



PARAGUAY

Systematic Country Diagnostic World Bank Group



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Executive Summary

1. **Paraguay has been characterized by solid economic growth, strong poverty reduction and macroeconomic stability in recent years. An adjustment of the development model, however, should increase sustainability and inclusiveness in the future.** Economic growth has been above the regional average. Macroeconomic stability has been achieved; inflation is under control and public debt is low. Poverty reduction has been substantial, and several social indicators have shown significant improvements. Apart from solid macroeconomic policy, growth has been based on extensive leveraging of the country's natural wealth, particularly land and hydroelectric potential. Demographic change in Paraguay has also led to a sizable expansion of the working-age population, adding to economic output. However, if the current model is adjusted, the sustainability of these achievements could be increased substantially, since two of the main sources of growth in the past decade (natural capital and the demographic bonus) will slowly reduce their contribution to growth. These adjustments should focus on overcoming the main obstacles that this report identified as critical challenges for a sustainable development: (a) concentration of inputs, production, exports, income, and political influence; (b) prevalence of informal economic relations; and (c) delivery of public services. To meet the population's expectations, higher growth is needed, but, even more importantly, this growth needs to become inclusive and sustainable in the medium- and long-term. The pathways toward this goal will need to overcome the mutually reinforcing challenges mentioned above. To that end, the SCD has identified the following priority areas: accountable institutions, rule of law, and business environment; natural wealth management; quality of public services; and human capital.

What sets Paraguay apart?

2. **Paraguay's development dynamics have been shaped by three key defining characteristics:** *Endowments* – characterized by an abundance of natural resources; *Demographics* – characterized by a young population and rapid urbanization; and *Institutional inheritance* – characterized by relatively low tax revenues, large state-owned enterprises (SOEs), and incipient professionalization of bureaucracy.

Endowments

3. **Paraguay is rich in natural endowments, which, combined with high-quality inputs and comparatively low costs, have given the country a comparative advantage in agriculture and livestock.** Rainfall, fertile soil, and forests are abundant in Paraguay, producing important comparative advantages for the agriculture and livestock sectors. Around 65 percent of the soil of the Eastern Region is fertile and well-drained, and thus excellent for crops and pasture. Western Paraguay's soil is less fertile and sandier, but very well-suited to cattle farming.¹ Natural endowments in per-capita terms stand out relative to neighbors when the high quality and low cost of related inputs are considered (as reflected, for example, by low-cost beef production in the Chaco region). The country is also exceptionally rich in water and hydroelectric potential. The Itaipú and Yacyretá binational dams generate most of the country's electricity. The 12,600MW Itaipú dam on the Paraná River generates the most hydroelectric power of any dam in the world, largely because of the sheer

¹ *Estrategia Nacional y Plan de Acción de Biodiversidad (ENPAB)*, 2004-2009. Presidencia de la República, Secretaría del Ambiente, Asunción, Paraguay, 2003.

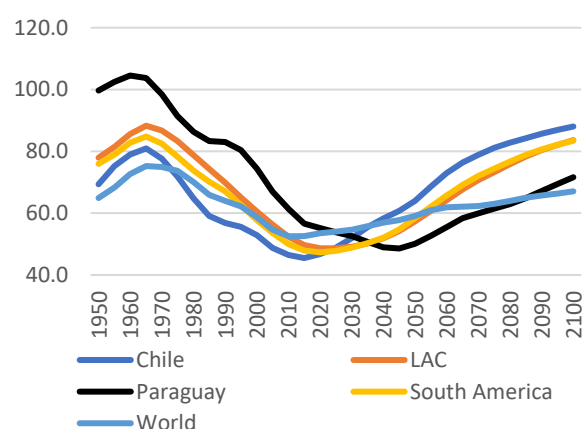
power and consistent flow of the Paraná, the second longest river in South America.² Paraguay's share, half of Itaipú's annual generation, is over 90 percent sold to Brazil.³

Demographics

4. **Paraguay benefits from a very young population and is going through a rapid urbanization process.** Almost 60 percent of the population is under 30 years old, putting the country in the early stage of the demographic transition (Figure 1, panel (a)). Relative to countries with similar GDP-per-capita levels, Paraguay has one of world's youngest populations and will enjoy the related population dividend for almost 30 more years. This presents an opportunity for the demographic dividend to contribute substantially to economic growth and poverty reduction, though it requires the productive participation of young people in the labor market. Paraguay—the least urbanized country in South America—is also going through a rapid urbanization process. With only 60 percent of the population concentrated in cities, the country has the lowest urban population share in South America, and among the lowest in Latin America (Figure 1, panel (b)). At the same time, a disproportionate share of the population growth is in urban areas, particularly in Greater Asunción. Between 2004 and 2014, the urban population grew at an average rate of 1.8 percent, faster than most South American countries—though not as fast as some central American countries. At the same time, most job creation was in urban areas, primarily Greater Asunción, where wages are higher.

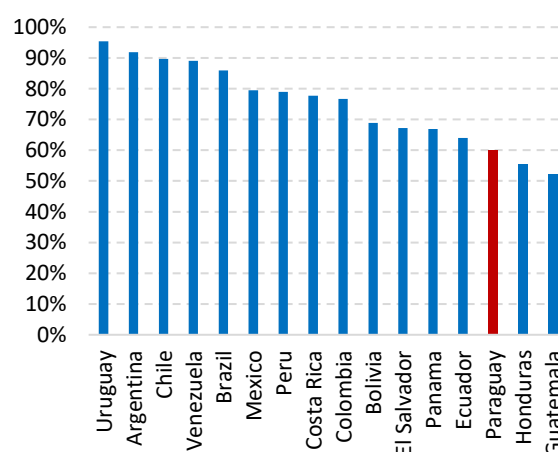
Figure 1. Paraguay has a Young Population and Still Low Urbanization Rate

(a) Dependency Ratio (Pop. 0-14 and 65+ / Pop. 15-65)



Source: UN, Population division.

(b) Percent of Urban Population



Source: WDI.

Institutional inheritance

5. **Paraguay's institutional inheritance and the resulting system of governance have shaped and constrained the country's policies and social and economic outcomes.** The interplay between structural factors (namely, a primarily agrarian economy with natural resources endowments) and sociopolitical institutions (comprising a relatively small public administration apparatus and a bureaucracy that needs to increase its professional skills) have created path dependencies that continue to shape the policy arena and

² "Brazil's Itaipú dam treaty with Paraguay up for renewal". *Financial Times*. September 20, 2017. Available at: <https://www.ft.com/content/bf02af96-7eb8-11e7-ab01-a13271d1ee9c>

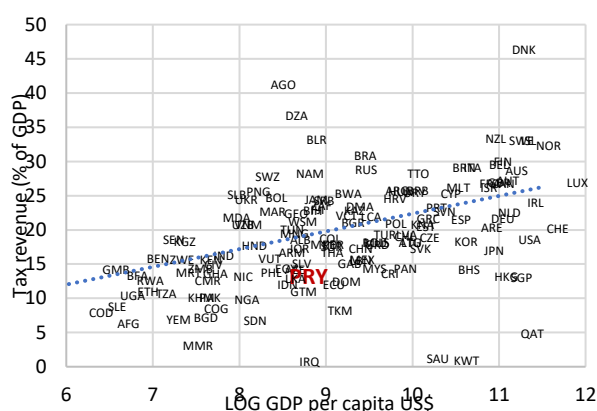
³ Ibid., 2017.

the quality of the policy-making process. There remain substantial areas to be tackled to establish a social contract based on a long-term commitment to inclusive growth and delivering goods and services that reflect the interests of a broader segment of society.

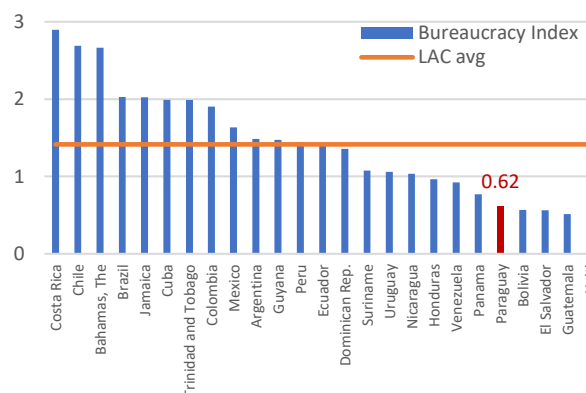
6. **Policy makers in Paraguay are faced with three challenges that limit their ability to design and implement public policies.** First, tax revenues are relatively low (Figure 2, panel (a)); the state-owned enterprises (SOEs) sector is very large; and the efficiency and effectiveness in the state bureaucracy would need to be raised (Figure 2, panel(b)). The low tax base has translated into a small public administration apparatus: the share of revenues and expenditures as percentage of GDP is slightly above 20 percent (not including the SOE sector), well below the OECD average and that of regional peers. This in turn has limited the ability of the state to deliver effectively a range of public social services and also upgrade the infrastructure of the country. The limited size of the public administration has both led to, and been exacerbated by, reliance on several large SOEs that are monopoly providers of basic services such as electricity and water, as well as on binational electricity generators, which have been major sources of fiscal revenue and exports. Paraguay has demonstrated encouraging signs of institutional change. The process of building functioning democratic checks and balances has advanced in some areas. Important steps have been recently made in institutional development, notably in moving to a more accountable government. Substantial progress has also been achieved in the institutional transformation of macroeconomic management.

Figure 2. Tax Revenues are Low in Paraguay, as is the Efficiency of Bureaucracy

(a) Tax Revenue (percent of GDP, 2004-2014)



(b) Bureaucracy Index, 2013



Source: World Development Indicators, World Bank.

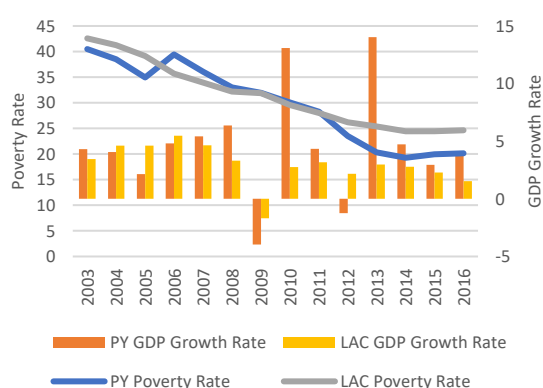
Source: Chuaire and Scartascini, 2013.

What has worked well?

7. **Paraguay has achieved solid economic growth and shared prosperity over the last 15 years.** The economy grew at 4.7 percent per year on average over 2004-2016, faster than the regional average and most of its regional comparators, though growth was highly volatile on a year-on-year basis (Figure 3). Economic growth has been accompanied by substantial poverty reduction and fast income growth among the bottom 40 percent of the population. Since 2003, poverty rates measured at 5.5 US\$ 2011PPP have fallen by 50 percent—a reduction larger than the regional average. The income of the bottom 40 percent grew at an annualized rate of 5.7 percent over 2003-2013—the fastest in the region between 2009-2015. The middle class has almost doubled since 2003, becoming—at 38 percent of the total population—the second-largest group, just below the vulnerable population.

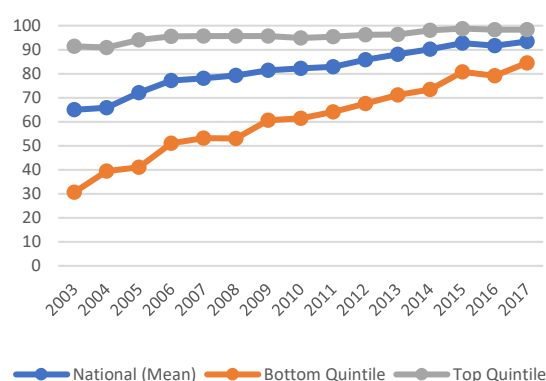
8. **There has also been significant improvement in social and service delivery outcomes.** Net enrollment rates in middle education increased from 36.8 percent in 2003 to 52.2 percent in 2016, and the enrollment gap in primary education between children in the bottom and top quintiles was cut in half. The gap in access to tap water between the richest and poorest quintiles narrowed considerably (Figure 4), and basic sanitation coverage has expanded from 71.9 percent in 2000 to 91.3 percent in 2015. This effort, together with increased household incomes, higher maternal education, and healthcare and family planning, contributed to lower child chronic malnutrition. In 2016, the prevalence of stunting, at 6 percent, was one third of what it was about 10 years previously. Job creation more than kept pace with the increased labor supply (which grew at 2.5 percent annually over the last decade), and labor formality has markedly improved (from 22 percent in 2008 to 28 percent in 2016, albeit partly driven by a rapid expansion of public employment).

Figure 3. Economic Growth was Rapid and Poverty Reduction was Substantial



Source: Poverty and Equity Database, World Bank and WDI.
Notes: Poverty rates at US\$5.5 2011 PPP

Figure 4. Gaps in Access to Tap Water were Reduced



Source: Authors' calculations based on EPH.

9. **Improvements in key economic institutions laid the foundation for recent progress.** The country embarked on a significant institutional transformation and professionalization of entities responsible for macroeconomic management such as the Central Bank (Banco Central del Paraguay, BCP) and Ministry of Finance (Ministerio de Hacienda). In turn, prudent macroeconomic policies, with low fiscal deficits and debt, lower and less volatile inflation, and flexible exchange-rate arrangements to absorb external shocks, supported faster and sustained economic growth. From a selective default status in 2002, the country had almost reached investment grade by mid-2018. Two new and well-targeted social programs—Pensiones Alimentarias para Adultos Mayores and Tekoporã—have been significantly expanded in recent years. More than 71 percent and 88 percent of the benefits of these programs accrue to the bottom 40 percent of the population, respectively, and they represent the largest contribution to poverty and inequality reduction of all fiscal interventions. To address the root causes of corruption, the government launched an ambitious package of reforms in fiscal transparency, open contracting, access to information, and open data.

10. **Growth was also spurred by use of abundant natural resources.** Agriculture has been the most dynamic economic sector in Paraguay, with spillover to the rest of the economy, especially services. Exploiting its comparative advantages and benefiting from a supportive macroeconomic environment, growth has been driven by export-oriented commodities and fueled by conversion of natural lands to agricultural use, transforming rural landscapes over recent decades. Since 2000, the land area under soy

cultivation has tripled in the Eastern Region and cattle herd size has been multiplied by six nationwide. At the same time, the economy is going through a structural transformation away from agriculture into services, and to a lesser extent but also importantly, industry. While agriculture still accounts for over a fifth of total employment, the retail, restaurant and hotel sector accounts for 27 percent of employment and continues to expand, reflecting rising consumption of services. Manufacturing is also playing an increasing role as the third largest creator of formal jobs since 2008, after retail and government.⁴

11. **The demographic dividend has contributed substantially to growth and poverty reduction.** The country's demographic bonus yielded 0.8 percentage points of growth on average over the 2004-2016 period. Demographics alone—the growth in the share of working-age population—account for almost 20 percent of observed poverty reduction since 2003. The urbanization process that accompanied population growth has further contributed to a rise in productivity, as urban job creation absorbed the rapidly expanding labor force.

What challenges lie ahead?

12. **To deliver a lasting and sustainable creation of wealth, especially for the bottom 40 percent, Paraguay's development model would need to evolve.** First, the incorporation of land to the productive process will be limited by the need to contain deforestation and avoid depleting Paraguay's natural capital, shifting the focus of agricultural production to increasing productivity. Second, human capital must play an increasing role in economic growth. The demographic dividend will continue for the next few decades, but its contribution to growth impact will slowly decline. Educational attainment has increased in recent years, and this trend needs to be matched by improvements in learning outcomes. Social protection policies will also need to focus more on human capital generation, assigning more resources to children (and, particularly, early childhood development). The growth of the youth population—which requires an estimated 65,000 new jobs every year until 2030—combined with the rapid and insufficiently planned urbanization process, will demand a dynamic economy and efficient public policies that promote job creation, particularly in urban areas. Lastly, institutional changes are taking place, and will need to advance rapidly to respond to expectations of the population, especially for the young people.

13. **Paraguay's GDP growth has been higher than that of other LAC countries in recent years, which allowed for a recovery of a relative loss between 1995 and 2010.** However, the country has not been able to close the gap with more developed countries, since, as a share of OECD levels, Paraguay's GDP has remained flat for over 30 years. For over 20 years, Paraguay had been losing ground relative to the region, but thanks to the good performance in the last five years, the gap with regional averages rapidly declined. At 41 percent, Paraguay's GDP per capita relative to the LAC region was in 2016 the same as it was in 1990.

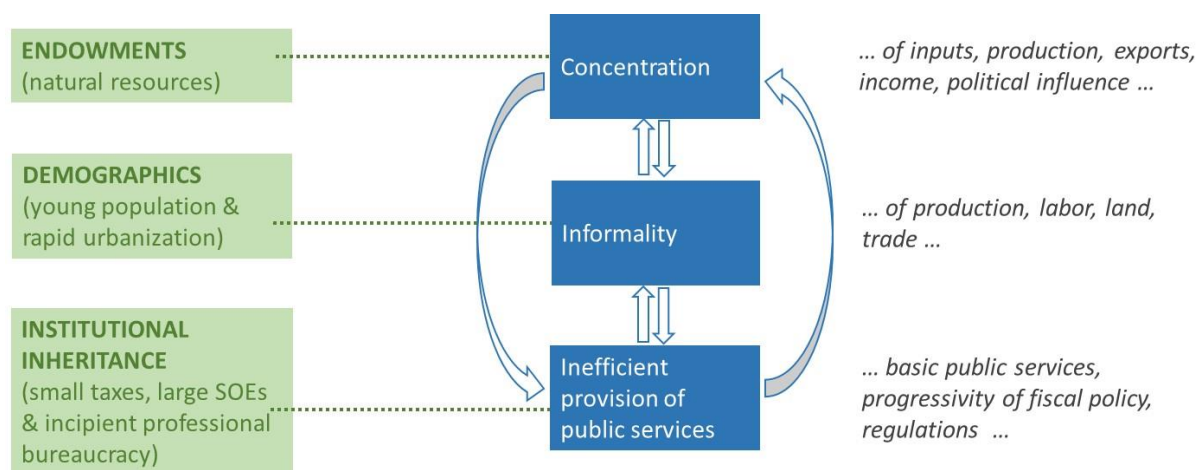
14. **Further advances will be core to reduce structural challenges on *concentration, informality, and the inefficient provision of public services* (Figure 5).** While advances have been observed in recent years, concentration is still high across multiple dimensions, including inputs, production, exports, income, and political influence. Informality has declined, but it is still important in production, labor, land, and trade. Quality of public services, including infrastructure, public administration, and fiscal policy, will need to be

⁴ Elizabeth N. Ruppert Bulmer et al. *Paraguay jobs diagnostic: the dynamic transformation of employment* (English). Jobs Series; issue no. 9. Washington, D.C.: World Bank Group, 2017.
<http://documents.worldbank.org/curated/en/500641499411206696/Paraguay-jobs-diagnostic-the-dynamic-transformation-of-employment>

raised. Currently, these three factors are behind most of the socio-economic areas in which Paraguay is underperforming when benchmarked to other countries. These include the low level or quality of investment in human and physical capital; high income inequality; duality (e.g., between informal self-employment and formal wage work, between subsistence farmers and productive big-farm agriculture, and between low-productivity micro firms and a small number of highly productive large firms); environmental degradation, and corruption.

15. **The reforms ahead are even more important as concentration, informality, and inefficient provision of public services mutually reinforce each other.** Inefficiencies in public service provision, together with a high concentration of economic resources, led to the emergence of a private sector that opts, in part, to produce these services directly. Since the fiscal system does not redistribute strongly, the concentration of resources and incomes is maintained, and unequal access to high-quality services results in inequality of opportunity and limits social mobility. Similarly, low-quality public goods and services reduce incentives for citizens to contribute, thereby providing incentives for informality. High levels of informality prevent the state from collecting more resources to spend on critical infrastructure and human capital investments. The concentration of economic assets and political influence among the rich, in conjunction with insufficient education, makes entry into the formal sector more difficult for most people. In turn, informal status in many cases restricts opportunities, such as access to finance and to export markets, favoring economic concentration. As a result, the three structural challenges tend to reinforce each other.

Figure 5. Paraguay's Defining Characteristics and Structural Challenges are Interconnected



Source: SCD team.

16. **These structural challenges cause a number of bottlenecks for development.** Recent efforts to improve human capital and modernize public service had limited impacts in a context of a history of underinvestment in human capital and infrastructure, reducing opportunities for faster growth and better inclusion. Paraguay's UNDP's Human Development Index (HDI) ranking has worsened (it ranked 84 out of 175 in 2003, versus 110 out of 188 in 2015). Health outcomes have improved, but at a slower pace than other countries in the region. Education attainment has increased in a substantial manner, but outcomes are lagging: comparative test scores place Paraguay at levels similar to those of lower-middle income countries. The stock of public capital in Paraguay stood at 44 percent of GDP in 2015, while the average for Latin American countries was over 84 percent of GDP. Income inequality continues to be high. The impressive growth of commercial agriculture has not been mirrored by family-based agriculture. Logging and clearing of land for charcoal/biomass, agriculture and cattle ranching has resulted in extensive forest

degradation and deforestation; the deforestation rate as a share of total forest cover is one of the highest in the world.⁵ Institutional weakness in the state apparatus means that perceptions of high corruption continue to permeate public life.

17. **The Paraguayan private sector is directly affected by concentration, informality, and the inefficient provision of public services.** The private sector is dualistic, with many small, often informal, unproductive firms, and a very few large and highly productive ones. The majority of firms, mostly small in size, suffer to a greater extent from insufficient skills, lack of access to finance, and a difficult competition environment, and are less able to address the impact of low-quality infrastructure and services on their businesses. Regulatory and bureaucratic barriers affect these firms disproportionately compared with larger firms, contributing to informality and low productivity. Firm productivity is harmed by the state's difficulty in providing high-quality services. Thus, despite the success of a few large, productive firms, mostly in highly mechanized agriculture, much of the private sector is constrained by these three realities.

The agenda ahead

18. **The diagnostics indicates that Paraguay can achieve significant growth and make it more inclusive and sustainable by tackling these structural challenges.** While significant social gains have been achieved, a quarter of the population still lives in poverty. Advances to reduce the *concentration* of wealth and power would need to continue, especially providing voice and participation to the most vulnerable. Overcoming *its institutional inheritance* would result in *higher-quality public services*, following the focus in recent years on expanding access. Improved services and transparency would provide a positive boost to *formality*; and improved transparency would also lead to a more sustainable use of the natural wealth. To meet the country's expectations, an acceleration of growth is needed, but, even more importantly, said growth would need to become more inclusive and sustainable. *Demographic pressures*—especially a large and growing youth population, and rapid urbanization—require a dynamic private sector and active labor markets to absorb them.

19. **Therefore, to make further progress towards the twin goals and to converge with high-income countries in living standards, the development model would need to evolve.** The policy priorities, to be identified by the SCD, will need to both reflect Paraguay's defining characteristics (*endowments, demographics and its institutional inheritance*) and take into account constraints imposed by its main structural challenges (*concentration, informality, and inefficient provision of public services*).

20. **Based on this assessment of Paraguay's development process, potential policy priority areas were identified considering their potential impact on: poverty; inequality; vulnerability; and tackling mutually-reinforcing structural challenges.** The four main policy priority areas if Paraguay is to reduce poverty and boost shared prosperity in a sustainable manner are presented in Figure 6. The diagnostics, filtered with the four criteria described above and the prioritization process, led to the following priority areas (not in order of significance): *Accountable institutions, rule of law, and business environment; natural wealth management; quality of public services; and human capital*. The priority areas are discussed in more detail in the following paragraphs, including broad examples of a tentative policy agenda in each. Table 1 summarizes the expected strength of the impact of each priority policy action on all filters.

⁵ Hansen, Matthew et al. (2013), "High-Resolution Global Maps of 21st-Century Forest Cover Change". Science 15 November 2013: Vol. 342 no. 6160 pp. 850-853. Available here: <http://www.sciencemag.org/content/342/6160/850>

Figure 6. The Four Policy Priority Areas for Paraguay



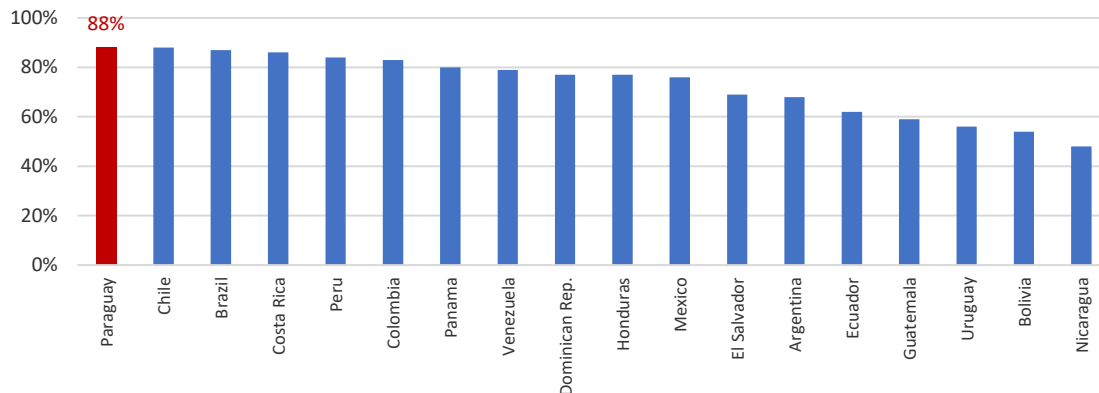
Source: SCD team.

Policy Priority 1: Accountable institutions, rule of law, and business environment

21. **Increase trust in public institutions and reinvigorate private sector growth.** The diagnostics reveal that, notwithstanding the recent significant progress, Paraguay still scores relatively low on governance-related indicators, representing significant constraints to firms across all sectors. Corruption is perceived as an important constraint: Paraguay ranks 123rd out of 176 countries on the 2016 Corruption Perception Index, with the fifth-highest level of public perceptions of corruption in the LAC region. While some governance reforms have been undertaken, trust in the judicial system remains low, which can undermine business performance and productivity, and thus job creation, as well as social cohesion. The transparency agenda has focused on the supply of information to date; strengthening demand-side accountability of citizens will now be necessary. Promoting a sound business environment so that private sector firms can create jobs calls for a further significant improvement in governance, including anticorruption measures, secure property rights, sound justice, and fair competitive conditions. Competitiveness is challenged by implementation of competition policy and the impact of SOEs in numerous sectors.

22. Addressing these challenges requires action on several fronts, including the following: *a) strengthen institutional mechanisms for citizens and civil society organizations to actively engage in the policy-making process (promote **transparency**); b) reform the **judiciary** to increase trust in the rule of law and ensure equal treatment to all citizens and all private organizations, enhancing the independence, integrity, and accountability of the courts; c) strengthen **anti-corruption** policies; and d) enhance business-environment **regulation** to increase the efficiency and contestability of markets, in particular: competition policy, trade facilitation, access to finance, insolvency, and business registration.*

Figure 7. Many Paraguayans Think the Country is Governed for the Benefit of the Powerful



Source: Latinobarometro, 2016.

Notes: Percent of respondents who say the country is governed for the benefit of the powerful.

Policy Priority 2: Natural wealth management

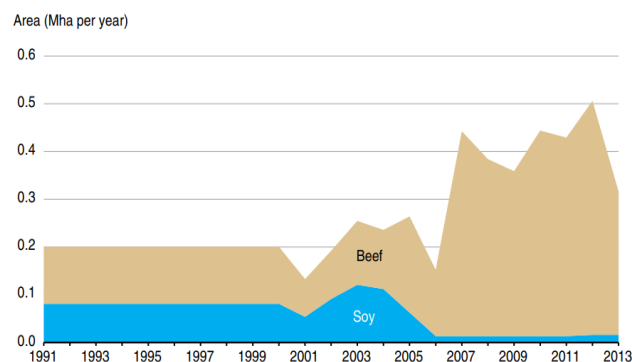
23. **Reconcile the productive use of natural capital with its preservation, while maintaining social cohesion.** Paraguay is rich in natural endowments (rainfall, fertile soil, and forest) and hydroelectric potential (the Itaipú and Yacyretá binational dams), and the country's recent high growth reflects the successful exploitation of these. However, the current model, including the overexploitation of Paraguay's natural resources, growing degradation of ecological systems, and vulnerability to climate change and weather variations can soon represent a social, environmental and economic liability (Figure 8). About 94 percent of the Atlantic Forest has already disappeared, and at current rates, the Chaco forest cover will disappear in 24 years. Rapid land conversion and associated market dynamics have not been paired with robust property rights and taxation systems, generating social instability and conflict. About 40 percent of rural properties are untitled or have incomplete or flawed titles, and the tax burden on agriculture is lower than the rest of the economy, despite its high earning potential. Paraguay has not adopted yet an integrated water resources management (IWRM) action plan to promote equitable access to clean freshwater and better protection against water-related hazards such as floods and droughts. Further, 34 percent of rural agricultural households report at least one negative shock in the past 12 months—mostly due to natural disasters—and the most-cited strategies they used to cope with these shocks were selling assets and reducing food consumption.

24. Reforms to better manage this challenge could include the following: *a) build a strong **land administration system** (cadaster, titling, registration) and strengthen institutional capacity to monitor and enforce laws on land use, including forested land; b) adjust the **tax** regime on land and agricultural activities to foster sustainable and equitable land management; c) move towards a more sustainable **energy consumption** matrix, while minimizing environmental and health risks, by reducing the dependence on biomass; d) establish a **stabilization fund** with royalties from the binational hydroelectric facilities to smooth economic and fiscal volatility; and e) mitigate the risk of and increase the country's **resilience to shocks** in the agriculture sector, including through the use of risk financing instruments.*

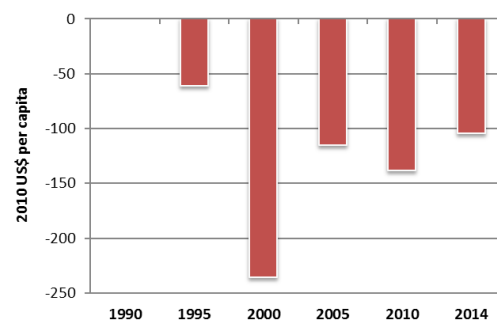
Figure 8. Deforestation Reduces Wealth in Paraguay

(a) Deforestation Drivers

(b) Change in Wealth per capita



Source: Beckham et al. (2017), "International Trade and Deforestation: Potential Policy Effects via a Global Economic Model".



Source: Authors' calculations based on wealth accounting databases.

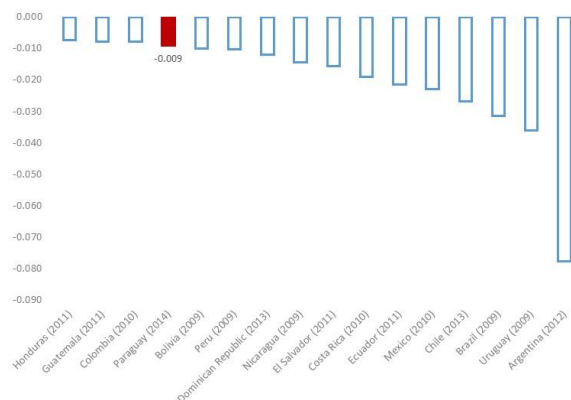
Policy Priority 3: Quality of public services

25. Improve the quality of public services—including infrastructure, public administration, and fiscal system— considering both current gaps and pressing demands from rapid urbanization. The provision of equitable, high-quality services, is critical for increasing firm productivity and human capital. Limited access to services, especially in rural and remote areas, has contributed to social exclusion and gaps in opportunities. According to the World Economic Forum Executive Opinion Survey, inadequate infrastructure and inefficient government bureaucracy are the 3rd and the 4th most problematic factors for doing business in Paraguay. While the contribution of the fiscal system to inequality reduction in Paraguay is positive, it is very small to make a significant difference. Less than 5 percent of the poorest quintile of the population has any health insurance, and 23 percent are at risk of catastrophic out-of-pocket expenditure. The fragmentation of the health system leads to inefficient and duplicated networks of service provision. Regulatory and institutional challenges limit the effectiveness and efficiency of SOEs.

