not surprising, because it becomes more challenging to outperform one's parents when educational attainment improves from one generation to the next. Notably, Paraguayans born in the 1980s with less-educated parents, who are more likely to be poor, exhibit greater upward mobility than previous generations (figure 2.3). This trend not only indicates substantial advancements in educational attainment in Paraguay but also highlights the potential of education to break the cycle of poverty.

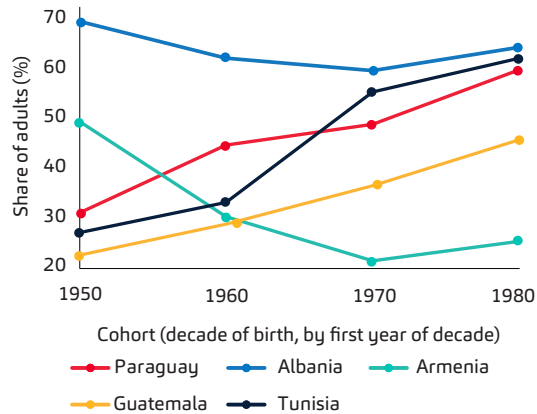


World Bank Flickr Photo Archive

24. Data from the 2022 EPHC indicate that 34.4 percent of individuals ages 5 and older primarily speak Spanish and Guaraní at home and that 33.4 percent speak Guaraní.

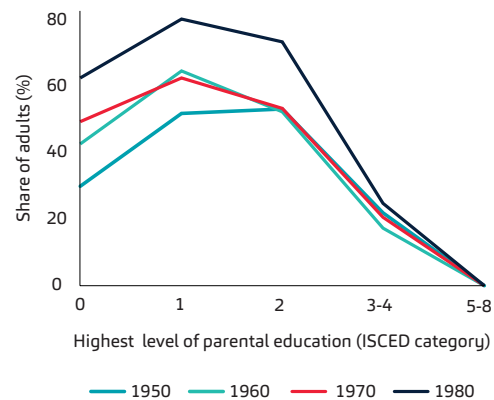
25. The analysis follows and relies on data by van der Weide et al. (2023).

Figure 2.2. Intergenerational mobility in education in Paraguay has been on the rise but remains below that of some structural peers
Intergenerational mobility in education, Paraguay and selected comparators, 1950–80



Source: World Bank, Global Database on Intergenerational Mobility (<https://datacatalog.worldbank.org/search/dataset/0050771/Global-Database-on-Intergenerational-Mobility>).

Figure 2.3. Parental education is strongly correlated with more highly educated children
Correlation of parental education and children's education, 1950–80



Source: World Bank, Global Database on Intergenerational Mobility (<https://datacatalog.worldbank.org/search/dataset/0050771/Global-Database-on-Intergenerational-Mobility>).

Note: ISCED = International Standard Classification of Education.

Despite improvements in intergenerational mobility in education, human capital gaps in Paraguay remain large, mainly in terms of education. The World Bank's Human Capital Index (HCI) is a synthetic index that measures the potential for a young person to reach her full income potential in life. Paraguay's HCI is 0.56 for the poorest 20 percent of the population, indicating that Paraguayan children in this group will reach slightly over half of their lifetime income potential as compared to 0.71 for children in the wealthiest 20 percent. Most of the difference is due to gaps in the quality of education. In Paraguay, a child in the richest 20 percent of households who starts school at age 6 can expect to complete 11.4 years of school by her 18th birthday, whereas a child from the poorest 20 percent can expect to complete 9.8 years. When it comes to education performance, a significant disparity exists between sixth grade students from different socioeconomic backgrounds. Students from the wealthiest quintile outperformed their peers in the lowest quintile by a considerable margin, scoring 10.9 percentage points higher in language, 7.7 percentage points higher in math, and 8.5 percentage points higher in science.²⁶

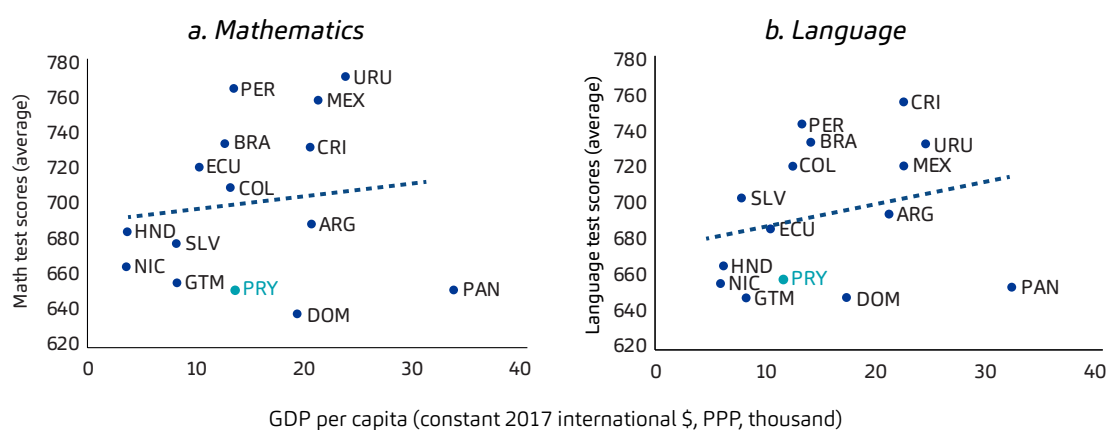
The overall quality of education in Paraguay is low, and young generations are not acquiring the basic skills necessary to compete in the labor market. According to the most recent PISA (2022), Paraguay ranked among the lowest performers in the region and was among the 10 lowest-performing countries worldwide in mathematics, reading, and science. The latest wave

26. The scores are based on the 2019 *Estudio Regional Comparativo y Explicativo* (ERCE) implemented by United Nations Educational, Scientific and Cultural Organization's Latin American Laboratory for the Assessment of the Quality of Education. The scores for students in the highest quintile are 724.4, 695, and 707.5 in language, math, and science standardized tests, respectively; students in the lowest quintile score 615.7, 618.8, and 624.7 in the same subjects.

of the regional standardized test on math, language, and science—the 2019 *Estudio Regional Comparativo y Explicativo* (ERCE)—reported similar results. Although Paraguay’s students outperform those from the Dominican Republic and Panama, countries with higher GDP per capita, they fall behind the levels of Ecuador and Peru, which have similar income levels and were among the top performers (figure 2.4). Compared to 2017, students in Paraguay achieved similar test scores in reading and modest improvements in mathematics and science. However, most students did not reach minimum proficiency levels, with 66 percent, 71 percent, and 85 percent failing to meet the minimum standards in reading, science, and math tests, respectively.

Figure 2.4. Paraguayan students achieved lower scores than their peers in countries with similar income levels

ERCE test scores and GDP per capita, Paraguay and LAC comparators, 2019



Source: Prepared by World Bank staff using data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and from the World Development Indicators.

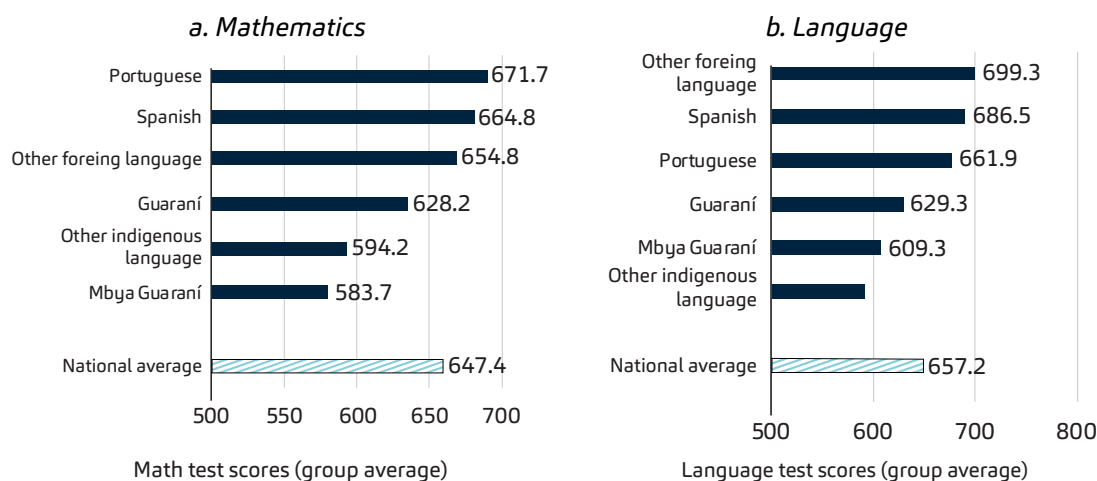
Note: The figure shows scores on the *Estudio Regional Comparativo y Explicativo* (implemented by UNESCO’s Latin American Laboratory for the Assessment of the Quality of Education). It does not include global comparisons because, at the time of developing this report, the Programme for International Student Assessment had not publicly released data. ERCE = *Estudio Regional Comparativo y Explicativo*.

One issue is that not all children in Paraguay have the same learning opportunities. Compared to Spanish-speaking children, many indigenous and Guaraní-speaking children are out of school—and the gap increases at higher education levels (*Gobierno de Paraguay* 2021). Furthermore, students who remain in the education system experience significant performance gaps, likely attributed to language barriers arising from the mismatch between students’ mother tongue and the official language of instruction, Spanish (Gayoso de Ervin 2016). The latest wave of ERCE reveals large gaps among sixth-grade students based on the language spoken at home. Guaraní-speaking students²⁷ exhibited the lowest average test scores in both math and language, whereas Spanish-speaking students achieved the highest average levels on these tests (figure 2.5). PISA 2022 results provide further evidence that these language gaps persist, with more than 8 out of 10 Guaraní-speaking students failing to reach the minimum level of competency on math, language, and sciences tests.

27. Including Mbya Guaraní and other Indigenous language speakers.

Figure 2.5. Sixth-grade students who speak Guaraní and other indigenous languages have lower test scores compared to their Spanish-speaking peers

ERCE test scores of sixth-grade students, by language spoken, 2019



Source: World Bank staff elaboration using data from the United Nations Educational, Scientific and Cultural Organization on the Estudio Regional Comparativo y Explicativo.

Note: ERCE = Estudio Regional Comparativo y Explicativo.”

Indigenous populations emerge as the most disadvantaged group in terms of human capital accumulation, followed by rural populations. As of 2017, average educational attainment among Indigenous individuals ages 25 and older was only 3.4 years of schooling, with about one-third of the population being illiterate. Indigenous women are notoriously more illiterate compared to their male counterparts. Rural students also fall behind their urban peers, with an educational attainment gap of 3.3 years of schooling (11.6 years of schooling on average in urban areas versus 8.3 years of schooling on average in rural areas). Notably, PISA results reveal a decline in test scores for rural students between 2017 and 2022, exacerbating the existing rural-urban educational gap.

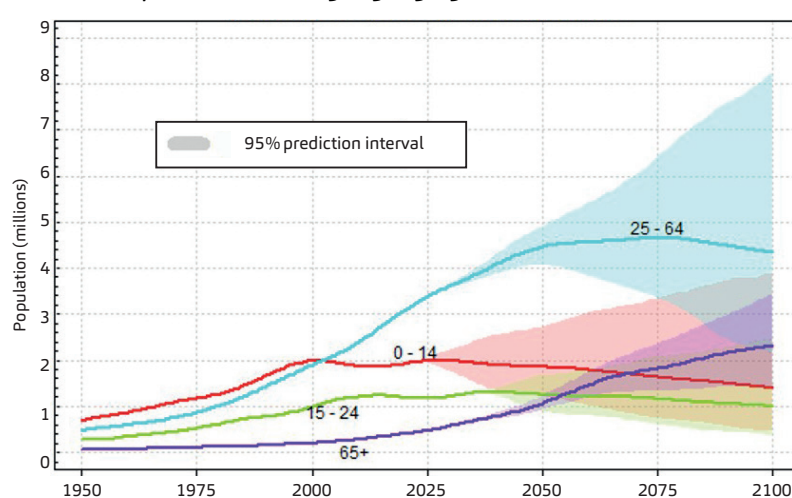
Seizing the moment: Investing in Paraguay’s youth to unlock the demographic dividend

Paraguay finds itself at a pivotal moment in its demographic transition, with significant untapped potential among its young population. Over the last five decades, the country has experienced the second-steepest decline in the age dependency ratio among structural and aspirational peers, surpassed only by Tunisia. Between 1974 and 2022, the ratio declined from 92 to 54 dependents per 100 working-age individuals.²⁸ This demographic shift can be attributed to different factors, notably declining fertility rates, which dropped from 5.3 to 2.5 births per woman during the same period. Consequently, two-thirds of Paraguay’s employed population is between 15 and 44 years old, representing a significant demographic dividend waiting to be harnessed. Within the LAC region, Paraguay is projected to have one of the longest-lasting demographic dividends, alongside Bolivia and Guatemala. Paraguay is also home to one of the youngest populations in the region (Figliuoli et al. 2018).

28. Data on age dependency and fertility rates come from United Nations Department of Economic and Social Affairs Population Division’s World Population Prospects 2024, which consider preliminary results from the 2022 population census in Paraguay. The age dependency ratio is calculated as population <15 + population >64/population 15–64. For more information, refer to <https://population.un.org/wpp/Graphs/DemographicProfiles/Line/600>.

Looking ahead, population projections suggest that Paraguay's working-age population (ages 25–64) will reach its pinnacle around 2050.²⁹ During this period, the labor force is expected to experience a temporary surge in growth compared to the population dependent on it, such as children and the elderly (figure 2.6). Consequently, Paraguay finds itself with a critical window of opportunity to seize the demographic dividend. The extent to which this dividend materializes, however, hinges on strategic investments made across the life cycle of Paraguayans. The future productivity and incomes of today's youth will rely on the quality and quantity of education and health care they receive.

Figure 2.6. Paraguay's working-age population is expected to peak in about 2050
Population of Paraguay, by age cohort, 1950–2050



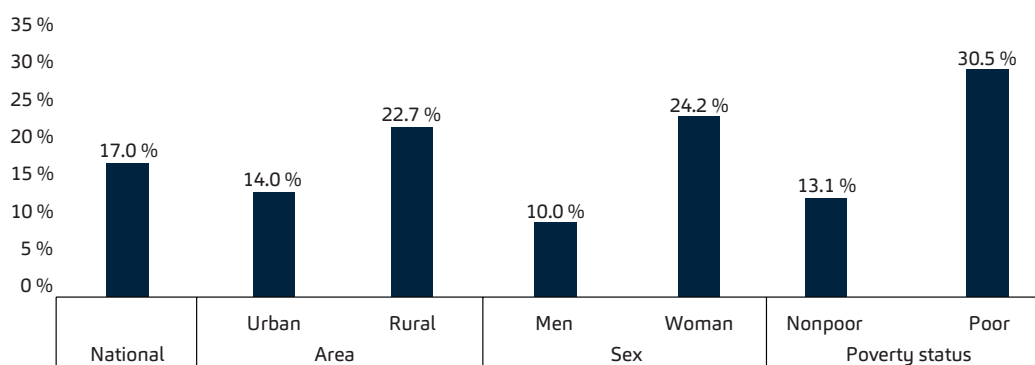
Source: United Nations Department of Economic and Social Affairs Population Division, World Population Prospects 2024 (<https://population.un.org/wpp/Graphs/DemographicProfiles/Line/600>).

Investing in human capital is crucial so that young adults in Paraguay can secure gainful employment and contribute to economic growth. In 2022, however, 17 percent of Paraguay's youth population (ages 15–24) fell into the category of NEET. The prevalence of NEET status was higher among rural youth (22.7 percent) than among their urban counterparts (14 percent). This disengagement disproportionately affects young women: nearly 25 percent of them were neither studying nor working, relative to 10 percent of young men (figure 2.7). Notable differences also appear by poverty status. Whereas 13.0 percent of nonpoor youths were NEET, this rate nearly triples among the youth population in poverty, reaching 30.5 percent. Paraguay's average NEET rate is lower than its structural peers but higher than its aspirational peers. However, the gender disparity is pronounced: whereas the NEET rate among male Paraguayan youth is the lowest compared to both structural and aspirational peers, the NEET rate among female Paraguayan youth is the second-highest, only surpassed by Guatemala.

29. Although the United Nations population projections are subject to revisions, forecasts for LAC have in the past been relatively accurate. Moreover, at least in the next 20–30 years, the baseline rise in the old-age dependency ratio is confirmed even under alternative fertility/migration and longevity scenarios (Figliuoli et al. 2018).

Multiple factors explain the NEET phenomenon in Paraguay, including limited access to quality education (particularly in rural areas), the lack of employment opportunities that discourage participation in formal education or training, and poverty itself. With focused social and economic policies targeting this group, Paraguay stands poised to capitalize on the demographic dividend. Currently, 46 percent of the employed population is 15–34 years old, underlying the importance of investing in the NEET population within this age group to enhance human capital accumulation and bolster labor force participation. Beyond 2050, the working-age population will begin to decline, and the older population (65+) will grow, creating new needs and challenges that demand proactive measures.