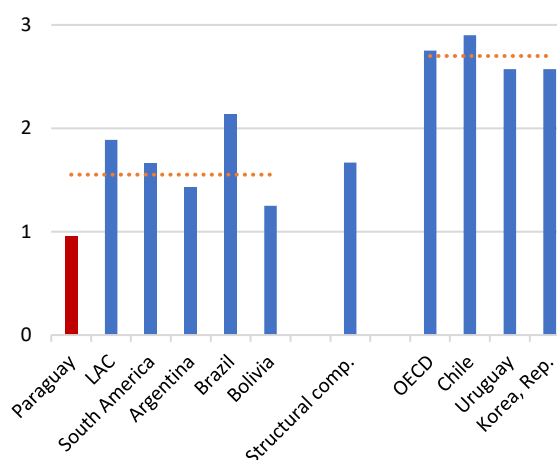
26. To improve the quality of public services, Paraguay can consider the following: a) *fill critical **infrastructure** gaps in transport, electricity, and water and sanitation*; b) *improve the efficiency and distributional impact of **fiscal policy**, both on the revenue side (e.g. increase progressivity of the PIT) and the expenditure side (e.g. improve efficiency of public health spending, expand well-targeted social programs)*; c) *develop an integrated **social information system** for the identification of the poor and vulnerable through a unified targeting system*; d) *strengthen **public administration**, by improving coordination and planning, lowering fragmentation and duplication of public functions, and further professionalizing the civil service*; and e) *improve **SOE performance** by implementing the Corporate Governance Code, strengthening performance contracts, and separating regulatory and service-provision roles.*

Figure 9. Redistribution by the Fiscal System is Limited and the Quality of Public Policies is Low

(a) *Redistributive Effect of the Fiscal System*



(b) *The Quality of Public Policies in Paraguay and Peers*



Source: Gimenez et al. 2017.

Notes: Difference in Gini coefficient when moving from market income (before any fiscal intervention) to disposable income (after fiscal interventions).

Source: Franco Chuaire & Scartascini, C. (2014).

Note: The graph shows an aggregate Index comprising the following sub-dimensions: Policy Stability, Efficiency, Adaptability, Coherence, Implementation and Enforcement, and Public Regardedness. Paraguay is the worst performer in 5 out of 6 dimensions captured by the Index.

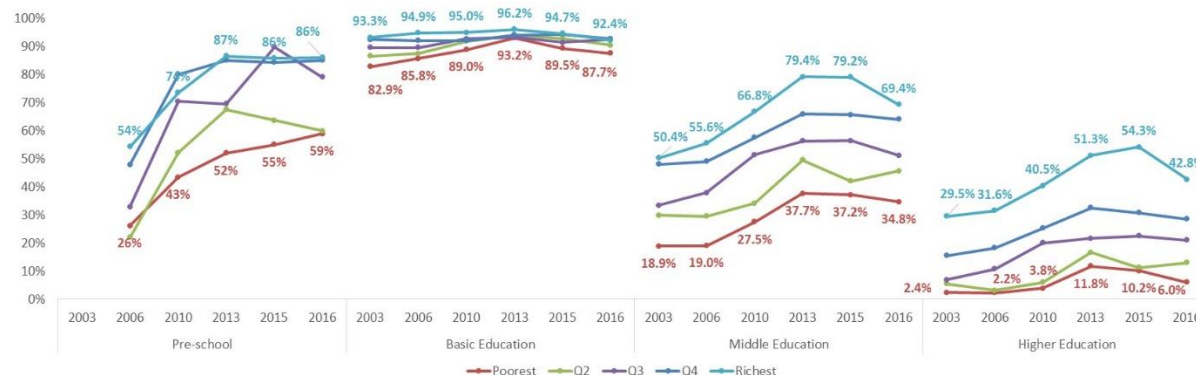
Policy Priority 4: Human capital

27. **Reform the education and training systems to better address the demands and needs of the private sector and better prepare young people for productive labor-market participation.** While human capital also includes health and nutrition, the special focus on education and skills is motivated by the critical challenges confronting the public education system. The education and training systems are not keeping up with demand from labor markets nor producing high-quality and equitable educational outcomes. According to the 2017-2018 WEF Global Competitiveness Index, an inadequately-educated labor force is the second most cited challenge to doing business in Paraguay, and employers report significant gaps in the skills required for higher-productivity jobs.⁶ While the stock of human capital increased due to higher enrollment rates, learning outcomes have not yet improved. The enrollment gaps in pre-school, middle education, and higher education between the top- and bottom-income quintiles are still substantial.

28. Reforms should focus on a) the strengthening of **financing-allocation mechanisms** in public education so that resources follow students' demands and needs; b) aligning teacher **incentives** to improve student outcomes; and c) increasing the alignment of academic **curricula** and training services with market demands.

⁶ Global Competitiveness Report 2017-2018. World Economic Forum, 2017. Available at: http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017_percentE2_percent80_percent932018.pdf

Figure 10. Gaps in School Attendance are Large



Source: World Bank 2018c.

Table 1. Expected Strength of the Impact of Priority Policy Actions on the Filters.

PRIORITIES	FILTERS			
	Poverty	Inequality	Vulnerability (environmental, social, fiscal)	Reinforcing structural challenges (concentration, informality, inefficient services)
Accountable institutions, rule of law, and business environment				
Strengthen institutional mechanisms for citizens and civil society organizations to actively engage in the policy-making process (promote transparency)	++	++	++	+++
Reform the judiciary to re-establish trust in the rule of law to ensure equal treatment to all citizens and all private organizations, enhancing the independence, integrity, and accountability of the courts	+	++	++	+++
Strengthen anti-corruption policies	+	+	+	+++
Enhance business-environment regulation to increase the efficiency and contestability of markets, in particular, competition policy, trade facilitation, access to finance, insolvency, and business registration	++	++	+	+++
Natural wealth management				
Build a strong land administration system (cadaster, titling, registration) and strengthen institutional capacity to monitor and enforce laws on land use, including forest land	++	++	+++	+++
Adjust tax regime on land and agriculture activities to foster sustainable and equitable land management	++	+++	+++	++
Move towards a more sustainable energy consumption matrix, while minimizing environmental and health risks, by reducing the dependence on biomass	+	+	++	+
Establish a stabilization fund with royalties from the bi-national hydroelectric facilities to smooth economic and fiscal volatility	+	+	+++	+

Mitigate the risk and increase the country's resilience to shocks to the agriculture sector, including through risk financing instruments	+++	++	+++	+
Quality of public services				
Fill critical infrastructure gaps in transport, electricity, and water and sanitation	+++	+++	++	++
Improve the efficiency and distributional impact of fiscal policy , both on the revenue side (e.g. increase progressivity of the PIT) and the expenditure side (e.g. improve efficiency of public health spending, expand well-targeted social programs)	+++	+++	++	++
Develop an integrated social information system for the identification of the poor and vulnerable through a unified targeting system	+++	+	+++	+
Strengthen public administration , by improving coordination and planning, lowering fragmentation and duplication of public functions, and the professionalization of the civil service	++	+	++	+++
Improve SOE performance by implementing the Corporate Governance Code, strengthening performance contracts, and separating regulatory and service-provision roles	+	+	+	++
Human capital				
Strengthen financing allocation mechanisms in public education so that resources follow students' demands and needs	+++	++	+	+
Align teacher incentives to improve student outcomes	+++	+++	+	+
Increase the alignment of academic curricula and training services with market demands	+++	+++	++	++

Notes: ("+") - moderate impact, ("++") - significant impact, ("+++") - high impact

Source: SCD team.

29. **Building on recent progress, Paraguay has a unique opportunity to adjust its development model—making it more inclusive and sustainable—so that it meets the expectations of the population.** Larger progress can be made if the country advances in all four priority areas identified, as complementarities among them are strong, and the cumulative impact could be overarching. While all priorities are expected to have impacts on all dimensions, some are particularly strong for a given dimension. For example, building human capital through improvement of education to generate higher labor income will likely have a large impact on poverty and inequality. Strengthening the rule of law, making institutions more accountable, and improving the business environment will significantly contribute toward breaking the self-reinforcing cycle of concentration, informality, and inefficient provision of public services, while better natural wealth management will reduce current vulnerabilities of the development model. Finally, improving the quality of public services (infrastructure, fiscal policy, and public administration) is expected to have a strong impact across all dimensions.

1. Setting the stage

30. **Paraguay has been characterized by solid economic growth, strong poverty reduction and macroeconomic stability in recent years. An adjustment of the development model, however, should increase sustainability and inclusiveness in coming years.** Economic growth has been above the regional average. Macroeconomic stability has been achieved; inflation is under control and public debt is low. Poverty reduction has been substantial, though it stalled for some years in the early 2010s. Apart from solid macroeconomic policy, growth has been based on extensive leveraging of the country's natural wealth, particularly land and hydroelectric potential. Demographic change in Paraguay has also led to a sizable expansion of the working-age population, adding to economic output. But there are limits to the current sources of growth. Natural resources are being depleted. The contribution of the demographic dividend to growth and poverty reduction has been important and will continue in coming decades, albeit at a declining pace. Moreover, several mutually reinforcing structural challenges can hinder the path toward more sustainable development: (a) inputs, production, exports, income, and political influence are highly concentrated; (b) informal economic relations are prevalent, as reflected in various areas including production, labor, land, and trade; and (c) albeit recent important progress, a gap still exists for the State to deliver high-quality public services to citizens. To meet the population's expectations, high growth is needed, but, even more importantly, this growth would need to become more inclusive and sustainable. The pathways toward this goal will need to lead to less concentration, more formality and a more effective delivery of public services. To that end, the SCD has identified the following priority areas: accountable institutions, rule of law, and business environment; natural wealth management; quality of public services; and human capital.

1.1 Snapshot of recent developments on twin goals

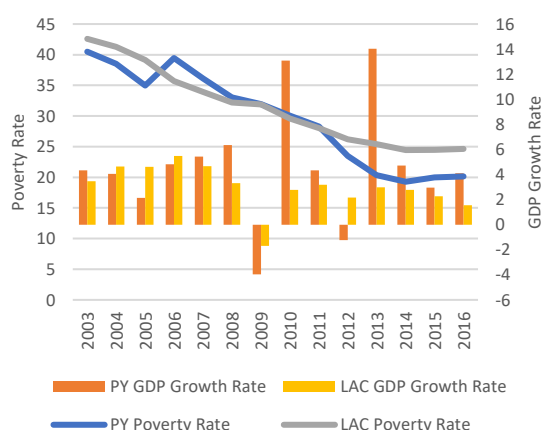
31. **Paraguay has realized substantial social gains, as reflected in lower poverty rates, shared prosperity and a larger middle class.** Since 2003, poverty rates measured at 5.5 US\$ 2011PPP have fallen by 50 percent (Figure 11)—a reduction larger than the regional average. Between 2003 and 2013 the mean income of the bottom 40 percent grew at an annualized rate of 5.7 percent, while the income of the top 60 percent did so at an annualized rate of 3.2 percent. The middle class has almost doubled since 2003, becoming—at 38 percent of the total population—the second largest group, just below the vulnerable population. While social gains stagnated towards the end of the period—poverty reduction slowed down and shared prosperity fell slightly between 2013-2016—they resumed in 2017 with a marked drop in poverty rates and high shared prosperity.⁷ However, the responsiveness of poverty to economic growth was lower than the regional average, and some population groups (indigenous population, monolingual Guarani-speakers, young people, and subsistence farmers) remain vulnerable and largely excluded. Income inequality has declined since 2003, but it is still high.

32. **Paraguay's growth in recent years has owed much to comparative advantages of fertile land and hydroelectric energy, supported by sound macroeconomic management.** Paraguay grew at 4.7 percent per year on average in the 2004-2016 period, a rate that was faster than the regional average, but highly volatile (Figure 11). The country's growth was largely driven by agriculture and, to a lesser extent, hydroelectric generation, exploiting the country's comparative advantage in abundant natural resources, and by an

⁷ Statistics based on the official poverty rate.

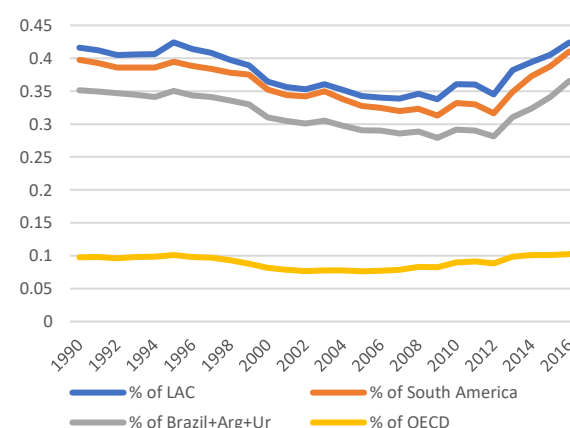
expanding services sector. Due in large part to the strong performance of the agricultural exporting sector, Paraguay stands out in the region for the positive contribution of net trade to growth: exports alone contributed 2.9 percentage points of GDP growth across 2004-2016. However, neither agriculture nor commodity exports are labor-intensive; in fact, most employment in Paraguay is informal self-employment with small capital inputs. The contribution of the capital stock to growth has been low, exacerbated by low public investment and, until now, a modest ability to attract foreign investment to help overcome a low domestic saving rate. Economic growth was supported by prudent macroeconomic policies. Paraguay averaged a fiscal surplus of 0.4 percent of GDP in the period from 2004 to 2016, and public debt is below 25 percent of GDP. Inflation has remained under control, and the flexible exchange rate arrangement helped the country to absorb external shocks.

Figure 11. Poverty Reduction and GDP Growth, 2003-2016



Source: Poverty and Equity Database, World Bank and WDI.
Notes: Poverty rates at US\$5.5 2011 PPP.

Figure 12. Paraguay per capita GDP Convergence, 1990-2016 (Paraguay's GDP per capita as a share of benchmarks, percent)



Source: World Development Indicators and World Bank Staff calculations.

33. **Economic growth came at an environment cost.** Logging and clearing of land for charcoal/biomass, crops and cattle ranching have resulted in extensive forest degradation and deforestation. The expansion of soybean cultivation and pasture expansion pose multiple challenges to protect the forest biome. Paraguay ranks among the top 11 countries on total deforestation (2000-2013) and it is one of the highest in relative terms with respect to total forest cover. Agriculture, an important source of growth in Paraguay, is highly sensitive to climate variability. Paraguay is amongst the top ten countries that are most exposed to “Agricultural Productivity Loss Risks” and the first (together with Bolivia) in South America, according to a ranking compiled by the Center of Global Development.⁸ Long-term estimates suggest that variability in precipitation is likely to vary from +9% to -10% in Paraguay, resulting in sustained periods of severe drought.

34. **Paraguay's GDP growth has been higher than that of other LAC countries in recent years, which allowed for a recovery of a relative loss between 1995 and 2010.** However, it has not been able to close the gap with more developed countries, since, as a share of OECD levels, Paraguay's GDP has remained flat for over 30 years. For almost 20 years Paraguay had been losing ground relative to the region, but thanks to

⁸ Center for Global Development, *Mapping the Impacts of Climate Change*, 2013. Available at: <https://www.cgdev.org/page/mapping-impacts-climate-change>.

the good performance in the last five years, the gap with regional averages rapidly declined. At 41 percent, Paraguay's GDP per capita relative to the LAC region was in 2016 the same as it was in 1990 (Figure 12).

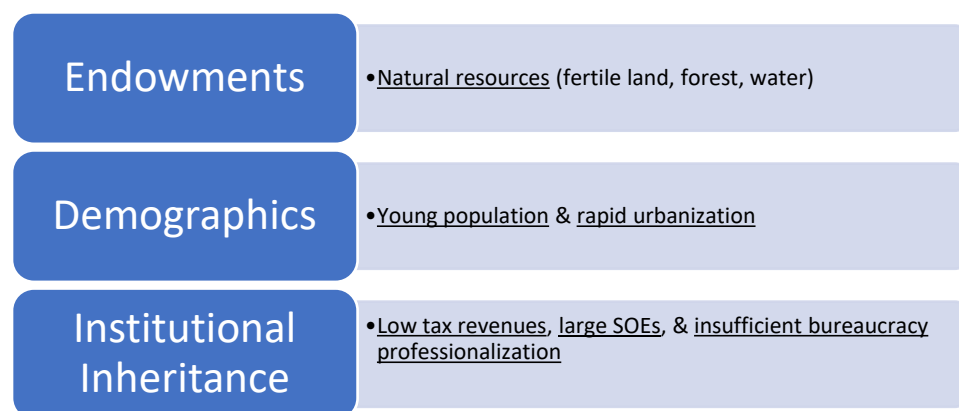
35. The following section will show how Paraguay's development dynamics—and these outcomes in particular—have been shaped by three defining characteristics, summarized under *endowments*, *demographics* and *institutional inheritance*. It will also show how Paraguay's main structural challenges—captured under *concentration*, *informality*, and *inefficient provision of public services*—hinder further progress towards the twin goals and convergence with high-income countries.

1.2 Defining characteristics of Paraguay's development dynamics

1.2.1. Structural and institutional characteristics

36. Paraguay's development dynamics have been shaped by three key defining characteristics: *Endowments* – characterized by abundance of natural resources; *Demographics* – characterized by a young population and rapid urbanization; and *Institutional Inheritance* – characterized by low tax revenues, large state-owned enterprises (SOEs) and incipient professionalization of bureaucracy (Figure 13).

Figure 13. Structural and Institutional Characteristics that Shape Paraguay's Growth Model



Source: SCD team.

Endowments

37. Paraguay is rich in natural endowments, which combined with high-quality inputs and comparatively low costs have given the country a comparative advantage in agriculture and livestock. Rainfall, fertile soil, and forest are abundant in Paraguay, producing important comparative advantages for the agriculture and livestock sectors. Eastern Paraguay is mostly flat with a maximum elevation of 842 meters above sea level. Western Paraguay, by contrast, is almost entirely a plain that slopes east towards the Paraguay River, with a maximum elevation of 380 meters above sea level. Around 65 percent of the soil of the Eastern Region is fertile and well-drained, and thus excellent for crops and pasture. Western Paraguay's soil is less fertile and sandier, thus better for cattle farming.⁹ Natural endowments in per-capita terms stand out relative to neighbors when the high quality and low cost of related inputs are considered (as reflected, for example, by low-cost beef production in the Chaco).

⁹ *Estrategia Nacional y Plan de Acción de Biodiversidad* (ENPAB), 2004-2009. Presidencia de la República, Secretaría del Ambiente, Asunción, Paraguay, 2003.

38. **The country is also exceptionally rich in water and hydroelectric potential.** The Itaipú and Yacyretá binational dams generate most of the country's electricity. The 12,600MW Itaipú dam on the Paraná River, which forms much of the natural border between Paraguay and Brazil, was the world's largest hydropower plant until China's Three Gorges Dam came online in 2007, although Itaipú still generates more power, largely because of the sheer power and consistent flow of the Paraná, the second longest river in South America.¹⁰ Paraguay's share, half of Itaipú's annual generation, is on average about 44,000 million units annually, with over 90 percent of this then sold to Brazil.¹¹

39. **At the same time, Paraguay is a landlocked country.** While the country managed to reduce disadvantages related to landlocked-ness, as evidenced by the recent good export growth (Box 1), this status does represent a vulnerability which could become more binding in the future. If problems in accessing transoceanic ports (and therefore export markets) occur, economic costs of trade would increase substantially. In addition, landlocked-ness makes the country more dependent on good relations with neighbors.

Box 1: Is Paraguay's performance defined by its landlocked-ness?

Paraguay is a landlocked country, but the country has managed to reduce and overcome some of the disadvantages related to the landlocked status. Its river system provides a relatively easy access to international sea waters, its logistic performance does not seem to be defined by weaknesses at the international transportation chain, and its export performance is superior to its peers.

The river system. The 1,265 kilometers of the Paraná-Paraguay river system across Paraguay from the north to the south constitute a key transport artery for international trade with sustained public and private investments over the last decade. It is important not only for the competitiveness of Paraguayan exports but also for the transit traffic passing through Paraguay. The river transport system consists of the Paraguay and Paraná rivers which together carry 7.5 million tons of freight per year, including trade flows with Brazil or Argentina, Paraguayan exports to international markets and transit merchandise coming from Bolivia, the North of Brazil and Argentina.

Logistics. Paraguay overall 2016 Logistic Performance Index (LPI) score of 2.53 is above the average for landlocked countries of 2.43, but most of the LPI components are not related to the geography. However, one of the six components, international shipments, could shed light on the impact of the landlocked-ness. Figure 14 panel (a) that shows Paraguay's ranking across various components of the LPI implies that the country is doing relatively better on international shipments (rank 96), than on the overall LPI (rank 101) and other (domestic and institutional, not related to geography) issues appear to be more binding (for instance, tracking and tracing with the rank of 126). Meanwhile, as Figure 14 panel (b) indicate, Paraguay's performance on international shipments in a cross-country perspective, put it in between the two groups: it scores higher than landlocked MICs, but lower than non-landlocked MICs.

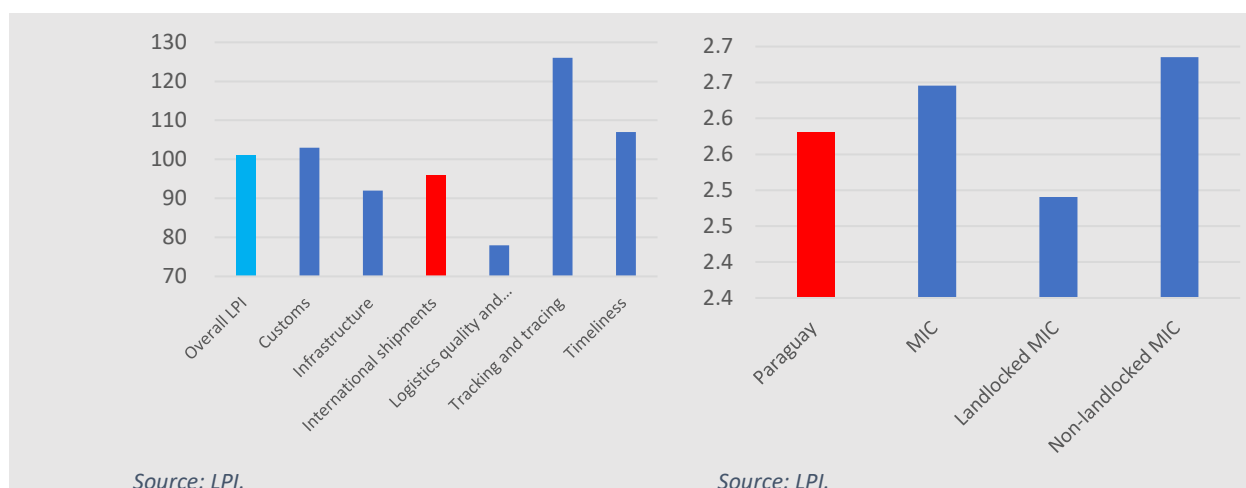
Figure 14. Paraguay's Performance on LPI, 2016

(a) across various components (rank)

(b) on international shipments (score)

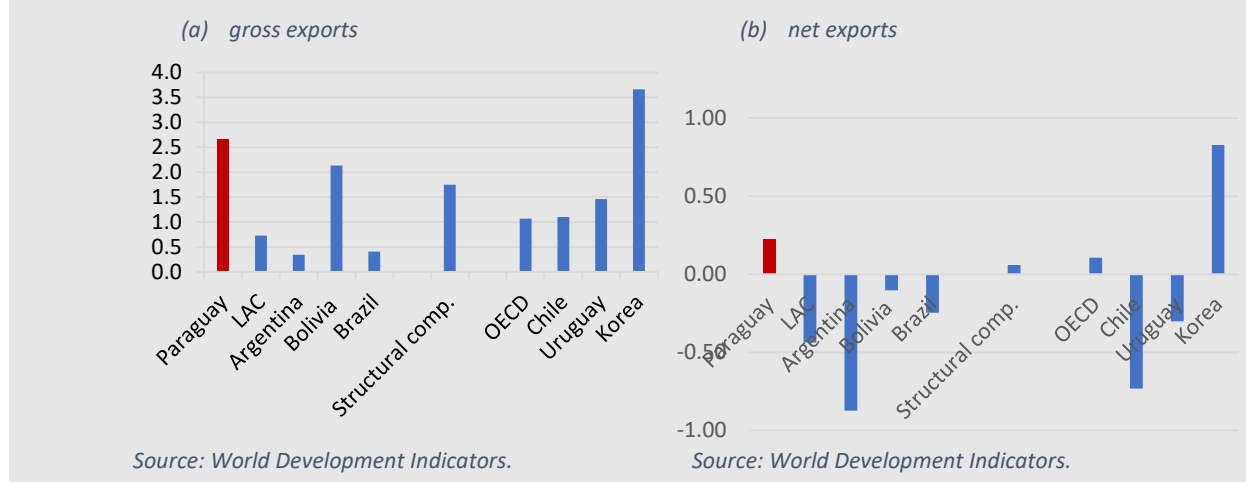
¹⁰ "Brazil's Itaipú dam treaty with Paraguay up for renewal". *Financial Times*. September 20, 2017. Available at: <https://www.ft.com/content/bf02af96-7eb8-11e7-ab01-a13271d1ee9c>

¹¹ Ibid., 2017.



Export performance. Paraguay's growth model is export oriented, and high recent GDP growth has been supported by fast export growth. Figure 15 shows that Paraguay exports, both gross and net, have contributed to growth more than all regional, structural, and aspirational peers, with an exception of Korea.

Figure 15. Contribution of Exports and Net Exports to GDP, percentage points



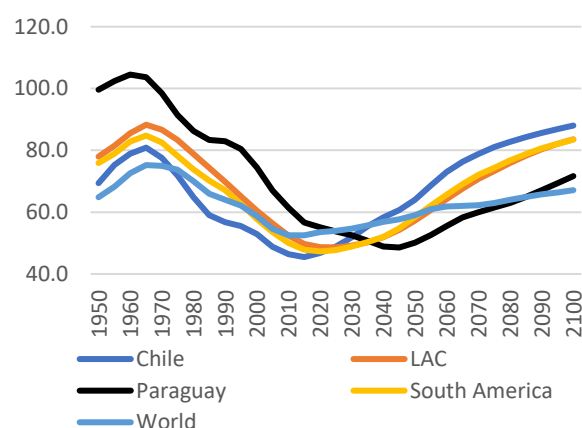
Demographics

40. With almost 60 percent of the Paraguayan population under 30 years old, Paraguay is in an early demographic transition with a dependency ratio that will reach its minimum about 25 years later than the LAC regional average (Figure 16, panel (a)). Relative to countries with similar GDP-per-capita levels, Paraguay has one of the highest rates of youth population (Figure 16, panel (b)). The dependency ratio in Paraguay will continue to fall for almost 30 years, albeit at a slowing rate. Conversely, the share of the working-age population will continue to increase until 2045, when it reaches a maximum of 67 percent of the population. This presents an opportunity for the demographic dividend to further contribute to economic growth and to poverty reduction, though it requires the productive participation of young people in the labor market.

41. **Paraguay is also the least urbanized country in South America, but it is going through a rapid urbanization process.** With only 60 percent of the population concentrated in cities, Paraguay has the lowest share of urban population in South America, and among the lowest in Latin America (Figure 16, panel (c)). At the same time, a disproportionate share of the population growth is happening in urban areas, particularly greater Asunción (Figure 16, panel (d)). Between 2004 and 2014, the urban population grew at an average rate of 1.8 percent, faster than the LAC average and faster than most South American countries—though not as fast as some central American countries. At the same time, most job creation was in urban areas, primarily Greater Asunción, where wages are higher. Through ambitious urban planning that thinks beyond Asunción to secondary and tertiary cities, Paraguay has an opportunity to mitigate the currently unbalanced urban migration and avoid the chaotic urbanization experience of Latin America.

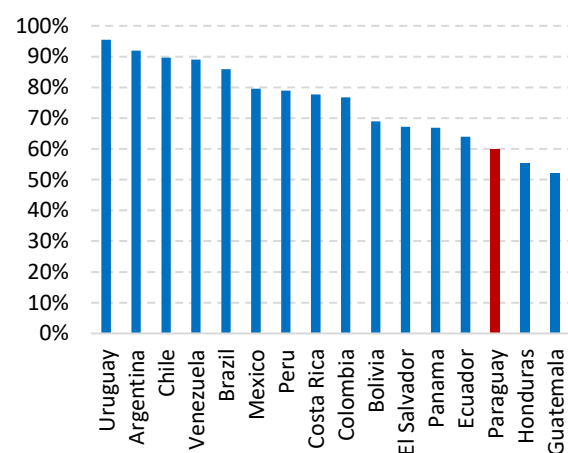
Figure 16. Demographics

(b) Dependency Ratio (Pop. 0-14 and 65+ / Pop. 15-65), 1950-2100



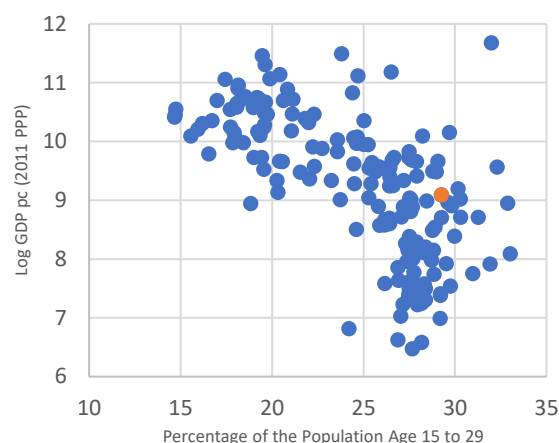
Source: UN, Population division.

(c) Percent of Urban Population, latest available year



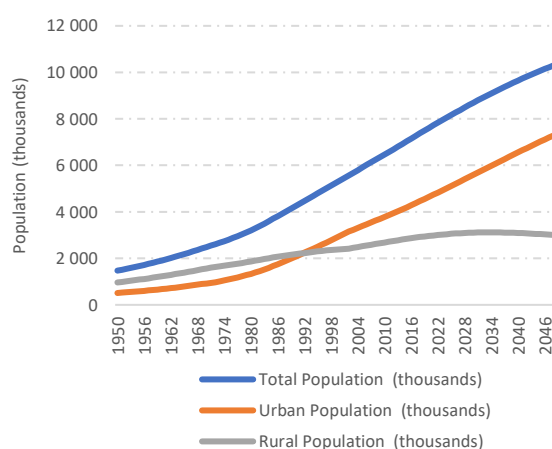
Source: World Development Indicators.

(b) GDP per capita and the Youth Population, 2016



Source: UN, Population division.

(d) Total, Urban, and Rural Population in Paraguay, 1950-2050



Source: DGEEC.

Institutional inheritance

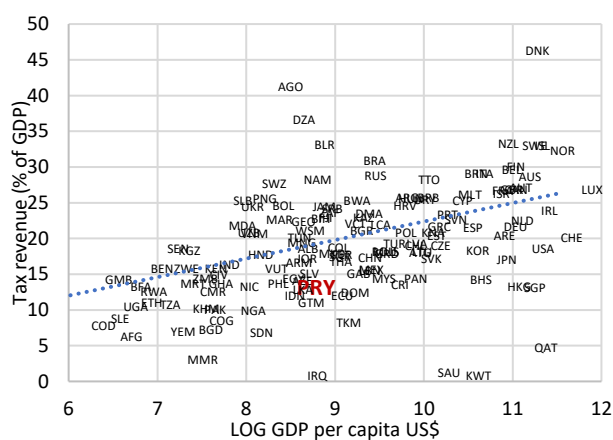
42. Paraguay's institutional inheritance and the resulting system of governance have shaped but also constrained the country's policies and social and economic outcomes. The interplay between structural factors (namely, a primarily agrarian economy with natural resources endowments) and sociopolitical institutions (comprising a relatively small state apparatus and a limited bureaucracy) have created several path dependencies that continue to shape the policy arena and the quality of the policy-making process. An important task ahead will be to shape a social contract based on a long-term commitment to inclusive growth and delivering goods and services that reflect the interests of a broad segment of Paraguayan society.

43. The institutional inheritance includes three features which are of importance today. A relatively low tax revenue (Figure 17); a significant state-owned enterprises (SOEs) sector; and limited efficiency of the

state bureaucracy (Figure 18). The low tax base has translated into a small state apparatus: the share of revenues and expenditures as percentage of GDP was slightly above 20 percent over 2004-2016, well below the OECD average and that of regional peers. This in turn has diminished the role of the state in directly providing social services in education, health and social protection. The limited size of the budget has both led to and been exacerbated by reliance on several large SOEs that are monopoly providers of basic services such as electricity and water¹², as well as on binational electricity generators, which are major source of fiscal revenue and exports. This affects the quality of essential services received by firms, as well as the scope of private sector activity and market contestability.

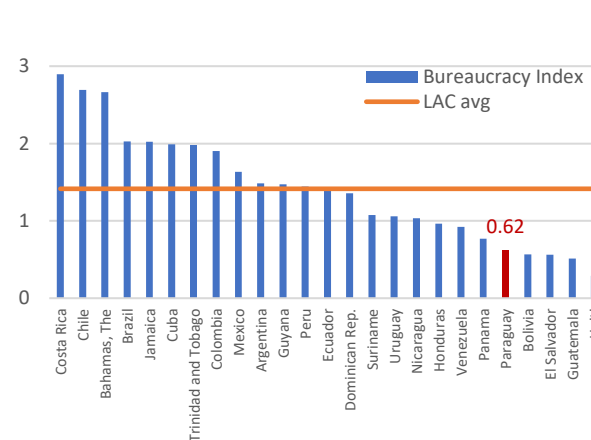
44. **Paraguay, a comparatively young democracy, has demonstrated encouraging signs of institutional change.** The process of building functioning democratic checks and balances has advanced in several areas. Important steps have been recently made in institutional development, notably in moving to a more accountable government, including the launching of an ambitious package of reforms in fiscal transparency, open contracting, access to information, open data, and anti-corruption. Substantial progress has also been achieved in the institutional transformation of government agencies responsible for macroeconomic management. The fiscal and monetary policy frameworks, for example, have been developed to protect policy makers from political interference that may lead to ineffective policies.

Figure 17. Tax Revenue (percent of GDP, 2004-2014)



Source: World Development Indicators, World Bank.

Figure 18. Bureaucracy Index, 2013



Source: Chuaire & Scartascini, 2013.

1.2.2. Progress under the current development model

45. **Paraguay has recently achieved positive economic and social outcomes (Figure 19).** Paraguay grew at 4.7 percent per year on average in the period 2004-2016, faster than most of its regional comparators. Economic growth has been accompanied by significant poverty reduction and strong income growth for the bottom 40 percent. From 1990 to 2015, Paraguay increased its piped water coverage levels by 53 percentage points (the fastest rate of expansion in the world during this period), and basic sanitation coverage increased from 71.9 percent in 2000 to 91.3 percent in 2015. Net enrollment rates in middle education increased from 36.8 percent in 2003 to 52.2 percent in 2016, and the enrollment gap in primary

¹² The non-financial SOE sector in Paraguay consists of nine companies, with turnover of 11 percent of GDP. The largest of them are ANDE and ASSAP, public providers of electricity and water. The SOEs finances are not included, according to international standards (in particular, IMF's GFS), in the definitions of the central government and general government finances.

education between children in the bottom and top quintiles was cut in half. Job creation more than kept pace with the increased labor supply (which grew at 2.5 percent annually over the last decade), and labor formality has markedly improved (from 22 percent in 2008 to 28 percent in 2016, albeit partly driven by a rapid expansion of public employment).

46. **Important institutional developments laid the foundation for recent progress.** Facing a small tax revenue and limited professional bureaucracy, Paraguay embarked on a significant institutional transformation and professionalization of entities responsible for macroeconomic management in the Central Bank (Banco Central del Paraguay, BCP) and Ministry of Finance (Ministerio de Hacienda). Economic growth and greater inclusion have been supported by prudent macroeconomic policies, with low fiscal deficits and debt, lower and less volatile inflation, and flexible exchange rate arrangement to absorb external shocks. From a selective default status in 2002, the country had almost reached investment grade by early-2018. Two well-targeted social programs—Pensiones Alimentarias para Adultos Mayores and Tekoporã—were introduced, and have been significantly expanded in recent years. These programs have more than 71 percent and 88 percent of their benefits accruing to the bottom 40 percent of the population, respectively, and represent the largest contribution to poverty and inequality reduction among all fiscal interventions.¹³ To address the root causes of corruption, the government launched an ambitious package of reforms in fiscal transparency, open contracting, access to information and open data.

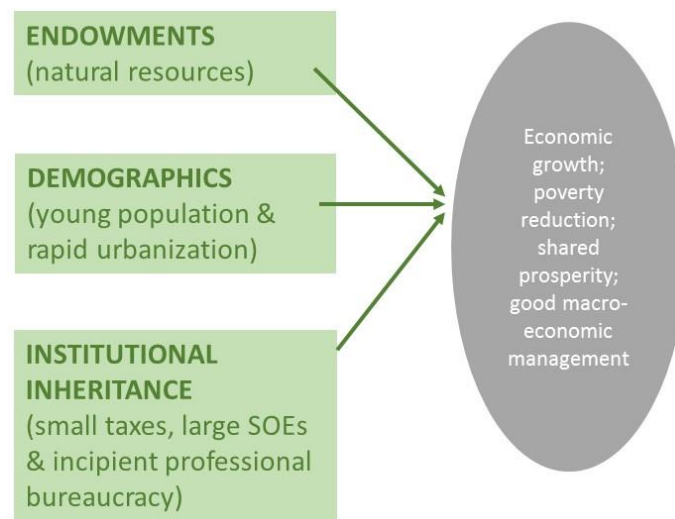
47. **Growth was spurred by the exploitation of abundant natural resources.** Agriculture has been the most dynamic economic sector in Paraguay, with spillover to the rest of the economy, especially services. Exploiting its comparative advantages and benefiting from a supportive macroeconomic environment, growth has been driven by export-oriented commodities and fueled by conversion of natural lands to agricultural use, transforming rural landscapes over the past decades. Since 2000, the land area under soy cultivation has tripled in the Eastern Region and cattle herd size has been multiplied by six. Paraguay began to create a growing river structure that serves both the agricultural industry and all other sectors of its economy, that exports and imports mainly through the Argentine and Brazilian ports. At the same time, the economy is going through a structural transformation away from agriculture into services, and to a lesser extent, industry. While agriculture still accounts for over a fifth of total employment, the retail, restaurant and hotel sector accounts for 27 percent of employment and continues to expand, reflecting rising consumption of services. Manufacturing is playing an increasing role, however, and was the third largest creator of formal jobs since 2008, following retail and government.¹⁴

48. **The demographic dividend has contributed substantially to growth and poverty reduction.** The country's demographic bonus yielded 0.8 percentage points of growth on average over the period 2004-2016. Demographics alone—the growth in the share of working-age population—account for almost 20 percent of the observed poverty reduction since 2003. The urbanization process that accompanied population growth has further contributed to a rise in productivity, as urban job creation absorbed the rapidly expanding labor force.

¹³ Lea Gimenez et al. *Paraguay: Análisis del sistema fiscal y su impacto en la pobreza y la equidad*. CEQ WP74, 2017.

¹⁴ Elizabeth N. Ruppert Bulmer et al. *Paraguay jobs diagnostic: the dynamic transformation of employment* (English). Jobs Series; issue no. 9. Washington, D.C.: World Bank Group, 2017.
<http://documents.worldbank.org/curated/en/500641499411206696/Paraguay-jobs-diagnostic-the-dynamic-transformation-of-employment>

Figure 19. Defining Characteristics of Paraguay's Development Dynamics: Positive Outcomes



Source: SCD team.

1.2.3. Challenges of the current development model

49. This model, however, will need adjustment if it is to deliver a lasting and sustainable creation of wealth, especially for the bottom 40 percent of the population. First, the depletion of natural resources at its current rate—largely driven by land conversion—is unsustainable, and growth is highly sensitive to climate variability. Second, the demographic dividend contribution to growth and poverty reduction will gradually decline¹⁵ This is further reinforced by the limited human capital, exacerbated by the fact that social protection expenditure currently caters significantly more to the elderly than to the young—for example, there is little provision for early childhood development. The growth of the youth population—which requires an estimated 65,000 new jobs every year until 2030—combined with the rapid and unplanned urbanization process, will demand a dynamic economy and efficient public policies which need to be developed. Growth in the agriculture sector has limited spillover for direct job creation and recent employment growth has happened in the service sector. Lastly, while institutional change has taken place, it still needs to pick up the pace so as to meet the expectations of the society.

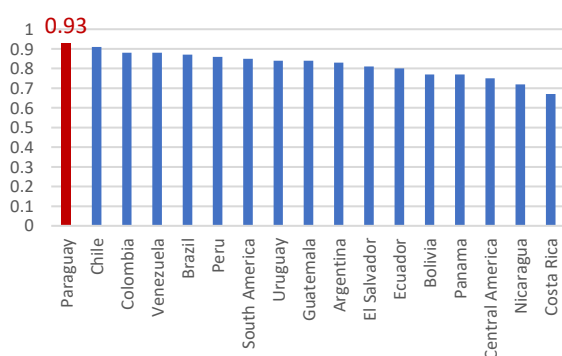
50. Further advances will be core to reduce structural challenges: *concentration, informality, and the inefficient provision of public services*. Currently, these three factors are mostly behind most of the socio-economic areas in which Paraguay appears underperforming when benchmarked to other countries. These include areas where advances have been made, but there is still significant space for improvements, such as the low level and quality of investment in human and physical capital; high growth volatility; high income inequality; increasing duality (e.g., between informal self-employment and formal wage work, between subsistence farmers and productive big-farm agriculture, and between low-productivity micro firms and a small number of highly productive large firms); environmental degradation, and corruption.

¹⁵ For example, the contribution of an increasing share of working-age adults accounted for 20 percent of poverty reduction to poverty reduction observed during the period 2003-2011 and fell to 10 percent during 2011-13. Furthermore, this shows stark contrast with the evidence presented in Inchauste et al. (2014), where the authors find that during the decade 1999 to 2010 demographics alone accounted for 60 percent of the poverty reduction.

Concentration

51. **Inputs, production, exports, income, and political influence are highly concentrated.** More than 70 percent of productive land is occupied by 1 percent of farms—large, latifundia-style holdings—placing Paraguay as the country with the highest level of land inequality in the world (Figure 20). Agricultural production as a proportion of GDP—at around 20 percent—is among the highest in the region, while its share of merchandise exports is close to 60 percent. Loans to agriculture and agribusiness make up 45 percent of the outstanding business loans of the banking system. Non-agricultural production also involves a high degree of market concentration that disadvantages smaller players. In many subsectors, for example, the top four firms account for more than half of all sales, and in some cases over 90 percent.¹⁶ The top 10 percent of households earn over 35 percent of total income. Paraguay’s scores a 1 in the University of Gothenburg’s Variety of Democracy Project, implying that wealthy people enjoy a dominant hold on political influence, people of average income have little say, and poorer people have essentially no influence.¹⁷ This assessment is confirmed by the Latinobarometro, with 88 percent of respondents saying the country is governed for the benefit of the powerful (Figure 21).

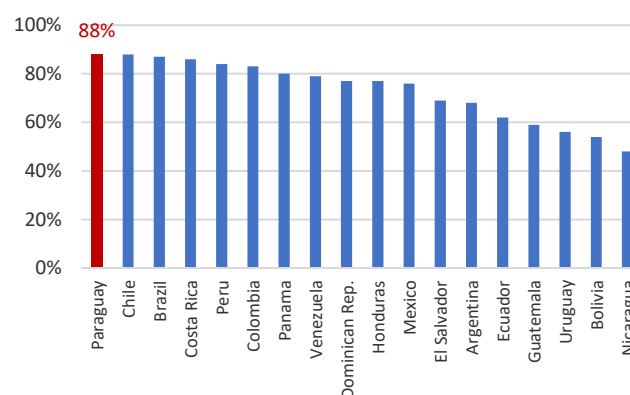
Figure 20. Gini Index of Land Distribution



Source: Oxfam, 2016.

Notes: based on most recent agriculture census.

Figure 21. Percent of Respondents Who Say the Country is Governed for the Benefit of the Powerful



Source: Latinobarometro 2016.

Informality

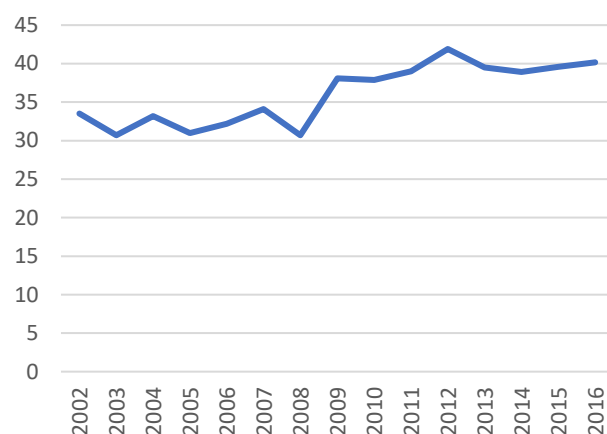
52. **Paraguay is in a process of formalization, but informal economic relations are still prominent, as reflected in various dimensions including production, labor, land, and trade.** The formal labor force has rapidly grown in recent years, with two out of three new jobs created between 2008 and 2016 being formal. However, informality is still high and goes beyond labor relations: according to the local think tank *ProDesarrollo*, the informal economy accounted for 40.2 percent of GDP in 2016 (Figure 22). One previous

¹⁶ “Firms’ Productivity and Employment in Paraguay 2010–2014”, by E. Ruppert Bulmer and A. Scutaru, Jobs Group, World Bank, June 2018.

¹⁷ University of Gothenburg, Variety of Democracy Project, 2018. Available at: <https://www.v-dem.net/en/>

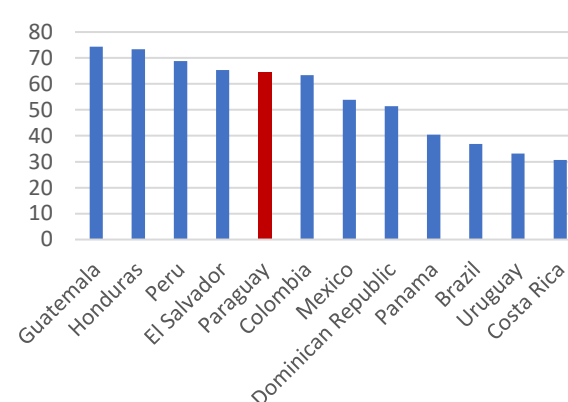
study estimated it at 38.8 percent.¹⁸ This is broadly confirmed by firm census data, in which 38 percent of firms have informal status, and 60 percent of formally-registered firms are in fact self-employed entrepreneurs lacking wage contract. Informality is even more pervasive in labor relations, with 65 percent of non-agricultural workers without a labor contract and social insurance (Figure 23).¹⁹ Moreover, there is much anecdotal evidence of informality in foreign trade flows, both on the import and export side, and informal capital flows, with low official numbers on FDI inflows not reflecting the actual scale of foreign investment. Albeit some progress has been achieved, reliable cadastral information is still lacking—both in rural and urban areas—contributing to informality and potential falsification of land titles. One estimate puts the existence of “virtual land” in the registry at 121,248 km², or 30 percent of Paraguay’s total area.²⁰

Figure 22. Shadow Economy in Paraguay (percent of official GDP), 2002-2016



Source: ProDesarrollo Paraguay.

Figure 23. Informal Employment (percent of total non-agriculture employment), Paraguay and LAC countries, 2014



Source: World Development Indicators, World Bank.

Inefficient provision of public services

53. **Despite a recent increase in government spending, the state is not yet providing high-quality services to citizens.** School attendance has increased, but student learning outcomes have not improved in recent years, despite a large increase in public education spending. In fact, based on regional student learning assessments, math test scores deteriorated between 2006 and 2013. The inefficiency of spending is further underscored by low student outcomes even when compared with countries that spend a similar amount per student (Figure 24). Similarly, some health outcomes have improved, but not at a pace commensurable with the increases in total health expenditure, that reached at 9.9 percent of GDP (half of it private), a level that surpassed that of any comparator group of countries. While Paraguay is a major hydro-power producer, the quality of electricity services in Paraguay is low by international standards, with both high frequency and duration of interruptions as well as high incidence of electricity losses (32 percent in 2016)

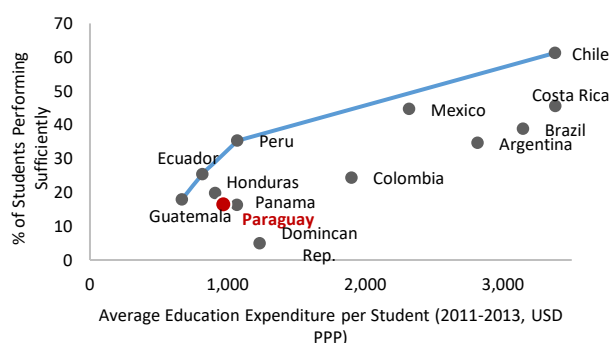
¹⁸ Friedrich Schneider et al.. "Shadow economies all over the world: New estimates for 162 countries from 1999 to 2007." *Handbook on the shadow economy* (2011): 9-77.

¹⁹ Figure 23 shows informality rate based on WDI definition (share of non-agriculture employment). Informality based on the social insurance-based definition results in a rate of 71 percent in 2014 (72 percent in 2016).

²⁰ World Bank, 2014.

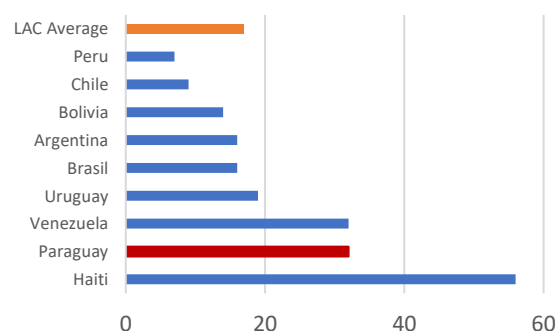
(Figure 25). While access to piped water is close to 90 percent, nearly half of the Paraguayan population continues to lack access to safely managed drinking water²¹ and only 73 percent of those with connections experience continuous service. Connectivity to sewage systems remains as low as 18 percent even in urban areas. Only 2 percent of wastewater is currently treated, well below other LAC middle-income countries. While expenditure on transport infrastructure has increased, Paraguay's score on the World Bank's Logistics Performance Index has fallen and remains low. Despite recent efforts to improve public investment the public infrastructure gap remains significant. Meanwhile, Paraguay's tax system relies little on direct taxation and is not progressive: the top 10 percent of the population paid, on average, only 0.54 percent of their income in direct taxes in 2014. The redistributive contribution of the country's fiscal system is one of the lowest in the region: inequality as measured by the Gini coefficient barely changes when moving from market income (i.e. before any fiscal intervention) to disposable income (i.e. plus/minus direct and indirect taxes, transfers, and subsidies). Laws and regulations are often not fully implemented.²²

Figure 24. Public Expenditure in Education and Student Outcomes



Source: WB calculations based on TERCE 2013 and expenditure. from WDI. Results based on math 3rd grade.

Figure 25. Average Electricity Losses



Source: IADB 2014.

Notes: LAC average does not include Haiti. Losses as a proportion of total electricity production. Average of available information in last 5 years.

54. **Paraguay's defining characteristics are linked to its structural challenges (Figure 26).** Concentration in most indicators can be traced back to the concentration of natural resources: The 600 largest holdings (0.2 percent of the total) control 40.7 percent of the nation's agriculture.²³ Concentration on production and exports is the direct consequence of impressive growth in the agriculture sector. Demographic trends—coupled with low levels of education, limited contestability of markets, weak enforcement and limited urban planning—feed into labor, firm, and land informality. The youth are the most likely to be informal and low paid, and rapid urbanization is happening without sufficient planning. Institutional

²¹ "Safely managed" as defined by the Sustainable Development Goals (defined as being (1) located on premises, (2) available when needed and (3) free from faecal and priority chemical contamination). Sustainable Development Goals' Target 6.1. WHO/UNICEF. Progress on drinking water, sanitation, and hygiene: 2017 update and SDG baselines, 2017.

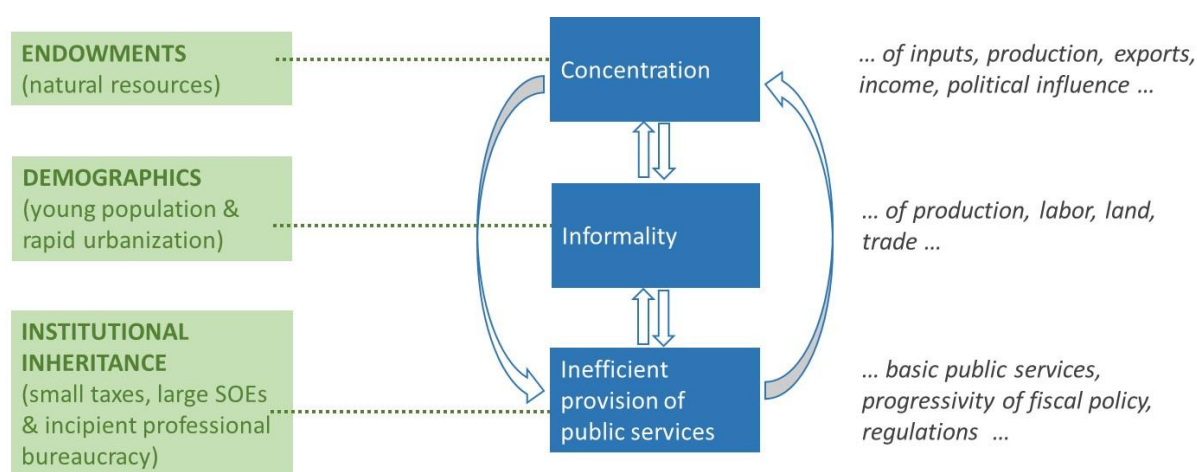
²² Global Indicators of Regulatory Governance database, World Bank, 2018. Available at: <http://rulemaking.worldbank.org>.

²³ Itriago, D. (2012) *Taxation in Paraguay: Marginalization of small-scale farming*. Oxford: Oxfam.

inheritance, through low tax revenues, major role of SOEs in service delivery, and limited institutional capacity, contribute to an overall inefficient provision of public services.

55. **Concentration, informality, and inefficient provision of public services mutually reinforce each other (Figure 26).** Inefficiencies in public services provision, together with a high concentration of economic resources, led to the emergence of a private sector that, part, produces some of these services directly. Since the fiscal system does not redistribute enough, the concentration of resources and incomes persists to a large degree, and unequal access to high-quality services results in inequality of opportunities and limits social mobility. Low-quality public goods and services reduce incentives for citizens to contribute to public coffers, fueling informality. High informality and tax evasion prevent the state from better financing critical infrastructure and human capital investments. The concentration of economic assets (primarily land) and political influence, in conjunction with insufficient education, makes entry into the formal sector more difficult for poor and vulnerable groups. In turn, informal status in many cases restricts opportunities, such as access to finance and to export markets, favoring economic concentration among incumbents. As a result, the interaction of the three drivers of Paraguay's development model tend to reinforce each other.

Figure 26. Defining Characteristics and Structural Challenges are Interconnected



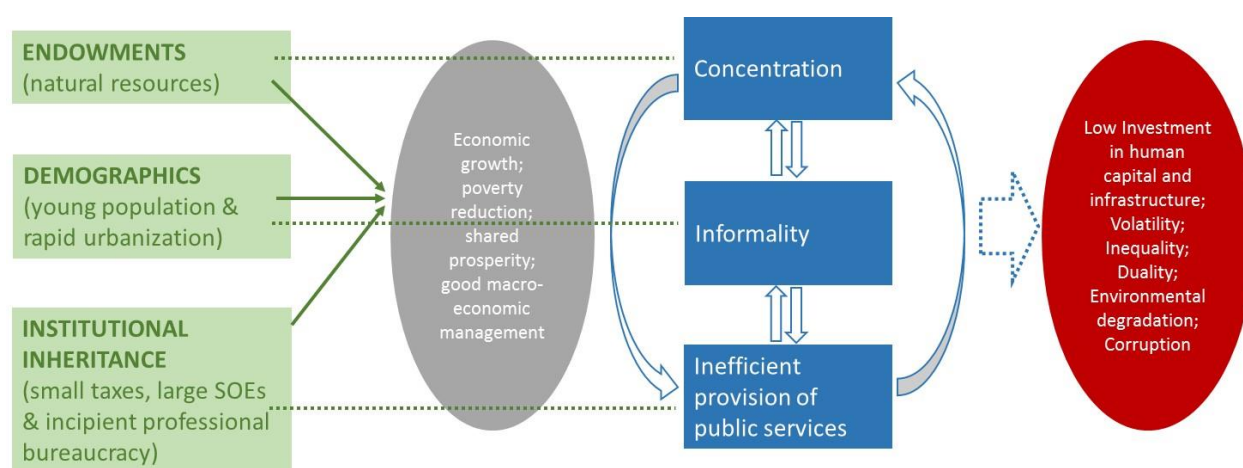
Source: SCD team.

56. **These structural challenges underlie many social bottlenecks (Figure 27).** Recent efforts to improve education and modernize public services have limited impacts in a context of a history of low investment in human capital and infrastructure, reducing opportunities for faster growth and better inclusion. Paraguay's UNDP's Human Development Index (HDI) ranking has declined in the last 15 years (it ranked 84 out of 175 in 2003, versus 110 out of 188 in 2015). Health outcomes have improved, but not as fast as desirable and slower than in other countries in the region: While life expectancy grew significantly in absolute terms, Paraguay moved from being one of the countries with the highest life expectancy in Latin America in 1960 to having the third lowest life expectancy in 2014. Education attainment has improved (particularly in secondary level) but quality is insufficient: comparative test scores place Paraguay at levels similar to those of lower-middle income countries. Poverty and income inequality have declined in the last decade, but continue to be a core challenge for public policies.

57. **Investment in infrastructure and government financing are also critical challenges.** The stock of public capital in Paraguay stood at 44 percent of GDP in 2015, while the average for Latin American countries was over 84 percent of GDP. Taxes in Paraguay are low in comparison with similar countries,

which creates space for private sector growth but, at the same time, limit the government's capacity to implement necessary policies. The country's growth volatility has been high in the last decade, predominantly reflecting the volatility of agricultural GDP. This volatility also affects fiscal accounts, and unpredictable fiscal revenue collection has been one of the causes of budget under-execution, which typically harms investment and social spending. Commercial agriculture has grown impressively, but available data on smaller, family farms productivity indicate that it has stagnated. Logging and clearing of land for charcoal/biomass, agriculture and cattle ranching has resulted in extensive forest degradation and deforestation. Over the period 2000-2013 Paraguay was among the top 11 countries with highest total deforestation, and the deforestation rate as a share of total forest cover is one of the highest in the world.²⁴ The institutional weakness of the state apparatus has created a social environment where perceptions of corruption continue to permeate public affairs. Paraguay ranked 123rd out of 176 countries on the 2016 Corruption Perception Index, making it the fifth most corrupt country in the LAC region.²⁵

Figure 27. Defining Characteristics of Paraguay's Development Dynamics: Negative Repercussions



Source: SCD team.

58. **Paraguay has made gradual progress in tackling its main structural challenges, manifested in lower economic concentration, higher levels of formality, and better provision of public services.** Macroeconomic management is sound and the institutional frameworks established in recent years are seen as credible. Export concentration has fallen, as measured by the Herfindahl-Hirschman Index of 0.13 in 2016, down from 0.26 in 2004. Income inequality, as measured by the Gini coefficient, fell from 0.55 in 2003 to 0.48 in 2016.²⁶ The rate of formal employment went in only six years from 22 in 2008 to 29 in 2014.²⁷ Direct taxes—which have the potential to be highly progressive—were instituted in 2013 (for the personal income tax)

²⁴ Matthew Hansen et al. "High-Resolution Global Maps of 21st-Century Forest Cover Change". Science 15 November 2013: Vol. 342 no. 6160 pp. 850-853. Link: <http://www.sciencemag.org/content/342/6160/850>.

²⁵ Transparency International. Corruption Perceptions Index 2016. Available here: https://www.transparency.org/news/feature/corruption_perceptions_index_2016

²⁶ Dirección General de Estadísticas, Encuestas, y Censos (DGEEC)

²⁷ Elizabeth N. Ruppert Bulmer et al. *Paraguay jobs diagnostic: the dynamic transformation of employment* (English). Jobs Series; issue no. 9. Washington, D.C.: World Bank Group, 2017. <http://documents.worldbank.org/curated/en/500641499411206696/Paraguay-jobs-diagnostic-the-dynamic-transformation-of-employment>

and in 2014 (for the agricultural income tax). Significant progress has been achieved with cadastral information in the past three years with the creation of a unified land registry database (Sistema de Información de Recursos de la Tierra, SIRT) and the adoption of streamlined adjudication procedures, resulting in over 16,000 cases resolved in two years. The government has invested in the development of an overall monitoring framework for the poverty reduction strategy that is linked to the budget process. Continuing and accelerating such progress will fuel the transition to a sustainable and more inclusive development model.

1.3 Preview of main messages

59. **Table 2 presents the main messages of the SCD.** It summarizes the achievements and bottlenecks in growth, inclusion, and sustainability, and closes with the four priority areas that arise from the analysis as the main opportunities that the country should pursue to generate a more inclusive and sustainable growth model. The next chapters will develop in more detail the sectoral views (Chapter 2 on Growth, Chapter 3 on Inclusion, and Chapter 4 on Sustainability), and the last chapter will develop the priorities in more detail and describe the process by which they were identified.

Table 2. Main Messages of the SCD

	Growth	Inclusion	Sustainability
Achievements	Paraguay's strong growth in recent years exploited its comparative advantages of fertile land and hydro energy, enabled by good macroeconomic management	Paraguay realized substantial social gains, as reflected in lower poverty rates, shared prosperity, and a larger middle class	Paraguay managed to maintain fiscal sustainability
Bottlenecks	High volatility, insufficient public infrastructure, low educational attainment, and poorly functioning institutions limit the potential for convergence with high-income countries	Low-quality human capital and gaps in access and quality of public services limit opportunities for the Bottom 40%; high exposure to risk and limited safety nets puts social gains at risk; the indigenous, monolingual Guaraní-speakers, young people, and subsistence farmers are vulnerable and excluded	Environmental sustainability is at risk due to rapid loss of natural forest, soil erosion and high vulnerability to climate shocks. Addressing social demands from young people and other marginalized groups is key to ensuring social sustainability
Opportunities	<p>Accountable institutions, rule of law, and business environment Increase trust in public institutions and reinvigorate private sector growth</p> <p>Natural wealth management Reconcile the productive use of natural capital with its preservation, while maintaining social cohesion</p>		

	<p>Quality of public services</p> <p>Improve the quality of public services—including infrastructure, public administration, and fiscal system—considering both current gaps and pressing demands from rapid urbanization</p> <p>Human capital</p> <p>Reform the education and training systems to better address the demands and needs of the private sector and better prepare young people for productive labor-market participation</p>
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Box 3: Selection of comparators for Paraguay

Throughout this SCD, like in most other SCDs, we use three sets of comparators to benchmark Paraguay's performance: *regional*, *structural*, and *aspirational*.

The *regional* set includes Paraguay's neighbors—*Argentina*, *Bolivia* and *Brazil*—and two regional averages—*LAC* and *South America*.

The set of *structural* comparators was derived using Find Friends 2.5, an excel workbook that houses several large datasets at the country level and allows to compare countries' performances across many indicators. The choice of criteria for structural comparators was based on the conceptual framework developed in this SCD: (i) share of population below age 14 (percent of total population): +/- 12 percentage points of Paraguay's share; (ii) share of rural population (percent of total population): +/- 12 percentage points of Paraguay's share; (iii) general government total expenditure (percent of GDP): +/- 12 percentage points of Paraguay's share; (iv) Agriculture, value added (percent of GDP): +/- 12 percentage points of Paraguay's share; (v) nominal GDP per capita (USD): +/- 30% of Paraguay's GDP; (vi) Population (millions): between one third of Paraguay's population and three times Paraguay's population; (vii) Population density below median (of all country-level population densities). Island states and fragile states were excluded. Applying these seven criteria to filter the list of all countries resulted in the following set of four countries: *Albania*, *Armenia*, *Guatemala*, and *Tunisia*. Comparisons are based relative to the average performance of these four countries.

The set of *aspirational* comparators consists of countries with high GDP growth that was sustained over long periods of time. We restricted the set to countries that were structurally similar to Paraguay at the onset of their growth path (mostly the same characteristics used to select structural comparators). Out of the available set, *Korea* was selected based on its successful industrialization experience, an aspiration for many in Paraguay. It also includes two regional peers that were frequently mentioned as aspirational comparators during country consultations: *Chile* and *Uruguay*, and an aspirational country club—*OECD*. Thus, the aspirational set includes: *OECD*, *Korea*, *Chile* and *Uruguay*.

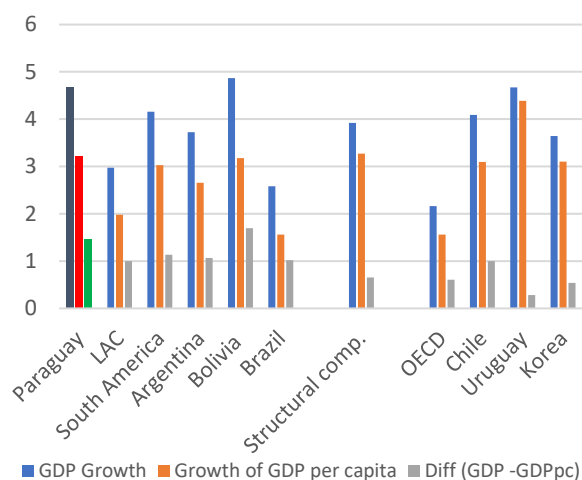
2. Growth

2.1 Stylized facts about recent growth: exploiting comparative advantages enabled by good macroeconomic management

60. **Paraguay's economic growth was driven by the agriculture and hydroelectric power sectors, which are also a source of high volatility, and by services.** Paraguay's economy grew at 4.7 percent per year on average in the period 2004-2016, faster than most of its regional and structural comparators. However, considering the fast growth of the Paraguayan population during the period, GDP per capita growth was

3.2 percent over the period, in line with the South American average and structural comparators (Figure 28). Growth was driven by agriculture and hydroelectric power generation, exploiting the country's abundant natural resources and comparative advantages, and by an expanding services sector (Figure 29). Figure 30, which shows a more detailed breakdown of contributions to growth, indicates that both crops and livestock were among the top five contributors to growth in 2004-2016, along with commerce, government services, and manufacturing. Crops alone contributed one-quarter of growth. During this period, the correlation between Paraguay's overall GDP growth and the growth of its agricultural sector is estimated at 0.97, while its industrial sector (0.19) and service sector (0.62) showed less correlation with overall growth. The agricultural sector is vulnerable to changes in international commodity prices and weather conditions, thus greatly influencing volatility in overall GDP growth. This could be seen during the simultaneous contraction of the agricultural sector and the overall economy in 2009, in turn the result of lower commodity prices amid the global financial crisis. Similarly, both the agricultural sector and GDP growth were hit by a period of severe drought in 2012. Paraguay's GDP volatility was higher than the global average during the 2004-2016 period. Within the South American sub-region, the only countries with greater volatility than Paraguay were Argentina and Venezuela (Figure 31).