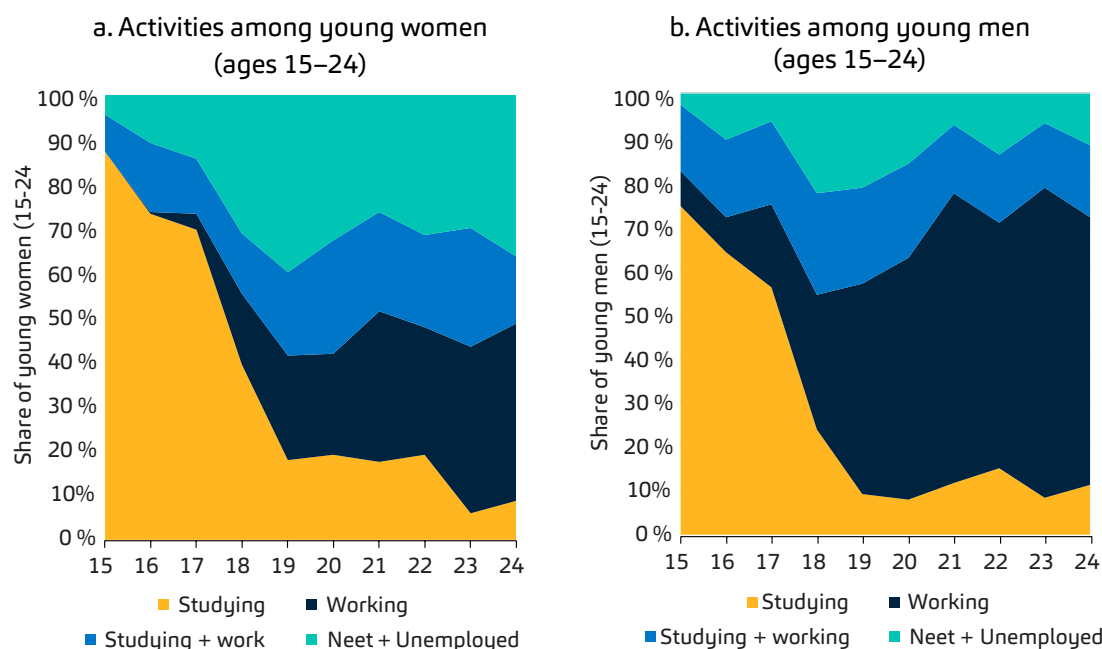
Figure 2.7. Almost 2 out of 10 youths are not engaged in either employment or education
Shares of young people neither studying nor working, by place of residence, sex, and poverty status



Source: Prepared by World Bank staff using data from Paraguay, Encuesta Permanente de Hogares Continua, 2022.

Young females are nearly twice as likely as young males to become NEET. At the age of 19, nearly 40 percent of young females fall into the NEET category, a 2-percentage point increase from the level observed in 2017 (World Bank 2020). Moreover, the rate of NEET and unemployed female youth in Paraguay increases rapidly from 4.6 percent to a maximum of 39.7 percent as they age, reaching a peak at 19 years old (figure 2.8, panel a). For males, this rate ranges from 2.6 to a maximum of 22.6 percent and peaks at 18 years old (figure 2.8, panel b). The overrepresentation of young women in the NEET population has been linked to gender norms that limit educational and employment opportunities and relegate them to the domestic sphere (World Bank 2020). These dynamics represent not only a loss of economic potential at the individual level but also lost productivity and human capital for society. NEET young women often miss out on critical opportunities to gain skills, experience, and professional networks during formative years, while facing heightened risks of poverty (Bynner and Parsons 2002).

Figure 2.8. Young women are more likely to transition to NEET after high school, whereas young men are more likely to transition to full-time work



Source: Prepared by World Bank staff using data from the Paraguay Encuesta Permanente de Hogares Continua, 2022.
Note: NEET = not in employment, education, or training.

Health as an investment required to unlock human capital and economic dividends

Despite increases in public health expenditure, Paraguay's performance on key health outcomes has been mixed compared to peers. In 1974, life expectancy in Paraguay was 63.2 years, compared to an average of 61.2 years in current structural peers and 70.0 years in aspirational peers. By 2022, however, life expectancy in both groups of countries had surpassed that of Paraguay (70.5 years), at 73.3 years in structural peers and 78.9 years in aspirational peers. Similar patterns are observed in maternal and child health outcomes. Paraguay's maternal mortality ratio (MMR) in 2020 (the latest comparable data point) was 71 deaths per 100,000 live births, higher than that registered in all aspirational and structural peers, except for Guatemala (96 deaths per 100,000 live births). Among the same groups of countries, Paraguay had the second-highest under-five mortality rate in 2021 (18.2 per 1,000 live births), lower only than Guatemala's (23 per 1,000 live births).³⁰

Simultaneously, the incidence of noncommunicable diseases (NCDs) has risen sharply, with NCDs accounting for 75 percent of total deaths in 2019, up from 61 percent in 2000.³¹ In Paraguay, cardiovascular diseases, diabetes, and chronic kidney disease are the leading causes of NCD-related mortality. Risk factors associated with poverty—such as malnutrition, limited access to clean water and sanitation, and reduced access to health care services—contribute to the high prevalence of NCDs among the disadvantaged population (Vos et al. 2020).

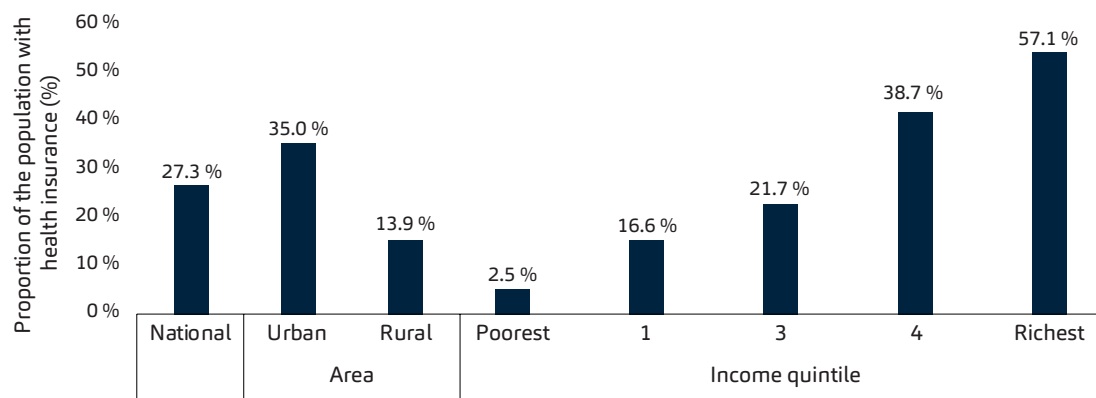
30. Data sources for each indicator are as follows: life expectancy (United Nations Population Division, World Population Prospects 2022), MMR (WHO et al. 2023), and under-five mortality rate (estimates by UNICEF, WHO, World Bank, UN DESA Population Division).

31. Latest data point from World Health Organization, Global Health Observatory, Estimates 2020: Deaths by Cause, Age, Sex, by Country and by Region, 2000–2019 (<https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-leading-causes-of-death>).

The fragmentation and overlapping networks of Paraguay's public health system lead to inefficiencies in service provision. *The Ministerio de Salud Pública y Bienestar Social* (MSPBS) is the main health service provider, serving 72 percent of the population. The Social Security Institute (IPS), the second-largest provider, covers 20 percent of the population, mainly formal workers and their dependents. The remaining 8 percent is covered by other providers. This segmentation results in significant inequalities. For example, per capita health spending for IPS beneficiaries in 2019 was US\$403 per year, while for MSPBS it was US\$142 per uninsured person. Additionally, IPS coverage is geographically unequal, reaching 32 percent in urban areas compared to 14 percent in rural areas.

The fragmentation of the health system is evident in the existence of multiple provider networks, which operate independently and often overlap. While there are some instances of interinstitutional agreements, such as between IPS and the military hospital or with certain private providers for medical studies, these initiatives are limited in scope. Generally, the lack of coordination between subsystems leads to inefficiencies, including cross-subsidization when MSPBS provides services to beneficiaries of other insurance schemes in areas where their coverage is limited, such as intensive care units or rural regions. These characteristics not only result in inefficient resource allocation but also exacerbate inequalities in access to and quality of health services across different population groups (World Bank 2023). Moreover, disparities in health insurance coverage further exacerbate the fragmentation of the health care system. In 2022, only 27.3 percent of the population reported having some form of health insurance, with significant variations across different segments of the population (figure 2.9).

Figure 2.9. Less than a third of the population reports having health insurance
Proportion of the population with health insurance, by place of residence and income quintile



Source: Prepared by World Bank staff using data from the Paraguay Encuesta Permanente de Hogares Continua, 2022.

The main challenge for the health sector in Paraguay is to ensure universal health coverage (UHC) for its population. UHC means that all Paraguayans can access the health services they need, of sufficient quality to be effective, and ensures that the use of these services does not expose the user to financial hardship. Although health services are ostensibly free in Paraguay, the fragmentation and segmentation of the health system result in varying quality of health services and financial protection across socioeconomic groups. As the burden of disease rapidly shifts toward NCDs and chronic conditions, further financial strain will be placed on the health system (World Bank 2018c). Additionally, sudden incidences of infectious and emerging diseases, some exacerbated by climate shocks, could increase health care costs (refer to the later section on exposure to climate shocks).

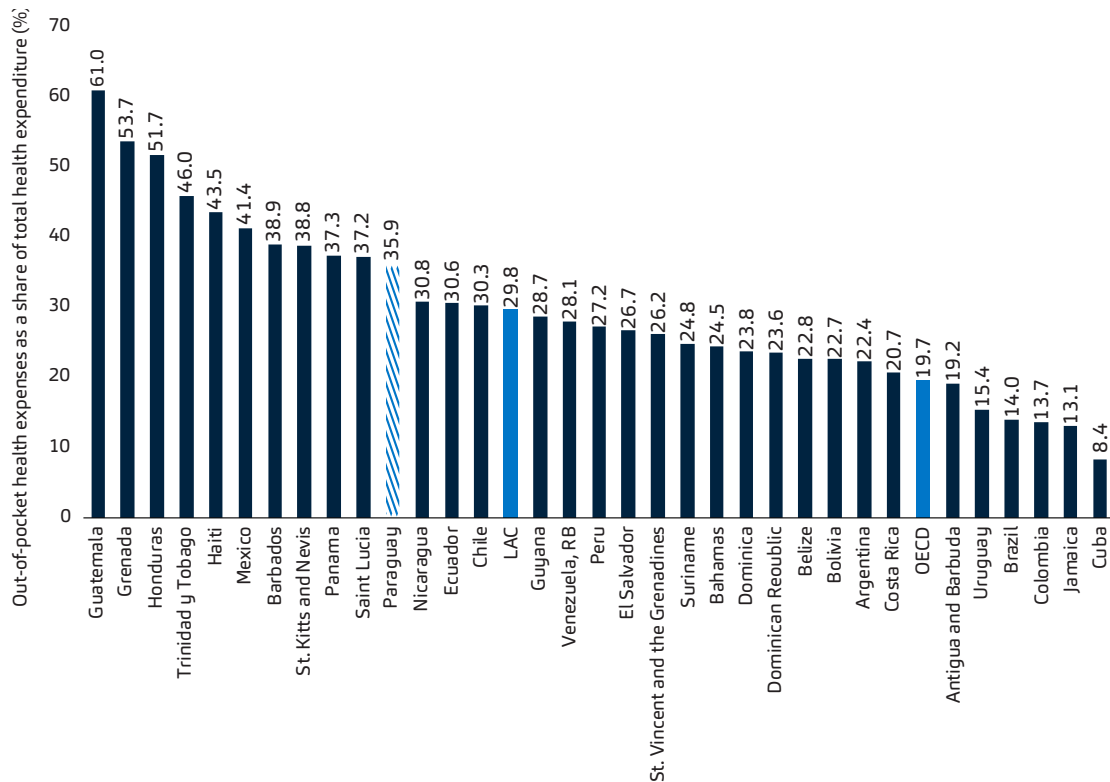
The use of health services in Paraguay is income-dependent, with individuals in higher income brackets accessing and using these services more frequently than those at the lower end of the income distribution. According to data from the *Encuesta Permanente de Hogares Continua* (EPHC), in 2022, nearly 32 percent of the Paraguayan population did not seek medical treatment at a health institution when sick or after experiencing an accident. The income disparity becomes evident when comparing the richest 10 percent of the income distribution (25.3 percent did not seek treatment when unwell) to the bottom 10 percent (34.0 percent did not seek care). Regardless of poverty status, more than two-thirds of adults reported self-medicating instead of seeking treatment, potentially reflecting the scarcity of quality health services in specific areas and the associated costs of existing services.

In general, high out-of-pocket health expenses likely deter individuals from seeking treatment when ill. The *Ministerio de Salud Pública y Bienestar Social* estimates that, in 2021, out-of-pocket health spending in Paraguay accounted for 36 percent of the total current expenditure on health—six percentage points higher than the average for LAC and almost double the share in Organisation for Economic Co-operation and Development (OECD) countries (figure 2.10). Furthermore, in Paraguay about half of total out-of-pocket health expenditure is typically allocated to the purchase of medicines (Giménez and Barrios 2014).



Figure 2.10. In 2021, out-of-pocket health expenses relative to current health expenditure in Paraguay exceeded the LAC average

Out-of-pocket health expenses as a share of total health expenditure, Paraguay, LAC comparators, and OECD average



Source: Prepared by World Bank staff using data from the World Health Organization Global Health Expenditure Database, 2020, and the OECD Health Statistics, 2019.

Note: LAC = Latin America and the Caribbean; OECD = Organisation for Economic Co-operation and Development.

Limited access to quality education and health services is a key factor in explaining poverty in Paraguay, as it restricts people's ability to acquire the knowledge and skills necessary to access quality jobs. Although younger generations (ages 25–29) who actively participate in the labor market obtain, on average, more years of schooling than older generations, the quality of education remains low. Furthermore, as described earlier, Paraguay has one of the highest rates of NEET youth in LAC, which signifies deficits in the development of skilled workers who can occupy high-quality jobs in the future (Gontero and Alborno 2019). Most positions in Paraguay's banking, trade, and technology sectors (usually high-paying fields) typically demand specialized expertise or advanced credentials that much of the population simply does not possess (World Bank 2022b). Over generations, the lack of human capital accumulation and quality jobs entrench inequality and poverty cycles, as explained in the following section.

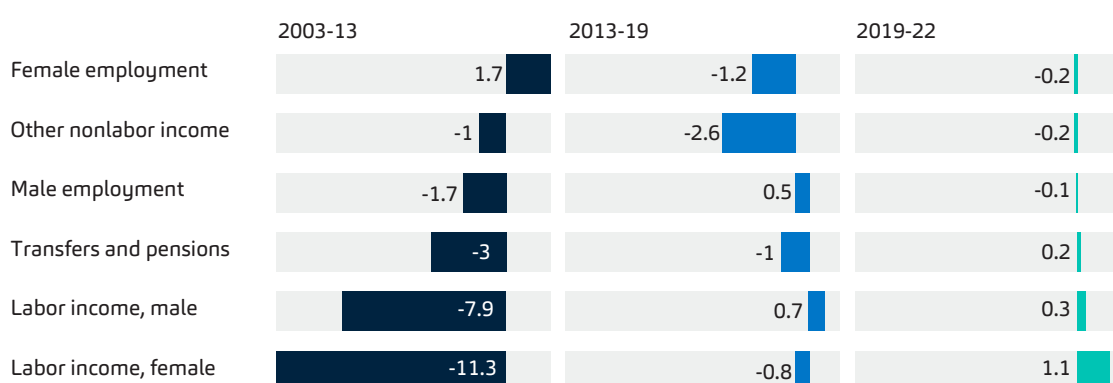
Access to and creation of quality jobs

Over the last two decades, Paraguay's economic growth has translated into improvements in the labor market, contributing to 66 percent and 53 percent of the decline in moderate and extreme poverty, respectively. The robust growth experienced in the first part of the 2000s translated into the creation of nearly 73,000 jobs annually and a rise in average labor incomes by 1.5 percent annually over the period (World Bank 2024b). Accordingly, those higher labor earnings explained 70 percent of the reduction in moderate poverty between 2003 and 2022, and 90 percent of the reduction in extreme poverty. In this sense, the contribution of labor market outcomes exceeded that of any other income source in reducing poverty.

However, the stagnation of labor earnings has been a key factor in the slowdown and recent increase in poverty levels. From 2003 to 2013, rising labor income, which constitutes on average 87 percent of Paraguayan households' income (based on 2022 figures), played a key role in reducing poverty (figure 2.11). Transfers and pensions also made significant contributions, accounting for 12 percent of the reduction in moderate poverty and 30 percent of the reduction in extreme poverty. However, the economic slowdown between 2013 and 2019 led to a halving of the average annual job creation compared to the previous period, accompanied by stagnating labor incomes, which had a minor impact on poverty reduction. During this time, increases in nonlabor income and improvements in women's labor force participation became key drivers of poverty reduction. From 2019 to 2022, a series of external shocks further eroded labor incomes, which decreased by 2 percent annually in real terms, leading to an increase in poverty. As noted in the first section of this report, public transfers mitigated the rise in poverty but could not fully offset households' loss of purchasing power due to rising prices.

Figure 2.11. Although rising labor income previously drove poverty reduction, its impact vanished after 2013

Contribution to moderate poverty reduction, by income source, 2003–22 (percentage points)

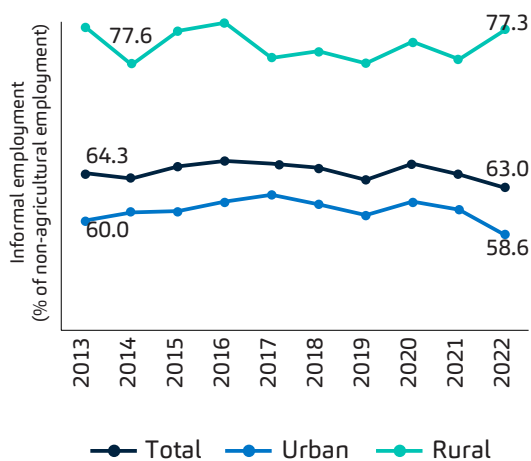


Source: Prepared by World Bank staff using data from the Paraguay Encuesta Permanente de Hogares Continua.
Note: Negative values indicate a contribution to poverty reduction, whereas positive values show contribution in terms of increases in poverty rates.