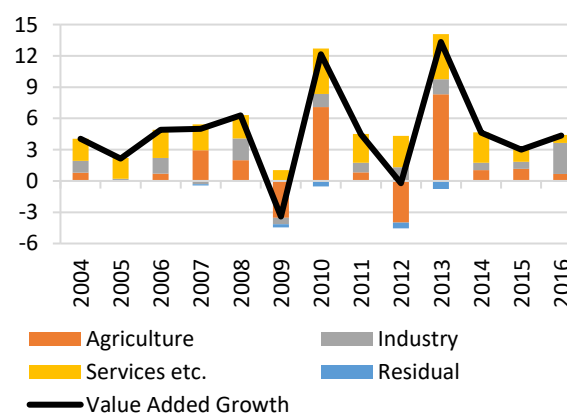
Figure 28. Growth of Real GDP, 2004-2016 (percent)



Source: World Development Indicators, World Bank.

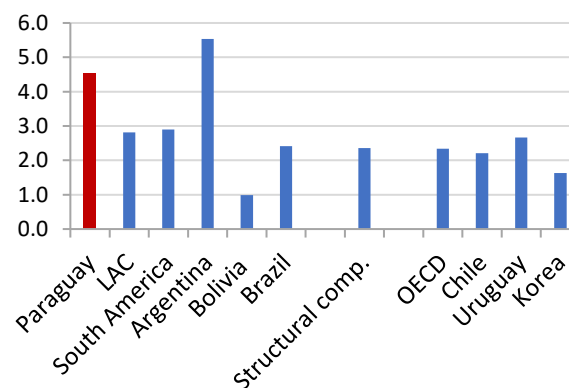
Figure 30. Contribution to Growth in Paraguay, 2004-2016 (percentage points, average)

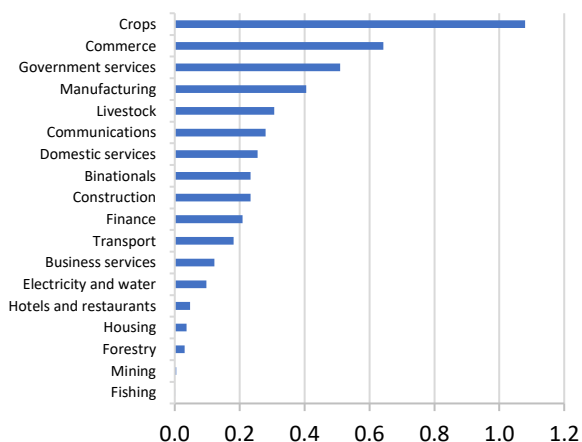
Figure 29. Decomposition Value Added Growth by Major Sector, 2004-2016 (percentage points)



Source: World Bank staff estimates.

Figure 31. GDP Volatility, 2004-2016 (5-year rolling std)



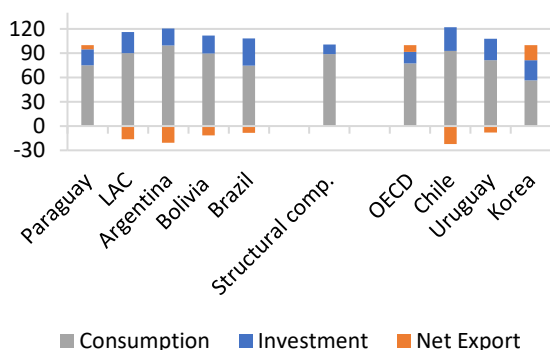


Source: World Development Indicators, World Bank.

Source: World Bank staff estimates.

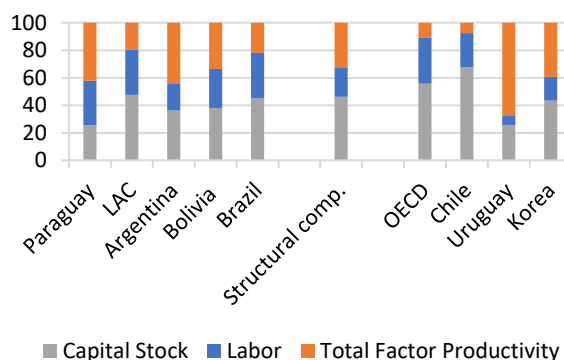
61. **On the demand side, exports provided a striking contribution to overall GDP.** In large part due to the strong performance of the agricultural exporting sector, Paraguay stands out in the region for the positive contribution of net trade to growth. Exports alone contributed 2.9 percentage points of growth in the 2004-2016 period, equaling the contribution made by private consumption. Government consumption and investment contributed 0.7 and 1.0 percentage points on average in the same period respectively. The level of gross capital formation averaged 16 percent of GDP between 2004-2016, the lowest among regional comparators and even structural comparators, except for Guatemala (Figure 32).

Figure 32. Decomposition Growth by Expenditure, 2004-2015 (percentage points)



Source: World Development Indicators, World Bank.

Figure 33. Decomposition Growth by Factor, 2004-2015 (percentage points)

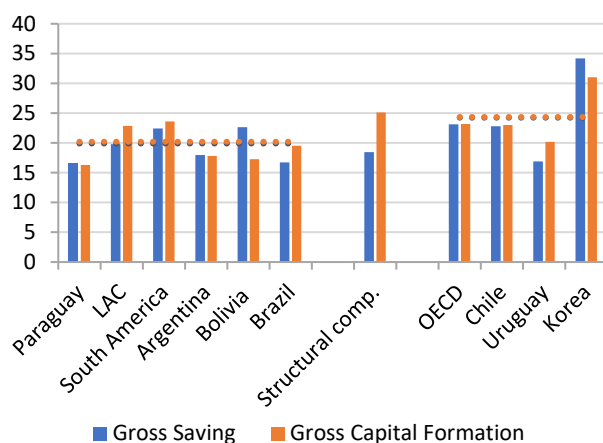


Source: World Bank staff estimates.

62. **The contribution of capital stock to growth has been relatively low, given low public investments and Paraguay's challenges to attract foreign investment, which could have helped to make up for a low domestic saving rate.** Due to this low level of investment, the capital stock as a factor of production contributed the least to GDP growth in the 2004-2016 period, while growth in Total Factor Productivity (TFP) and Labor provided the first and second most important factors (Figure 33). While labor added to growth on the supply side, labor skills remain relatively low and, on the demand side, economic expansion was not sufficient to absorb the growing labor force into productive employment (see Section 2.2.3). Investment levels were also lower than domestic savings, while gross saving levels for Paraguay as a proportion of GDP were in turn lower than most structural comparators (Figure 34). Averaging a surplus of just 1 percent of

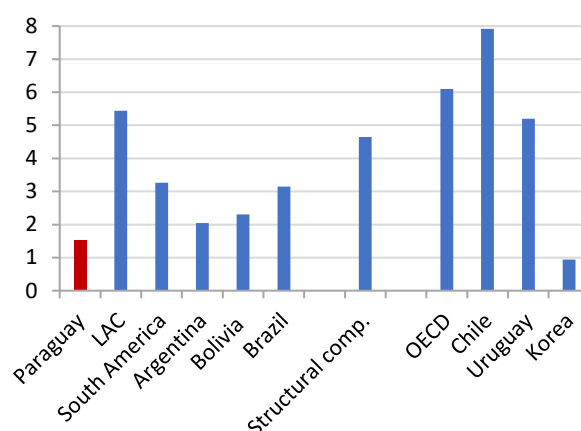
GDP in the period, the current-account balance suggests that Paraguay has not been able to channel external savings for financing investment to a significant degree. Having reached 3 percent of GDP in 2012, Foreign Direct Investment net inflows to Paraguay have converged back to the average level for the 2004-16 period of 1.5 percent of GDP, the lowest among comparators, except for Korea which is a net foreign investor (Figure 35). Even allowing for possible significant underreporting of incoming FDI, Paraguay would still have one of the lowest levels among comparators.

Figure 34. Savings and Investment, 2004-2016 (percent of GDP)



Source: World Development Indicators, World Bank.

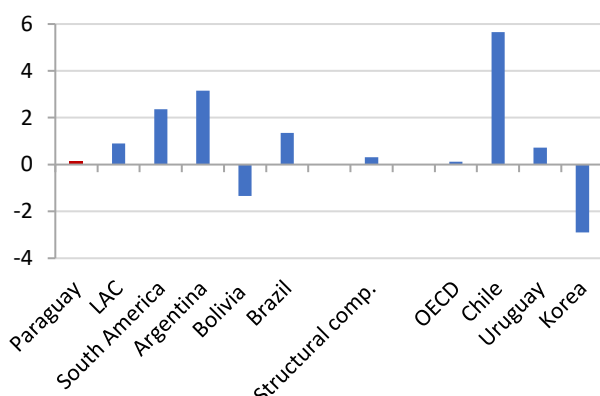
Figure 35. Foreign Direct Investment, 2004-2016 (percent of GDP)



Source: World Development Indicators, World Bank.

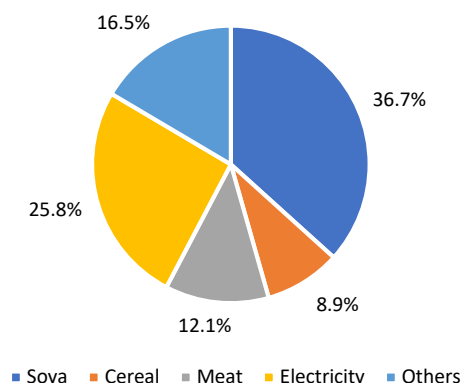
63. Unlike in other LAC countries that benefited from commodity booms, gains in the terms of trade did not seem to have contributed much to Paraguay's growth. Paraguay's trade openness is above what would be expected for the country's income level. Trade openness grew continuously until 2008, when trade reached 100 percent of GDP, but it then declined to 84 percent of GDP in 2016, the lowest level since 2002. A fall in demand from the country's main markets, Brazil and Argentina—which received 35 percent and 10 percent of Paraguay's total exports from 2004-2016—and lower international commodity prices, explain the less buoyant performance of exports in the recent period. After a peak in prices in 2012, soy beans traded 20 percent lower in the 2014-2016 period. Therefore, while South American countries on average experienced important terms-of-trade gains in the 2004-2016 period, growing 2.1 percent annually on average, Paraguay's terms-of-trade gains were much more modest, at 0.2 percent per year (Figure 36).

Figure 36. Terms-of-trade Gains, 2004-2016 (average annual percentage change)



Source: World Development Indicators, World Bank.

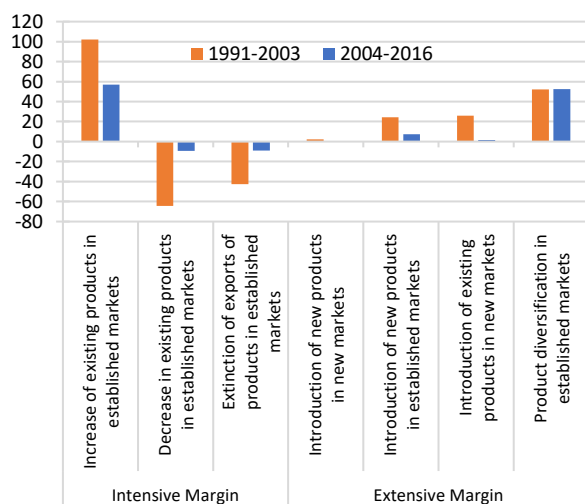
Figure 37. Paraguay's Main Product Exports, 2016 (percent)



Source: WITS.

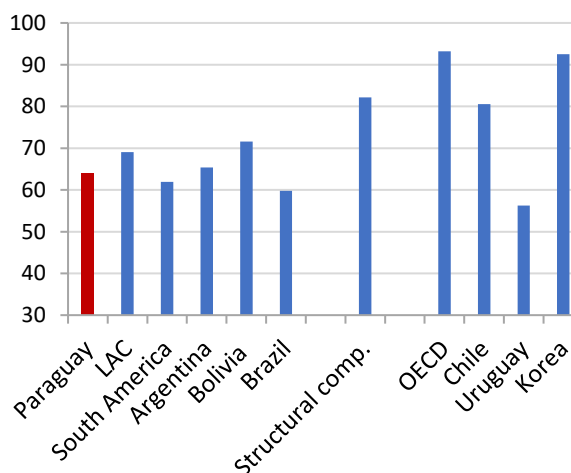
64. Paraguay's exports are concentrated in agricultural products (Figure 37), with limited diversification in the past decade. While the diversification of products exported by Paraguay improved—as measured by a score on the Herfindahl-Hirschman Index of 0.13 in 2016, down from 0.26 in 2004—the concentration of the country's export base is the highest among its comparator countries. Most of the growth in Paraguay's exports from 2004-2016 came from increasing export flows of existing products to established markets (Figure 38). The export penetration index, representing how many markets Paraguay's exports reach, has declined in recent years. In 2016, Paraguay exported fresh meat to 24 out of 132 possible market countries, with Chile and Brazil together receiving 90 percent of exports. The unit-value of Paraguay's exports of fresh meat exports is also much lower than neighboring Argentina and Uruguay. Paraguay's exports of fresh meat represented 1.8 percent of GDP in 2016. If the country could reach the average unit price for red meat exported by Argentina and Uruguay, this would represent an additional 1.9 percentage points of GDP.

Figure 38. Decomposition of Export Growth along Margins of Trade, 1991-2016 (percent)



Source: WITS.

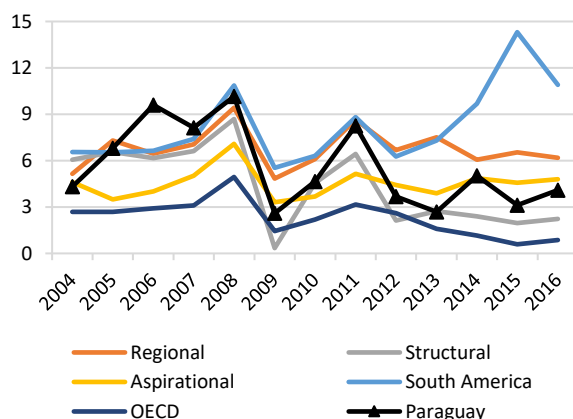
Figure 39. Trading across Borders, 2018 (Distance to frontier, 100=frontier)



Source: World Development Indicators, World Bank.

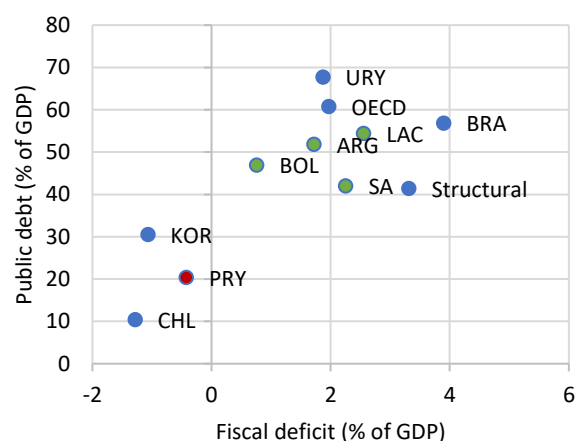
65. **Trading across borders continues to be costly, especially for Paraguay's exporters.** Paraguay has moved closer to the frontier in terms of trading across borders, scoring 64 in the 2018 Doing Business Report—where 100 represents the frontier—up from a score of 60 in 2015. However, it remained below the LAC average of 69 (Figure 39). The costs associated with exporting, especially due to border compliance, appear higher than for several comparators.

Figure 40. Inflation Rate, 2004-2016 (percent)



Source: World Development Indicators, World Bank.

Figure 41. Public Debt and Fiscal Deficit, 2004-2016 (percent of GDP)

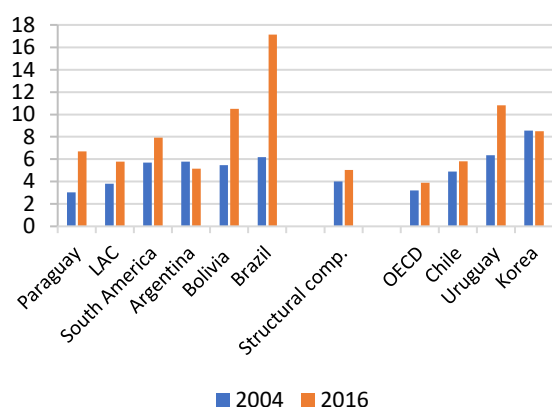


Source: World Bank, MFMod.

66. **Economic growth was supported by prudent macroeconomic policies.** Paraguay averaged a fiscal surplus of 0.4 percent of GDP in the 2004-2016 period. A rise in public expenditure and stagnation of revenue have led to fiscal deficits since 2012, but these deficits remain moderate and public debt is also low (Figure 41 and Table 3). In 2015, the country began implementing the Fiscal Responsibility Law, which limits the central government deficit to 1.5 percent of GDP and the growth of primary current expenditure to 4 percent of GDP. The BCP has adopted inflation targeting and inflation has remained under control, having fallen significantly below regional comparators since 2012, and is in line with aspirational comparators and the OECD average (Figure 40). Paraguay's flexible exchange rate arrangement has helped the country to absorb recent external shocks. The IMF estimates the country's REER to be slightly undervalued.²⁸ Foreign reserves remained at prudent levels, reaching almost seven months of future imports and three times the country's short-term external debt (Figure 42). While domestic credit grew rapidly, from 14.7 percent of GDP in 2004 to 54.4 percent in 2016 (Figure 43), the financial sector appears sound, with low levels of non-performing loans and well-capitalized banks.

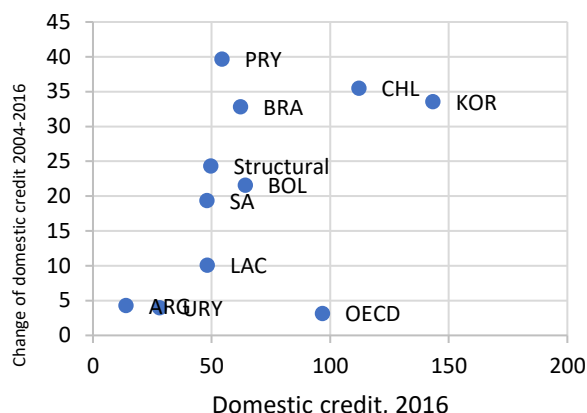
²⁸ IMF (2017), Article IV Report

Figure 42. International Reserves, 2004-2016 (months of imports)



Source: World Development Indicators, World Bank.

Figure 43. Domestic Credit to the Private Sector, 2004-2016 (percent of GDP)



Source: World Development Indicators, World Bank.

Table 3. Key Macroeconomic and Fiscal Indicators

	2012	2013	2014	2015	2016	2017e
Real GDP, percent change	-1.2	14.0	4.7	3.0	4.0	4.3
Consumer Inflation, percent change	4.0	3.7	4.2	3.1	3.9	4.5
Current Account, percent of GDP	-2.0	1.7	-0.4	-1.1	1.5	-1.2
International Reserves, months of future imports	4.6	5.3	7.2	6.8	7.4	7.8
Consolidated Public Sector, percent of GDP						
Revenue	23.6	22.1	22.8	24.0	23.7	23.6
Expenditure	25.3	23.5	23.5	25.4	24.9	24.9
Overall Balance	-1.6	-1.4	-0.7	-1.3	-1.1	-1.4
Primary Balance	-1.0	-0.7	0.1	-0.3	0.0	0.0
Debt	16.2	17.0	19.7	24.0	24.6	25.4

Source: Paraguay authorities, IMF, WB.

67. **Prudent fiscal policies have contributed to macro stability, despite relatively low levels of revenue mobilization and service delivery:**

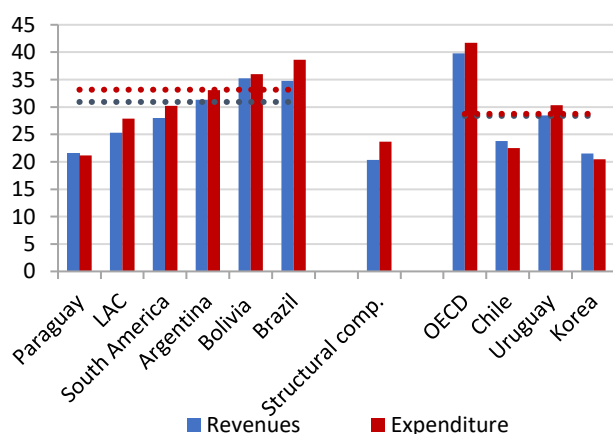
- **Revenue:** While revenue mobilization has improved from 19.9 percent of GDP in 2004 to 22.6 percent of GDP in 2016, following the expansion of VAT and the introduction of personal income tax, the total revenue of the general government is the lowest among comparator countries, except for Guatemala and Korea (Figure 44). Most of the recent improvement in revenue mobilization came from a rise in tax revenue in 2016, from 10 percent of GDP to 13.3 percent of GDP. Indirect taxes account for the majority of tax revenue. Revenue from income and local taxes remains low, even as revenue from the former rises.²⁹ An important source of public financing (especially for subnational governments) are the binational hydroelectric facilities. Around 10 percent of total

²⁹ As municipal budgets are not part of the integrated public finance system (SIAF), it is difficult to measure accurately the contribution of local government to revenue mobilization, but the BOOST database indicates municipalities' tax revenues averaging 0.7 percent of GDP for the 2011-2015 period. Departmental governments are considered decentralized rather than federal units and are almost entirely funded by transfers from the central government.

revenues are derived from royalties related to hydroelectric generation by the Itaipú and Yacyretá facilities, which are shared with Brazil and Argentina respectively.

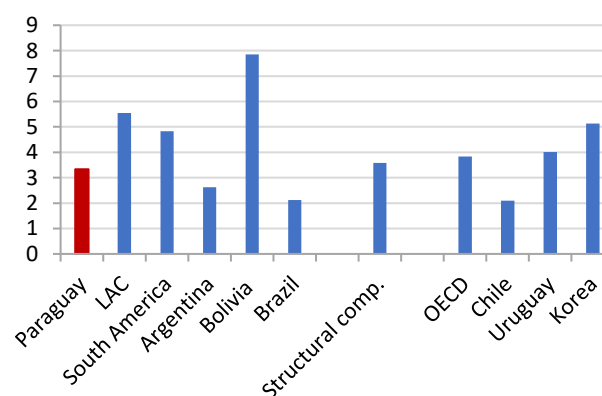
- **Expenditure:** Averaging 21.2 percent of GDP in 2004-2016, levels of government expenditure are 6 percentage points below the average for the region and less than half the average for OECD countries. Expenditure levels have been rising across most categories, except for goods and services and interest payments (the latter of which are kept low in part due to low public debt levels). Employee compensation absorbs almost half of all expenditure, representing between 11 percent and 12 percent of GDP, up from 8 percent in 2005. Social benefits have also increased, driven by both the rise in formal employment and an expansion in the coverage of social programs. Paraguay has been able to double public investment in recent years, even surpassing some of its aspirational comparators, but it still falls behind the LAC and South American averages (Figure 45).

Figure 44. Fiscal Accounts, 2004-2016 (percent of GDP)



Source: World Development Indicators, World Bank.

Figure 45. General Government Investment, 2004-2015 (percent of GDP)



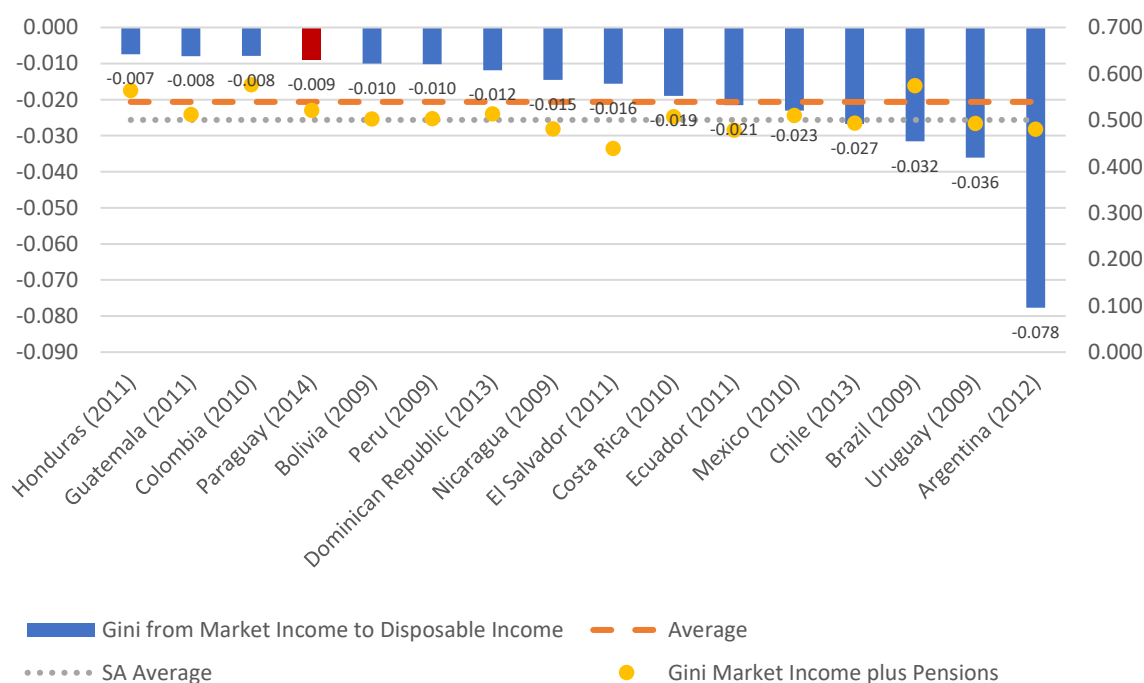
Source: IMF, Government Finance Statistics.

68. While Paraguay performed well in terms of maintaining prudent fiscal deficits and debt levels, revenue mobilization remains low, public investment falls short of the country's infrastructure needs, and expenditure is volatile. The tax base has been eroded by numerous tax exemptions, deductions, low taxation of commercial agriculture, and incentives with limited reach, coupled with high informality. Revenues from income and profits, as a share of total tax revenue, are the second lowest in the region. Tax expenditures represent 16 percent of total tax revenues and the VAT collection gap (due to tax evasion) alone was estimated at 30.9 percent in 2014. Moreover, rates of 10 percent for the main taxes (VAT, PIT, and CIT) are the lowest in the region by a large margin, and among the lowest in the world. At over 11.2 percent of GDP in 2014-2016 (or almost half of public revenue), the public wage bill in the country is high, among the highest in LAC and well above the OECD average. Public procurement in Paraguay can produce better value for money, due to low levels of competition for government contracts, bunching of procurement at the end of the year, and fragmentation of demand. In recent years, Paraguay has increased public investment but still faces a substantial gap in terms of its public capital stock. Growth in current spending would need to be contained (together with efficiency gains across spending categories and higher revenues) to create fiscal space for higher public investment. The nominal deficit target does not take into account the country's cyclical position, leading to ad hoc expenditure execution controls and thereby decreasing the government's margin to tackle poverty and reduce inequality.

69. The contribution of the fiscal system to income redistribution is slightly positive but among the lowest in the region (Figure 46). The Gini coefficient changes little when moving from market income (i.e. before any fiscal intervention) to disposable income (i.e. plus/minus direct and indirect taxes, transfers, and subsidies), placing the contribution of the country's redistributive fiscal system among the lowest in the region.³⁰ Furthermore, only one-quarter of the overall effect can be attributed to the tax system, making its effect marginal. This is due to the low progressivity of direct taxes. In contrast to most countries, the incidence curve—that is, the mean size of direct taxes as a share of market income—is virtually flat. Estimates show that the top 10 percent of the population paid, on average, only 0.54 percent of their income in direct taxes in 2014, the second-lowest contribution in LAC.³¹

70. The contribution of the fiscal system to poverty reduction is in line with the regional average, but smaller than the South American average (Figure 47). The poverty rate in 2014 was 1.76 percentage points lower—from a base of 16 percent—once taxes, transfers, and subsidies were considered.³² Most of this small contribution is due to the two main social assistance programs, *Tekoporã* and *Adultos Mayores*, which have expanded in recent years while continuing to target those most in need. However, coverage remains low and the size of the cash transfer is limited. Despite recent expansion, only 35 percent of the extreme poor are covered. Those living on a daily per-capita income of US\$1.25 in 2005 PPP receive on average the equivalent of about 40 percent of their market income in direct transfers, lower than other countries in the region.

Figure 46. Redistributive Effect of the Fiscal System



Source: Gimenez et al. 2017.

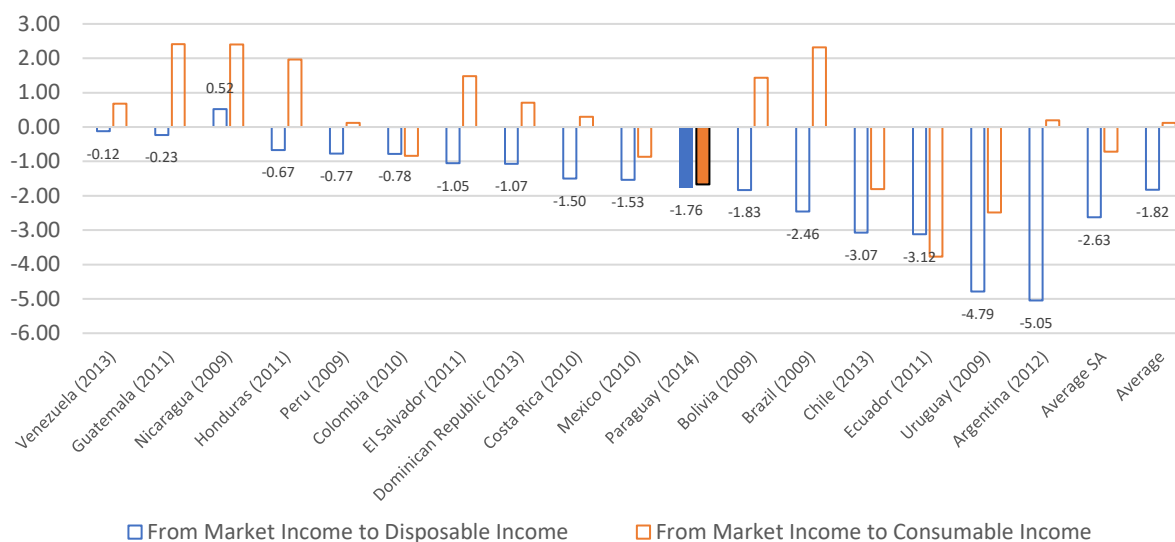
³⁰ Gimenez et al. 2017

³¹ Ibid., 2017, and World Bank, 2018e.

³² Ibid., 2017. Impact measured at US\$4 in 2005 PPP.

Notes: Effect calculated considering contributed pensions as differed income

Figure 47. Effect of the Fiscal System on Poverty



Source: Gimenez et al. 2017.

2.2 Inside the production function

2.2.1 Natural capital

71. **Paraguay's capacity for sustainable growth depends heavily on its natural resource endowments, primarily land and water.** The abundance of fertile land, forest, water resources, and hydroelectric potential give Paraguay important comparative advantages in the agriculture, livestock and energy sectors. The country remains among the five largest producers of soybeans and among the ten largest exporters of beef worldwide.³³ Taken together, both production areas constitute 25 percent of Paraguay's GDP and account for 65 percent of exports. In 2017, agriculture was the single most important contributor to GDP, making up a fifth of total GDP. Hydroelectric energy exports represented nearly 10 percent of total GDP and nearly a quarter of total exports.

72. **Abundant rainfall, fertile soil, and comparatively low costs have made agriculture one of the most important sectors in the Paraguayan economy.** The Eastern Region—with 65 percent of the land well drained and with fertile soil—is excellent for agriculture and pasture. The Western Region, in turn, has less fertile and sandier soil, hence better for cattle farming.³⁴ Abundant Guinea grass (*Panicum maximum*) pasture, which grows extremely well in the Chaco (part of which encompasses the Western Region), makes

³³ Other important agricultural products include stevia (Paraguay is the world's 2nd producer), yerba mate (3rd producer and exporter), soybean oil (4th largest exporter), yucca starch (4th exporter), corn (6th largest exporter), and wheat (10th largest exporter). Further details, see: <https://www.huffingtonpost.com/lorena-rios/paraguay-a-lost-paradise-b-7554930.html>

³⁴ Estrategia Nacional y Plan de Accion de Biodiversiad (ENPAB), 2003

Paraguay one of the most efficient places worldwide for cattle raising, with average yields far greater than those of Argentina's pampas and Uruguay's prairies.³⁵

73. **Paraguay has one of the lowest levels of greenhouse gas emissions in the region.** Paraguay contributes just 0.08% to greenhouse gas (GHG) emissions internationally, ranking the country in 86th place, one of the lowest in Latin America and just above Uruguay (World Resource Institute, 2017).³⁶ However, emission levels correlate with deforestation. In 2014, land-use change and forestry in Paraguay contributed with nearly 78 percent of total emission. Since 2005, emissions nearly doubled from 100 Mt to 180 Mt of emissions (World Resource Institute – Climate Watch Data).³⁷

74. **Biomass is an extremely important energy source for the country, but its widespread use represents a significant health and energy-security risk.** Biomass, mainly wood, is the main energy source for half the rural population, while half of Paraguay's biomass energy is consumed by the country's industrial sector. Yet if current trends in Paraguay continue, forest resources will be overexploited, posing a considerable risk to energy security in addition to the associated environmental impact. Moreover, biomass is considered a risky fuel due to the health consequences of smoke inhalation. Burning solid fuels produces extremely high levels of indoor air pollution. Recent estimates suggest that Paraguayan household air pollution from cooking with solid fuels denotes one of the highest hidden costs at the national level. It represents nearly half of the total costs related to air pollution and over a third of total environmental health costs.^{38,39} Firewood smoke can have severe health consequences, particularly for children and women. Women exposed to indoor smoke are three times more likely to suffer from chronic obstructive pulmonary disease, such as chronic bronchitis or emphysema, than women who cook with electricity, gas or other cleaner fuels.⁴⁰

75. **At the macro level, Paraguay is depleting its stock of natural wealth.** Based on the indicator "change in total wealth per capita"—which estimates if a country is saving enough of its resources for the future—Paraguay has been depleting its natural capital since 1995 (Figure 48).⁴¹ The Adjusted Net Savings (ANS) indicator, which incorporates natural resources, subsoil asset depletion and net forest depletion, as well as

³⁵ Invest In Paraguay, Grupo Monte Claro. Available at: http://www.grupomonteclaro.com/invest_in_paraguay.html Accessed May 30th 2018.

³⁶ Climate Analysis Indicators Tool (CAIT) Version 2.0. World Resources Institute. Retrieved on June 12, 2017.

³⁷ World Resource Institute. Climate Watch Data (<https://www.climatewatchdata.org/countries/PRY>). Retrieved June 20, 2018.

³⁸ Narain, Urvashi, and Chris Sall. "Methodology for Valuing the Health Impacts of Air Pollution: Discussion of Challenges and Proposed Solutions." World Bank, Washington, DC, 2016.

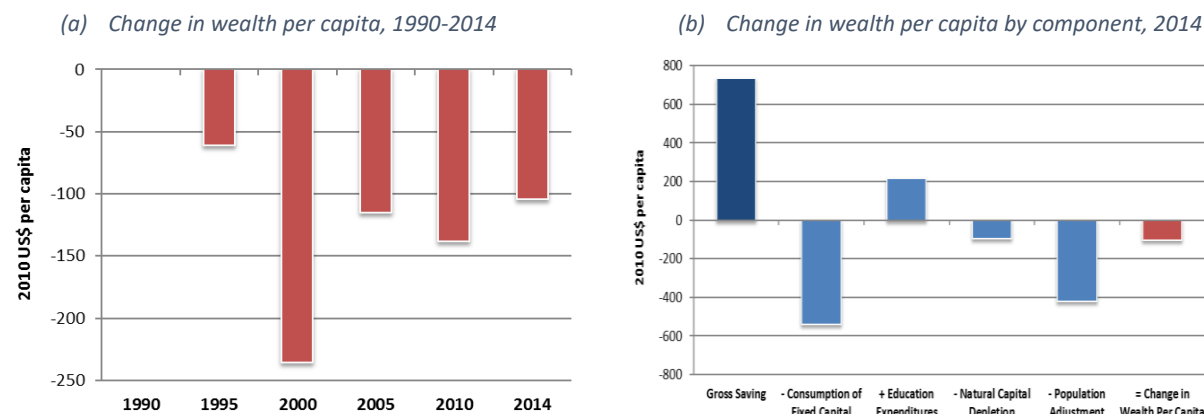
³⁹ World Bank-IHME. "The Cost of Air Pollution: Strengthening the Economic Case for Action." World Bank, Washington, DC, 2016.

⁴⁰ WHO 2006, Fuel for Life: Household energy and health. Available at: <http://www.who.int/indoorair/publications/fuelforall.pdf>

⁴¹ GDP may provide misleading signals about the health of an economy, since it does not reflect depreciation and depletion of assets, whether investment and accumulation of wealth are keeping pace with population growth, or whether the mix of assets is consistent with a country's development goals. Thus, the "change in total wealth per capita" indicator provides a more comprehensive view of wealth. This indicator is used by the World Bank as a core indicator of sustainability to determine whether enough resources are saved for the future. The estimates shown in this report differ from WB estimations due to the different treatment of the value of agriculture versus forest land, which is crucial for the case of Paraguay.

pollution damage, indicates per-capita wealth has fallen in recent decades.⁴² Natural capital depletion has been driven entirely by deforestation, while energy depletion and mineral depletion is negligible. Forest ecosystems can be important sources of wealth in the form of economic rents, jobs, and sustainable livelihoods. But opportunities could be lost to underinvestment, degradation, and depletion. Nearly 94 percent of the Atlantic Forest has already disappeared and the high pressure on forests has now shifted to the Chaco, where forest loss is estimated at approximately 240,000 hectares per year. Exploiting forest and land resources is a crucial part of the country's development success, but Paraguay needs to invest in different kinds of assets to preserve future wealth per capita.

Figure 48. Estimates of Change in Wealth Per Capita in Paraguay



Source: Author's calculations, based on wealth accounting databases.

2.2.2 Physical capital

76. **Paraguay is exceptionally rich in water and hydroelectric energy potential, positioning the country as the world's biggest exporter of clean and renewable energy.** Electricity generation is dominated by the Itaipú and Yacyretá binational dams, which generate most of the country's electricity (Paraguay's peak power demand is 2,700MW, and 75 percent of hydroelectricity production is exported). The 12,600MW Itaipú dam on the River Paraná, which marks the southeastern border between eastern Paraguay and Brazil, was the world's largest hydropower plant until China's Three Gorges Dam superseded it in 2007. However, Itaipú still generates more power, largely because of the sheer power and constant flow of the Paraná, the second-longest river in South America.⁴³ Itaipú's generation is divided equally between Paraguay and Brazil, with Paraguay's share averaging around 44,000 million units annually of which over 90 percent, surplus to national requirements, is sold to Brazil.⁴⁴ Since 2010, revenues from the Itaipú and Yacyretá dams have been quantified in national GDP accounts, with hydroelectric power emerging as one of Paraguay's most

⁴² Change in Wealth Per-Capita (CWPC) is calculated as gross savings, less the consumption of fixed capital, plus current public expenditure on education, less natural capital depletion, less a population adjustment factor. The first two components come from National Accounts. Natural Capital Depletion includes net forest depletion, energy depletion, and mineral depletion. The population adjustment factor is equal to wealth per capita multiplied by the population growth rate. By including this final adjustment factor, CWPC takes into account the effects of population growth and the additional investment needed to provide for the wellbeing of a larger number of people.

⁴³ "Brazil's Itaipú dam treaty with Paraguay up for renewal". Financial Times. September 20, 2017. Link: <https://www.ft.com/content/bf02af96-7eb8-11e7-ab01-a13271d1ee9c>.

⁴⁴ Pun, 2008.

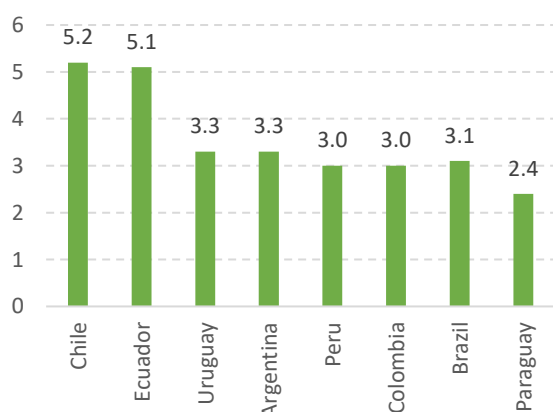
important exports. In 2017, Itaipú's earnings represented 94 percent of total revenues from hydroelectric generation and Yacyretá for six percent.

77. **As a landlocked, trade-reliant, agricultural producer, Paraguay is dependent on land transportation and river-sea operations to make its exports competitive and import processes efficient.** Since most Paraguayan exports are either destined for Brazil or Argentina, or transit through these countries *en route* to international markets such as China and the European Union (EU), the quality of domestic and regional transport connections, both fluvial and land based, is critical for sustained economic growth.

78. **Despite substantial economic growth, no systematic improvements in Paraguay's logistical performance have materialized during the last decade.** While expenditure on transport infrastructure has increased in the last decade, there has been no systematic improvement in the Logistics Performance Index (LPI) score. Paraguay's LPI score decreased from 2.57 to 2.56 between 2007 and 2016, with its performance declining in both tracking and tracing and timeliness and infrastructure, although customs, logistics competence, and international shipments showed some improvement. Paraguay's global ranking as per the LPI Score has also fallen, from 71 in 2007 to 101 in 2016. On average, limitations in Paraguay's soy supply chain amount to an estimated 112 percent of the logistics costs of the supply chain in the United States, the reference country cited in a recent study.⁴⁵ Losses in the soybean supply chain are estimated at US\$39 per ton, while losses for frozen beef are estimated at US\$67 per ton.⁴⁶ Waiting time, and the linked product losses due to spoilage, are an important part of the cost of inefficient logistics in Paraguay.

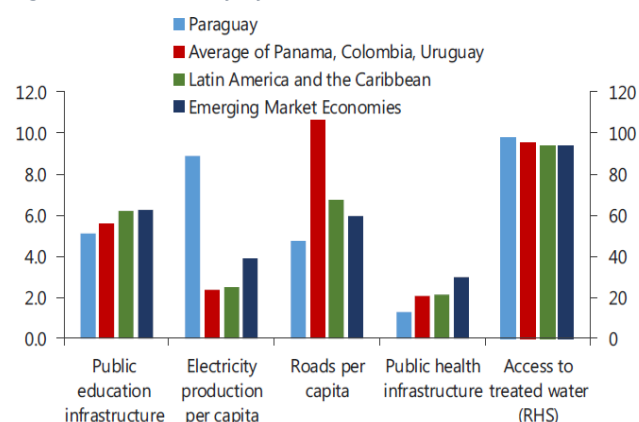
79. **Furthermore, Paraguayan roads are, on average, in a worse condition than in LAC peers, despite increased road-sector expenditure.** Although absolute expenditure on the road sector has increased, this is yet to have a visible impact on the overall condition of the road network. According to the World Economic Forum (WEF) Global Competitiveness Index 2017, Paraguay is the lowest-rated country for road conditions in LAC (a region known for the low quality of its road infrastructure) and the only country in the region rated below 3.0 out of 10 (Figure 49).

Figure 49. Road Conditions in LAC



Source: WEF - Global Competitiveness Index 2017.

Figure 50. Measures of Infrastructure Access



Source: IMF 2017.

⁴⁵ Grégoire Gauthier, Robin Carruthers y Florencia Millán Placci. Logística de la Soja Argentina – Paraguay – Uruguay. *Serie de informes técnicos del Banco Mundial en Argentina, Paraguay y Uruguay* Nº 4, 2016.

⁴⁶ Placci, Florencia Millán. *Paraguay: Análisis de Riesgo del Sector Agropecuario: Riesgo en la Cadena Logística*. Unpublished document, 2015.

80. **The paved road network mirrors urban/rural wealth divides, leading to the perception that public spending in roads has benefited the urban wealthy at the expense of the rural poor.** The Eastern Region concentrates 69 percent of the paved road national network (about 3,100 Kms), 96 percent of the population, hosts most of the soy production, and has the most important river ports that provide outlets to international markets. The Western Region has about 31 percent of the total national paved road network (990 kms) and is a relatively deserted area with just 290,000 inhabitants in 2017 (4 percent of the total Paraguayan population), but represents 61 percent of national territory. The Western Region concentrates 43 percent of national livestock production. Two national highways (Ruta 9 and Ruta 5) connect both regions and support international (principally soybean) and transit cargo to and from Chile, Argentina, and Bolivia. Trade logistics and port development represents a challenge for city and urban development. The port city and capital of Asunción in particular faces important congestion linked to the traffic of grain and containers to and from ports. A difficult city-port interface is made worse by the proliferation of private ports along the adjacent stretches of river. The Asunción metropolitan area—with over 2.5 million inhabitants—is not only host to the main export ports but also the country’s largest consumer and economic center.

81. **The trucking industry suffers from bad road conditions.** The reliance on roads for domestic freight is in sharp contrast to the massive use of waterways for international logistics.⁴⁷ As in many other areas of Paraguay’s development model, the trucking industry consists of two segments: the formal sector, serving large, agro-industrial farms, and the informal sector, consisting of small farms and small payloads. Nearly half of land freight operators own fewer than 19 trucks, covering about 12 percent of the market. Apart from carrying smaller, inefficient load sizes, operational costs for these operators are increased by an insufficiently maintained and mostly unpaved rural and feeder network. Large trucks, on the other hand, are confined to paved national roads and corridors, admittedly in better shape than rural roads, and are beneficiaries of the bulk of public spending on roads. This implies that benefits of public road expenditures accrue disproportionately to large logistics and trucking companies, and, among others, large-scale livestock and agriculture farmers. With low revenue-generation potential, low economies of scale, and high levels of competition in the small truck sector, operators have little possibility to upgrade and renew their fleets, which in turn impacts the productivity of the sector and total logistics costs for small farmers.

82. **The Paraná-Paraguay waterway has unrealized potential.** The inadequate draft of the *hidrovía* is a key constraint for barges operating along these rivers, and would be best addressed via planned and frequent dredging at critical points along the river ports. Despite the recognized importance of waterways, the share of investment allocated to this sub-sector is only 0.02 percent of GDP per year and was stagnant between 2008-15. Ad hoc dredging has been the norm and does not offer the navigational reliability necessary for the private sector to schedule operations and fleet renewal. The longer turnaround times for barges translates into higher shipping costs and narrower profit margins with smaller producers disproportionately impacted. The government’s recent award of a maintenance dredging contract worth US\$6m in December 2017, which guarantees necessary depth at the confluence of the Paraná and Paraguay rivers, is a step in the right direction and needs to be applied at scale.

83. **The country’s digital development is growing, and mobile internet access penetration is significant, but costs remain high and infrastructure is insufficient.** While the penetration of mobile phones is high (95

⁴⁷ According to the Plan Nacional de Logística of 2013, 97% of internal trade is transported by truck.

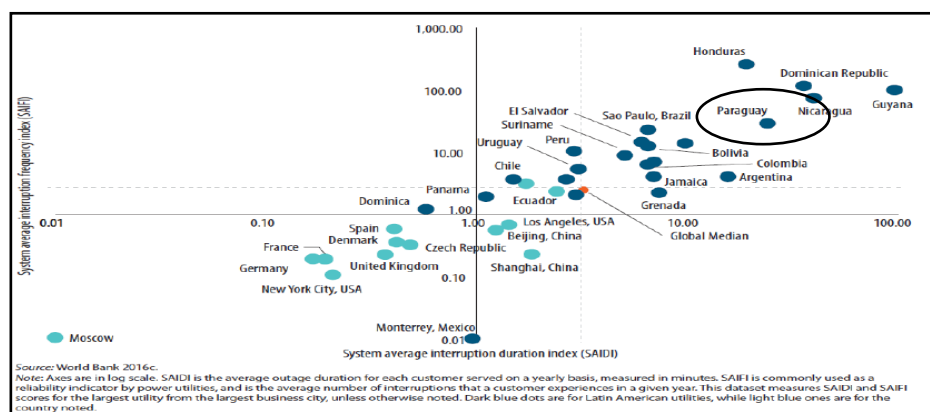
percent of households), less than one-fourth of households have internet access (22.46 percent according to the EPH 2016). The cost of internet access through broadband (fixed and mobile) is still one of the highest in the region due to Paraguay's landlocked status and insufficient access network infrastructure, especially in rural areas. Data upload and download speeds are also lower than the region's average. Moreover, there exist significant disparities in internet access between rural and urban areas (with 7.37 percent and 32.16 percent of households with internet access, respectively). To support sustained growth and competitiveness, Paraguay has developed a National Digital Agenda, launched in early 2018, to promote the productive use of digital technologies.

84. **An evolving legal framework will need to deliver the security needed for PPP-driven infrastructure investment.** Paraguay's infrastructure needs are enormous, and the country can mobilize additional financial resources and gain access to valuable expertise by structuring projects as public-private partnerships (PPPs). However, enticing the private sector into infrastructure requires good policies, expertise in developing well-structured projects, and supportive institutions. The 2013 PPP Act (Ley Alianza Público-Privada, APP) and further PPP regulations in 2014 aimed to expand the sectors and project stages open for private participation while making the process simpler and faster. Yet the two transport projects tendered under the new legal regime (National highways Ruta 2 and Ruta 7, and the Aeropuerto Internacional Silvio Pettirossi) have not been successful. Lessons learned are the importance of transparency in decision making processes and a strong project preparation capacity.

85. **In recent years, Paraguay has been executing public investment at a faster rate, but it still faces a substantial gap in terms of its public capital stock, impacting its access to infrastructure (Figure 50).** Paraguay faces sizeable infrastructure investment needs. Different measures related to the quantity of physical infrastructure show that access is lacking to, for example, educational infrastructure, roads per capita, and public health infrastructure.⁴⁸

86. **Despite high levels of electricity production, electricity services and infrastructure are of low quality and unreliable.** The quality of electricity services in Paraguay is low by international standards, with regular and long-lasting interruptions to service. In addition, the incidence of electricity losses is high (25 percent of energy consumed in 2015 and 30 percent in 2016), putting stress on the grid (Figure 51).

Figure 51. Frequency and Duration of Interruptions in Utilities, 2015

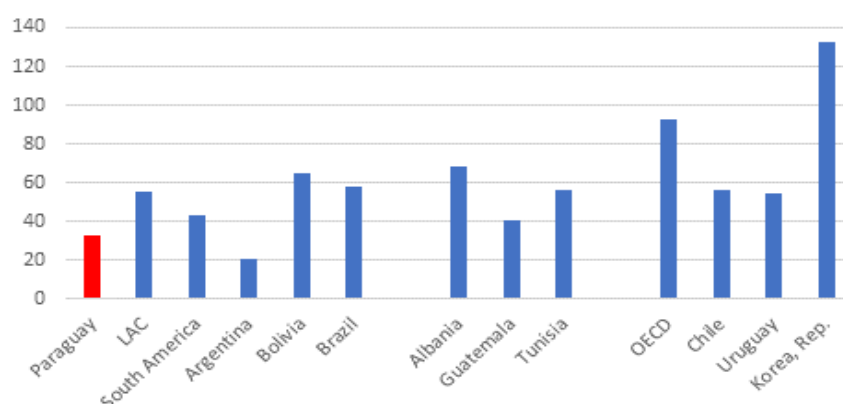


Source: World Bank (2016a).

⁴⁸ IMF 2017.

87. **The financial sector, key to mobilizing new capital in the economy, is bank-centric and still small.** While there was an important progress in financial sector reform after the banking crises of the late 1990s - early 2000s—adoption of new central bank legislation, creation of a deposit guarantee fund and strengthening the supervisory and banking resolution frameworks—the sector remains shallow, undiversified, and highly exposed to a volatile agricultural sector. Whereas the regional average of bank deposits to GDP stood at 49.9 percent in 2015, in Paraguay this figure was just 32.5 percent (Figure 52). In the decade until 2015, bank credit growth was high, about 25 percent annually, but more recently Paraguay’s financial sector has been negatively affected by lower commodity prices, excess debt taken on by farmers, flooding, drought, and lower commercial activity with neighbors and key trading partners Argentina and Brazil. Financial intermediation is significantly dollarized, with more than half of loans denominated in foreign currencies. Because of the difficulty of obtaining bank loans, alternative, informal (and unregulated) lending mechanisms such as Casas de Credito and Casas de Empeño have proliferated. Capital markets in Paraguay are shallow. The total bond issuance volume was only 1 percent of GDP in 2015 compared to a regional median of 2.1 percent. The Paraguayan debt market is small and lacks vital instruments for long term financing and infrastructure. Because it holds important claims on banks, the Instituto de Previsión Social (IPS, Paraguay’s main social security institution) has a key role in the financial system as a major institutional investor. The insurance market is small. Only 4 percent of the population reports having a life insurance policy. These factors hinder the financial sector from efficiently mobilizing Paraguay’s financial resources for their optimal use.

Figure 52. Domestic Bank Deposits in Paraguay and Peers in 2015 (percent of GDP).



Source: FinStat database of the World Bank.

88. **Although significant progress has been made in financial account ownership and financial inclusion, the level of formal savings would need to be expanded.** Over the last years, Paraguay has developed a comprehensive Financial Inclusion Strategy, including the establishment of the legal and institutional infrastructure for its implementation. In 2017, 49 percent of adults in Paraguay had an account, up from 22 percent in 2003.⁴⁹ The gender gap—at 5 percentage points—is lower than the developing country average of 9 percentage points. But the gap in account ownership between the poorest 40 percent and the richest 60 percent is 18 percentage points (38 percent compared to 56 percent), potentially limiting opportunities for the poor and vulnerable to accumulate savings and access credit to cope with negative

⁴⁹ Demirgüç-Kunt, et al. The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. (Washington, DC, World Bank, 2017).

shocks. Nationally, only 12 percent of account owners have saved at a bank or other formal financial institution, a rate that is less than half of the regional average and one-third of the developing world average.

2.2.3 Labor and human capital

89. **Employment has undergone a dynamic transformation in the last 13 years, with a shift away from agriculture and into services, job creation concentrating in the formal sector, and widespread productivity gains and increased earnings.** As expectable, agriculture was the only sector with negative employment growth, with its contribution to total employment falling from 25 percent in 2008 to 22 percent in 2016. In the same period, twice as many jobs were created in the formal sector than in the informal sector and the formal employment rate increased from 22 percent to 29 percent, with much of the gains made by 2011.⁵⁰ Most of the formal jobs were created by large firms (20 employees or more) and heavily concentrated in urban areas, most notably the Central Department. These changes contributed to increased labor productivity across most sectors (except in commerce, where productivity fell), and were reflected in higher salaries (except manufacture, where salaries remained constant). On average, labor productivity and average earnings rose by around 2.1 percent and 4 percent per year respectively between 2008 and 2015.⁵¹

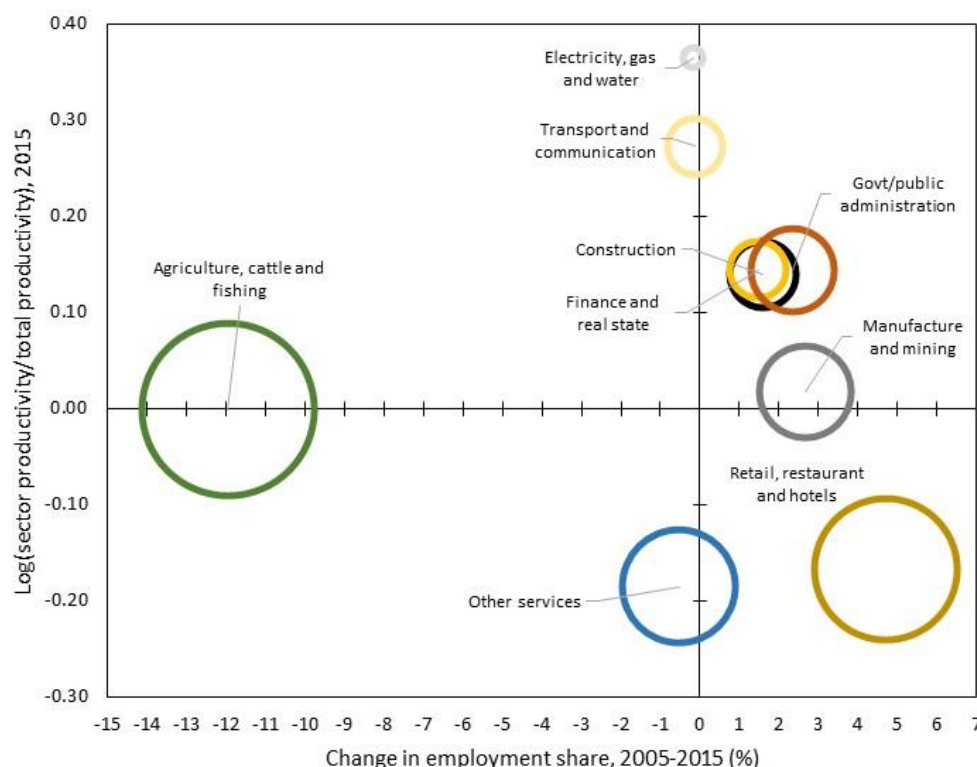
90. **While some higher productivity sectors witnessed an employment growth, most jobs were, nevertheless, still created in low-productivity sectors.** Most jobs, whether formal or informal, were created in low-productivity sectors, with retail alone accounting for 45 percent of new jobs (Figure 53). Productivity gains occurred within most sectors, but there was limited reallocation of jobs from low to higher productivity activities. The general shift out of agriculture into services—and to a lesser extent into industry—only explains about one fifth of productivity growth.⁵²

⁵⁰ Formality rates calculated based on national definition of informality, and therefore might differ from internationally comparable calculations used in the previous section. Informal jobs include: farmers, herders, and fishermen (self-employed or employees of firms with no Registro Único de Contribuyente, or RUC); unpaid family workers; non-farmer self-employed, employee, or employer of firm with no RUC; and wage employees not contributing to Social Security. Formal jobs include: wage employees contributing to Social Security; employers of a registered firm (with a RUC); and self-employed workers with a registered firm (with a RUC).

⁵¹ Rupert Bulmer et al. 2017

⁵² Ibid., 2017.

Figure 53. Change in Employment 2005-2015, by Sector Productivity



Source: Rupert Bulmer et al. 2017.

Note: Circle size is proportionate to employment share in 2005.

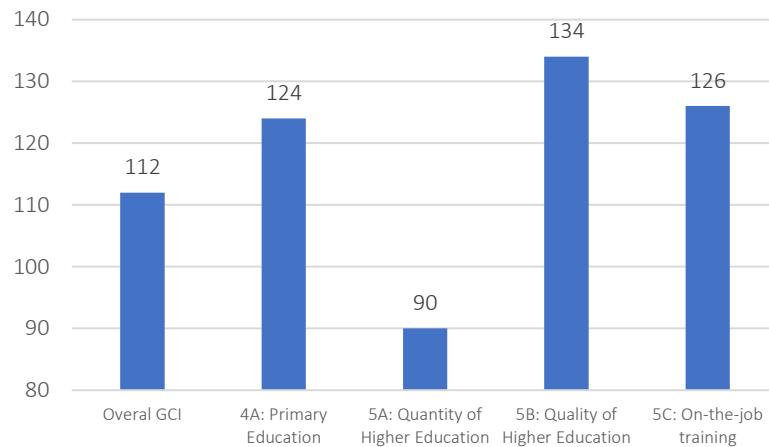
91. **Work status and education level matter for earnings.**⁵³ The labor market rewards educational attainment through higher wages, especially for those with a tertiary level. But formality status also matters. The wage premium for formal employment is 54 percent, other things being equal, which at least partly reflects higher productivity. In the public sector, wages are a third higher than comparable work in the private sector and grew faster than all other work status categories; this faster wage growth is unlikely to be driven by productivity gains, however.

92. **Without improvement in current indicators of human capital, prospects for improving labor productivity growth are modest.** The lack of an adequately educated workforce was the second most-cited problematic factor for doing business in the country, trailing only corruption, in the 2017-2018 World Economic Forum's Global Competitive Index (section 2.2.4). Private employers report significant skills gaps, especially relating to client-facing skills (communications, customer service), business operating skills (computing, accounting, marketing), and soft skills.⁵⁴ A growing proportion of new entrants in the workforce have secondary and some tertiary education, but do not have the competencies being sought, especially in high-value or export-oriented sectors, resulting in a skills mismatch and unmet expectations among young people. Paraguay consistently ranks among the worst performers across most indicators in the Global Competitive Index of Education (Figure 54).

⁵³ Rupert Bulmer et al. (2017)

⁵⁴ Observatorio Laboral. 2017. "Encuesta sobre Necesidades de Capacitación Laboral: Resumen Finales", Sistema Nacional de Formación y Capacitación Laboral (SINAFOCAL), Ministerio de Trabajo, Empleo y Seguridad Social de Paraguay, Mayo 2017.

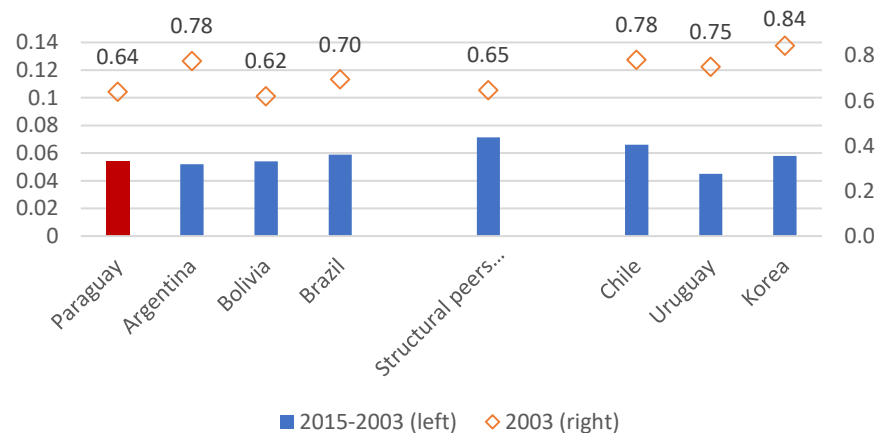
Figure 54. Paraguay's Ranking in the Global Competitiveness Index of Education (out of 137)



Source: World Economic Forum.

93. Despite recent progress in the Human Development Index—a composite index of average progress in life expectancy, education, and GNI per capita—Paraguay still has gaps relative to aspirational peers, and remains with one of the lowest HDI scores among regional or structural peers. The increase in the HDI—from 0.64 in 2003 to 0.69 in 2015—was in line with that of regional and aspirational peers, but was significantly lower than structural peers (Figure 55). In fact, Paraguay's ranking declined over this period (84 out of 175 in 2003, versus 110 out of 188 in 2015). This is consistent with lagging progress in mortality: while life expectancy has consistently grown, Paraguay went from having one of the highest life expectancies at birth in Latin America in 1960 to having the third lowest in 2014 (Figure 56a). In education, school attainment has increased over time, but quality as measured by standardized test show a low performance: both 3rd and 6th graders' math and reading tests are among the lowest of upper-middle income level countries (Figure 56b).

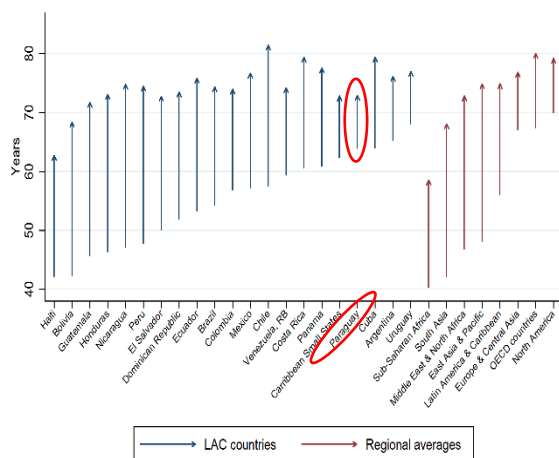
Figure 55. Human Development Index, Paraguay and comparators



Source: World Development Indicators, World Bank.

Figure 56. Life Expectancy and Learning Outcomes

(a) Life expectancy, Paraguay and LAC countries, 1960-2014



(b) Mean performance in math for 6th graders, TERCE, 2013



Source: World Development Indicators.