Even before the series of adverse shocks that affected Paraguay between 2019 and 2022 (that is, the pandemic, droughts, and inflation), the prior economic slowdown had exposed structural weaknesses in the labor market, particularly the low quality of jobs. A defining characteristic of the Paraguayan labor market is the high level of informality, which persists despite periods of high economic growth and macroeconomic stability. Between 2013 and 2022, the period for which official INE data are available, labor informality declined only marginally, from 64.3 percent to roughly 63.0 percent in 2022. In rural areas, informality lingered at 77 percent—the same level observed in 2013 (figure 2.12). Although informality is a common feature in many LAC countries, Paraguay’s rate exceeds the expected level given the country’s GDP per capita (figure 2.13). Informality is a significant factor, but it does not fully account for the poverty dynamics in Paraguay. Crucial obstacles to poverty reduction are the prevalence of low-quality jobs and the inadequate social protection system, which fails to provide access to quality health care services and pensions. These obstacles expose people to greater income instability when faced with shocks, making them more vulnerable to falling into or remaining in poverty.

Figure 2.12. Informality represents two-thirds of Paraguay’s employment, a share that has not changed since 2013

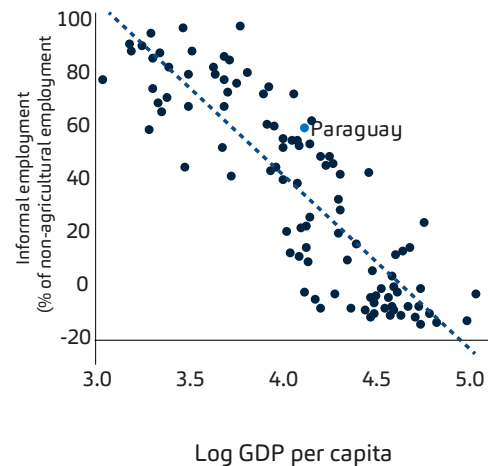
Informal employment in Paraguay, by place of residence, 2013–22



Source: Paraguay, Instituto Nacional de Estadística. Official data on informality are available only since 2012. Note: Informal employment includes public and private employees not contributing to pensions, employers and self-employed without Registro Único de Contribuyentes, unpaid family workers, and domestic workers not contributing to pensions.

Figure 2.13. Paraguay has higher-than-expected rates of informality given its GDP per capita

Informal employment and GDP per capita, Paraguay and comparators



Sources: International Labour Organization; World Bank, World Development Indicators.

Note: Data correspond to 2022 or latest year available (as of November 2023).

Obstacles to quality job creation in Paraguay: The interplay of low productivity and skills mismatch

Paraguay's labor market faces the challenge of generating high-quality jobs, a problem closely linked to the country's extensive informal sector. This section examines the factors contributing to the low quality of jobs in Paraguay and those hindering the generation of quality employment opportunities. Building upon various World Bank reports, including the CEM (World Bank 2024b), the Trade and Investment Diagnostic (World Bank 2022a), the Human Capital Review (World Bank 2022b), and the Jobs Diagnostic for Paraguay (World Bank 2017)—this section aims to provide a comprehensive understanding of the challenges faced by Paraguay's labor market and the potential avenues for improving job quality and fostering inclusive economic growth.

The quality of jobs in Paraguay

In 2022, Paraguay ranked second lowest in the Job Quality Index (JQI) across LAC countries, attaining a score of 0.64 on the 0–1 scale. The JQI, proposed by Barreto et al. (2023) integrates four key dimensions of job quality: (1) earnings surpassing the US\$6.85 per day threshold (2017 PPP), (2) benefits such as health insurance coverage and retirement plans, (3) job security in the form of a contract and permanency, and (4) job satisfaction (which is lower for individuals with two jobs). Each indicator is treated as either a success (1) or a failure (0), and the resulting JQI is calculated as the average of the four dimensions, ranging from 0 to 1, with a higher value signifying a higher-quality job that performs well across multiple dimensions (figure 2.14).³² Paraguay's low score is predominantly driven by the limited provision of job benefits, which can leave workers vulnerable to falling into poverty (figure 2.15). Conversely, Uruguay and Costa Rica, the aspirational peers with JQI estimates, rank near the top regionally in both job benefits and overall work quality.

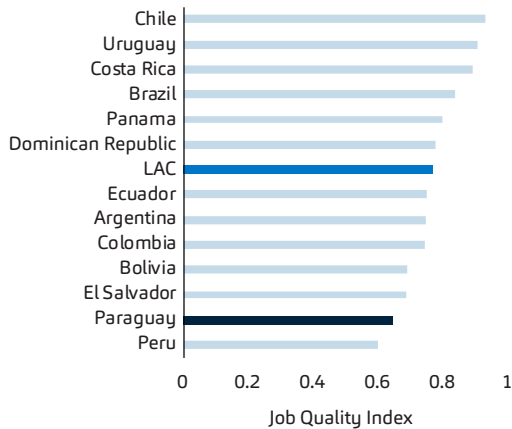


World Bank Flickr Photo Archive

32. The analysis encompasses all individuals in the labor force, regardless of their employment status, and includes those actively seeking for a job.

Figure 2.14. Paraguay ranks second lowest in job quality among LAC countries

Job Quality Index scores, Paraguay and selected LAC countries



Source: LAC Equity Lab, using data from the Socio-Economic Database for LAC (Center of Distributive Labor and Social Studies and the World Bank).

Note: Data for Paraguay are from 2022. For all other countries, data are from 2021 or the most recent available values. LAC represents the unweighted mean across countries in this sample. LAC = Latin America and the Caribbean.

Figure 2.15. The poor quality of jobs is mainly due to the low coverage of benefits

Paraguay's scores on four JQI dimensions, 2022



Source: LAC Equity Lab, using data from the Socio-Economic Database for LAC (Center of Distributive Labor and Social Studies and the World Bank).

Note: Data are from 2022. JQI = Job Quality Index.

Since 2013, job quality in Paraguay has improved only marginally, representing persistent challenges for rural and young workers in terms of benefits and job security. Mirroring tendencies in the LAC region, rural workers and those in the agriculture sector face less favorable employment conditions than their urban counterparts, with the widest gaps in benefits and income. Young workers also face increased vulnerability because they often lack a contract or hold temporary positions. Gender disparities are evident as well, with female workers facing more challenges in terms of income and job security (with a large share earning below the US\$6.85-per-day poverty line) compared to men. Although all groups score low in the benefits dimension, rural workers obtain the lowest score across the board. In fact, among all components of the JQI, absence of job benefits emerges as the strongest predictor of extreme and moderate poverty in Paraguay.³³

Although low earnings are not the main factor explaining the poor quality of jobs in Paraguay, large disparities in labor income highlight a complex interplay of factors that contribute to persistent inequality. Despite advancements in women's educational attainment, the gender wage gap stubbornly persists, with male workers earning on average 1.3 times more than their female counterparts. This disparity is influenced by employment opportunities and labor market choices: women often opt for or find themselves in lower-wage roles such as domestic work and

33. Estimation of a logit model for the 2011–22 period using EPHC data. The dependent variable “poor” (1 if a worker lives in a poor household and 0 otherwise) was modeled as a function of the JQI components, except for income because of endogeneity.

self-employment, which offer the flexibility needed to support family responsibilities. Beyond gender, wage gaps are pronounced across various groups, with urban workers out-earning rural ones by 1.5 times, and the nonpoor making 3.3 times more than the poor. Language further divides: Guaraní speakers earn just 40 percent of what Spanish speakers do, with the starkest income contrast seen between the poor and nonpoor within the Guaraní-speaking community. Occupation, sector, and firm size also stratify income levels: public sector employees and employers reap the highest wages, whereas those self-employed or in domestic work, agriculture, or micro firms face the lowest average incomes.

Why isn't Paraguay creating more quality jobs?

Paraguay faces significant challenges in creating quality jobs for a combination of reasons.³⁴ The slow growth in formal job creation, particularly in the private sector, is a major issue. According to the CEM (World Bank 2024b), the public sector, which tends to offer relatively stable and well-compensated positions, generated 82 percent fewer net formal jobs during 2013–21 than during 2003–13, largely because of efforts to contain the public sector wage bill as part of the fiscal consolidation process. Public employees represented 24 percent of total employment in Paraguay in 2022, compared to 68.3 percent in 2003. Although the private sector has created more formal jobs in recent years, those jobs have not been sufficient to drive a significant increase in overall labor formality, which has hovered around 36 percent in recent years.

The slowdown in the structural transformation of the economy is another factor hindering quality job creation. The transition of workers from the agricultural sector, which has great potential for increased productivity, to more productive sectors such as manufacturing and services has been limited. Between 2003 and 2013, nontradable services and construction generated most of the net job creation, initially creating more formal salaried jobs and opportunities requiring higher skills compared to agriculture. However, this momentum has decelerated, and only construction and the hotel and restaurant sector created more jobs between 2013 and 2021 than in the previous period. Furthermore, high-value-added sectors that usually offer better paid jobs, like financial and commercial services, generated 50 percent fewer positions during this period.

In agriculture, although the large-scale, capital-intensive commodity production for export has driven productivity gains, it generates relatively few employment opportunities. In contrast, the traditional small-scale, labor-intensive agriculture that employs most agricultural workers is characterized by low productivity and incomes. This lack of integration between these two segments limits the potential for the modern agriculture sector to stimulate job creation. Although the manufacturing industry has contributed to the generation of formal jobs, the diversification of productive activities remains limited, and the level of sophistication is relatively low. The *maquila* regime, established in 2000, has been a strategy to generate employment, based on labor-intensive technologies, low-skilled labor, and imported inputs. While this strategy has been successful in direct job creation, there is potential to expand its multiplier effects in the local economy (World Bank 2017). To maximize the benefits of this and other sectors, it would be beneficial to attract investments in production lines that involve local companies in supply chains, especially in less developed regions. This approach could increase domestic value added and generate broader positive social externalities (World Bank 2024b).

³⁴ This subsection focuses on the findings presented in the CEM and the Trade and Investment Report (2022).

The declining returns to education and to labor formalization, coupled with the mismatch between the skills demanded by employers and those possessed by job seekers, constitute a critical factor hindering quality job creation. The returns to education have decreased over time, with the returns to an additional year of schooling falling from 9.2 percent in 2002–13 to 4.6 percent in 2013–19 (Rojas and Yoong 2022); the returns to formality have more than halved between the two periods. This trend suggests a growing mismatch between the skills available in the labor market and those required by employers. According to an OECD survey (OECD 2018) and data from Paraguay's *Observatorio Laboral* (2017), the most sought-after skills are related to emotional intelligence, communication, and critical thinking, in addition to technical competencies such as accounting, marketing, finance, and computing. Private companies emphasize, however, that the low relevance of job seekers' skills to labor market needs is among the main obstacles to hiring workers and conducting business in the country. Overall, the difficulty in filling vacancies in Paraguay is higher than the average for LAC countries, with 80 percent of Paraguayan firms failing to find suitable candidates compared to 74 percent on average in the region (OECD 2018).

The slowdown in quality job creation also points to a structural challenge in Paraguay's current growth model: the limited increase in labor productivity in non-agricultural sectors. While agricultural productivity has shown significant growth since 2002, the manufacturing and service sectors have experienced more modest gains. This pattern differs from what is observed in other upper-middle-income countries, where productivity growth has been more evenly distributed across sectors. The growth in non-agricultural labor demand between 2002 and 2013 relied more on better utilization of existing capacity than on investments in new productive capacities. As these efficiency gains have largely been realized, the slower productivity growth in non-agricultural sectors may be constraining the creation of quality jobs.

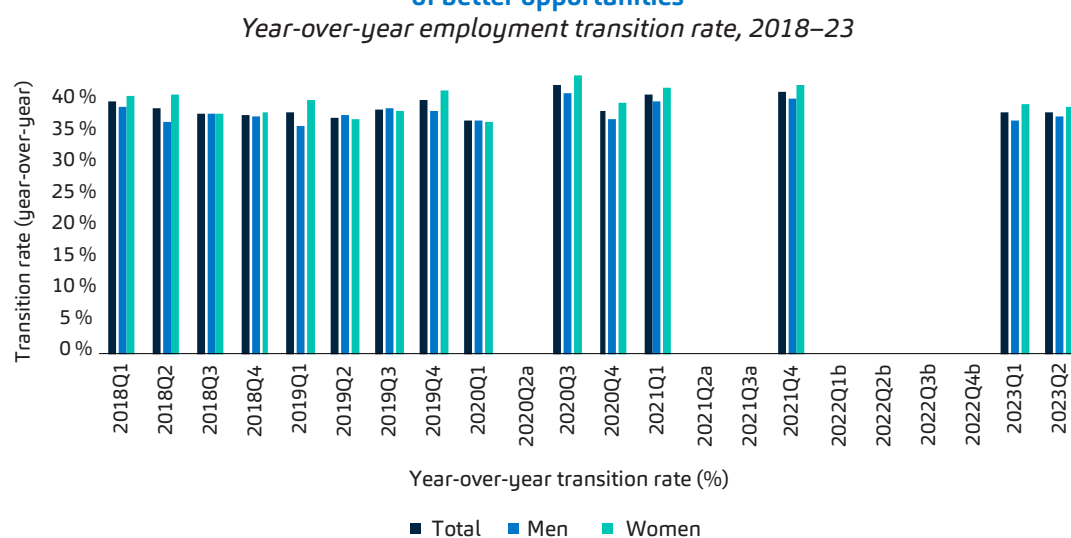
The Paraguayan labor market presents opportunities for improving formal employment. Micro, small, and medium enterprises, which account for 75 percent of the workforce, are integral to the country's economy. Many entrepreneurs establish businesses primarily to generate income, often focusing on short-term viability. This approach can lead to challenges in providing comprehensive working conditions and social security coverage, highlighting an area for potential improvement in job quality. A recent study (Feal-Zubimendi and Ventura 2023) explores various factors influencing business formalization, noting differences based on company size. Despite government efforts to streamline formalization and encourage entrepreneurship, perceptions of the process vary: smaller companies often find it complex, medium-sized firms see potential advantages in their public sector relationships, and larger enterprises consider its impact on competitiveness. A recurring theme is the perceived balance between the costs and benefits of social security, suggesting an opportunity for further dialogue between public and private sectors to enhance these services.



Moving between jobs to seize better opportunities

The prevalence of low-quality employment drives high job turnover and labor force exits and reentries in Paraguay. Between 2018 and 2023, over 30 percent of the Paraguayan population ages 15 and older changed jobs annually in search of better employment opportunities (figure 2.16). The analysis of year-over-year labor market transitions is based on the annual rotating panel component of the quarterly EPHC between 2017 and 2023, which allows following 80 percent of households for 5 consecutive quarters. This feature allowed for household tracking in two periods: from 2017 to 2021, and from 2022 to 2023. The discontinuity between these periods is due to the sample update in 2022.³⁵ Labor market transitions among job categories include moving into and out of inactivity and unemployment, as well as between various job categories.³⁶ The transition rate between 2018 and 2023 remained relatively stable, with women slightly more likely than men to move jobs. Paraguay's transition rate is higher than the average rate observed in cross-country studies comparing labor market dynamics in lower- and higher-income countries (Donovan, Lu, and Schoellman 2023).³⁷

Figure 2.16. Over 30 percent of Paraguayan workers change jobs within a year in search of better opportunities



Source: World Bank staff calculations using data from the Paraguay Quarterly Encuesta Permanente de Hogares Continua, 2017–23.

Note: For population ages 15 and older. Year-over-year labor market transitions compare employment categories to the corresponding quarter of the previous year.

a. Data could not be matched because of telephone surveys during COVID-19.

b. Data could not be matched because of the new 2022-26 sample design.

35. In this section, year-over-year labor market transitions compare employment categories to the corresponding quarter of the previous year.

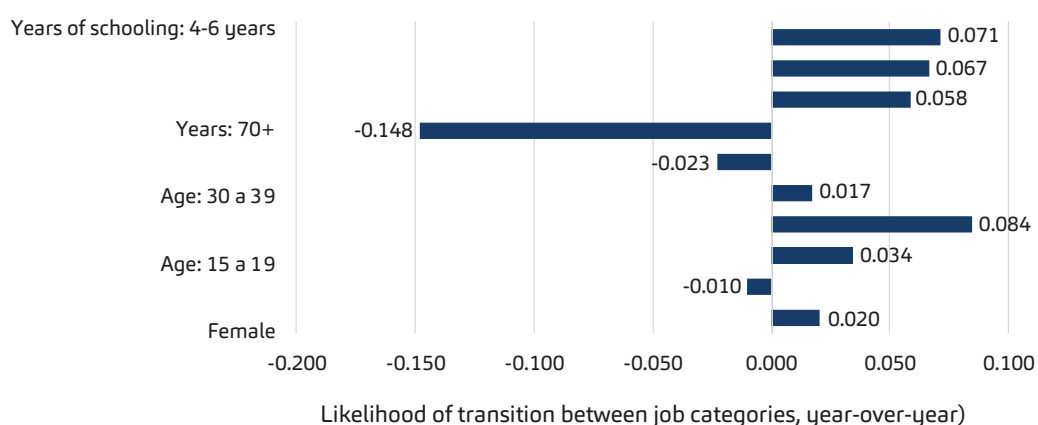
36. An individual is considered to have transitioned to a new job category if their current job category is different than their past job category.

37. In the sample of 49 countries included in the study, the average exit rates to unemployment and to inactivity are 2.2 percent and 3.8 percent, respectively. The average job-finding rate from unemployment is 29.6 percent, and the corresponding share from inactivity is 8.6 percent. The job-to-job rate is estimated at 6.8 percent, whereas the occupational switching share is 10.3 percent.

Young workers and those with lower levels of education are the most likely to transition between jobs in search of better and more stable employment.³⁸ Workers with lower educational attainment exhibit higher rates of job transitions compared to those with 13 or more years of schooling (figure 2.17). Younger populations also switch positions more frequently than middle-aged groups (ages 40–59), whereas older cohorts change jobs less often. Rural populations are slightly less likely to transition between jobs than urban populations. Women demonstrate a somewhat greater likelihood than men to move between roles annually, which may be attributed to various factors, possibly due to family responsibilities that limit their access to stable, high-quality employment. These patterns are consistent with the literature suggesting that women, youth, and less educated workers face less stability in the workforce and may transition between jobs and try new things, learn new skills, and find better opportunities (Lo Bue et al. 2021).