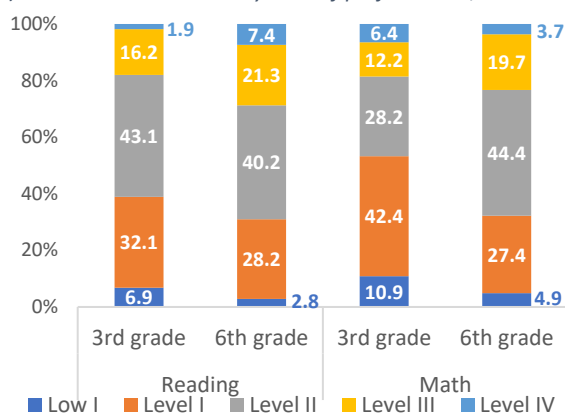
Source: TERCE (2013) based on WDI, World Bank.

94. For future entrants into the labor markets to find productive jobs, student learning outcomes will need to improve. Despite increased educational attainment, schooling quality remains very low. Only 4 out of every 100 children in the 6th grade of primary school reach a satisfactory level on regional math tests (Third Regional Comparative and Explanatory Study, TERCE) and only 7 out of every 100 children in the same grade reach a satisfactory level in reading (Figure 57a). Moreover, while reading test scores have shown improvements between 2006 and 2013, math test scores have deteriorated during this period, and Paraguay remains among the low performers in the region (Figure 57b). This will have important ramifications, as learning and skills acquired, rather than years of schooling, are decisive for future economic growth.⁵⁵

⁵⁵ World Bank, 2018d.

Figure 57. Student Performance on TERCE

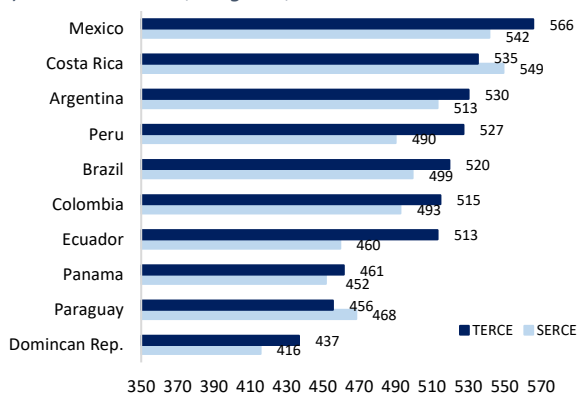
(a) Test score distribution by level of performance, 2013.



Source: World Development Indicators, World Bank.

Notes: Level IV represents satisfactory performance on the TERCE test.

(b) Math test scores, 3rd grade, 2006 and 2013



Source: TERCE (2013) extracted from EdStats.

Notes: SERCE (2006) and TERCE (2013) are comparable over time.

95. **Access to higher education has improved, but it remains low and quality is lacking.** Enrollment in higher education increased from 15.4 percent in 2003 to 25.9 percent in 2016.⁵⁶ But the sector is characterized by high fragmentation among providers (16 public institutions and 74 private organizations offer vocational services and higher education), lack of clear regulation to ensure minimum standards of the services provided, lack of coordination between primary and high-school education on the one hand and higher education on the other, and a curriculum that is disconnected from the needs of the labor market.⁵⁷

96. **While Paraguay has an extensive and well-resourced TVET system, activities to date have had mixed or uncertain results.** As part of the Paraguay 2030 Development Plan, the Ministry of Labor, Employment, and Social Security (MTESS) is responsible for the promotion of decent and inclusive employment, training and qualification for employability, and social protection, with an emphasis on vulnerable groups. Training is offered through two inter-related services. Firstly, the MTESS offers a range of training courses through SINAFOCAL (the National Labor Training System), designed to meet firms' individual training needs, though it mostly reaches larger firms. Meanwhile, it offers general job training courses as a public policy through the National Service for Professional Promotion (SNPP), which reaches all departments of the country. Services include entrepreneurship training, Informatics and Language, and job-readiness programs tailored to adolescents, among others. In both cases, however, results are unknown as monitoring and impact evaluation are limited. More generally, Active Labor Market Policies (ALMPs) would benefit from moving from ad-hoc, self-standing interventions to an integrated package of services that can be adapted to the needs of different population groups, with updated course designs and the implementation of a modern monitoring and evaluation system.

97. **Paraguay has made considerable progress in basic service delivery and chronic malnutrition.** From 1990 to 2015, Paraguay increased its piped water coverage levels by 63 percentage points (going from 30

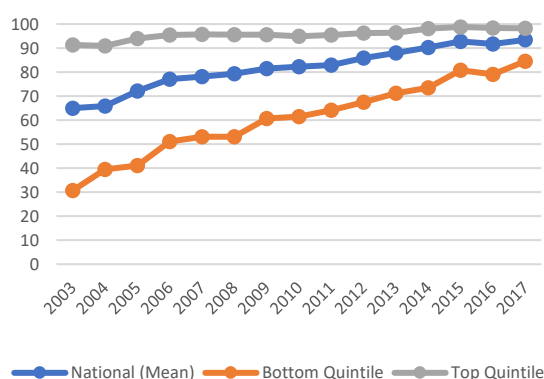
⁵⁶ Enrollment estimated from EPH based on school attendance for the age group 18 to 21 (World Bank, 2018c)

⁵⁷ World Bank, 2018c

percent to 93 percent), the fastest rate of expansion in the world during this period.⁵⁸ After a major policy shift in the 2000s, the gap in improved water access between the richest and poorest quintiles narrowed considerably (Figure 58a). Basic sanitation coverage also increased from 71.9 percent in 2000 to 91.3 percent in 2015, driven mainly by the adoption of unshared sanitation facilities, with the prevalence of septic tanks increasing from 13.7 percent to 44.7 percent over the same period.⁵⁹ This effort, together with increased household incomes, higher maternal education, and healthcare and family planning, contributed to lower child chronic malnutrition.⁶⁰ In 2016, the prevalence of stunting, at 6 percent, was one third of what it was about 10 years previously (Figure 58b).

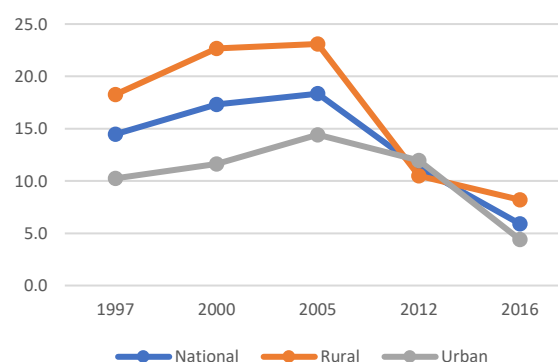
Figure 58. Access to Improved Water and Child Stunting

(a) Access to Piped Water by Income Quintile, 2003-2017



Source: Authors' calculations based on EPH.

(b) Stunting Prevalence (Children under 5, HAZ<-2), 1997-2016



Source: EPH, MICS 2016.

98. **Nevertheless, access to high-quality water and sanitation services would need to be improved.** Despite rapid gains in piped water coverage over the past decade, safely managed drinking water—which is defined as being (1) located on premises, (2) available when needed and (3) free from faecal and chemical contamination—remains unavailable to 47 percent of the Paraguayan population.⁶¹ In rural areas 59 percent of the population lacks access compared to 40 percent of the urban population.⁶² Furthermore, only 15 percent of the population (17 percent urban and 12.4 percent rural) has access to improved sanitation facilities, which are not shared with other households and where excreta are safely disposed in situ or transported and treated off-site.⁶³

⁵⁸ WHO/UNICEF. 2015. Water Supply Statistics.

⁵⁹ WHO/UNICEF Joint Monitoring Programme, 2017. Available at <https://washdata.org/data#!/pry>

⁶⁰ Paul Ervin and Vit Bubak. *Closing the Rural-Urban Gap in Child Malnutrition: Evidence from Paraguay, 1997-2012*. Instituto Desarrollo, 2017.

⁶¹ The three criteria for safe drinking water are defined by the Sustainable Development Goals' Target 6.1. WHO/UNICEF. *Progress on drinking water, sanitation, and hygiene: 2017 update and SDG baselines*, 2017.

⁶² UNICEF Paraguay Multiple Indicator Cluster Survey (MICS), 2016. Available at: <https://www.unicef.org/paraguay/spanish/unicefpy-folletomics.pdf>

⁶³ These are the criteria for safely managed sanitation facilities defined by the Sustainable Development Goals' Target 6.2. Ibid., 2017; MICS 2016.

99. **Limited access to high-quality water and sanitation services manifest in some fragile early childhood development outcomes.** Lack of access to safe, clean drinking-water and basic sanitation, as well as poor hygiene, increase the risk of severe infectious diseases, especially diarrhea, which can contribute to malnutrition. With a 12 percent occurrence rate, diarrhea is identified as one of the top three predominant causes of death for children under five (after pneumonia and influenza).⁶⁴ Continued and severe bouts of malnutrition can have lifelong consequences on brain development, future learning outcomes, and productivity.⁶⁵

100. **As the disease burden shifts from communicable diseases to non-communicable diseases (NCDs), the risk of chronic morbidity and disability will increase, with implications for human capital and productivity.** Globally, NCDs account for two out of every three years lived with a disability.⁶⁶ From 1990 to 2016, Paraguay observed a large shift in disease burden from communicable diseases towards NCDs.⁶⁷ Cardiovascular diseases now burden the Paraguayan population more than any other diseases in terms of disability adjusted life years (DALYs), a composite measure of life years lost due to morbidity and early death. Other non-communicable diseases associated with obesity and alcohol consumption, such as diabetes and liver diseases, are rapidly growing. Strengthening disease prevention by increasing opportunities for physical activity, expanding the availability and affordability of a healthy diet, and lowering alcohol consumption, may reduce the future incidence of NCDs and limit their burden on the healthcare system.

2.2.4 Institutions, policies, and regulations

101. **The quality of governance remains fundamental for Paraguay's development path.** A historical perspective shows that Paraguay has improved its performance in some important governance areas (Figure 59), albeit from a low starting point. Efforts to enhance the professionalism and efficiency of the bureaucracy have been made – nevertheless, the country continues to lag the regional average and performs below the OECD average with respect to the various governance dimensions. In particular, Paraguay falls in the twentieth percentile, the lowest, for government effectiveness, control of corruption, and rule of law (Figure 60). The Government's limited institutional capacity for planning, implementing, and monitoring public policies directly affects the performance of the public administration and thereby weakens its ability to improve the delivery of basic services to citizens, especially the poor and most vulnerable, and sustain recent gains in poverty reduction.

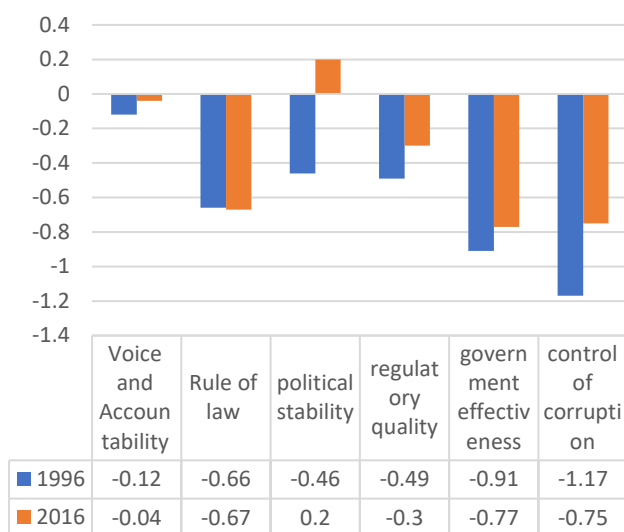
⁶⁴ Paraguay Country Report. Pan-American Health Organization, 2017. Available at https://www.paho.org/salud-en-las-americas-2017/?page_id=147.

⁶⁵ Kar, B. R. et al. Cognitive Development in Children with Chronic Protein Energy Malnutrition. *Behavioral and Brain Functions*, 4(1), 31, 2008; Hoddinott, J. et al. Effect of a Nutrition Intervention during Early Childhood on Economic Productivity in Guatemalan Adults. *The Lancet*, 371 (9610), 2008, 411–416.

⁶⁶ Nicola C Richards et al. Disability, noncommunicable disease and health information. *Bulletin of the World Health Organization* 2016; 94, 230-232.

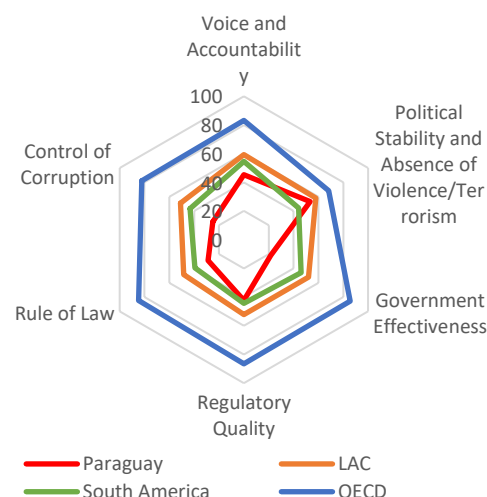
⁶⁷ *The Global Burden of Disease Study*. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2016.

Figure 59. World Governance Indicators for Paraguay, 1996 and 2016



Source: World Governance Indicators, 2017.

Figure 60. World Governance Indicators for Paraguay and Peers, 2016



Source: World Governance Indicators, 2017.

102. Paraguay has a low number of regulatory barriers that limit competition relative to its regional and structural peers, but certain regulatory constraints might be limiting competition relative to most of its aspirational peers. OECD-World Bank Group Product Market Regulation (PMR) data suggests that, compared with its neighbors (Argentina, Bolivia and Brazil) and regional averages, overall regulatory restrictiveness in Paraguay is relatively low (Figure 61).⁶⁸ However, when compared to LAC and OECD top performers, Paraguay still has significant space to align government interventions in markets so that they encourage firms to operate efficiently. A deeper examination indicates that Paraguay's license and permits system is not as complex as that of its regional peers and that there are generally fewer legal barriers that offer regulatory protection for incumbents. Nevertheless, restrictions to competition from foreign providers (for example, through imports) are high in Paraguay relative to most of its regional and structural peers, and discriminatory restrictions persist in the access of foreign suppliers to public procurement tenders in sectors such as construction or professional services. Foreign ownership is also constrained in sectors such as passenger transport.

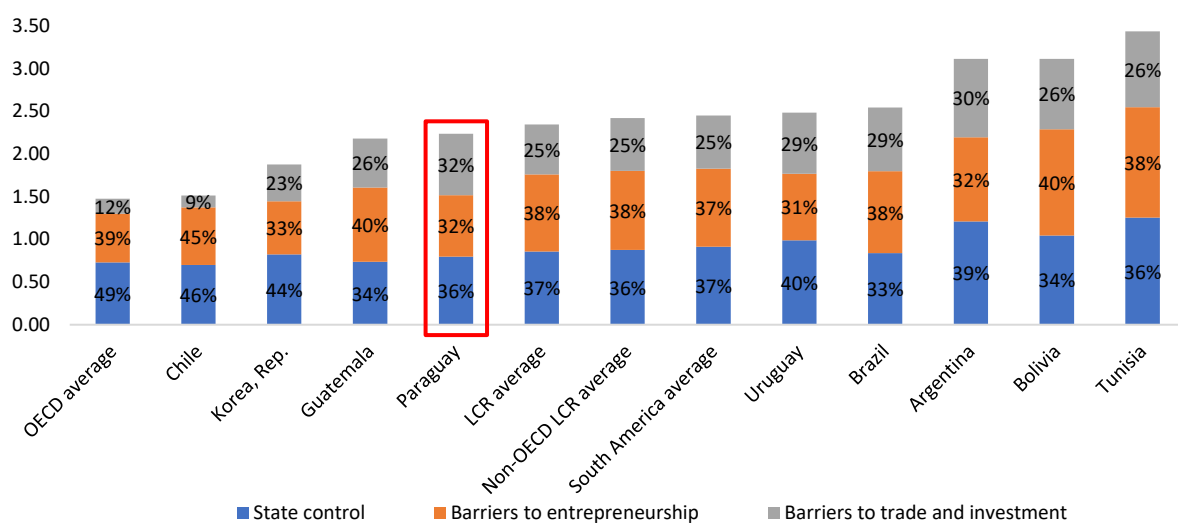
103. The state and state-owned enterprises (SOEs) play a significant role in key markets of the economy that could be typically served by the private sector. Figure 61 breaks down overall product market regulation

⁶⁸ The OECD-WBG PMR data are part of the WBG's Markets and Competition Policy Database. Product Market Regulation (PMR) indicators assess the extent to which public policies promote or inhibit market forces in several areas of product markets. Each of the areas addressed within the PMR methodology sheds light on specific restrictions of the regulatory framework, both economy-wide and in key sectors, on twelve topics: electricity; gas; telecoms; post; transport; water; retail distribution; professional services; other sectors; administrative requirements for business start-ups; treatment of foreign parties; and others, such as governance of public-controlled enterprises or antitrust exclusions and exemptions. The information included in this dataset was collected as part of a partnership between the Markets & Competition Policy Global team of the World Bank Group (WBG) and the Economics Division of the Organisation for Economic Co-operation and Development (OECD) to produce PMR indicators for 10 LAC countries (Brazil, Costa Rica, Chile, Colombia, Dominican Republic, El Salvador, Honduras, Jamaica, Mexico, Nicaragua, Peru, and Uruguay), a partnership which was later supported by the Inter-American Development Bank to produce indicators for 5 additional countries in the region (Bolivia, Ecuador, Guatemala, Panama, and Paraguay). For further details on the PMR methodology, see the Product Market Regulation Indicators Homepage of the OECD.

(PMR) score into the three sub-indicators: state control, barriers to entrepreneurship, and barriers to trade and investment. While the overall extent of state control in Paraguay is less than in its regional, structural, and aspirational peers, there is a greater government involvement in network sectors than in most of its peers. Paraguay's SOEs have monopoly rights in sectors such as electricity, telecommunications, water, and postage. In electricity, ANDE, an SOE, has a legal monopoly in all segments including generation, where private sector participation is typically viable. COPACO SA, an SOE in the telecommunications sector, has a monopoly in fixed-line services. There is private participation in mobile services and internet, but the state owns one of the four market competitors.

104. **Paraguay is developing a competition-law enforcement.** While Paraguay has had a competition law in place since 2013, essential staff to execute its functions were not appointed until 2016. In 2017, the relevant agency closed its first-ever review of a merger and acquisition transaction, but has yet to sanction any cartel agreement or unilateral anti-competitive practice.

Figure 61. OECD Product Market Regulation Indicator



Note: Absolute values from 0 to 6. Higher values are associated with regulations more restrictive to competition
Source: OECD Product Market Regulation database, and OECD-World Bank Group Product Market Regulation database for non-OECD countries 2013-2016, as of May 2018.

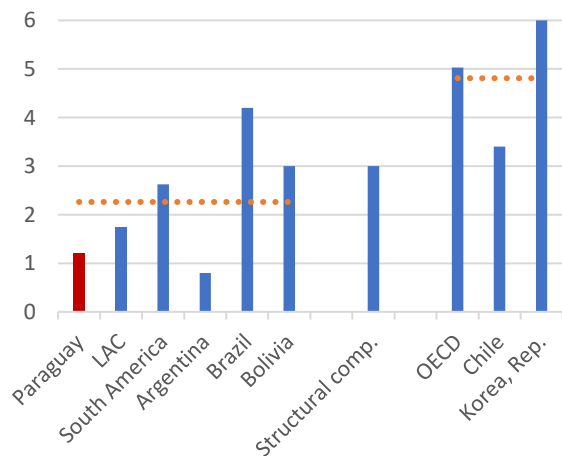
105. **The Government has begun an important reform process to improve the governance framework of SOEs.** SOEs in Paraguay are essential providers of basic public services, such as water, sanitation, and electricity. In terms of corporate governance, important achievements include the establishment, in 2013, of a centralized oversight body, the National SOE Council (Consejo Nacional de Empresas Públicas) and the adoption of Corporate Governance Code for SOEs (Código Arandú), inspired by OECD best practices and approved by decree in 2016. The Code calls for the separation of management from the board of directors, as well as the nomination of board members by the Consejo (as provided for in the law), who have to be independent (i.e., no government employees). Other important provisions of the Code include the adoption of a comprehensive transparency and disclosure policy on financial and non-financial statements, including stakeholder outreach and the creation of a user-friendly information portal.

106. **Despite these efforts, important challenges are yet to be addressed to improve the performance of SOEs.** The available evidence indicates that service delivery by most SOEs remains weak in general and few companies manage to achieve other objectives such as building technical or sectoral expertise. SOEs in

Paraguay face specific governance challenges related to their status, including regulatory, institutional, and human resources challenges. Firstly, they are mostly protected from major threats such as bankruptcy, and they are sometimes protected from competition. This often creates market distortions, crowding out the private sector. Secondly, despite the provisions of the Corporate Governance Code, merit-based appointments of directors, managers, and staff is not a general practice, nor is financial and operational disclosure, nor the regulation of conflict of interest among senior SOE officials. This has led to mismanagement, inefficiency, and an inflated payroll in some SOEs. Third, procurement processes lack transparency and rigorous processes to ensure value-for-money in the acquisition of goods and services. Fourth, despite the existence of performance contracts between the CNEP and the companies, objective and target settings are often unrealistic, and there are limited incentives in place to ensure compliance. Finally, SOEs in Paraguay often operate in a complex institutional environment where informal practices trump formal requirements, undermining government oversight efforts and SOE compliance with the Code.

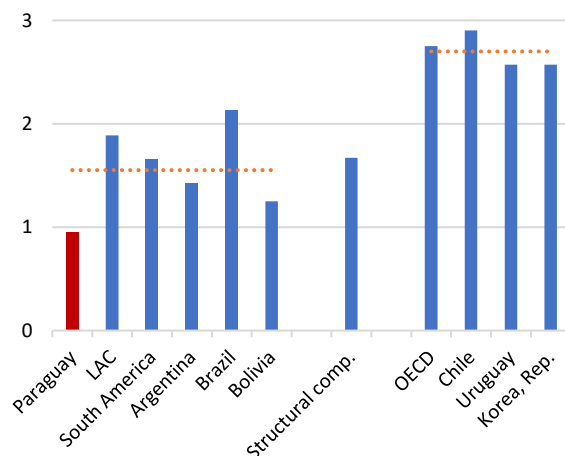
107. **The public administration has yet to enlarge a professional bureaucracy.** The professional bureaucracy base in Paraguay remains small. While normative and legislative systems exist, evidence from the 2016 Global Indicators of Regulatory Governance, for example, suggests that the Paraguayan public sector is under-regulated, and faces significant challenges in implementing laws, regulations and policy decisions (Figure 62). This in turn undermines the quality of public policies, which are often not implemented and enforced, and reflects high levels of inefficiency relative to regional and structural peers (Figure 63).⁶⁹ Weak capacity in the civil service also contributes to bureaucratic red tape and widespread use of personal discretion by officials, which are among the main obstacles to doing business in Paraguay, fostering an environment that is particularly challenging for micro- and small enterprises.

Figure 62. Implementation of Laws and Regulations in Paraguay and Peers



Source: Global Indicators of Regulatory Governance database (<http://rulemaking.worldbank.org>), World Bank.
 Note: The Score designed to quantify good regulatory practices in three core areas: transparency around proposed regulations, consultation on their content, and the use of regulatory impact assessments.

Figure 63. The Quality of Public Policies in Paraguay and Peers



Source: Franco Chuaire & Scartascini, C. (2014).
 Note: The graph shows an aggregate Index comprising the following sub-dimensions: Policy Stability, Efficiency, Adaptability, Coherence, Implementation and Enforcement, and Public Regardedness. Paraguay is the worst performer in 5 out of 6 dimensions captured by the Index.

⁶⁹ Franco Chuaire, M. and C. Scartascini. *Political Institutions, State Capabilities, and Public Policy: An International Dataset*. 2013 Update. IDB Database 112. Washington, DC: Inter-American Development Bank, 2013.

108. **The coherence and effectiveness of the policy-making process is affected by the emergence of multiple veto players intended to balance distribution of power among branches of government.** The 1992 constitution sought to establish a system of checks and balances that granted the legislature veto powers to control the executive, representing in practice an important challenge for the legislative agenda.⁷⁰ Many reform areas identified as crucial by key stakeholders (including the privatization of public enterprises, civil service reform, and the modernization of public-sector management through regulatory reforms) have not moved forward as social and political coalitions to promote key reforms could not yet be built. Between 1993 and 2003 the success rate of executive-initiated bills fell from 96 percent to 65 percent.⁷¹

109. **In similar contexts, efforts to pass broad legislative agendas have often involved the deployment of personal incentives to build coalitions, increasing the risk of corruption.** As shown in a recent comparative analysis of party systems in Latin America, efforts to build coalitions within congress in support of the presidential agenda can foster corruption, as politicians look for less legitimate means of obtaining support from deputies and senators. Such a context of presidential weakness also encourages presidents to create public positions for patronage reasons, give jobs to political appointees, and grant public-sector jobs to political supporters.⁷²

110. **Institutional challenges, combined with rising expectations of a growing middle class, have combined that perceptions of corruption continue to permeate public affairs.** Although there have been advances in public transparency, the perception of corruption continues to be a challenge. According to international studies and rankings, corruption in Paraguay is widespread and involves multiple sectors of government and private enterprise. Trade-related contraband activities stand out as perhaps the most persistent form of corruption.⁷³ In 1998 Paraguay was rated by Transparency International as the second most corrupt country in the world (of those countries surveyed, following except for Cameroon). Almost two decades later, the country was not in the bottom quartile of countries any more but still ranked 123rd out of 176 countries in the 2016 Corruption Perception Index. Paraguay was the country with the fifth-highest perception of corruption in the LAC region after Guatemala, Nicaragua, Venezuela, and Haiti. These perceptions tend to correlate with public opinion surveys: more than a third of the population (37 percent) has experienced corruption, 54 percent consider corruption to be “highly generalized” among civil servants and business executives alike, and 68 percent believe that the government is doing a poor job of fighting corruption (well above the regional average of 53 percent).⁷⁴

111. **To address the root causes of corruption, the government launched an ambitious package of reforms in fiscal transparency, open contracting access to information, and open data.** An important Transparency law was enacted in 2014 requiring all public offices to disclose information regarding the use of public funds to pay salaries. Later on, the reform process included measures on fiscal transparency and procurement reforms (open contracting) and culminated in the adoption of the Access to Public Information (API) Law,

⁷⁰ Juan J. Linz. “The Perils of Presidentialism” in *Journal of Democracy*, 1, 1, 1990; 51–69.

⁷¹ J Molinas, et al.. De la concentración a la fragmentación. El juego político en Paraguay en los últimos 50 años. In C. Scartascini, P. Spiller, E. H. Stein & M. Tommasi (Eds.), *El juego político en América Latina: ¿Cómo se deciden las políticas públicas?* (pp. 341-384). Washington DC: Banco Interamericano de Desarrollo, 2011, 355.

⁷² Scott Mainwaring, *Party Systems in Latin America: Institutionalization, Decay and Collapse*. Cambridge University Press, 2018.

⁷³ BTI 2016; Nickson 2009

⁷⁴ Transparency International. 2017

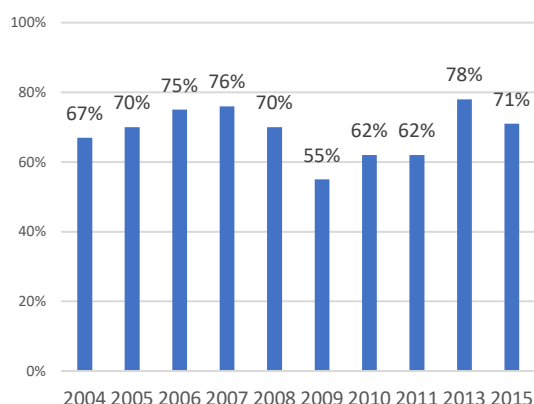
followed by the launch of the Open Data Portal and the issuing of national guidelines for the publication of datasets by public institutions. The API Law establishes the minimum mandatory information that state entities, particularly the executive branch, must make available to the public. This includes information on the national budget, the budget proposal, budget execution, public debt, and public procurement. Recent innovations have significantly expanded access to fiscal information, such as the BOOST Database,⁷⁵ the Portal of Financial Reports, the Open Government Data Catalog, the Open Data portals of the Ministry of Finance and the National Directorate of Public Procurement (DNCP). The DNCP, along with other public institutions, has made their data available through Paraguay's Open Government Data Portal,⁷⁶ as well as through institutional portals. The DNCP also adopted the OCDS, making Paraguay the first country in the world to do so. Currently, Paraguay, Colombia, and Mexico are the only three countries in the region that have adopted the OCDS. According to the Global Open Data Index's indicator on procurement, Paraguay is among the top 10 countries in the world in terms of disseminating information about tenders and awards of public procurement contracts.

112. **Notwithstanding the important advance made in recent years in public transparency, high levels of perceived corruption risk to compromise the legitimacy of public institutions and can undermine the business environment.** Survey data indicate a persistent belief among citizens that more efforts necessary to reduce corruption (Figure 64) and that would change the perception that public policies reflect the interests of specific individuals or groups rather than promoting general welfare. Indeed, 88 percent of respondents currently believe that the country is governed for the benefit of the powerful, the highest percentage in the LAC region (Figure 65). Over time, these public attitudes toward authorities can undermine the social contract between the state and its citizens, reducing citizens' incentives to contribute to the provision of public services (by paying taxes) and thus eroding fiscal space. Moreover, by blunting competition and discouraging innovation, productivity and job creation, corruption also creates barriers to entry into the economic arena and impedes the growth of less connected and/or smaller businesses, the success of which is essential if Paraguay's economic inclusiveness is to be improved. Both the Global Competitiveness Index (GCI 2017-2018) and the World Bank 2017 Enterprise Survey still report corruption as the most problematic factor for doing business in Paraguay, with 34 percent of firms having to pay bribes to secure government contracts (compared with a regional average of 20 percent).

⁷⁵ The BOOST Database for Paraguay was launched in 2013 by the Ministry of Finance in collaboration with the World Bank. Paraguay was the first country in LAC to disseminate budget data to the public using BOOST. The BOOST Database for Paraguay provides access to highly disaggregated public expenditure data for government entities in the central administration, decentralized entities, and municipalities. It can be accessed at http://isdatbank.info/boost_paraguay/.

⁷⁶ Available at <http://www.datos.gov.py>.

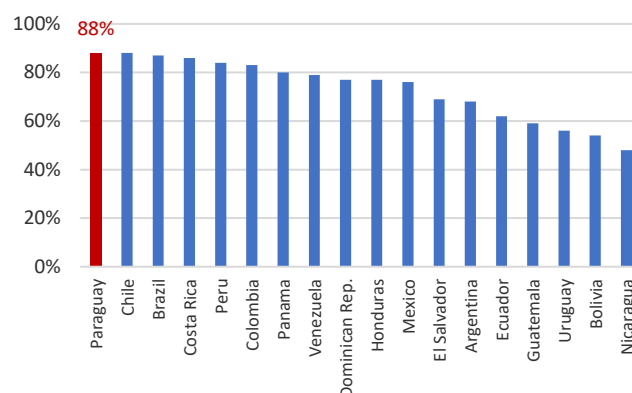
Figure 64. Perception of Corruption in Paraguay, 2004-2015



Source: *Latinobarometro*, 2004-2015.

Notes: Percent of respondents who report that there has been little or no progress in reducing corruption in state institutions over the two years preceding the survey year.

Figure 65. Perception of Governance in Paraguay and Peers, 2016

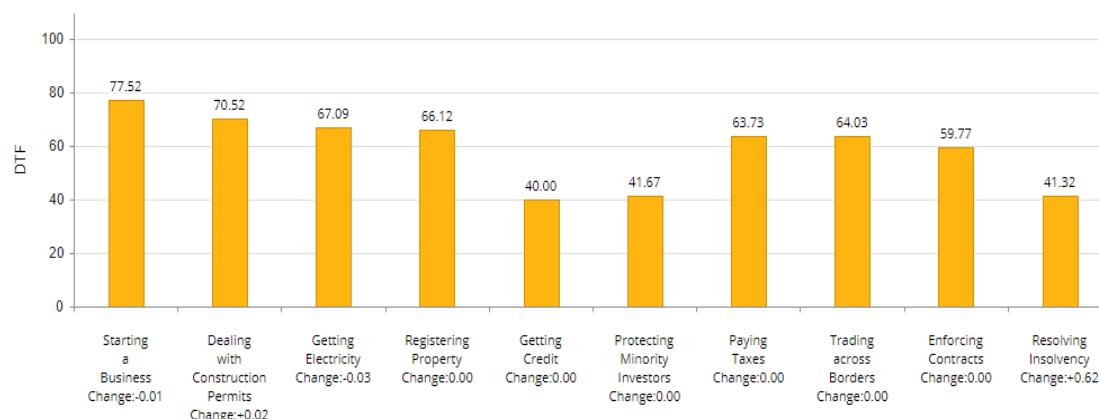


Source: *Latinobarometro*, 2016.

Notes: Percent of respondents who say the country is governed for the benefit of the powerful.