Figure 2.17. The likelihood of transitioning between job categories depends largely on education and age

Year-over-year employment transition, by educational attainment, age, place of residence, and gender



Source: World Bank staff calculations using data from the Paraguay Quarterly *Encuesta Permanente de Hogares Continua*, 2017–23.

Note: Figure shows average marginal effects of weighted logistic regression from panel data. All variables were statistically significant with p -value < 0.05. Job categories include inactivity and unemployment. “Years of schooling” is relative to 13 or more years of schooling. “Age” is relative to population ages 40–59. Complete year-quarter indicators are not shown.

Labor market transitions exhibit stark differences across employment types in Paraguay, with informal workers switching positions more frequently than their formal counterparts. Formal work provides the most stable employment: only 7.8 percent of formal public workers and 21.4 percent of formal private workers transition to another job after one year. In contrast, labor market transition rates are higher for unpaid workers (68.9 percent), domestic workers (43.7 percent), the self-employed (41.2 percent), and informal wage workers (40.6 percent)—table 2.1. Transitions between informal and formal employment categories are low, with only 9.7 percent of all informal wage employees transitioning to formal employment, public or private, every year.

38. Analysis based on a logistic regression estimating the likelihood of transitioning between job categories over the preceding year.

After one year, 26.2 percent of those initially unemployed exited the labor force and 19.7 percent remained unemployed. Most of the unemployed who found jobs over the period of analysis entered informal wage sectors (22.2 percent), self-employment (11.8 percent) or private formal wage employment (6.5 percent). Among inactive workers, most remained inactive, but those who entered the labor force primarily took up farming (7.5 percent), self-employment (6.3 percent), or informal wage jobs (5.5 percent). These patterns mirror the cross-country findings in recent studies (for example, Donovan, Lu, and Schoellman 2023), showing that lower-income countries exhibit much higher labor market transitions between unemployment, inactivity, self-employment, and informal/low-earning wage work (table 2.1). The Paraguayan case exemplifies the idea that self-employment often acts as a substitute for unemployment insurance, providing temporary income during job search rather than a form of stable employment or a path to better-paying jobs.

Table 2.1. Labor market transitions are highly segmented, with formal workers likely to stay put

Transition rates from previous to current job category

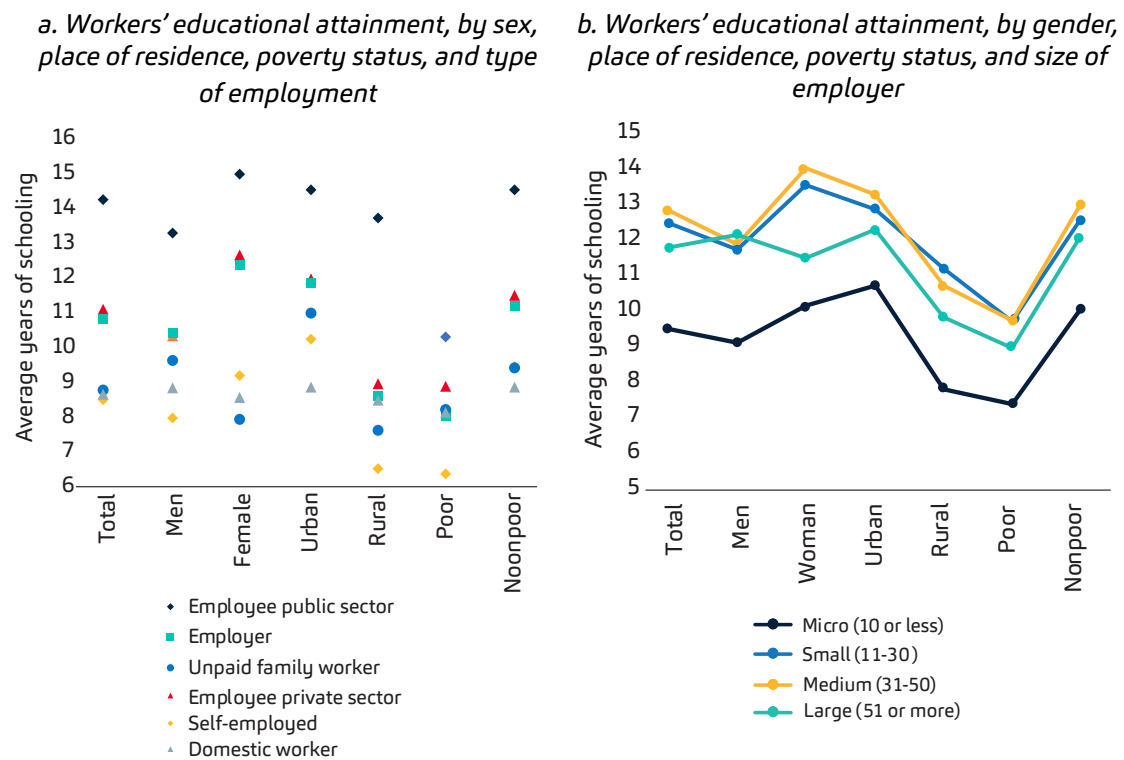
Initial employment category	Current Employment Category									
	Inactive	Unemployed	Unpaid	Domestic Worker	Farmer	Employer	Self-employed non-farm	Informal Farmer wage	Formal wage private	Formal wage public
Inactive	69.5	5.6	1.5	2.9	7.5	0.3	6.3	5.5	0.7	0.1
Unemployed	26.2	19.7	0.9	6.2	5.0	1.0	11.8	22.2	6.5	0.5
Unpaid	21.0	5.0	31.1	1.1	3.5	4.7	19.7	12.6	0.6	0.6
Domestic worker	18.1	7.1	0.4	56.3	2.8	0.1	6.4	7.3	1.5	0.0
Farmer	14.8	1.5	0.3	1.1	72.4	0.4	5.0	3.5	0.7	0.2
Employer	2.7	1.1	2.0	0.4	3.4	52.5	26.4	10.0	1.1	0.4
Self-employed (non-farm)	13.0	2.7	2.0	2.0	5.4	5.3	58.8	9.2	1.1	0.6
Informal wage	6.7	5.8	0.9	2.2	3.6	2.5	9.0	59.4	8.2	1.5
Formal wage private	2.1	3.6	0.2	0.7	1.1	0.6	2.8	9.2	78.6	1.2
Formal wage public	2.0	0.2	0.2	0.2	0.6	0.4	1.0	2.1	1.1	92.2

Source: World Bank staff calculations using data from the Paraguay Quarterly Encuesta Permanente de Hogares Continua, 2017–23.

Profound differences in labor market trajectories are strongly correlated with the disparities in educational outcomes that emerge early in life in Paraguay. Significant gaps exist according to poverty status, location, language spoken, and ethnicity—with poorer, rural, Indigenous, and Guaraní-speaking groups facing the biggest hurdles accumulating quality education and skills. These gaps then lead to the uneven returns individuals realize in work, with less-educated groups concentrating in subsistence farming and domestic work, characterized by little social protection, lower pay, and higher instability.

The strong correlation between workers' education levels and employment characteristics underscores how early human capital deficits trap people in a cycle of vulnerable, low-quality jobs. The public sector appears to have workers with the highest credentials, whereas microenterprises, which employ 75 percent of workers, absorb the least educated workers (figure 2.18). Disparities in labor market outcomes mirror gaps in schooling years between urban and rural areas, by language spoken, and by socioeconomic status. Poorer workers ages 15 and older obtain on average seven years of schooling, nearly half that of their counterparts at the top of the income distribution (13.2 years), with the gap increasing along the income distribution.

Figure 2.18. The largest differences in educational attainment occur between public sector employees and the self-employed, and by firm size



Source: World Bank staff calculations using data from the Paraguay *Encuesta Permanente de Hogares Continua*, 2022.

The low levels of productivity, high level of informality, and the prevalence of poor-quality jobs in Paraguay have far-reaching implications for the country's fiscal system and its ability to reduce poverty and inequality. As discussed in the following section, a substantial portion of economic activity occurs outside the formal tax system, narrowing the tax base and limiting the government's capacity to collect taxes and fund crucial public services and social programs. Moreover, the suboptimal labor market outcomes, characterized by low wages, limited benefits, and lack of job security, further constrain potential tax revenue. This restricts the implementation of effective redistributive policies and inclusive economic growth.

Impacts of the fiscal system on poverty

Taxes and transfers are a powerful tool in the redistribution of the benefits of economic growth among the poorest and most vulnerable.³⁹ In 2019, Paraguay implemented a tax reform, which came into effect in 2020, aimed at enhancing formalization, restructuring the tax system, increasing revenue from direct taxes, and eliminating legal loopholes that allowed tax avoidance. This reform introduced significant changes: it separated capital income from personal services income, with capital income subject to a flat rate of 8 percent and personal services income subject to a progressive rate of 8–10 percent based on earnings. It eliminated deductions for luxury goods, non-personal-use vehicles, and nonresidential properties; consolidated various income taxes into a unified *impuesto a la renta empresarial* (IRE), eliminating the differentiated implementation for agricultural and livestock activities; and introduced the *impuesto a los dividendos y a las utilidades* (IDU). Indirect tax adjustments included applying a reduced VAT rate to property rentals and taxing digital services, and increasing rates for tobacco, sugary beverages, and alcoholic beverages. According to the 2023 Public Finance Report of the *Ministerio de Economía y Finanzas* (MEF), these measures generated a revenue increase of 0.19 percent of GDP in fiscal year 2021, primarily driven by IRE, IDU, VAT on digital services, and the *impuesto a la renta personal* (IRP).

Social transfers in Paraguay are social assistance programs that provide direct economic support to individuals or families in vulnerable situations. These programs include various modalities, such as conditional cash transfers (for example, the *Tekoporã* program), which link economic support to the fulfillment of certain conditions like school attendance or medical visits; non-contributory pensions for the elderly or people with disabilities; subsidies to cover expenses such as housing, food, or basic services; and emergency assistance in cases of natural disasters or economic crises.

In 2021, the tax and transfer system in Paraguay contributed to a 2.4 point reduction in the Gini coefficient, from 46.1 to 43.7 points, between market income plus pensions (“market income” hereafter) and consumable income (figure 2.19).⁴⁰ Most of the reduction is attributed to the effect of direct transfers, moving from net market income to disposable income.⁴¹ Furthermore, the overall impact is more substantial when the monetized value of education and health care is included, reaching 27.4 Gini points (dashed lines in figure 2.19).

The decrease in inequality when moving from consumable income to final income coincides with an increase in health and education spending during and after the pandemic. However, it is important to note that this temporal relationship does not imply causality. Health spending rose 49 percent from US\$1.124 billion in 2019 to US\$1.678 billion in 2021, increasing its share in GDP by 1 percentage point to 4.5 percent. Similarly, education spending grew by 14 percent

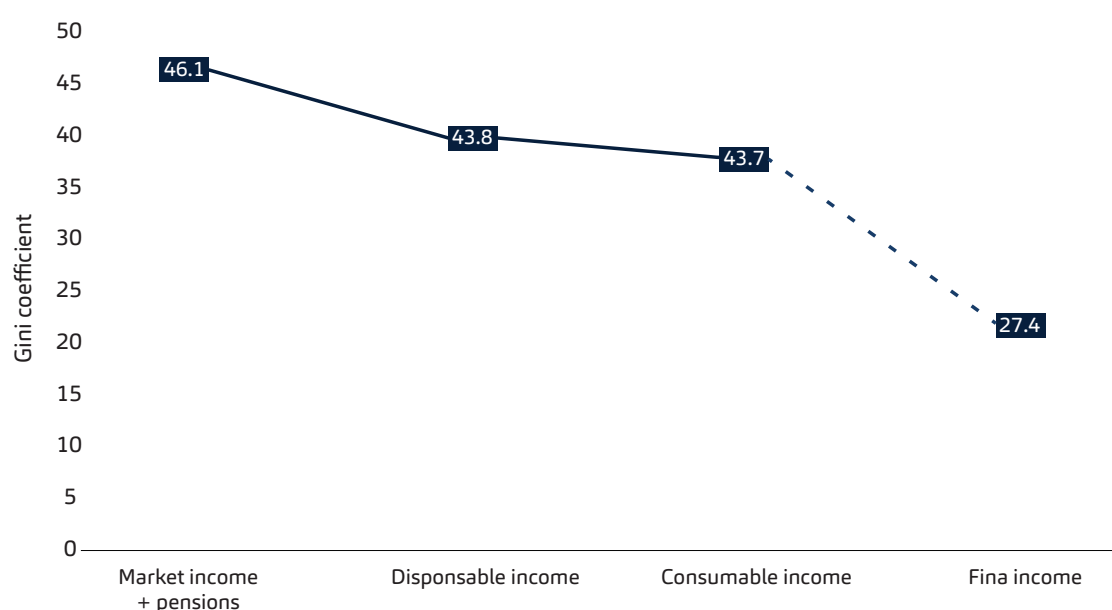
39. The analysis of the distributional impact of taxes and the public spending to shape poverty and inequality in Paraguay follows the Commitment to Equity (CEQ) methodology, developed by the CEQ Institute (Lustig 2018).

40. Market income includes wages, capital income, private transfers, imputed rent, and own production. Consumable income adds taxes and transfers before the monetized value of public health, education, and copayments. Refer to the fiscal incidence background note for details.

41. Although direct comparisons with the previous fiscal incidence analysis conducted in 2017 may not be appropriate because of methodological differences, it is noteworthy that the reduction in inequality estimated at that time, from market income to consumable income, was 1.2 Gini points (Giménez et al. 2017).

from US\$1.121 billion to US\$1.277 billion. These increases in social spending over a two-year period could have contributed to the steep decline in the Gini coefficient from consumable to final income. However, monetizing government-provided education and health services does not necessarily reflect the quality of provision. In fact, despite increased education spending, structural issues have prevented improvements in educational outcomes, as discussed in section 3 of this report.⁴² Therefore, results should be interpreted with caution, considering the limitations of not measuring the quality of services.

Figure 2.19. Paraguay's taxes and transfers reduce inequality

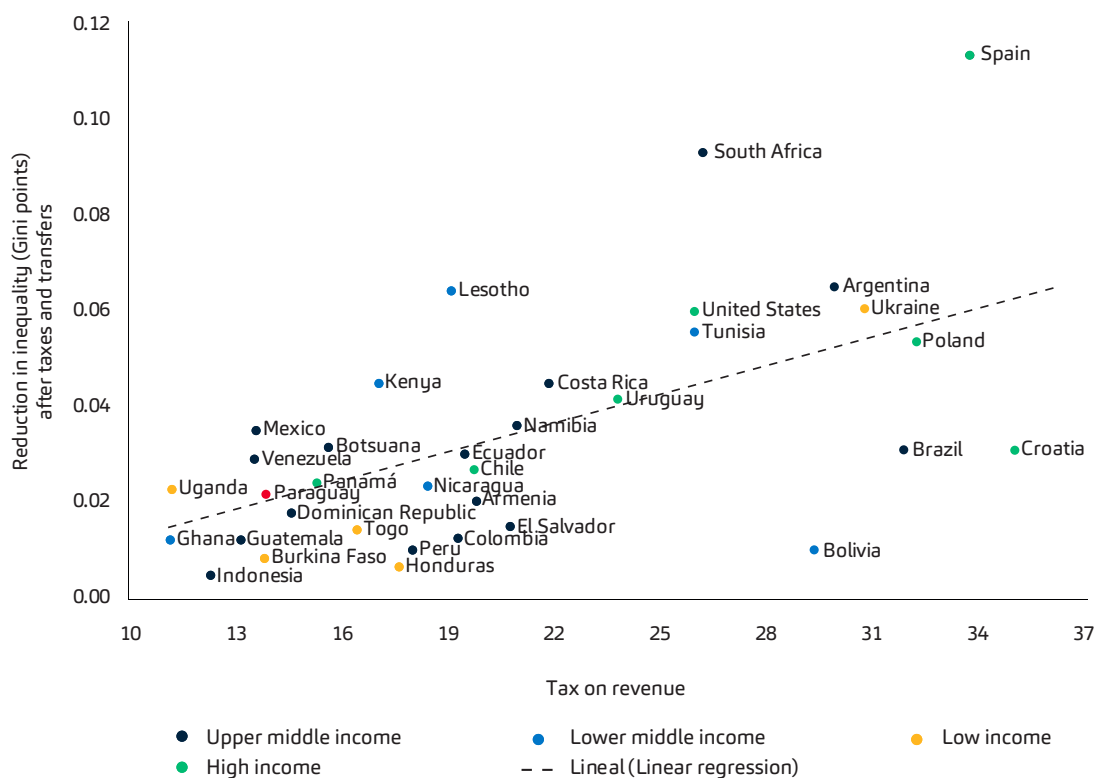


Source: Estimates based on the Paraguay Encuesta Permanente de Hogares Continua, 2021; tax records; and administrative data.

Fiscal policy has a lesser impact on reducing inequality in Paraguay than it does in most aspirational and structural peers. The reduction in inequality achieved by Paraguay's fiscal system, measured by the decline in the Gini coefficient from market income to consumable income (excluding education and health services), exceeds that of some upper-middle-income countries. However, it is lower than the reduction achieved by structural peers such as Costa Rica (4.7 Gini points in 2020), Uruguay (4.4 Gini points in 2021) and Croatia (3.7 Gini points). This lower redistributive capacity of Paraguay's fiscal system can be attributed, in part, to the relatively low tax burden compared to these countries, factors that restrict the scope of redistributive fiscal policies (figure 2.20).

⁴² Refer to World Bank 2018c for a detailed analysis of efficiency in education spending.

Figure 2.20. Paraguay's tax system lags in Inequality reduction and revenue collection compared to some peers



Source: CEQ Institute and World Bank staff estimates.

Note: The Commitment to Equity (CEQ) analysis for each country was conducted between 2007 and 2021.

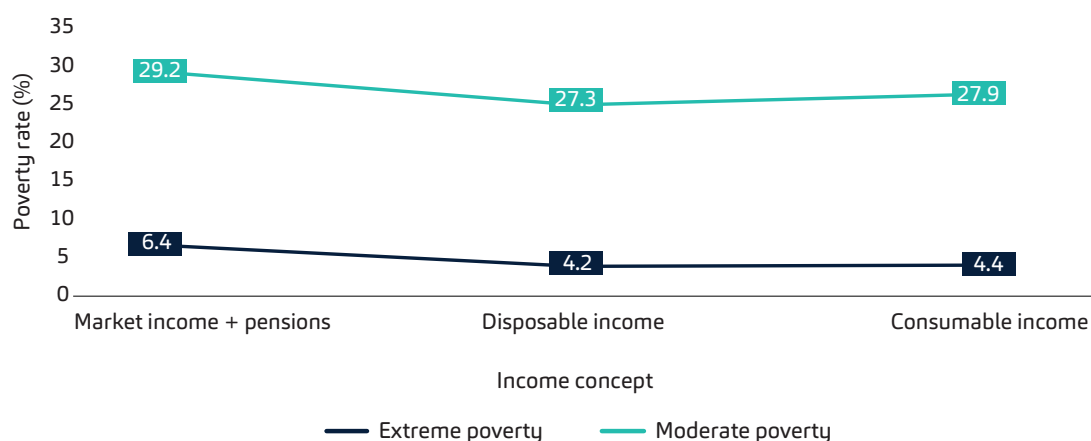
Paraguay's fiscal system has a modest impact on poverty reduction, a characteristic shared by various countries in the region.⁴³ This limited impact can be explained by the regressive nature of indirect taxes, which partly offset the progressive effect of direct taxes and transfers. Although direct taxes and transfers reduce moderate poverty from 29.2 percent at market income to 27.3 percent at disposable income, this effect is primarily driven by direct transfers, which account for a 1.9 percentage point reduction (from market to disposable income). In contrast, moderate poverty increases by 0.6 percentage point from disposable income to at consumable income, resulting in an overall 1.3 percentage point reduction in moderate poverty (using the national poverty line). The progressive direct taxes and transfers, which place a greater burden on higher-income individuals, do not compensate for the regressive effect of indirect taxes that disproportionately affect lower-income households. Moreover, Paraguay performs below aspirational peers like Costa Rica, where the system reduces poverty by 2.5 percentage points.⁴⁴

43. The noncompliance modeling process involves determining the proportion of formal and informal spending, calculating expenditure shares, and estimating indirect tax effects using an input-output matrix. The baseline distinguishes between formal goods (paying statutory rates plus indirect effects) and informal goods (paying hidden tax rates based on indirect effects), allowing for the calculation of indirect tax amounts to be included in consumable income.

44. The comparison is based on estimates using official poverty lines as a reference.

The fiscal system has similar effects on extreme poverty. In Paraguay, individuals in extreme poverty are exempt from direct taxes, as these are targeted towards higher-income sectors. In fact, this exemption extends not only to those in extreme poverty but also to those in moderate poverty. The personal income tax is only effective for individuals earning approximately 3 or more minimum wages. As a result, the fiscal system reduces extreme poverty from 6.4 percent at market income to 4.4 percent at consumable income, representing a 1.2 percentage point decrease—driven primarily by social transfers (figure 2.21).⁴⁵ Overall, direct transfers also play an important key role in reducing both moderate and extreme poverty in Paraguay.⁴⁶

Figure 2.21. Paraguay's fiscal system facilitates reductions in poverty



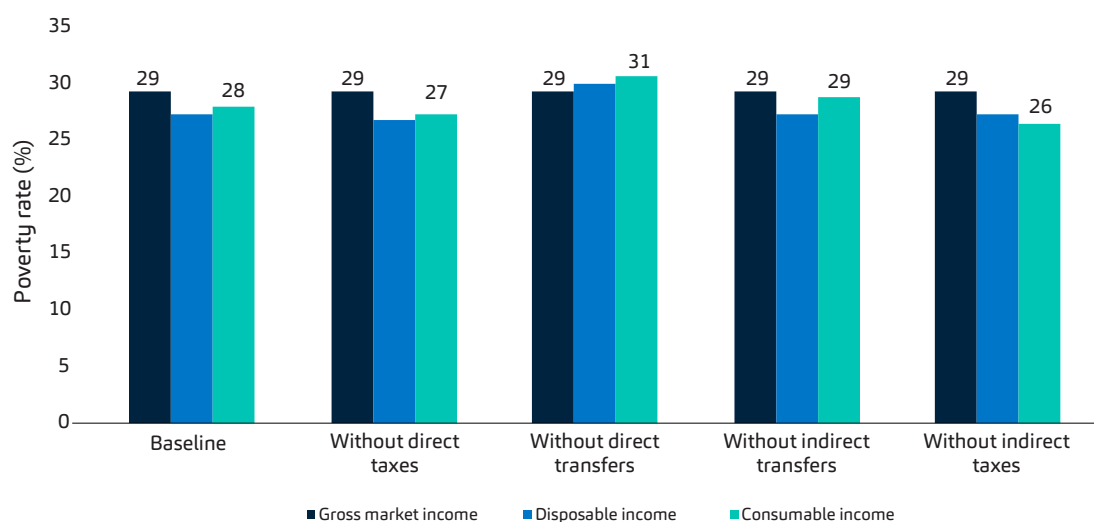
Source: Estimates based on the Paraguay Encuesta Permanente de Hogares Continua (EPHC), 2021; tax records; and administrative data.

Examining the overall fiscal system reveals that indirect taxes are the most influential instrument in explaining the limited effects of Paraguay's fiscal system on poverty reduction. The baseline case shows a moderate poverty rate of 29.2 percent for gross market income, 27.3 percent for disposable income, and 27.9 percent for consumable income. Comparing scenarios without direct taxes and transfers highlights the importance (albeit small effect) of direct transfers in reducing poverty. However, the positive impact of direct transfers is partly diluted by the regressivity of indirect taxes. Simulations conducted without policy aggregates reveal that, in the absence of indirect taxes, the moderate poverty rate at consumable income would decrease from 29.2 to 26.4 percent, whereas the absence of indirect transfers would raise it to 31 percent (figure 2.22). This partial equilibrium exercise should be interpreted cautiously. Given that indirect taxes in Paraguay are low and direct taxes have a limited effective rate, the key to achieving greater progressivity does not lie in reducing indirect taxes, but in strengthening the base of direct taxes.

45. In 2021, Paraguay's official moderate poverty rate was 26.9 percent and its extreme poverty rate 3.9 percent, comparable to poverty rates estimated according to disposable income in the CEQ. Small differences are due to the inclusion of additional in-kind transfers and a higher number of direct transfer beneficiaries in the CEQ calculations compared to the *Encuesta Permanente de Hogares Continua* (EPHC).

46. It is important to note that, although the analysis included despite including a large set of interventions in the analysis, they are not exhaustive. Therefore, the poverty impact attributed to the overall fiscal system may be understated.

Figure 2.22. Direct transfers play a significant role in poverty reduction, but their effect is diminished by the impact of indirect taxes

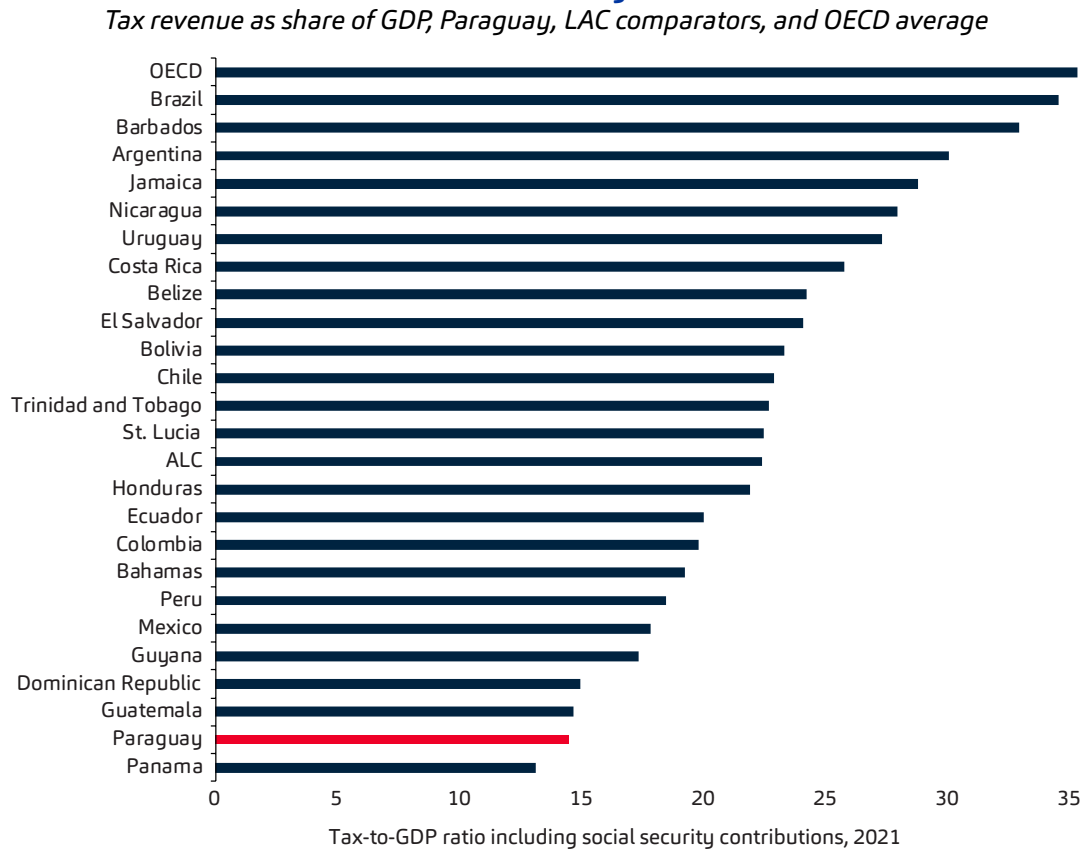


Source: Estimates based the Paraguay Encuesta Permanente de Hogares, 2021; tax records; and administrative data.

The fiscal system in Paraguay—which, as noted earlier, is partly constrained by low levels of tax collection and, thus, public spending—could have a greater impact on poverty reduction. Harmonized fiscal data from the OECD indicate that Paraguay’s general government tax revenues, including social security contributions, amounted to 14 percent of GDP in 2021 (latest data available), 2 percentage points higher than in 2000. In comparison, the average LAC country experienced a 4.6 percentage point increase over the same period (from 17.1 percent to 21.7 percent). Overall, Paraguay’s tax revenues, as a share of its GDP, remain below most countries in LAC, including those with similar levels of GDP per capita, such as Colombia and Ecuador (figure 2.23). Given Paraguay’s fiscal rule that stipulates a deficit ceiling of 1.5 percent of GDP, the low level of tax revenues constrains the level of public spending.

In 2021, general government expenditure represented 21.8 percent of Paraguay’s GDP, below the regional average of 29.7 percent (figure 2.24). The low level of overall government expenditure directly affects the resource envelope for sectors such as education, health, and social assistance, which are important in addressing the needs of the most vulnerable. Total revenues including social security contributions represent 14.0 percent of its GDP but tax revenues only 9.8 percent. Despite recent increases in the number of taxpayers, tax rates are low, and Paraguay is among the LAC countries with the lowest percentage of taxpayers in relation to employment (5 percent), below the 35 percent regional average in 2020 (Carvallo et al. 2023).

Figure 2.23. As a share of GDP, Paraguay's tax revenue collection ranks among the lowest in the region

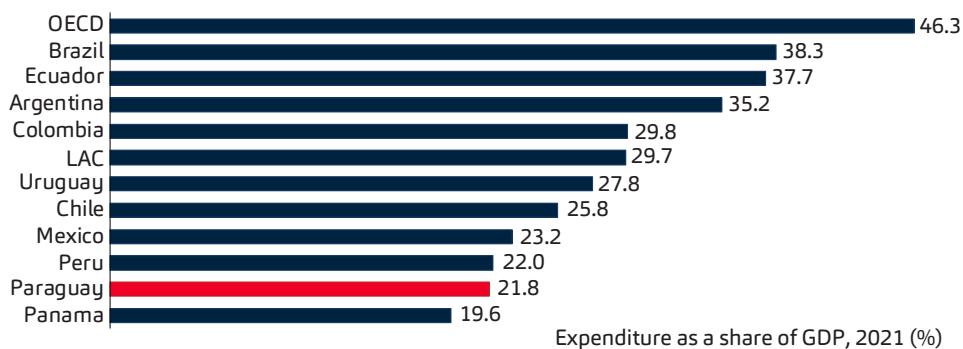


Source: Prepared by World Bank staff using data from OECD et al. (2023).

Note: Figure refers to general government fiscal data including social security contributions. OECD represents the unweighted average of the 38 member countries, including Chile, Colombia, Costa Rica, and Mexico. LAC is the unweighted average of the 25 countries. LAC = Latin America and the Caribbean; OECD = Organisation for Economic Co-operation and Development.

Figure 2.24. Paraguay spends less than most countries in LAC

General government expenditure, Paraguay, selected LAC comparators, and OECD average, 2021



Source: Prepared by World Bank staff using data from OECD et al. (2023).

Note: Figure refers to general government fiscal data. OECD represents the unweighted average of the 38 member countries, including Chile, Colombia, Costa Rica, and Mexico. LAC is the unweighted average of the 25 countries. LAC = Latin America and the Caribbean; OECD = Organisation for Economic Co-operation and Development.

The dependency on indirect taxes and tax exemptions that benefit the upper end of the income distribution also explain the limited redistributive capacity of fiscal policy in Paraguay. Taxes on goods and services generate over half of Paraguay's total tax revenues, comparable to the rest of the LAC region but much higher than in OECD countries, where these taxes contribute less than a third of total tax revenues. The VAT is the principal source of these indirect tax revenues in Paraguay, contributing 51 percent of central government tax revenues in 2023—or 5.1 percent of GDP. Conversely, direct taxes (the personal income tax and the corporate income tax) accounted for only a quarter of central government tax revenues. The issue is that the VAT is regressive (that is, the burden of taxes is relatively higher for lower income levels): VAT payments correspond to 1 percent of pre-fiscal income among households in the top decile but to 5 percent among households in the poorest decile. As in many other countries, this disparity occurs because, relative to the richest households, the poorest households allocate more of their income on basic goods and services (such as food) that pay VAT.⁴⁷

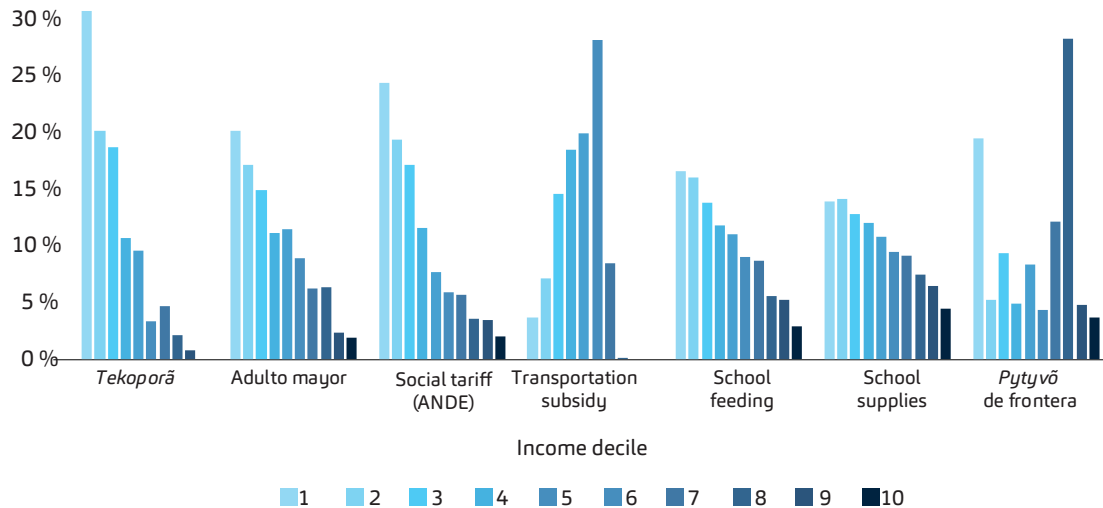
Although most public transfers are progressive—that is, the proportion of the benefit decreases with income—leakages to wealthier households reduce the impact of these transfers on poverty and inequality reduction. Transfers and subsidies tend to benefit poorer households more, but a significant portion of resources also goes to the upper deciles (Figure 2.25). *Tekoporã* and *Adulto Mayor*, despite their different objectives and target populations, have limited capacity to reduce inequality due to the dispersion of benefits and their restricted coverage. *Tekoporã* is a well-targeted direct transfer (pro-poor), aimed at low-income families with children, but its limited scale and the specific characteristics of its beneficiaries, such as larger household sizes and more children among poor families, result in a small impact on poverty reduction. In the bottom decile, *Tekoporã* represents less than 7 percent of the average market income, and in the second decile, only 2 percent. In comparison, *Adulto Mayor*, directed at elderly individuals in poverty, has a slightly higher impact, representing 20 percent and 10 percent of the average market income for the first two deciles, respectively.

The analysis of subsidies in Paraguay reveals a nuanced picture. Over 70 percent of the social tariff resources, benefit the bottom four quintiles, while most housing subsidies are received by the bottom two quintiles. However, transportation subsidies primarily benefit households in the middle of the income distribution. Student support programs, particularly school meal programs, show a progressive nature, with a concentration of beneficiaries in the lower deciles. However, there are still opportunities to optimize their reach and impact. For instance, 46 percent of the student population does not receive breakfast or snacks, and school lunch provision is even more limited, with 65.4 percent of public-school students lacking access (Serafini 2024). The *Hambre Cero* program, approved in 2024, aims to improve resource allocation, aligning with the progressive nature of school feeding programs, but it is not included in this analysis, which focuses on the fiscal system using 2021 data.

47. Similarly, the Impuesto Selectivo al Consumo (ISC), which is an excise tax on goods, such as alcoholic beverages, cigarettes, and fuel, is regressive. At the highest decile, it is equivalent to 1 percent of pre-fiscal income, while, at the poorest decile, it is equivalent to 2.2 percent.