113. **Many of the competitiveness challenges facing Paraguay relate to the barriers entrepreneurs and firms face when doing business.** The World Bank's Doing Business Index captures the extent of the barriers related to starting a business, finding a location, financing, daily operations, solving conflicts, and closing a business in Paraguay (Figure 66). Paraguay has a Distance to Frontier (DF)⁷⁷ of 59.18, slightly above the Latin American Average (58.68). The areas where Paraguay is weakest are credit access (DF 40), resolving insolvency (DF 41.32), protecting minority investors (DF 41.67), enforcing contracts (DF 59.77), paying taxes (DF 63.75), and trading across borders (DF 64.03).

Figure 66. Distance to Frontier, Paraguay's Performance in Doing Business



Source: *Doing Business 2018*, World Bank.

114. **In the Global Competitiveness Index, Paraguay ranks above mean of the LAC region with respect to the Macroeconomic Environment and the Goods Market Efficiency pillars – but ranks below the mean for all other indicators.** Figure 67 shows the performance distribution of Paraguay and the best, worst, and median

⁷⁷ Distance to Frontier score captures the gap between an economy's performance and a measure of best practice across the entire sample, it is expressed in percent of best practice performance.

performers for each pillar in the LAC region. In the Institutions pillar, Paraguay's score comes slightly below the median and significantly below the regional leader, Uruguay. On Infrastructure, Paraguay scores significantly below the regional average and closer to the worst performing country, Haiti. In the macroeconomic pillar Paraguay scores above the mean, and although with a similar score, ranks below the mean in Health and Primary Education. In the efficiency enhancers, several pillars indicating how well markets work, Paraguay is close to the regional average except in Higher Education and Training and Technological Readiness. Finally, Paraguay performs below the regional average in the Business Sophistication and Innovation pillars (similarly, according to the World Bank Enterprise Survey, most firms in Paraguay do not spend on R&D, few introduce new processes, products and services, and there is close to no technology transfer from abroad). Compared with other reference groups, Paraguay does better than regional champions and performs similarly to OECD countries on Macro-environment, and performs similarly to structurally comparable peers in Market Size and Product and Factor Market Efficiency, but comes below all reference groups in Innovation and technological factors and Higher Education and Training.

Figure 67. Paraguay in the Global Competitiveness Index

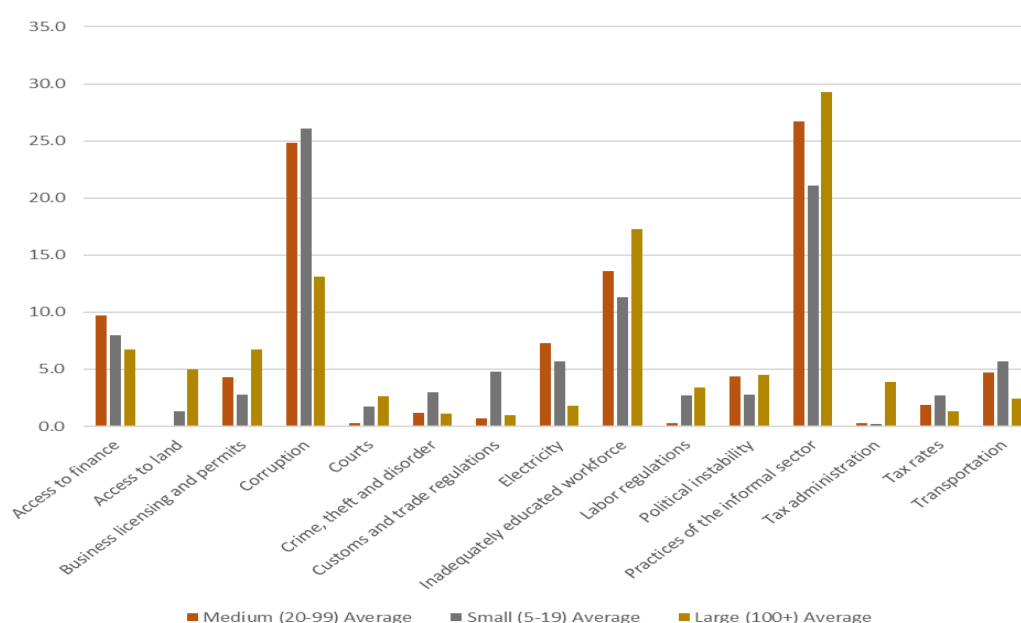


Source: Global Competitiveness Report 2017-2018.

115. **Managers and entrepreneurs in Paraguay have identified informality, corruption, lack of human capital, and inadequate supply of infrastructure as the top business environment obstacles for firms.** According to the latest edition of the World Bank Enterprise Surveys, entrepreneurs in Paraguay find that informality, corruption, the workforce lacking education, limited access to finance, and the unreliable electricity supply are the main obstacles to a suitable business environment for firms. The main obstacle differs for enterprises of different size and types. The main obstacle reported by small enterprises is corruption, followed by competition from the informal sector, and an inadequately trained workforce. Medium-size enterprises identify the informal sector, corruption and access to finance as the main barrier. Finally, large firms report that the practices of the informal sector, an inadequately educated workforce, and corruption are the main obstacles to growth (Figure 68). Exporters and non-exporters both consider that the practices of the informal sector are the main obstacle, but non-exporters find that corruption is more of a barrier than exporters do. Enterprises with full or part foreign ownership report that business licenses and permits and transportation are significant obstacles, whereas firms with full domestic

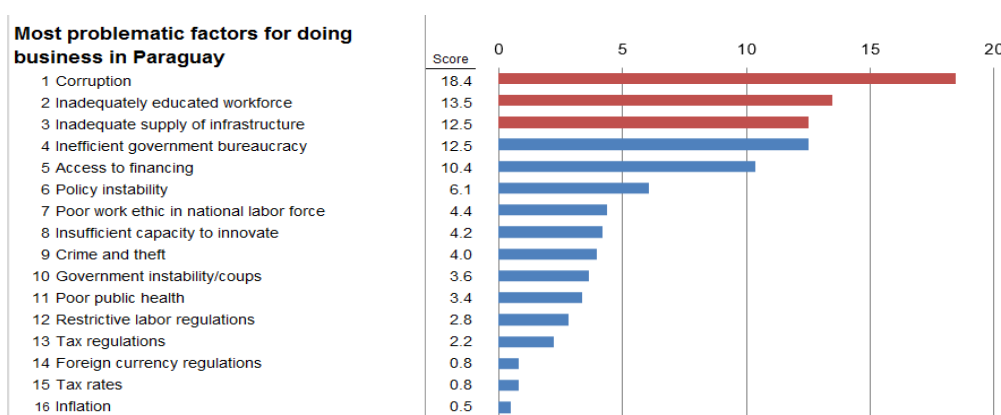
ownership do not. Likewise, there are differences between Asunción and central Paraguay with firms outside of the capital reporting insufficient transportation links, corruption, and an inadequately educated workforce as the main impediments to firm growth. The World Economic Forum Executive Opinion Survey finds that the most problematic factors for doing business in Paraguay are corruption, the inadequately educated workforce, inadequate infrastructure, inefficient government bureaucracy, and access to financing (Figure 69).

Figure 68. Top Business Environment Obstacles for Firms, by Firm Size



Source: Enterprise Surveys, Paraguay 2018, World Bank.

Figure 69. Most Problematic Factors for Doing Business

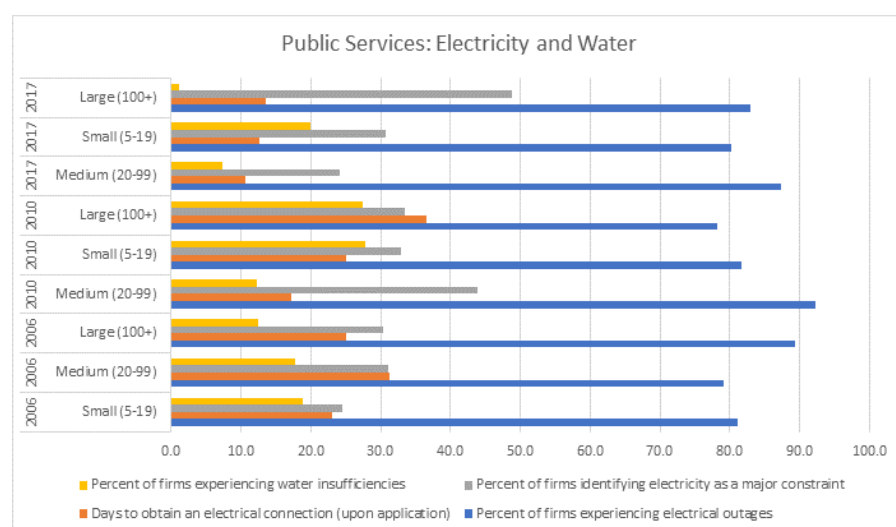


Source: Executive Opinion Survey, WEF, 2017.

116. **Regulatory barriers and the difficulty of accessing services affect SMEs disproportionately compared with larger firms and are contributing to informality and low productivity.** Surveys show that only 30 percent of SMEs have access to credit, compared with 44.5 percent in Latin America. This particularly affects informal firms. While banks tend to only accept immovable assets as collateral, SMEs tend to have only moveable assets. Registering new businesses is particularly burdensome in Paraguay, taking 35 days

compared with an average of eight days in the OECD. Lengthy insolvency procedures in Paraguay also prevent the fast reallocation of assets and productive capacity across firms and sectors. The recovery rate during insolvency procedures in Paraguay is 21 percent, compared with 71 percent in OECD countries, and it takes 3.9 years to resolve insolvency in Paraguay, compared with 1.7 in OECD countries. These three areas (access to credit, registering a business, and insolvency procedures) limit new entry to, and the growth and consolidation of a formal SME sector, so the Government developed a legislative package to reform business regulations affecting entry, access to credit, and exit of firms. World Bank Enterprise Surveys show that many firms face water and electricity outages (Figure 70). Insufficient provision of public goods limits the entry and growth of small firms, for which these barriers are harder to overcome through private provision.

Figure 70. Access to Electricity and Water as Obstacles for Firms, 2018

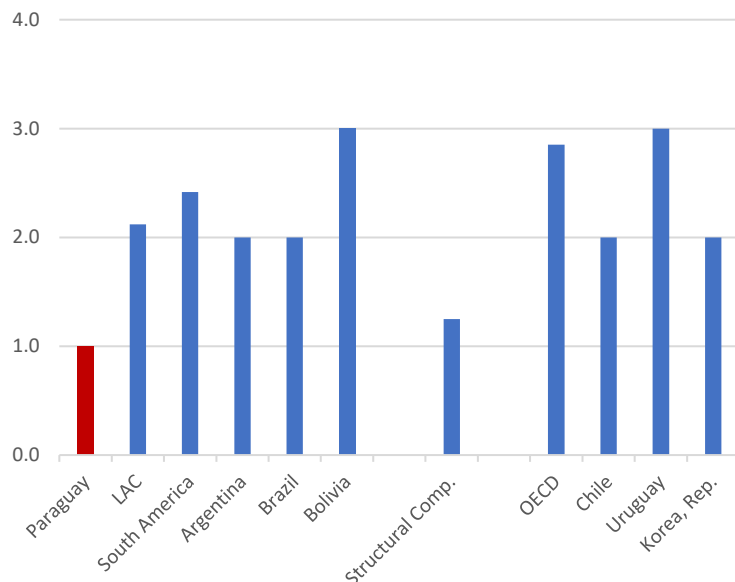


Source: Enterprise Surveys, Paraguay 2018, World Bank.

117. As the World Development Report (2017) argues, reaching a new and better governance equilibrium entails that groups currently with little voice and power become a more inclusive part of the policy making process. Modern and flourishing economies are characterized by a power “equilibrium”, in which powerful groups and family ties are held in check and balanced by open processes and voices of the economically less fortunate. With the important advances made on improving transparency and accountability, Paraguay has taken an important step, which would need to be built on in the future in this respect.⁷⁸

⁷⁸ Historically, an empirical analysis of all bills passed by congress over the 1993-2003 period showed that policy initiatives aimed at regulating broad economic sectors or nationwide activities and those intended to redistribute opportunities and income across social groups were the least likely to pass, whereas particularistic policies benefiting narrow groups of beneficiaries were more likely to pass. (Molinas et al., 2011)

Figure 71. Power Distribution by Socioeconomic Position in Paraguay and Peers



0: Wealthy people enjoy a virtual monopoly on political power. Average and poorer people have almost no influence.
1: Wealthy people enjoy a dominant hold on political power. People of average income have little say. Poorer people have essentially no influence.
2: Wealthy people have a very strong hold on political power. People of average or poorer income have some degree of influence but only on issues that matter less for wealthy people.
3: Wealthy people have more political power than others. But people of average income have almost as much influence and poor people also have a significant degree of political power.
4: Wealthy people have no more political power than those whose economic status is average or poor. Political power is more or less equally distributed across economic groups.

Source: Authors using data from Variety of Democracy Project, University of Gothenburg. University of Gothenburg, Variety of Democracy Project, 2018. Available at: <https://www.v-dem.net/en/>

Note: The graph shows experts' assessment of "power distribution by socioeconomic position" using an ordinal scale 0-4. Low score = high concentration of power. All societies are characterized by some degree of economic (wealth and income) inequality. In some societies, income and wealth are distributed in a grossly unequal fashion. In others, the difference between rich and poor is not so great. This measure is concerned not with the degree of social inequality but rather with the political effects of this inequality. Specifically, the extent to which wealth and income translates into political power.

3. Inclusion

3.1 Stylized facts: growth with inclusion

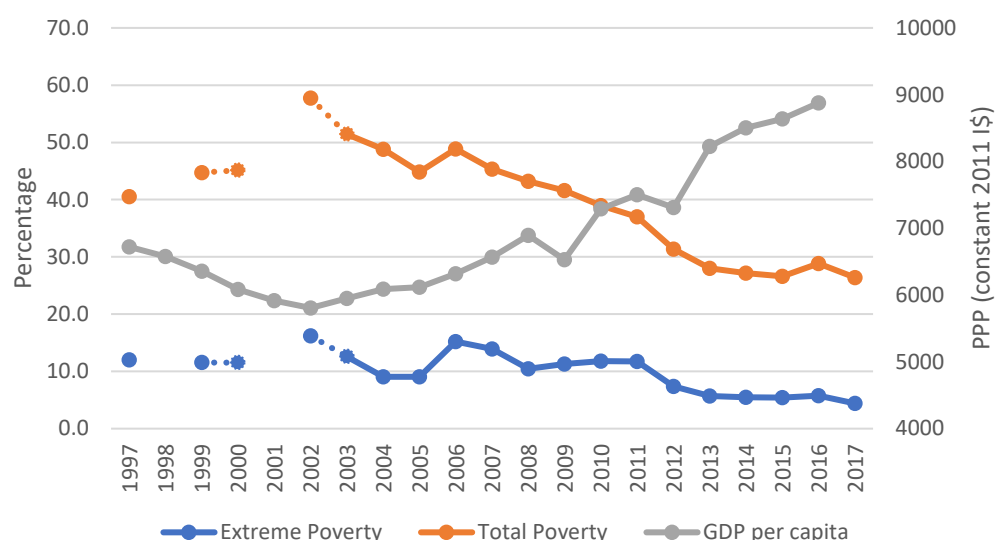
118. Economic growth experienced since the early 2000s has been accompanied by significant poverty reduction, albeit at varying rates throughout the period (Figure 72). Overall, poverty reduction mirrors macro-economic trends, with poverty rising in the late 1990s and falling since 2002.^{79,80} In 2017, both total and extreme poverty were significantly lower than in 2003, falling by 8 and 25 percentage points, respectively, though the reduction was not gradual or uniform, particularly for extreme poverty. Poverty reduction slowed down between 2013-2016, as capital-intensive GDP growth did not translate into higher labor incomes. However, following two years of zero growth in private per-capita consumption, a noticeable recovery observed in 2017, which is projected to continue in the next few years, may mark a new period of poverty reduction in Paraguay. In 2017, the official poverty rate fell by 2.5 percentage points

⁷⁹ Data before 2003 is not strictly comparable. In Figure 72, the complete series from 1997 is shown to illustrate overall trends, but in-depth analysis is only applied to data since 2003.

⁸⁰ In June 2017 the DGEEC released a new poverty series following the adoption of new poverty lines and updated population weights. Numbers therefore differ from previous publications. See details in Annex 2 Box 1

(from 28.9 percent to 26.4 percent) and the extreme poverty rate fell by 1.3 percentage points (from 5.7 percent to 4.4 percent), with both reaching historic lows.

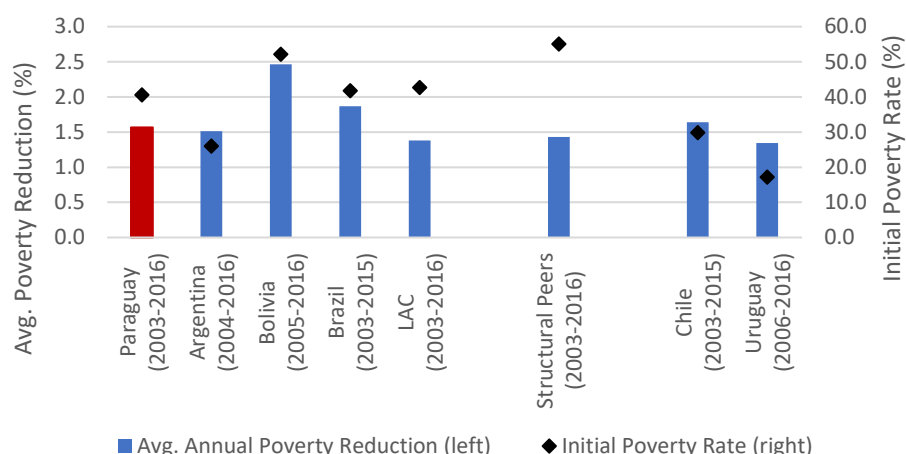
Figure 72. Trends in Official Poverty Rates (left) and GDP per capita (right), 1997-2017



Source: DGEEC; Banco Central del Paraguay.

119. **Poverty reduction was faster than the regional average and structural peers, though lower than most regional comparators and not as strong when taking into account the rate of economic growth (Figure 73).** In 2003 the poverty headcount in Paraguay was 2.1 percentage points lower than the regional average; by 2016 this difference had doubled. This was largely the result of the notable drop in poverty rates that occurred between 2011 and 2013, when the poverty headcount in Paraguay fell by 8 percentage points, while in LAC it dropped by only 3 percentage points. Until that point, Paraguay and the region had reduced poverty at similar rates. The gap with aspirational peers was reduced (from 11 to 10 percentage points relative to Chile between 2003-2015, and from 22 to 16 percentage points relative to Uruguay between 2006-2016). However, poverty in Paraguay is less sensitive to economic growth compared to the regional average. Based on the LAC growth-poverty elasticity between 2003 and 2016, GDP growth in Paraguay should have been associated with a 67 percent drop in the poverty rate. Instead, poverty fell by 50 percent.

Figure 73. Poverty Reduction since 2003 (or Closest Year Available), Measured at \$5.5 in 2011 PPP



Source: Poverty and Equity Database, World Bank

Box 5: Is there a macro-micro paradox in recent years?

While the LAC region experienced an economic slowdown that turned into a GDP contraction of 1.4 percent in 2015, Paraguay continued to grow. Between 2013 and 2016 Paraguay grew at an annualized rate of 3.9 percent. Furthermore, this was the first time that Paraguay's performance did not match that of its main trade partners, Argentina and Brazil, who experienced GDP contractions during the same period.

These latest gains, however, have not been reflected in household incomes, which fell by an annualized rate of 0.7 percent since 2013, with two consecutive drops in mean income in 2015 and 2016. This stagnation cannot be explained by data quality issues, and it is not driven by top incomes alone.

The following observations account for most of this apparent paradox:

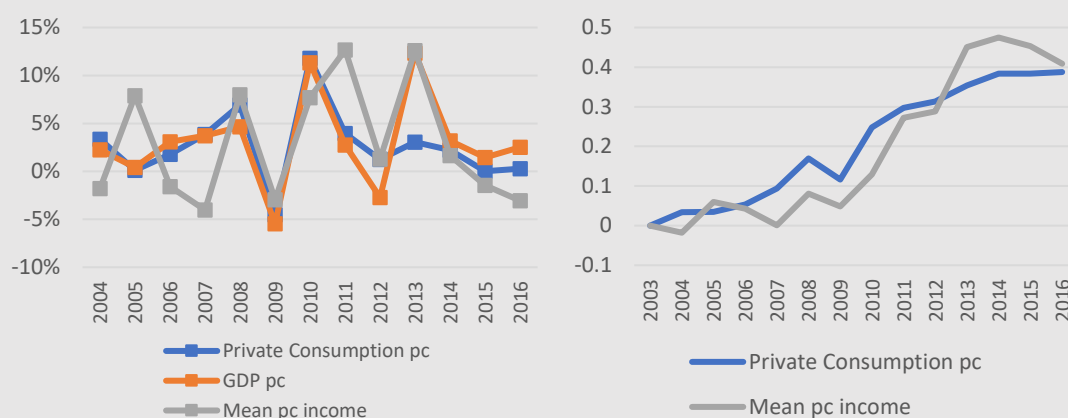
- . *GDP growth was not as high as observed once population growth is taken into account.* GDP per capita grew at an annualized rate of 2.4 percent between 2013 and 2016 once population growth is considered.

- . *Ongoing formalization of the economy could be causing an overestimation of growth in national accounts.* While formal activities are directly captured by the system, growth in the informal economy has to be estimated. If the assumptions behind this estimation are not properly adjusted, part of total GDP growth could be the result of a changes in informal-to-formal status rather than the creation of new economic output.

- . *National accounts also show stagnation in private consumption.* Per-capita private consumption did not grow in 2015 and 2016, contributing to an annualized growth rate of just 0.8 percent since 2013. The share of private consumption to GDP, which had been growing since the early 2000s, reached a peak of 70 percent in 2012 and fell thereafter to 62 percent in 2016, the lowest level since 2002.

- . *Macro and micro trends are consistent over the longer period.* Between 2003 and 2016 private per-capita consumption and mean per-capita income grew by the same cumulative rate of 39 percent (Figure 74). The fall in mean income in 2015 and 2016 is the result of the convergence between the two trends after the higher growth in mean income observed in earlier years, especially in 2013.

Figure 74. Growth of GDP per capita, Private Consumption per capita, and Household Income per capita
(a) Trends in per capita Growth Rates, 2004-2016 (b) Cumulative Growth Rates, 2003-2016



Source: EPH and Banco Central del Paraguay.

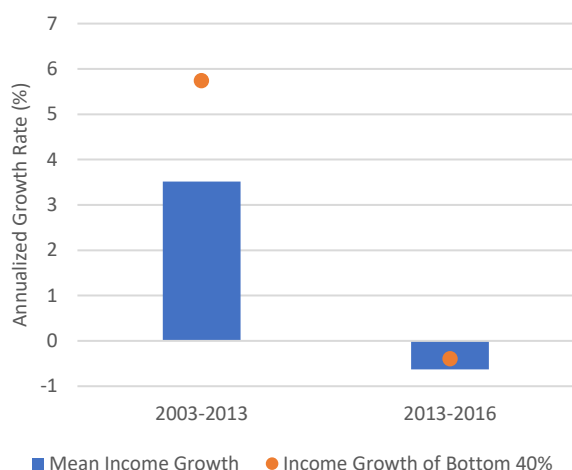
Source: EPH and Banco Central del Paraguay.

120. In terms of shared prosperity, Paraguay showed substantial income growth among the bottom 40 percent of the population and was higher than in all comparators. Between 2003 and 2013, the mean income of the bottom 40 percent grew at an annualized rate of 5.7 percent, while mean income overall grew at an annualized rate of 3.5 percent (Figure 75). Displaying substantial variation within the period, growth was particularly high towards the end of the decade (around 13 percent in the last two years), making Paraguay the top performer in the region.⁸¹ Consistent with the slowdown in poverty reduction, income growth became negative in 2013-2016, though it recovered in 2017 when average income among the bottom 40 grew by 7.5 percent.

⁸¹ World Bank 2016.

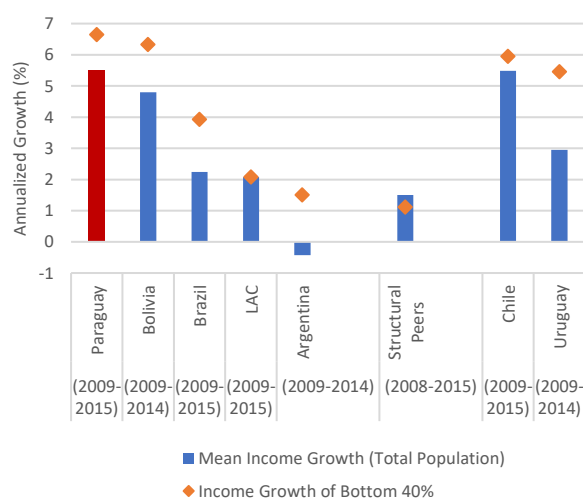
Figure 75. Shared Prosperity in Paraguay and Comparator Countries

(a) Shared Prosperity in Paraguay for Select Periods



Source: Authors' calculations using EPH.

(b) Shared Prosperity in Paraguay and Comparators circa 2009-2015

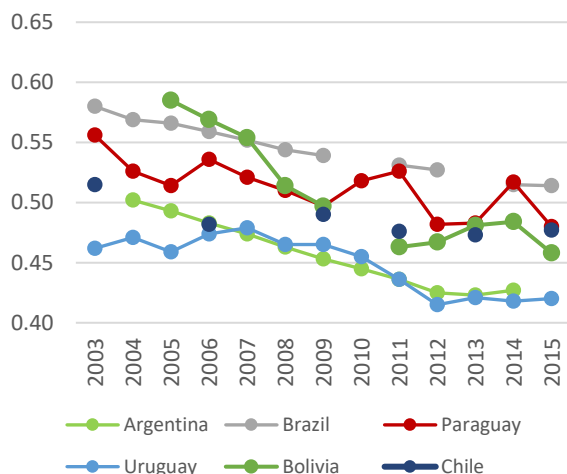


Source: Poverty and Equity Database, World Bank.

121. **Income inequality is lower than in 2003, but the downward trend displays notable year-to-year variation.** As in almost every country in the region, income inequality today is lower than at the beginning of the century. In Paraguay, the Gini coefficient fell from 0.55 in 2003 to 0.48 in 2015 (Figure 76). Unlike in most countries, however, progress has been marked by large year-to-year variations. While other countries have occasionally experienced changes of similar magnitude (including DR, Ecuador, and Colombia), none of the large variations have occurred with the frequency observed in Paraguay. This variation is closely linked to changes observed at the top of income distribution, which (consistent with GDP volatility) display substantial variability (See details in Annex 1, Box 2). While these large fluctuations have affected the ranking of Paraguay within the region, its position has been consistently among those countries with highest income inequality.

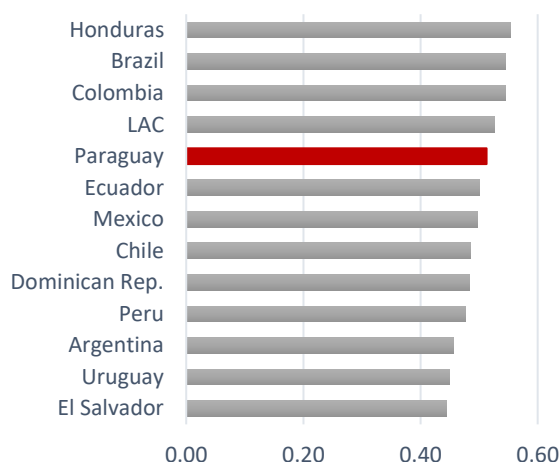
Figure 76. Inequality in Paraguay and Latin America

(a) Evolution of Gini Coefficient, Paraguay and LAC Comparators, 2003-2015



Source: Poverty and Equity Database, World Bank.

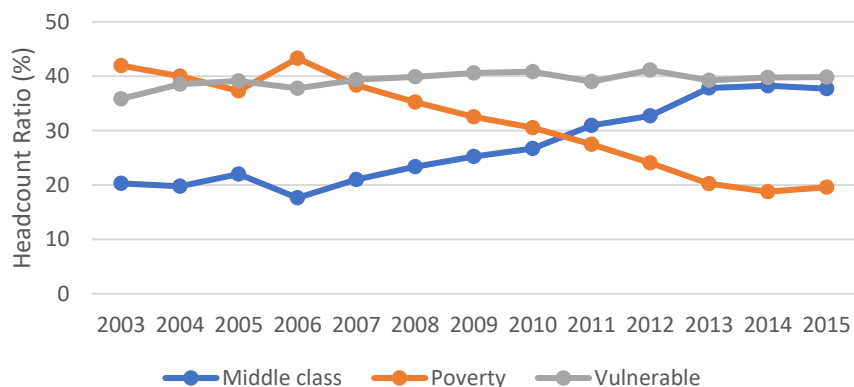
(b) Gini Coefficient, LAC Region, Average 2003-2015



Source: Poverty and Equity Database, World Bank.

122. The middle class almost doubled since 2003, becoming—at 38 percent of the population—the second largest population group, just below the vulnerable population. In 2003 just 20 percent of the population belonged to the middle class, compared to 42 percent living in poverty. By 2015 this relationship was reversed, with almost two people in the middle class for every person living under the poverty line (Figure 77). This significant shift in the socio-economic composition of the population occurred through a gradual transition of the poor moving up into the vulnerable population, and the vulnerable moving into the middle class. The substantial size of the middle class not only reflects improved living standards among the population, but also represents a potential source of increasing social demands that, if well channeled, could steer Paraguay through the necessary transformations towards becoming a high-income country. However, this new middle class could also be the source of challenges if their increased aspirations are not met.

Figure 77. Evolution of Poverty, Vulnerability, and the Middle Class in Paraguay since 2003



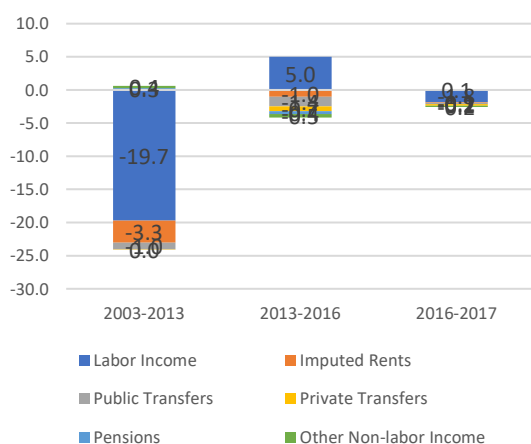
Source: Poverty and Equity Database, World Bank.

Notes: Poverty trend in Paraguay at \$5.5 in 2011 PPP is indistinguishable from the trend at \$4 in 2005 PPP. As middle class and vulnerability lines have not been updated to 2011 PPP, this graph shows lines in 2005PPP. Middle class: \$10-\$50 in 2005 PPP, Vulnerable: \$4-\$10 in 2005 PPP, Poor: below \$4 in 2005 PPP.

123. **Labor-income growth was the main contributor to poverty reduction until 2013, and its subsequent slowdown is behind the stagnation observed in the last three years.** Paraguay's economy has been creating jobs that have contributed to increased labor productivity and per-capita income, making labor income responsible for 84 percent of the observed poverty reduction up until 2013 (Figure 78, Panel ((a)). Consistent with the generalized growth in productivity and incomes described in Chapter 2, mean income grew across all sectors among the poor, i.e. those in the bottom 30 percent of the income distribution,⁸² from 2003-2013 (Figure 78, Panel ((c)). However, labor market outcomes have been slowly deteriorating in recent years. After a decade of continued growth, the share of household members in the bottom 30 percent reporting labor income has been falling since 2013, primarily driven by a drop among the youth and female household members. At the same time, a rise in labor earnings came to a halt for the bottom 30 percent (Figure 78, Panel ((b)). The slowdown was observed across all economic sectors (Figure 78, Panel ((c)). Average earnings reported by family farmers and the self-employed also declined between 2013 and 2016. As a result, the contribution of labor income to poverty reduction turned negative during the same period. This stagnation could prove temporary, provided the recovery of labor income observed in 2017 is sustained, in which case Paraguay may see a new phase of poverty reduction.

Figure 78. Income Sources, Poverty Reduction, and Primary Labor Income Trends

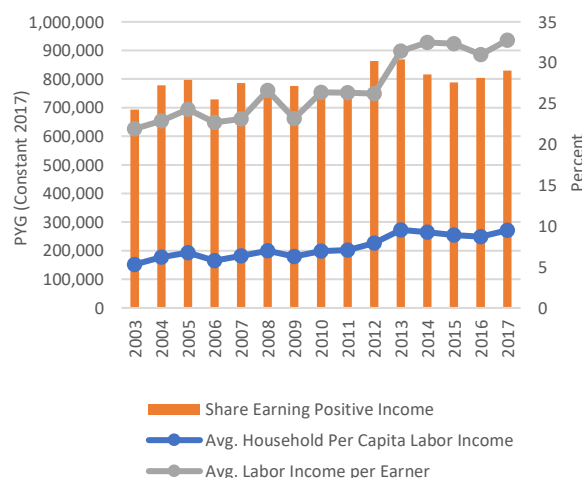
(a) Contributions of Income Sources to Changes in Total Poverty



Source: Authors' calculations using EPH.