Figure 2.25. Targeting of social programs can be improved, particularly in the case of transportation subsidies

Recipients of social program resources, by income decile



Source: Estimates based on the Paraguay Encuesta Permanente de Hogares Continua, 2021; tax records; and administrative data.

Note: ANDE = Administración Nacional de Electricidad.

Inefficiencies in public spending constitute an obstacle to reducing poverty and inequality. Addressing these inefficiencies could free up resources for social programs and climate resilience initiatives. Studies by Pessino, Izquierdo, and Vuletin (2018) and the World Bank (2022d) estimate that transfer leakages, procurement waste, and wage bill inefficiencies represent 3.9 percent of GDP and 19 percent of total public spending (above the 17.7 percent average for LAC). Notably, public sector employee remuneration accounted for 38 percent of spending in 2022. According to Carvallo et al. (2023), although Paraguay's total technical inefficiency is estimated to be lower than the regional average (3.9 percent vs. 4.4 percent of GDP), eliminating these inefficiencies could effectively triple the resources available for priority public programs. Furthermore, achieving efficiency levels comparable to those of Chile (1.8 percent of GDP) would allow doubling the funding for social programs and strengthening the social protection system. This optimization of resources is crucial given Paraguay's high vulnerability to climate shocks such as droughts and floods. These events disproportionately affect the population living in poverty, who lack resources to cope with their adverse impacts. The direct consequences include losses of crops and livestock, main sources of rural income, damage to housing and infrastructure, increased recovery expenses, and disruption of economic activities, resulting in income losses for the most vulnerable families.

Exposure to climate shocks

Climate change is expected to have far-reaching consequences for people around the world, but low-income households in underdeveloped areas are likely to be the most affected because of their heavy reliance on agriculture and subsistence farming. In Paraguay, despite recent efforts to diversify the economy, sectors such as agriculture, forestry, and fishing continue to play a crucial role in the economy. These sectors are particularly vulnerable to the extreme weather events exacerbated by climate change, which can have devastating impacts on natural capital. For instance, extreme heat and drought conditions can degrade soil moisture and health, reducing crop quality and yield. Because the poor are more likely not only to depend on agriculture but also to allocate a larger share of their incomes to food expenditures, they may be disproportionately affected by the resulting decline in agricultural income and the subsequent increase in food prices (Hallegatte et al. 2016).

Paraguay's vulnerability to climate change is reflected by its position on the Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index,⁴⁸ which assesses a country's vulnerability to climate change and other global challenges alongside its readiness to improve resilience. In 2021, Paraguay ranked 93rd out of 185 countries, placing it in the middle of the ND-GAIN index. The country's high vulnerability is primarily attributed to several factors, including projected changes in crop yields due to climate change, limited agricultural technological capacity, a low proportion of paved roads, and a scarcity of medical personnel per capita. Additionally, Paraguay's readiness to address the impacts of climate change is hampered by limited human capital accumulation, low levels of innovation, and governance challenges. The latter specifically refers to households' and firms' perception of the use of public power for private gain. This vulnerability has manifested in the significant impacts of short-term weather shocks on income and poverty in Paraguay.

Analysis of the 2004-2019 period reveals interesting patterns regarding the impact of climatic events. Droughts particularly affected rural incomes, disproportionately impacting male-headed households, likely due to their greater participation in climate-sensitive agriculture.⁴⁹ In contrast, urban households were affected more by extreme rainfall and cold shocks.⁵⁰ Notably, incomes of rural female-headed households showed greater vulnerability to cold waves, possibly due to women's overrepresentation in informal and unpaid domestic work, increasing the likelihood of falling into poverty during periods of increased utility costs. These short-term weather shocks were also associated with increased poverty, with drought shocks leading to a 2.4 percentage point increase in rural poverty; flood and heat shocks were associated with average urban poverty increases of 2.0 and 1.8 percentage points, respectively (Janz, Gassmann and Gayoso de Ervin 2024).⁵¹ As climate change continues to alter weather patterns and modify rainfall, the

48. ND-GAIN, Índice de países, <https://gain-new.crc.nd.edu/country/paraguay>.

49. The period of analysis purposely excludes the pandemic period. 50. Indicadores de Gobernanza Mundial (WGI, por sus siglas en inglés), reportados en el ND-GAIN. Para más información, véase: Banco Mundial, "Worldwide Governance Indicators", <https://www.worldbank.org/en/publication/worldwide-governance-indicators>.

50. Precipitation and temperature shocks measured as deviations from historical averages, as a ratio of historical standard deviation.

51. The analysis uses EPHC data, ERA5 Land Aggregates temperature data (ECMWF and Copernicus Climate Change Service 2017; Muñoz Sabater 2019), and CHIRPS rainfall data (Funk et al. 2014). Temperature and precipitation are aggregated at the district level and aligned with survey data based on interview dates using 90-day moving averages.

frequency and intensity of such weather shocks may change, affecting the flow of households into poverty (Hallegate et al. 2016). This unpredictability underscores the importance of high-frequency poverty estimation to effectively target and deliver timely assistance to vulnerable populations. Paraguay has already begun working on this initiative using the quarterly EPHC and following the SWIFT methodology developed by Yoshida et al. (2022)—refer to appendix A for details.

Despite increasing government efforts in climate change adaptation, which is a national priority, long-term impacts from climatic events could increase vulnerability to poverty, especially in the agricultural sector. Strengthening adaptation and mitigation policies will be crucial to minimize these potential risks. The Country Climate and Development Report for Paraguay (World Bank 2024a) considers two sustainable development scenarios regarding greenhouse gas (GHG) emissions out of the five developed by the United Nations. First, a scenario with low GHG emissions, SSP1–2.6, which involves rapid reductions in GHG emissions that are not fast enough to reach zero global emissions by 2050. The second scenario is a high GHG emission scenario, SSP5–8.5, which implies that current carbon dioxide emission levels will double by 2050. Under the first scenario, poverty is projected to increase between 0.05 and 1.00 percentage points. In the second scenario, poverty is expected to increase between 0.64 and 1.20 percentage points, mainly because of agricultural yield losses (figure 2.26, panel a).⁵²

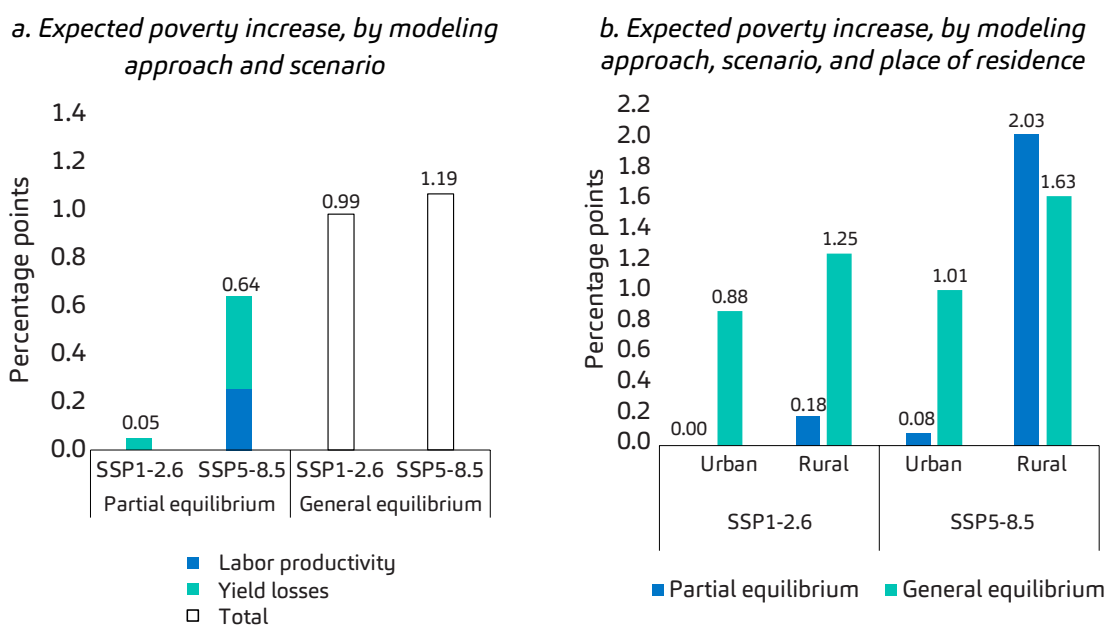
Higher poverty rates associated with climate change in the long term are likely to be driven by increases in rural poverty. Considering the same two climate scenarios, and in the absence of adaptation and mitigation measures, poverty rates are projected to increase disproportionately in rural areas relative to urban areas. Under the low GHG emissions scenario, poverty in rural areas is projected to rise by between 0.18 and 1.25 percentage points; in urban areas, the estimated increase could be 0.88 percentage point (figure 2.26, panel b). Under the high GHG emissions scenario, the impacts of climate change on poverty are expected to be more significant, with a wider gap between urban and rural poverty rates. Although these increases appear small, the results may underestimate the potential impacts of climate change on poverty because the modeling approaches used do not incorporate behavioral responses from firms and households.



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52. The projection depends on the modeling approach used (either partial equilibrium or general equilibrium analysis), with respect to a baseline scenario that assumes no climate change. Shared Socioeconomic Pathways (SSPs) are climate change scenarios of projected socioeconomic global changes up to 2100 as defined in the IPCC Sixth Assessment Report on climate change in 2021. They are used to derive greenhouse gas emissions scenarios with different climate policies.

Figure 2.26. Without climate adaptation and mitigation, poverty is expected to rise by 2050, especially in rural areas



Source: World Bank (2024a).

Note: The baseline scenario assumes no climate change. Under this scenario, the national poverty rate is expected to decrease from 26.9 percent in 2021 to 15.5 percent in 2050. GE = general equilibrium model; PE = equilibrium modeling.

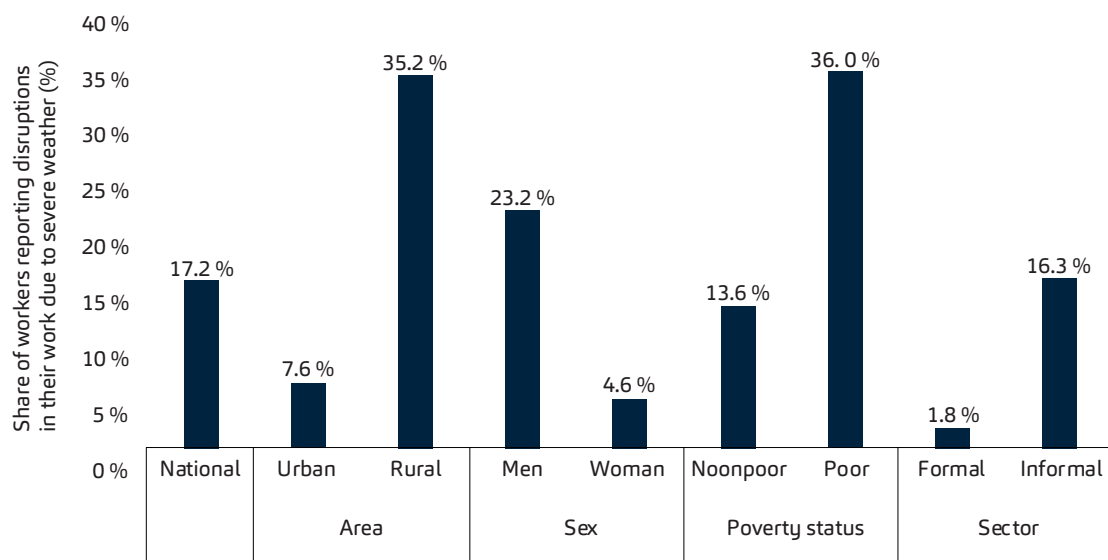
Although most poverty impacts come from yield losses, weather events also have a detrimental impact on Paraguay's labor productivity. In 2022, about 14 percent of workers reported working fewer hours than usual. Inclement weather emerged as the second most frequently reported factor, affecting roughly 2 out of 10 workers (figure 2.27). Vulnerable workers (those living in poverty, in rural areas, and engaged in informal jobs) are at a higher risk of experiencing reductions in work hours due to adverse weather conditions. For instance, in 2022, nearly 4 out of 10 workers in poverty cited inclement weather as the main reason for working fewer hours than usual—three times higher than the number reported by the nonpoor. In the long term, heat stress is also expected to affect labor productivity with potentially greater effects on poverty. Conte Grand et al. (2024) estimate that labor productivity in Paraguay could decline by 0.2 percent in services, 1.1 percent in industry, and 3.7 percent in agriculture by 2050, relative to the baseline year of 2020.⁵³

53. The analysis uses data from WetBulb Globe Temperature to estimate two measures of heat stress: (1) under the shade (indoors without air conditioning), and (2) under the sun (outdoors), which are then correlated with household survey data. Productivity losses attributable to heat stress are estimated by employing a standard workability-temperature loss function under different climate change scenarios. For more information, refer to US National Weather Service, WetBulb Globe Temperature, [https://www.weather.gov/tsa/wbgt#:~:text=The%20WetBulb%20Globe%20Temperature%20\(WBGT,is%20calculated%20for%20shady%20areas.](https://www.weather.gov/tsa/wbgt#:~:text=The%20WetBulb%20Globe%20Temperature%20(WBGT,is%20calculated%20for%20shady%20areas.)

Beyond its effects on poverty, exposure to extreme weather events exacerbated by climate change can negatively impact both physical and mental health in Paraguay. Recent research on the impact of climate change on physical health in the country reveals that wind and relative humidity were negatively correlated with the incidence of dengue in Asunción during the 2014-20 period. Additionally, temperatures showed differential effects, with higher dengue incidence when temperatures were below 21.3°C (Gómez Gómez et al. 2022). Furthermore, Borchers-Arriagada et al. (2023) estimate that 40 percent of air particles in Paraguay can be attributed to forest fires, and project that these could increase by 120 percent by 2100, causing nearly 5,000 deaths and a loss of 3.5 percent of the country's GDP. Additionally, Conte Grand et al. (2024) suggest that non-optimal temperatures could increase mortality between 1.5 percent and 22 percent, depending on the climate scenario, with a more pronounced impact on Paraguay's elderly population.

Figure 2.27. Over a third of poor and rural workers experienced work disruptions due to severe weather conditions

Share of workers experiencing weather-related disruptions, by place of residence, sex, poverty status, and formality status



Source: Prepared by World Bank staff using data from the Paraguay Encuesta Permanente de Hogares Continua, 2022.

In addition to physical health, climate change can have profound and often overlooked effects on mental health, particularly among children and youth (Clayton and Karazsia 2020; Wu, Snell, and Samji 2020). Direct effects on mental health may stem from exposure to and experience of extreme weather events, whereas indirect impacts occur when awareness of climate change manifests as emotional distress, even in individuals who have not experienced a direct impact (Clayton 2020). Weather shocks could either trigger new emotional responses or exacerbate existing ones among children and youths, leading to increased prevalence of issues such as anxiety and depression, learning problems, and cognitive deficits (García and Sheehan 2016; Burke, Sanson and Van Hoorn 2019).

Climate-related hazards pose threats to poverty reduction in Paraguay

Paraguay faces high climate-related hazards that can disproportionately affect poor and vulnerable communities. The country has a high risk of experiencing major rural and urban flooding, with large, harmful, and potentially life-threatening flood events expected to occur once every 10 years on average. Prolonged exposure to extreme heat is also expected at least once in the next five years (ThinkHazard! 2020). Urban flooding due to inadequate infrastructure and planning has emerged as a pressing issue, displacing thousands every year, damaging property and infrastructure, and tragically costing lives. According to the *Secretaría de Emergencia Nacional*, floods in 2019 alone displaced over 60,000 families. Despite recent investments in upgraded municipal drainage systems, recurrent floods still affect vulnerable families in floodplains. Similarly, the heat waves that affected Argentina and Paraguay in 2022 led to significant disruptions in basic services like electricity, and had severe consequences on agricultural production, deeply affecting soybean agriculture—a leading export product that provides an important source of income for Paraguay (World Weather Attribution 2022).

Recent advances in hazard mapping, such as improved hydrologic modeling for floods and extreme heat projections, allow the identification of areas and populations affected by or most exposed to natural hazards in Paraguay. Flood hazard maps modeled by Fathom⁵⁴ provide insights into expected floodwater extent and depth across varying return periods (or probability of occurrence) from 5 years to 1,000 years for both pluvial and fluvial scenarios.⁵⁵ Similarly, extreme heat maps from Vito⁵⁶ contain hazard information in degrees Celsius, classified by WetBulb Globe Temperature ranges over 5-, 20-, and 100-year periods. Overlaying these maps with geolocated household survey data from the 2021 EPHC makes it possible to estimate the proportion of households and individuals likely to be affected by floods and extreme heat in the coming years if current trends persist. The combination of hazard data and maps creates a comprehensive picture of Paraguay's areas and populations exposed to risk of climate threats like recurring flooding and extreme heat.

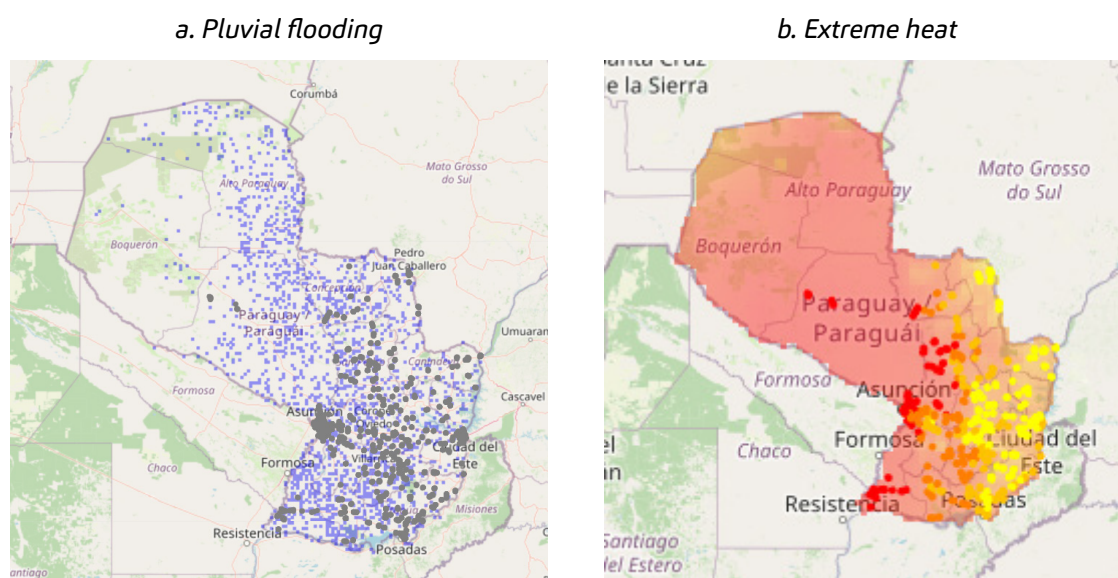
These maps and models indicate that Paraguay faces widespread risks from both flooding and extreme heat. Flood maps show that, for lower return periods, pluvial flooding stemming from intense rainfall is more likely to affect a greater share of the population across all regions than fluvial flooding from overflowing rivers, which poses threats mainly in eastern areas (map 2.1, panel a). However, for heat hazards, geographical differences exist: the Chaco region and states along the Paraguay River face the highest risks of severe heat stress, with average temperatures potentially surpassing 32°C depending on return period (map 2.1, panel a). Although parts of the country are susceptible to both pluvial flooding and extreme heat, these two major climate threats have differing localized impacts that require targeted adaptation approaches to protect vulnerable communities most at risk of exposure.

54. For more information on Fathom, refer to its website, <https://www.fathom.global>.

55. Return periods, derived from historical weather, terrain, and land use data, express the estimated average time between hazard events (for example, 1-in-5-year or 1-in-100-year events) and the annual percent chance of occurrence. Shorter return periods indicate higher probability. Because of their probabilistic nature, events can occur at any time. Climate change may cause underestimation of extreme weather event probabilities.

56. Vito, Mapping Climate Change, <https://vito.be/en/impact/mapping-climate-change>.

Map 2.1. Pluvial flooding is likely to affect a large share of the Paraguayan population, and the Chaco region is more likely to endure extreme heat



Source: Prepared by World Bank staff using Fathom's Flood Hazard Maps and Vito's extreme heat hazard maps. Note: Panel a shows the overlay of flood hazard maps and households' geographic locations according to the Paraguay Encuesta Permanente de Hogares Continua, 2021, depicted as gray dots on the maps over a five-year return period or 20 percent chance of the event happening. Similarly, panel b displays the overlay of extreme heat hazard maps with households' geographic locations, represented by different shades of red dots, also considering a five-year return period. Gray dots in panel a denote representative households in the survey. Yellow to red dots in panel b denote representative households in the survey and the degree of risk to extreme heat in the areas they are located with red representing areas at high risk of severe extreme heat.

Paraguay's vulnerability to climate risks is considerable, affecting approximately 25 percent of its population, which faces dual exposure to pluvial and fluvial flooding, regardless of area of residence.⁵⁷ However, most of this flood exposure stems from pluvial flooding, with nearly 22 percent of the total population exposed compared to only 2.7 percent for fluvial flooding (figure 2.28). Despite similar shares of the population exposed in urban and rural areas, about 3 percent of the urban population is more exposed to fluvial flooding, twice as high as the exposure of the population in rural areas. These figures indicate that a large proportion of the urban poor settle near rivers and other bodies of water, thereby exposing themselves to urban flooding events.

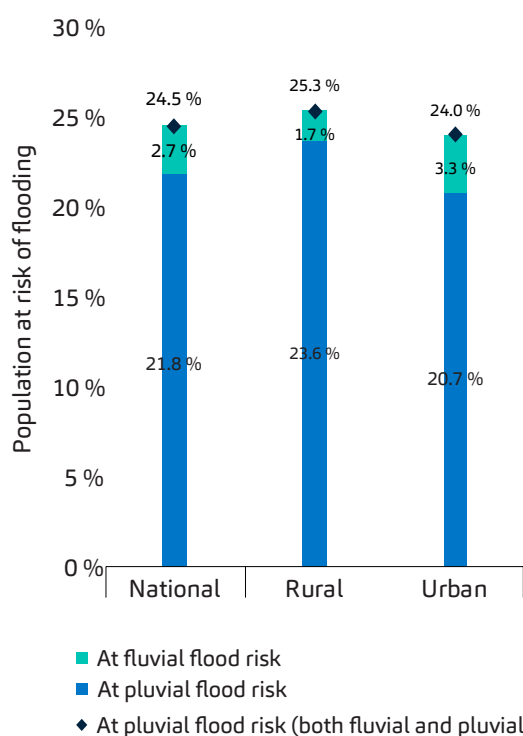
At the same time, a large portion of Paraguay's population is exposed to severe heat-related distress (figure 2.29). In a one-in-five-year return period, almost 40 percent of the total population is vulnerable to extreme heat occurrence.⁵⁸ Urban populations are 2.7 times more likely than rural populations to endure an extreme heat event. However, the geographic difference of potential impacts diminishes for more extensive heat events (with lower probability of occurrence). This potential is worrying, considering the intensifying heat waves expected in the future because of climate change.

57. The analysis is based on the flood risk index developed by Gayoso and Rubiano-Matulevich (2023), which combines the probability of a flood event with the potential severity of flooding in a given return period, drawing inspiration from Ervin et al. (2024). Methodological details are described in the accompanying background note to this report.

58. Heat stress risk is categorized using 28°C and 32°C thresholds based on WetBulb Globe Temperature. Intensity thresholds for potential damage are slight/low (<28°C), moderate/high (28-32°C), and severe/very high (>32°C). Households in regions where expected temperatures exceed 32°C within a given return period are identified as being at extreme heat risk.

Figure 2.28. Nearly a quarter of the population is exposed to flood risk, primarily pluvial flooding

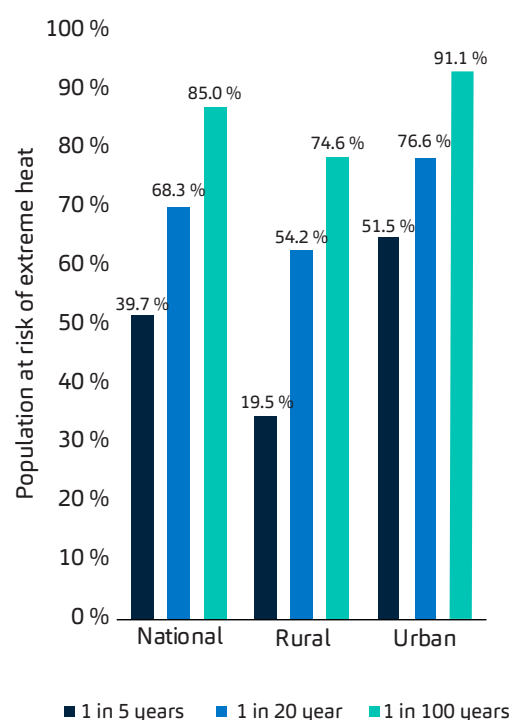
Exposure to risk of flooding, by place or residence and type of flooding



Source: Ervin, Gayoso de Ervin, and Rubiano-Matulevich, forthcoming.

Figure 2.29. Most Paraguayans are likely to be affected by events of extreme heat

Exposure to risk of extreme heat, by place of residence and intensity of event



Source: Prepared by World Bank staff based on the Paraguay Encuesta Permanente de Hogares Continua, 2021, and Vito's extreme heat hazard risk maps.

Paraguay's poor population is exposed to urban floods, especially during major events. Nationally, 27.4 percent of those at risk live below the poverty line. In urban areas, however, the share of poor population exposed to flooding is 1.2 times higher than the share not exposed to flood hazards. This heightened urban exposure to flood risk is driven primarily by fluvial flooding, with nearly 32 percent of the poor population living in floodplains, 1.3 times more than unaffected areas. Furthermore, whereas only 1.3 percent and 3.5 percent of the urban poor face minor pluvial and fluvial floods, respectively, these shares increase rapidly compared to the nonpoor as event severity escalates, with 26 percent of the poor population likely to be affected by a 1-in-1,000-year pluvial flood event (compared to 22 percent for the nonpoor). Despite relatively small differences, more destructive events take the greatest toll on poor households because those households have fewest resources to recover.

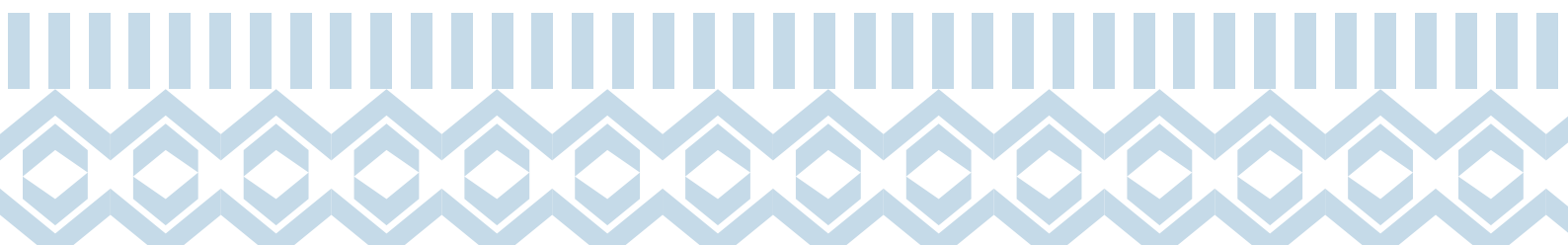
3. How can Paraguay unlock its potential to foster inclusive growth and accelerate poverty reduction?



Paraguay faces the challenge of promoting inclusive economic growth to accelerate poverty reduction in a sustainable manner. The country's strong macroeconomic policies have helped it avoid big economic fluctuations experienced by other countries in the region. Maintaining these economic foundations will be crucial in the years to come. Even before the pandemic, however, Paraguay's economic growth had already started to slow down, as factors that previously contributed to this growth, such as the increase in agricultural commodity prices, diminished. Although labor income growth had played a significant role in reducing poverty levels, the situation has reversed in recent years, leading to a slower decline in poverty rates. The country needs to find new ways to boost productivity, diversify exports, develop high-value-added services, and ensure that economic growth benefits all segments of society, particularly those at the bottom of the income distribution.

Preserving the macroeconomic and price stability that has become a defining feature of Paraguay's economy is crucial to accelerating poverty reduction efforts. A stable macroeconomic environment promotes confidence among investors, encourages productive investments, and drives long-term economic growth, which is essential for creating employment opportunities. This stability is indispensable for poverty alleviation as it underpins long-term economic growth. Strengthening institutional capacities, enhancing coordination among public institutions, and continuing with the ongoing economic diversification will mitigate exposure to external shocks and foster sustainable growth. The recent adverse climate events, which led to soaring food and fuel prices, have eroded the purchasing power of low-income households and exacerbated extreme poverty. Addressing these challenges through prudent policies is vital for safeguarding the well-being of the most vulnerable.

Addressing the multidimensional nature of poverty and inequality in Paraguay requires an equally multifaceted approach. Policies need to focus on bridging gaps in access to human capital, improving its quality, and promoting its accumulation, particularly among those falling behind. Additionally, they could support the creation of more and better jobs, while developing the skills demanded by the market. Enhancing the redistributive role of fiscal policies and achieving a more efficient use of public resources can further contribute to reducing poverty and inequality. Moreover, building resilience against adverse shocks is crucial to prevent the reversal of hard-won gains. Implementing this ambitious agenda will be challenging and require difficult trade-offs but offers a path to a more equitable and resilient Paraguay. By sequencing reforms on the basis of urgency, feasibility, and synergies, and mobilizing resources, the country can accelerate poverty reduction (refer to table ES.1 in the executive summary).



Improving learning outcomes and ensuring equitable opportunities in human capital accumulation

This report has identified three fundamental barriers to the accumulation of human capital in Paraguay: low quality of education and poor learning outcomes; large disparities in access to quality education, which begin in early childhood; and inadequate access to health services. Addressing these issues will require a multifaceted approach.

Improving the quality of education needs to be a top priority for Paraguay to address existing disparities and promote long-term economic growth. The country can achieve this goal by focusing on early childhood education and literacy programs to ensure access to quality learning opportunities from a young age, particularly in rural and marginalized communities. Implementing targeted literacy interventions, such as reading clubs and home-based learning programs, can further support this goal. Additionally, providing teacher training and professional development programs will equip educators with the necessary skills and knowledge to effectively teach and promote learning. The *Programa de Mejoramiento de la Educación Paraguaya 2023-2028* is a promising initiative that considers several of these crucial reforms. However, the program is yet to be implemented, and its success will depend on ensuring timely execution. Reviewing the contents and teaching methods to orient the education system toward the acquisition of 21st-century labor market skills, focusing on cognitive, socio-emotional, and “green” competencies, is also crucial. To monitor progress, data management systems should be enhanced, and report formats optimized to ensure learning data are accessible and usable for all stakeholders (World Bank 2022b).

Addressing educational disparities, especially in rural and indigenous communities, is another key aspect of improving human capital accumulation. Developing culturally responsive teaching methods and curricula that recognize and incorporate Indigenous languages and traditions, as well as instruction in mother tongue, can help bridge the gap. The latter approach responds to Paraguay’s distinctive characteristic of Spanish-Guaraní bilingualism: speaking the Indigenous language Guaraní does not imply belonging to an Indigenous population (Gayoso de Ervin 2016; Psacharopoulos, Velez, and Patrinos 1994). Investing in teacher training to equip educators with the skills to manage diverse classrooms and provide instruction in multiple languages, including Guaraní, is essential. Upgrading educational infrastructure and ensuring equitable distribution of resources, such as broadband internet connectivity, to rural and indigenous areas are also necessary. In general, establishing a robust framework for evaluating educational quality across different regions, such as the World Bank’s Teach tool and the Coach program, will help to identify disparities and target interventions effectively.⁵⁹

59. Teach is a classroom observation tool that helps countries measure and track teaching quality. The Coach program builds on Teach to improve in-service professional development based on teachers’ needs.

Revitalizing learning environments is important for improving educational outcomes. According to the Plan Nacional de Transformación Educativa del Paraguay 2040 (*Ministerio de Educación y Ciencias* 2022), school infrastructure is the area of education investment with the largest absolute gap compared to the desired annual budget for 2040. To achieve learning environments with adequate structural and material conditions for acquiring fundamental skills, investments need to include not only building infrastructure but also the necessary equipment and materials. Conducting a comprehensive review of the teaching profession, addressing both the incentive scheme and the requirements for entering the profession, is also important.

Addressing the NEET phenomenon in Paraguay requires focusing on enhancing access to quality education and vocational training, preparing those young people to meet the demands of the local and global job markets. Paraguay could consider expanding second-chance programs, investing in early warning systems to reduce dropout rates, and providing targeted financial support to families living in poverty. To help with the transition from school to work, initiatives could include the development of alliances with the private sector to create apprenticeship programs. Policies could also support entrepreneurship and small businesses, which can provide employment opportunities for young people. Furthermore, it is important to address gender disparities and gender norms by encouraging the participation of young women in nontraditional but more profitable fields (Beegle and Rubiano-Matulevich 2020) and providing support for young mothers to continue their education or enter the workforce.

To improve access to quality health care and move toward universalization, Paraguay needs to prioritize the integration of its fragmented health system. Streamlining the operations of the MSPBS, IPS, and private health care providers can help reduce inefficiencies, optimize resource allocation, and ensure more consistent quality of care across the country. This streamlining can be coupled with strengthening the centralized public procurement and free distribution of essential medicines through public facilities and community workers. Supporting ongoing government initiatives that allow self-employed workers to voluntarily register with the IPS can expand insurance coverage and financial risk protection, which goes hand in hand with the quality of services, to a segment of the population that often lacks them.

Increasing access to and availability of quality jobs

To address the challenges in the labor market and promote inclusive growth, Paraguay needs to consider a set of interconnected interventions that focus on both the demand and supply sides of the labor market, as well as on specific issues such as the high proportion of NEET youth. These recommendations are based on the analysis conducted for this assessment, but also build on those put forward by other recent reports and analytical pieces for Paraguay, including the CCDR (World Bank 2024a), the CEM (World Bank 2024b), the Trade and Investment Report (World Bank 2022a), and the Human Capital Review (World Bank 2022b). With a relatively young population, Paraguay has the potential to harness a demographic dividend, which could provide a boost to economic growth and poverty reduction through strategic investments in education, skills development, and job creation.

On the demand side, stimulating job creation in micro, small, and medium enterprises (MSMEs) is essential, because they employ 75 percent of the working population. Providing targeted financial support, such as grants or subsidized loans, coupled with demand-driven business training and advisory services, can help MSMEs grow and create more jobs (World Bank 2024b). Supporting the internationalization of Paraguayan firms, especially MSMEs, through export promotion programs, market intelligence services, and participation in international trade fairs, can further expand market access and create jobs. Providing more information and support to exporters through a single platform and programs to enhance export capabilities will also strengthen MSMEs (World Bank 2022a). These interventions will be key to meet the new administration's goal of creating 500,000 additional jobs, which could contribute to reducing poverty by nearly 6 percentage points.⁶⁰

Attracting foreign direct investment (FDI) in strategic sectors with potential for job creation and technology spillovers, such as modern agribusiness, is crucial for promoting employment creation in Paraguay. Developing a comprehensive FDI attraction strategy; fostering links between FDI and local firms through supplier development, partnerships, and training; and streamlining regulations and processes can help upgrade Paraguay's technological capabilities and attract more investments. Increasing the transparency of investment incentives is also important for attracting and maintaining FDI, which can contribute to generating quality jobs (World Bank 2018a, 2022a), and World Bank (2024b).

Paraguay has significant potential to expand and upgrade its services sector, which can be a key driver of good-quality job creation and inclusive growth. The services sector already generates over half of Paraguay's gross domestic product and employment but tends to be concentrated in lower-productivity activities. By strategically developing higher-value-added segments such as information and communication technology (ICT), finance, and tourism, Paraguay can tap into new sources of export revenue while boosting job quality and productivity. For example, enhancing digital skills training, improving ICT infrastructure, and strengthening the regulatory framework could position Paraguay to export more competitive ICT services (World Bank 2024b). Similarly, by investing in key tourism assets, transportation connectivity, and sector-specific human capital, Paraguay can cultivate a higher-value eco-tourism segment, with positive spillovers for job creation in local communities.

To address the challenges faced by small-scale farmers, Paraguay can create a more inclusive and integrated agriculture sector that generates quality employment opportunities and fosters the growth of modern agribusinesses through multiple channels. First, investing in rural infrastructure, including roads, irrigation systems, and storage facilities, is important to enhance connectivity between small-scale farmers and modern agricultural markets, reducing transaction costs and increasing efficiency. Second, offering training programs and extension services tailored to the needs of small-scale farmers is crucial to improve their technical skills, business management capabilities, and understanding of modern agricultural practices, enabling them to meet the quality standards required by agribusinesses. Third, because small-scale farmers

60. Estimates by World Bank staff using a micro-macro simulation model that integrates the 2019 EPH and Paraguay's latest Social Accounting Matrix from 2014. In this model, new jobs are probabilistically assigned to unemployed and inactive individuals based on their likelihood of acceptance and potential wages. Simulations are based on assumptions outlined in the text and impacts on poverty and inequality can vary depending on policy implementation (Canavire, Gayoso de Ervin, and Ríos 2022).

in Paraguay face barriers to accessing credit, developing financial products and services that cater to their needs, such as microfinance and crop insurance, will help them invest in their operations, manage risks, and engage more effectively with modern agricultural value chains. Fourth, encouraging the development of inclusive agricultural value chains that integrate small-scale farmers at various stages—such as input supply, production, processing, and marketing—can create diverse employment opportunities and improve the distribution of benefits along the value chain (World Bank 2022 and 2024b).

On the supply side, enhancing skills and offering retraining opportunities that align with the demands of future jobs is critical. Higher education programs, such as short-cycle programs, can help develop skilled human capital by providing practical training in fields like advertising, hospitality, design, and innovative areas like app development and cybersecurity (Ferreyra et al. 2021). Aligning education and vocational training programs with the skills demanded by foreign investors and fostering collaboration between foreign firms, local enterprises, and educational institutions to develop industry-relevant curricula and apprenticeship programs can further strengthen the link between education and employment.

Addressing the NEET issue is critical, because sustained educational and professional disengagement can have long-lasting consequences on excluded youths and the country's workforce. This issue holds particular significance for Paraguay, given the shifting age structure as the high proportion of youths in the country become adults and ready themselves for entry to the workforce. The high proportion of NEET youths is likely a result of the difficulties they encounter in maintaining school enrollment (attributed to factors such as poor quality of education, inadequate infrastructure, and high out-of-pocket expenses) and in cultivating productivity. From the labor market perspective, it will be important to foster the pursuit of higher education that aligns with evolving job market demands, for instance through the provision of information on sectoral demand and profitability. Joint workforce development initiatives like apprenticeships and on-the-job training programs could help develop skilled labor per private sector requirements. These efforts could be complemented with labor intermediation services and should be evaluated to assess their effectiveness and opportunities for improvement.

To promote greater gender equality in economic opportunity and reduce poverty risk among women, the priority initiatives need to address two key barriers, namely, the lack of affordable care options and gender norms that relegate women to the domestic sphere. On childcare, it is important to invest in a robust national care system that provides subsidized, high-quality care facilities across the country. Such a system will allow more women to enter and remain in the workforce by relieving the disproportionate burden of unpaid care work. Care programs need to meet quality standards, ensure proper child development, and be staffed by trained professionals. Affordable fees scaled to income levels can promote equity of access. A national care system also offers the opportunity to create jobs and contribute to the goal of generating high-quality jobs in the next years. Affordable fees scaled to income levels can promote equity of access. In tandem, it will be crucial to tackle deep-rooted gender norms that constrain women's economic opportunities. A national campaign using media (as planned by the new government), community outreach, and school curricula could contribute to shifting mindsets around gender

roles and counter discriminatory social norms. The private sector could be engaged as partners to enhance gender diversity and inclusion within workplaces (IFC 2017). Furthermore, policy measures like flexible work arrangements and leadership training for women can reinforce attitude changes. To complement these efforts, it is essential to design educational programs that encourage shared responsibility in child-rearing, prevent teenage pregnancy, reduce gender-based violence, and promote changes in social norms (World Bank 2022b).

Finally, investing in the collection and management of high-quality data is important for supporting the creation of more and better jobs in Paraguay. An economic census, last conducted in Paraguay in 2011, provides invaluable data on the structure, characteristics, and performance of businesses across various sectors and regions. This information allows policy makers to gain a clear understanding of labor market trends, skill gaps, and industry needs, enabling them to develop targeted policies and programs that foster job creation and workforce development. Apart from making the economic census a recurrent operation (every five years or so), Paraguay needs to consider complementary initiatives aimed at improving the frequency, quality, and granularity of data, for instance through improvements in administrative data. Standardized collection processes could be implemented across the different institutions in the national statistical system, along with integrated data systems and regular updating.

Improving the progressivity of the tax system and its revenue collection capacity

Paraguay's tax system could play a more prominent role in reducing poverty and inequality. The country has recognized the need to address the challenge of low fiscal revenues to support growth-enhancing investments and poverty reduction programs. Expanding the number of people contributing to direct taxes could create additional fiscal space for social investments. Increased fiscal revenues would provide Paraguay with additional resources to allocate to public infrastructure, education, health, and other basic services so that the poor can realize their productive potential and improve their overall quality of life. Some options to increase tax revenues include broadening the tax base, elevating tax rates, enhancing tax collection mechanisms, and streamlining or reducing tax incentives and tax expenditures (for example, deductions and exemptions for top income earners). International evidence suggests that people are more willing to pay tax when taxes are progressive (Hoy 2022). The quality of governance is also important; governments need to show that tax collections are being used to deliver high-quality services and infrastructure that benefit the population.

Paraguay could enhance the efficiency and distributional impacts of transportation subsidies by gradually improving their targeting, considering budgetary constraints and the current allocation of resources to the top deciles. Refocusing subsidies is a complex process that requires public support for success. If Paraguay decides to reform some of the subsidies that present leakages to the richest deciles, it will be crucial to formulate a comprehensive communication strategy and secure political support. This strategy should transparently present the true cost of subsidies to the public and clarify the beneficiaries. In parallel, compensatory measures could be introduced

to protect the most vulnerable segments in case of crises. Examples from other countries that have implemented such measures in the context of subsidy reduction include targeted cash transfers to low-income households in Jordan or the expansion of existing social protection programs in Egypt (Verme 2016).

To accelerate poverty reduction, Paraguay could consider expanding the coverage of *Tekoporã* and *Adulto Mayor*, with a focus on the bottom income deciles. *Tekoporã* is a progressive direct transfer program in the fiscal incidence analysis conducted for this report. World Bank estimates indicate that, by expanding the coverage by 25 percent, moderate poverty could decrease by 3.5 percentage points, even after factoring in all direct and indirect taxes. Furthermore, given its design, this program can contribute to enhancing human capital in the long term. Although *Tekoporã* exhibits good targeting, it still presents exclusion errors, given that it covers only 31 percent of the population in the poorest income decile. It may be feasible to increase the poverty reduction impacts by reinforcing the conditional cash transfer's targeting scheme and focusing on universalization for the bottom three deciles. Geographic targeting using poverty maps derived from the 2022 population census may improve the targeting of lagging regions. When combined with other targeting methods, such as administrative records, it holds the potential to increase targeting accuracy. Offering larger transfers alone (for example, increasing the benefit by 25–35 percent) has minor effects on poverty and inequality reduction. Expanding coverage could also enhance the distributional impacts of the *Adulto Mayor* program. Considering budgetary limitations and the program rules in terms of target population, the government could consider an expansion of coverage prioritizing the four lowest income deciles until the program achieves universalization within this socioeconomic range. Improving targeting for greater impacts also requires careful consideration, including the gradual phase-out of beneficiaries who no longer need assistance.

Increasing resilience to climate shocks

Paraguay's climate characteristics, economic structure, and limited adaptive capacity make the country highly vulnerable to climate change. Using the analysis conducted for this assessment and building on recommendations put forward by other recent reports and analytical pieces for Paraguay, including the World Bank's CCDR, this assessment identifies four priority areas to help the country increase its resilience in the face of climate change: (1) narrowing knowledge and data gaps, by generating more and better information regarding the populations most vulnerable to the impacts of climate change; (2) enhancing the resilience of critical infrastructure to droughts and floods; (3) adopting a comprehensive approach to disaster risk management, including the strengthening of institutional and legal frameworks; and (4) creating climate risk insurance and strengthening of safety nets.

First, identifying those at most risk to natural hazards can facilitate predisaster planning, the investments needed to install the infrastructure required for adaptation and risk reduction, and the early identification of social assistance needs in the event of a shock. This information is crucial for a comprehensive understanding of those who may need assistance in the event of shocks along with the funding requirements or cost to the government to assist the population

more likely to endure the adverse impacts of climate change. Furthermore, this information can guide the establishment of well-designed and well-implemented proactive programs to support and respond to shocks, rather than reactive measures that often fall short of generating effective responses. For instance, such information can guide the adaptation of the social protection system to changing needs. In general, in the event of a shock or during a crisis, social protection programs can be adapted to offer temporary support in different ways, such as by increasing support to current beneficiaries through a temporary increase in the monetary value of cash transfers, or expanding the coverage of programs by increasing the number of beneficiaries (that is, temporarily, or even permanently, including as beneficiaries those who could become poor). Similarly, a national registry of beneficiaries can help improve focalization and the impact of social programs.

Second, the country needs to enhance the resilience of its critical waterway infrastructure to droughts and floods through an integrated management plan, including capital and maintenance dredging, beaconing, and a permanent river bathymetric information system. Promoting efficient and sustainable water resource management by integrating basin-level risks associated with water supply and availability, strengthening water governance, and supporting family farmers in adopting irrigation systems and adaptive technologies will further bolster resilience (Silvero et al. 2019). In addition, the adoption of a building code and the establishment of a regulatory authority could help promote the adoption of infrastructure solutions resilient to natural hazards and extreme weather events, particularly in at-risk areas. For instance, building codes could promote the use of materials resistant to heat and/or surface run-off. At the same time, these solutions could help reduce the likelihood of deaths linked to extreme weather events and natural hazards, such as heat waves and rising temperatures in the country (Conte Grand et al. 2024). Adaptation efforts could also focus on securing additional resources for the health system to prepare for increased health impacts from rising temperatures and air pollution, while developing monitoring and early warning systems for droughts, flooding, and disease outbreaks.

To tackle the structural constraints of pollutant cooking fuel use and inadequate garbage management, which exacerbate multidimensional poverty and disproportionately affect women in Paraguay, the government could adopt a holistic, gender-sensitive approach. According to the World Bank report “What a Waste 2.0” (2018d), inadequate waste management has negative impacts on health, the environment, and the economy, especially affecting low-income communities. To address these challenges, Paraguay could expand clean fuel infrastructure, such as natural gas or electricity, with better targeting of subsidies for low-income households, especially those headed by women (World Bank 2020). Simultaneously, the country could develop and enforce regulations on waste management, establishing efficient collection systems and promoting separation and recycling. These efforts could be complemented by gender-sensitive awareness campaigns and educational programs to promote clean cooking practices and responsible waste management (UN Women 2014). By empowering women as agents of change in their homes and communities, employment opportunities could also be generated in the clean energy and waste management sectors, reducing gender inequalities that perpetuate multidimensional poverty.

Third, Paraguay can benefit from a comprehensive approach to disaster risk management by adopting a strategy that encompasses the full spectrum of risk identification, management, and adaptation. The strategy needs to involve a systematic process for recognizing the responsibilities of the different actors within the government, both explicit and implicit, before and after weather shocks strike. By incorporating risk identification into financial and investment management processes, Paraguay can better prepare for contingent liabilities. To enhance the effectiveness of this strategy, it is crucial to build the technical capabilities of government officials at all levels, including subnational and sectoral. Training programs designed to improve the generation and use of technical information, as well as the management of financial instruments for disaster risk, will contribute to the long-term sustainability of the strategy. The implementation plan may involve coordination by the MEF with an interinstitutional group that includes key public and private sector stakeholders. This group could work together to identify disaster risks, assess their potential impacts, and understand the liabilities they entail. By doing so, Paraguay can mitigate the effects of weather shocks and ensure a swift recovery, safeguarding the well-being of its citizens and the stability of its economy.

Fourth, to reduce the vulnerability of family and small-scale farmers to climate shocks, Paraguay needs to implement a risk financing strategy that combines climate risk insurance with targeted social protection policies. Risk insurance for family farmers in Paraguay could serve as a critical safety net in the face of weather shocks, such as droughts, floods, or severe storms, by providing financial compensation to farmers when predefined adverse weather conditions occur, thereby mitigating the economic impact of crop or livestock losses. This system would not only offer immediate postdisaster financial relief but also encourage farmers to invest in their operations with greater confidence, knowing they have a measure of protection against unpredictable weather patterns.

To implement this risk financing strategy, Paraguay could follow the approach outlined by Valdivia et al. (2023), which focuses on a macro-level parametric insurance product. The insurance could be based on the Agricultural Vegetation Index, an annual reserve fund, and a contingent line of credit. The parametric insurance would cover more severe, less frequent events; the reserve fund would address more frequent, less severe impacts; and the contingent credit line would finance intermediate layers of risk. This approach would enable Paraguay to have financing readily available to efficiently distribute assistance to affected family farmers in a timely manner when disasters occur. The country could establish an annual budget to finance the premium cost of the parametric insurance coverage and contributions to initial and operating expenses. Importantly, the country has previous experience developing risk insurance for family farmers, providing an opportunity to consider design and implementation features that were successful, as well as lessons learned and potential improvements from the process. Moreover, the geo-referenced data from the 2022 *Censo Agropecuario Nacional* would help to recharacterize the country's producers, allowing more precise identification of the most vulnerable segment and, therefore, the number of beneficiaries.

Appendix A. Nowcasting poverty in Paraguay

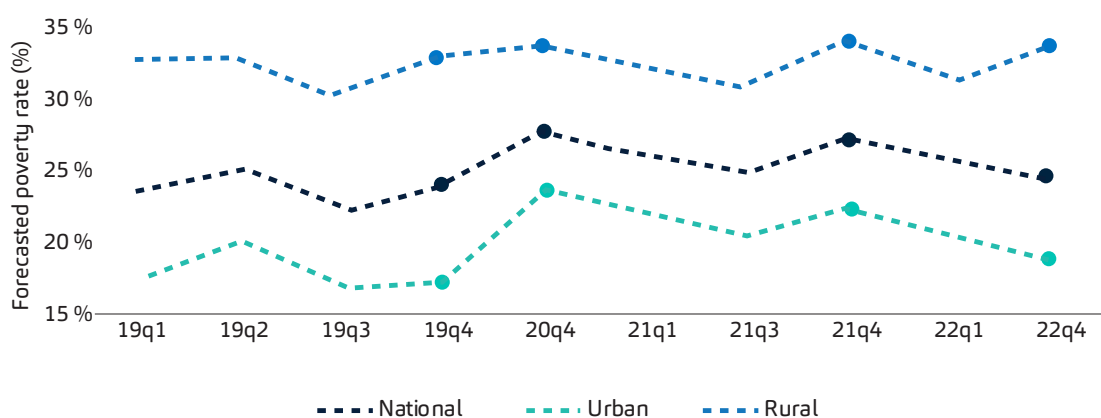
Poverty measurement relies on household surveys that collect income or expenditure data, which is challenging, costly, and often requires complex questionnaires. The infrequent availability of poverty data poses challenges for policy making.

The World Bank has provided the MEF and the INE with an adapted version of the Survey of Well-being via Instant and Frequent Tracking (SWIFT) tool (Yoshida et al. 2022). By using a limited set of variables from the Quarterly EPHC, SWIFT enables the generation of more frequent poverty estimates to complement official statistics, facilitating a more dynamic approach to analyzing changes in the socioeconomic status of households when required.

SWIFT employs machine learning techniques to estimate poverty using 10 to 20 questions on poverty and income correlates, such as ownership of assets, housing conditions, and household demographics. To capture real-time changes in household well-being in Paraguay, the model includes fast-changing variables like employment status, number of jobs, and working hours within the past seven days, as well as slow-changing variables like household demographics and household head characteristics to capture medium- and long-term welfare changes.⁶¹ Separate models were built for urban and rural areas to account for differences in samples.

SWIFT produces estimates close to the official poverty figures and captures short-term variations in trends (figure A.1). With its implementation, Paraguay can complement official poverty estimates, analyze between periods, forecast the impacts of specific events, and enact measures to mitigate the adverse effects of shocks on the economy.

Figure A.1. Quarterly poverty forecasts in Paraguay capture short-term variations in trends
Quarterly poverty forecasts, 2019–22



Source: Galeano et al. forthcoming.

Note: Poverty rates for the fourth quarter (Q4) correspond to official figures published by the Instituto Nacional de Estadística. The figures for the other quarters (represented by dotted lines) derive from model estimates. Because of limitations in variable availability and comparability, not all quarters were predicted. For instance, for the first, second, and third quarters of 2020, income-related variables were not available because they were excluded from data collection during the COVID-19 pandemic.

61. The regression model uses the most recent EPHC incorporating the official poverty measurement, which was conducted in the fourth quarter of 2022.

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The background features a dark blue color with a pattern of overlapping, semi-transparent images of woven baskets. The baskets are arranged in a way that creates a sense of depth and perspective, with some appearing in the foreground and others receding into the background. The weaving patterns are intricate, showing various textures and designs.

Paraguay Poverty and Equity Assessment

Strategies to boost inclusive
growth and poverty reduction