(c) Primary Labor Income of the B30 by Sector

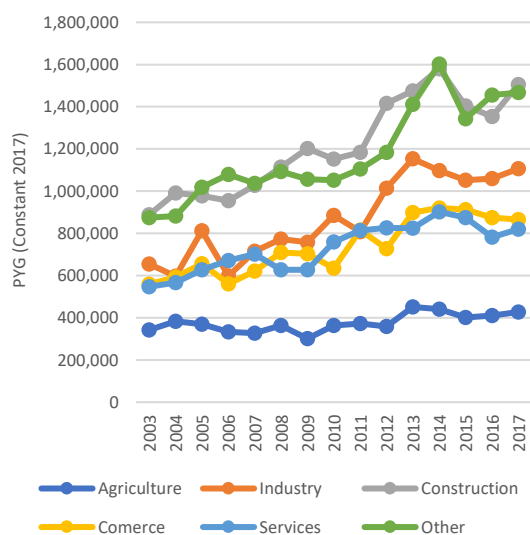
(b) Evolution of Primary Income and Labor Force Participation of the B30



Source: Authors' calculations using EPH.

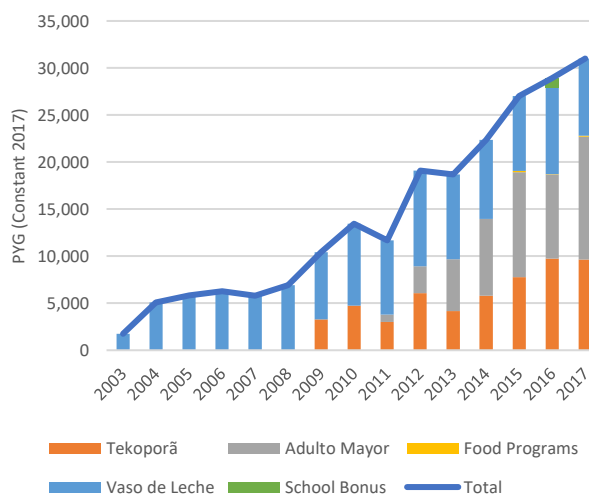
(d) Public Transfers to the B30 by Program (Per Capita)

⁸² Since 2012, approximately 30% of the population has been in total poverty based on national poverty lines.



Source: Authors' calculations using EPH.

Notes (a): Other sectors include energy, transportation, and finance.



Source: Authors' calculations using EPH.

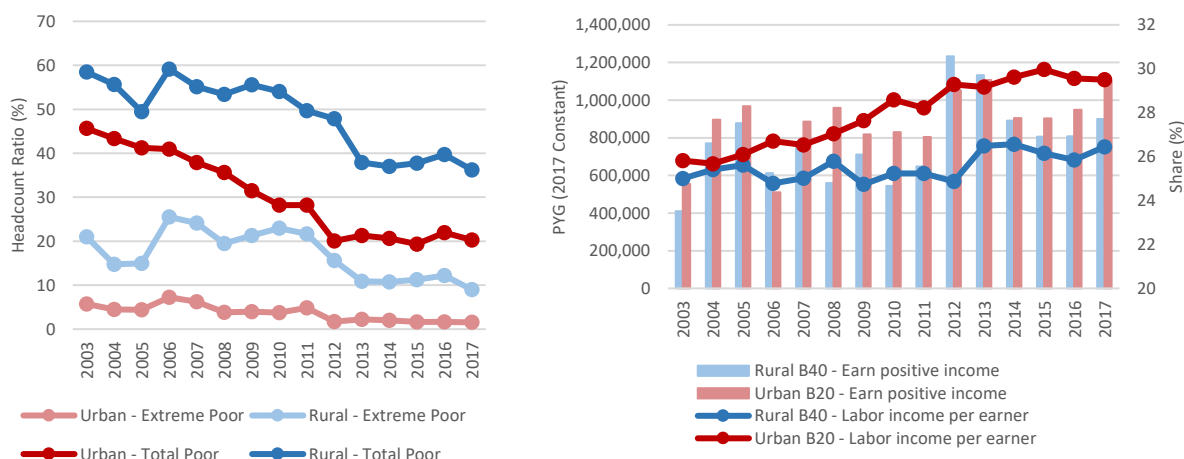
124. **Non-labor income, especially public transfers, has played an increasingly important role in preventing households from falling into poverty.** While the coverage of the main social assistance programs remains limited, it has increased substantially over the last few years (Figure 78, Panel (d)). Between 2013 and 2016, the proportion of the extreme poor receiving income from either of the two main social assistance programs—Tekoporã and Adultos Mayores—more than doubled, going from 14 percent to 35 percent. This expansion played an important role in protecting the poor during the recent deceleration in labor incomes. In 2013, extreme poverty would have been 12 percent higher without the income from those programs. In 2016, extreme poverty would have been 24 percent higher without social-assistance income.

125. **Poverty reduction was significant in both urban and rural areas, though slightly greater in urban areas.** The poor are almost evenly distributed between urban and rural areas, with this composition remaining stable throughout the period. Since 2003, urban poverty fell by 25 percentage points and rural poverty by 22 percentage points, reaching 20 percent and 36 percent of the population in urban and rural areas respectively in 2017 (Figure 79, Panel ((a)). The number of people living under the poverty line also fell, with over 1 million fewer poor individuals in 2017 than in 2003. In both urban and rural areas, gains were concentrated between 2003-2013, and driven by growth in labor incomes. However, progress during that decade was more volatile in rural areas, and a recent deceleration in poverty reduction was more pronounced among rural households. This is consistent with the more irregular income trend observed among poor rural households, and the sharper decline in household per-capita income between 2013-2016 (Figure 79, Panel ((b)). In these three years, household per-capita labor income fell by 18 percent among the rural bottom 40 percent, while it did so only by 1 percent among the urban bottom 20 percent (B40 and B20 correspond roughly to those in poverty in rural and urban areas, respectively). Likewise, the protective role of public transfers was significantly more important for rural households.

Figure 79. Evolution of Poverty Rates and Labor Income Trends in Rural and Urban Areas, 2003-2017

(a) Poverty Rates in Rural and Urban Areas

(b) Evolution of Total Labor Income and Labor Force Participation for Households in the B20 in Urban Areas and B40 in Rural Areas



Source: Authors' calculation based on EPH.

Notes (a): Poverty based on national poverty lines. Notes (b): Total labor income includes income from primary, secondary, and additional labor.

126. The structure of employment among rural households under the poverty line is highly concentrated (in self-employed/unpaid agriculture) and has barely changed throughout the period, while the urban poor are more diversified and have benefited from some structural transformation. Over 80 percent of the rural poor in 2017 worked as self-employed or unpaid family workers, and more than 70 percent worked in agriculture. Furthermore, the structure of employment among the bottom 40 percent has barely changed since 2003. In contrast, those who were poor in 2003 but are now over the poverty line—roughly those in the third quintile of the distribution—saw significant changes in their employment structure. The percent of wage employees grew from 20 percent to 32 percent over the 2003-17 period, while the share of those working in agriculture fell from 67 percent to 50 percent. Income in most sectors fell from 2013 to 2016 across income levels, but much faster for the bottom 40 percent. For example, agricultural income fell by 2.7 percent in the top 60 percent but by 12.4 percent in the bottom 40 percent. In urban areas, the share of private wage workers is almost the same as that of the self-employed (around 40 percent each). In urban contexts, the poor also work in more diverse sectors, with commerce (37 percent) and services (25 percent) accounting for most jobs, followed by construction (13 percent), industry (12 percent), and agriculture (8 percent). There are some signs of structural change among the urban poor towards private wage labor from self-employment, and employment in construction and commerce has grown over the years, by about 5 percentage points each. From 2013 to 2016 wage growth for the urban poor turned negative in services, construction, and industry, and remained positive but slowed in commerce.

127. Extreme poverty is a largely rural phenomenon, and though progress has been irregular, rural poverty rates are significantly lower than in 2003. In 2017, 78 percent of people living in extreme poverty resided in rural areas, slightly up from 75 percent in 2003. But progress within rural areas has been substantial. At 9 percent, the extreme rural poverty rate is almost 60 percentage points lower than it was in 2003 (Figure 79, Panel (a)). Most gains, however, were concentrated between 2011-2013. Until then, the rise in food prices counterbalanced the increase in labor incomes, keeping poverty rates around 20 percent.⁸³ Consistent with the description in the previous paragraph, the structure of employment changed

⁸³ Volatility and Inequality as Constraints to Shared Prosperity: Paraguay Equity Assessment (Washington, D.C., World Bank Group, 2015).

more pronouncedly among the non-extreme poor than among the extreme poor. Nevertheless, some improvements were observed among the bottom 20 percent of the rural population: Within agriculture, there has been a substitution away from unpaid family work (from 43 to 36 percent) towards self-employment (which increased from 53 to 60 percent). Outside of agriculture, self-employment has been falling while the incidence of wage labor and domestic employment increased (the former from 15 to 24 percent, the latter from 10 to 19 percent).

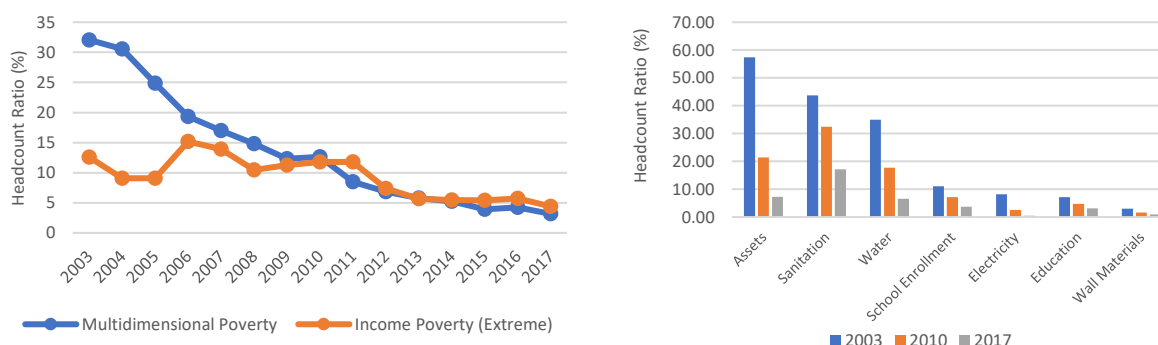
128. **Furthermore, lasting structural changes in the profile of poverty can be observed, as the extent of deprivation in non-monetary dimensions decreased throughout the 2003-2017 period.** The share of Paraguayans who are jointly deprived in at least 3 of 7 important non-monetary dimensions of well-being—including education level, school enrolment, housing quality, access to water, access to sanitation, access to electricity, and assets—declined from 32 percent in 2003 to 3 percent in 2017. The incidence of multidimensional poverty fell almost consistently year-on-year, even when reductions in income poverty were slow, as from 2003 to 2011 (Figure 80, Panel ((a)). Moreover, the population in both multidimensional and income poverty fell from 9.4 percent in 2003 to below 1 percent in 2017, while the population in multidimensional poverty but not income 22.6 percent poverty fell from to 2.5 percent over the same period. These groups are often referred to as the chronic poor and the invisible poor, respectively, because the former is likely to have been monetarily poor during more than one period, while the latter cannot be identified by income measures of poverty alone.⁸⁴ Improvements were achieved across all non-monetary dimensions, though progress was mostly driven by asset ownership, water, and sanitation (Figure 80, Panel ((b)). Rapid adoption of cell phones and motorcycles led to rapid declines in the population deprived in asset ownership. By 2017, 60 percent of the population had access to a motorcycle, and 98 percent had access to a cellular phone. Cell phone ownership is among the highest in Latin America, presenting development opportunities for mobile finance, health, citizen involvement, and information sharing. In fact, 29 percent of adults in Paraguay have a mobile money account, making it one of the rare non-African countries with high mobile money penetration.⁸⁵

⁸⁴ López-Calva, L.L., E. Ortiz-Juarez and S. Singh. 2014. If Life Gives You Lemons...Identifying the chronic poor through non-monetary poverty indicators in the absence of panel data. mimeo, The World Bank.

⁸⁵ Demirgüç-Kunt, et al. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. (Washington, DC, World Bank, 2017).

Figure 80. Non-monetary Dimensions

(a) Multidimensional Poverty and Extreme Income Poverty Incidence, 2003-2017 (b) Deprivations by Dimensions, 2003, 2010 and 2017



Source: Authors' calculation based on EPH.

Notes (a): multidimensional poverty is composed of the following categories: assets (don't have access to two or more of: TV, phone, transportation, refrigerator); sanitation (lack of flush toilet or pit latrine); drinking water (lack of tap water in home); school enrollment (child aged 7-15 not enrolled in school); electricity (lack of electricity); education (no household member has completed at least 5 years of schooling); wall materials (lack of non-precarious wall materials).

3.2 Economic opportunities

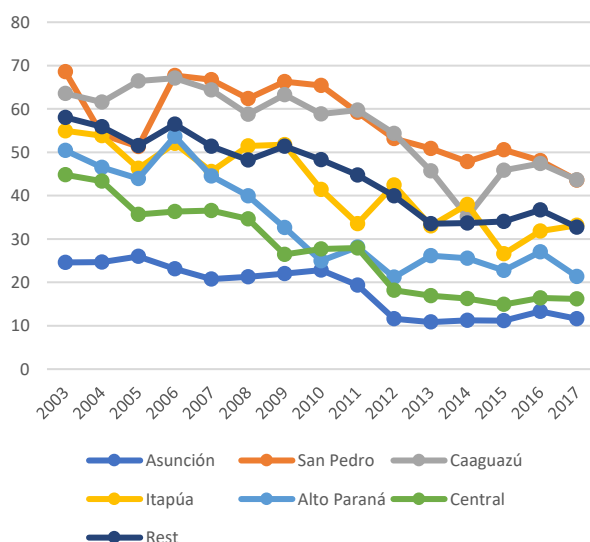
3.2.1 An unfinished agenda

129. **While progress has been widely shared across the country, poverty rates across different geographic regions have not yet converged.** Big differences remain across different geographic regions. Gaps between the poorest and better-off regions have not narrowed (Figure 80). For example, the two poorest departments of the country—Caaguazú and San Pedro—saw significantly smaller declines in their total poverty rates between 2003 and 2017 than the national average (each about 30-35 percent, relative to 48 percent nationwide). Each department started the period with poverty rates that were 2.6 times higher than that of Asunción and ended the period with poverty rates 3.8 times higher. In contrast, Central—which had the second-lowest poverty rate—experienced an impressive convergence towards Asunción poverty rates, reflecting the urbanization of the areas surrounding the capital. A similar story holds for extreme poverty, with the better-off departments reducing their relative difference with Asunción and the poorest departments increasing it.⁸⁶

⁸⁶ In Figure 81, and as per the EPH, “resto” or “rest” combines all departments other than the largest 5 and Asunción, as the survey did not allow further disaggregation until 2015. This groups hides, however, great variation. Total (extreme) poverty in 2017 was around 16 percent (3 percent) in Amambay and Presidente Hayes, and around 47 percent (14 percent) in Caazapá, for example.

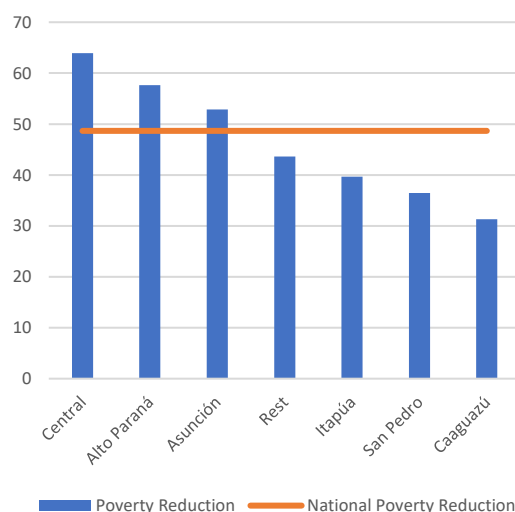
Figure 81. Poverty trends across departments

(a) Total Poverty by Department (Headcount Ratio, National Poverty Line), 2003-2017



Source: Authors' calculation based on EPH.

(b) Poverty Reduction from 2003 to 2017 (National Poverty Line)



Source: Authors' calculation based on EPH.

130. **Rural workers and those at the lower end of the income distribution face higher constraints to access good jobs.** Despite recent progress in labor market outcomes, many workers face more limited opportunities. Recent job growth has been skewed to formal jobs in urban areas, to the exclusion of rural districts and secondary towns.⁸⁷ While the informality rate fell by 17 percentage points in urban areas, it only did so by 6 percentage points in rural areas, where it remains close to 90 percent. Additionally, the increased formalization, which is associated with higher wages and access to social security, has been concentrated among those in middle-to-high quintiles of the income distribution (See Figure 82, Panel ((a)). Workers in the bottom 40 percent of households are 1.5 times more likely to be in informal labor than those in the top 60 percent and the gap in participation rates between those in the bottom 40 percent and those in the top 60 percent has widened (going from 5 percentage points difference in 2003 to 10 percentage points in 2016). A structural transformation within the agriculture sector created a few formal relatively-high skilled jobs, but a significant share of rural households still relies on agriculture-based income from self-employment, while the productivity of small-scale agriculture remains low and is failing to generate higher earnings. As discussed in the previous section, the structural move away from agriculture has not reached the bottom quintile of rural households.

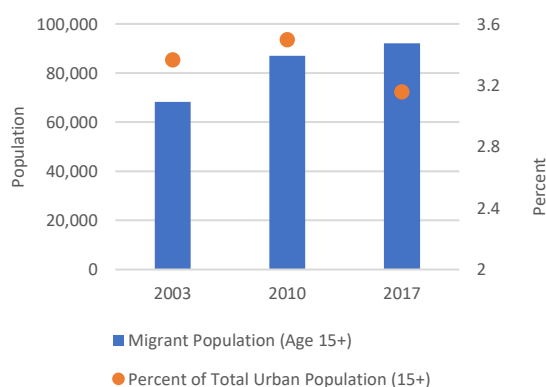
131. **Migration to urban areas has traditionally been used to access better jobs and is increasing.** In 2017, nearly 3 percent of adults (aged 15 and over) living in urban areas reported having migrated from a rural area in the previous five years, a rate that has been relatively constant since 2003 (See Figure 82, Panel ((a)). In Paraguay, migrants tend to be young, with a median age of 23 years. Migrants generally obtain over

⁸⁷ Ruppert Bulmer, et al. *Paraguay jobs diagnostic: the dynamic transformation of employment*. Jobs Series; 9 (Washington, D.C.: World Bank Group, 2017).

two more years of schooling than those that stay in rural areas.⁸⁸ In 2017, nearly 60 percent of urban migrants were females working primarily in the service sector as domestic workers (54 percent) and in commerce (24 percent). Male migrants—the remaining 40 percent—generally work in more diverse sectors, especially commerce (32 percent), construction (20 percent), industry (18 percent), and services (10 percent).⁸⁹ Once settled, migrants often send remittances to family members in rural areas, contributing to rural development—both directly if used for human capital and/or productive investments, and indirectly through higher and less volatile consumption.⁹⁰ Since 2003, about 6 percent of household income in rural areas has come from family transfers from within the country, highlighting the potentially important role of urban-rural remittances (See Figure 82, Panel ((b))).⁹¹ Living standards of recent migrants, measured by poverty rates and access to basic services, are generally higher than their rural counterparts and similar to the urban population. The challenges migrants face when preparing to migrate and assimilating into urban areas after migration are harder to identify with the available data, however.

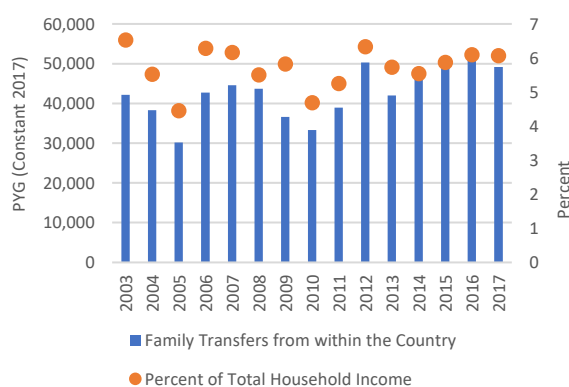
Figure 82. Rural-to-urban Migration and Internal Remittances

(a) Rural-to-urban Internal Migration within Past Five Years (Population Age 15+)



Source: Authors' calculation based on EPH.

(b) Average Household Income Derived from Family Transfers from within the Country (Rural Households)



Source: Authors' calculation based on EPH.

132. **Women, young people, and the less educated benefit less from labor market opportunities and the potential to increase their labor incomes.**⁹² A comparison of labor outcomes across different population groups shows that young workers and those with less education are more likely to work informally, reflecting unequal access to good jobs. Young people face significantly higher unemployment rates than prime-age workers (see section 3.2.2). Women face only marginally higher unemployment and informality

⁸⁸ Encuesta Permanente de Hogares (EPH), 2017. Due to limitations in the data it is unknown whether this education is acquired in preparation to migrate or after migration.

⁸⁹ Ibid., 2017.

⁹⁰ Lall et al., *Rural-urban migration in developing countries: A survey of theoretical predictions and empirical findings* (Washington, D.C., World Bank Group, 2006).

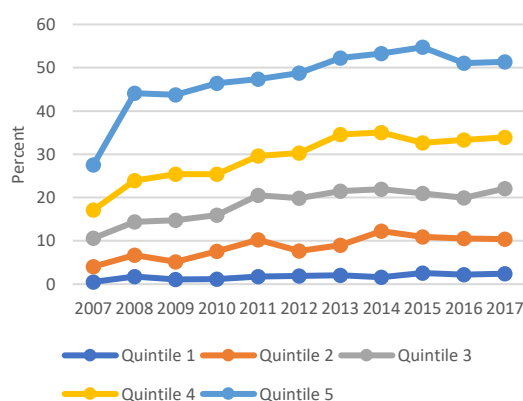
⁹¹ The survey data (EPH) does not allow the researcher to differentiate family transfers from within the country between urban and rural origins. Thus, some percentage of this income may come from family transfers from other rural family members.

⁹² Ruppert Bulmer et al, *Paraguay jobs diagnostic*, 2017.

rates, but they face significant wage discrimination, as reflected in the large male-to-female wage ratio (Figure 83, panel ((b))). Holding individual characteristics fixed, the wage gap in monthly earnings is 43 percent, partly driven by lower female work hours. When restricting the sample to full-time workers the gap goes down to 27 percent. Paraguay is slightly below the LAC regional average in terms of the wage gap.⁹³

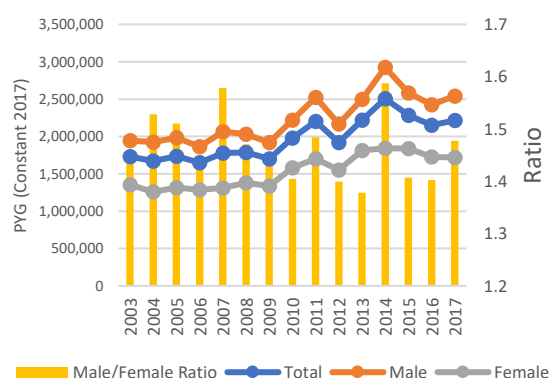
Figure 83. Formality by Income Quintile and Labor Income by Gender

(a) Formal Employment (percent) by Quintile, 2007-2017



Source: Authors' calculations using EPH.

(b) Real Labor Income by Gender (Monthly Earnings), 2003-2017



Source: Authors' calculations using EPH.

133. **Female labor-force participation is high compared to other countries in Latin America (Figure 84, Panel ((a)), and continuing to reduce barriers to entry could provide large economic returns.** A recent estimate suggests that increasing the labor force participation of women who have completed some level of education to male participation levels could increase Paraguay's GDP by 6.7 percent.⁹⁴ In addition to these productivity gains, increased female labor force participation is expected to reduce poverty and inequality, not only by increasing household earnings, but through increased investments in children's development and well-being, thus reducing future poverty by reducing the intergenerational transmission of poverty. Finally, to fully capitalize on educational investments requires effectively incorporating females into paid work. In Paraguay, it is estimated that 40 percent of investments in female education are not capitalized upon through labor force participation, whereas this number is close to 20 percent for males.⁹⁵

134. **Childcare and housework appear to be major barriers to increasing female labor force participation in Paraguay.** According to the 2016 Time-Use Survey carried out by the DGEEC, 51.1 percent of females reported housekeeping as their reason for being outside the labor force, while 50.7 percent of males reported education as the reason for their labor inactivity (See Figure 84, Panel ((b))). In terms of time-use, women reported spending an average of 54.7 percent of their weekly hours on housework and caring for household members (See Figure 83, Panel ((c))). Men spend most of their weekly hours at their main

⁹³ Rupert Bulmer et al, *Stubborn Gender Gaps in Paraguay*, Jobs Group, World Bank, June 2018

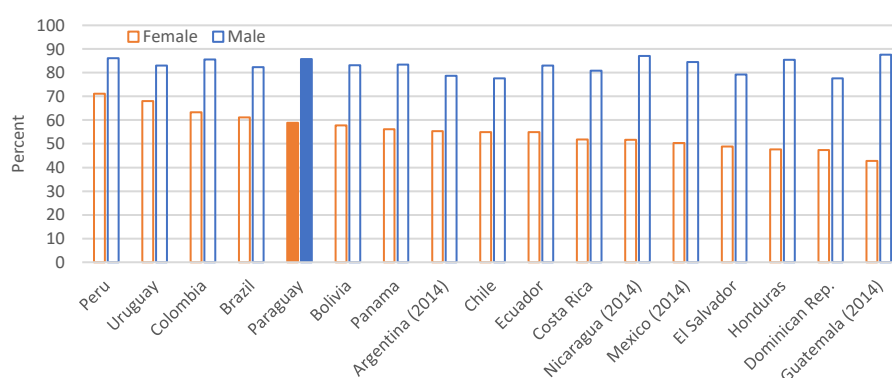
⁹⁴ Mercedes Mateo Díaz and Lourdes Rodriguez-Chamussy. *Cashing in on Education: Women, Childcare, and Prosperity in Latin America and the Caribbean* (Washington, DC: World Bank and Inter-American Development Bank, 2016).

⁹⁵ Ibid., 2016.

occupation and only 16.3 percent of their time on housework and childcare. The same study cited above argue that more and better childcare, accompanied by labor market policies (such as maternity leave), are important ways to increase FLFP.⁹⁶ In Paraguay, 85 percent of early childcare and education institutions are private, and public institutions are generally not convenient for service-users (for example, the Programa Nacional Abrazo provided by community centers scores of 3 out of 7 in convenience factors).⁹⁷ Not only does this limit female labor force participation among the poor, but it may perpetuate achievement gaps between low- and high-income groups, since the poor may not be able to afford to send their children to private care-providers. Increasing affordable, accessible, and high-quality early childcare and education can help remove barriers to labor market entry for women and ensure Paraguay reaps the full economic returns of increased female labor force participation and the country's demographic dividend.

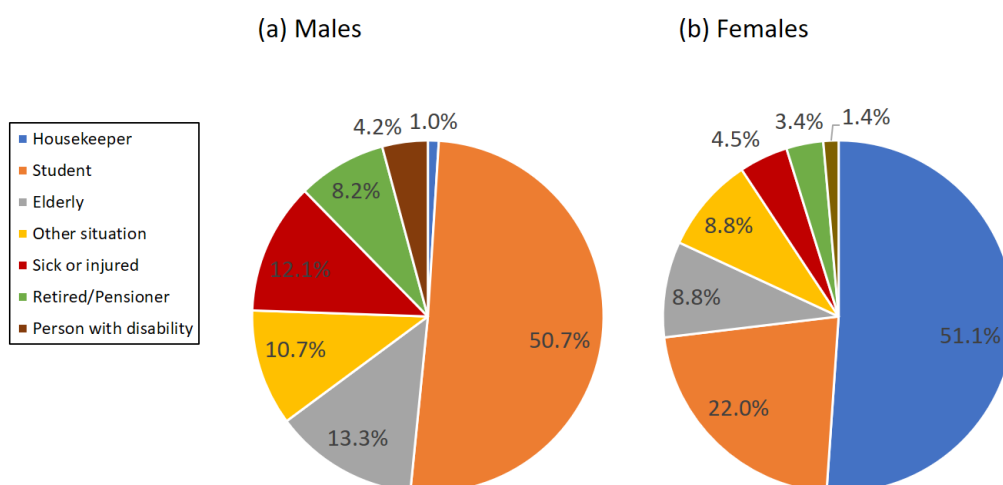
Figure 84. Labor-force Participation and Time Use

(a) Labor-force Participation by Gender (Age 15-64), 2015



Source: Authors' calculations, SEDLAC.

(b) Reason for Labor Inactivity, by Gender, 2016

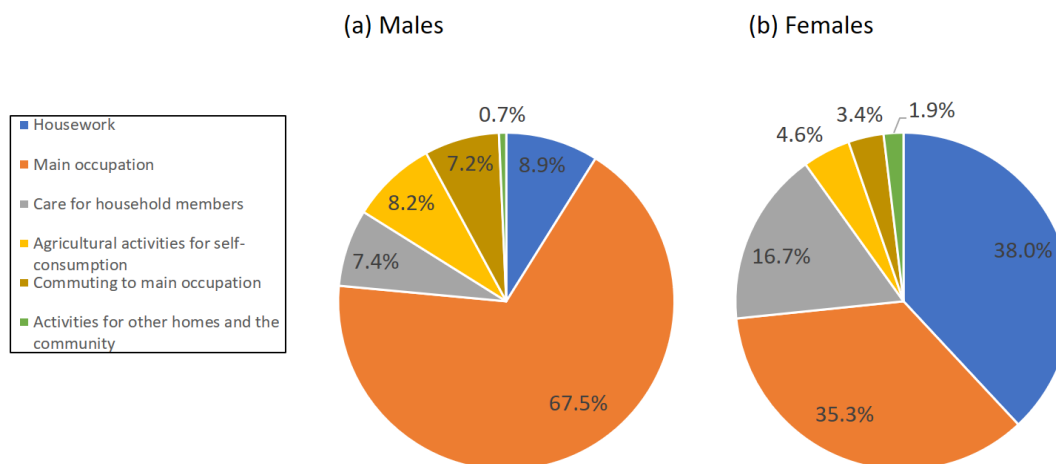


⁹⁶ Ibid., 2016.

⁹⁷ Ibid., 2016.

Source: STP/DGEEC. MH-BID. (2016). Notes: Other situation includes property owners and those under working age, among others.

(c) Distribution of Use of Weekly Hours by Activity and Gender, 2016



Source: STP/DGEEC. MH-BID. (2016).

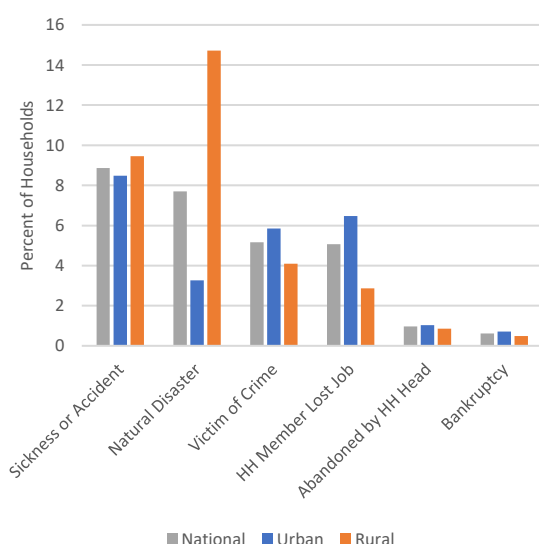
135. **Negative shocks place a heavy burden on Paraguayan households, especially the poor, who are forced to sell assets and reduce food consumption to cope with shocks.** In 2012, 25.4 percent of households reported suffering from at least one shock in the past 12 months (23 percent urban and 29 percent rural).⁹⁸ Health shocks were the highest reported shocks nationally, affecting 8.9 percent of households, followed by natural disasters (7.7 percent), crime (5.2 percent), and job loss (5.1 percent) (Figure 85, Panel ((a)). Of the households reporting at least one shock, 16.4 percent used savings to cope with the shock, followed by taking a loan (13.3 percent), reducing food consumption (11.8 percent), selling off assets (10.9 percent), and looking for more work (8.4 percent). Only 2.4 percent of households received government assistance, mainly rural ones (Figure 85, Panel ((b)). Poor households, as defined by the education of the household head and housing characteristics, were 30 percent more likely to report a shock than non-poor households (31 percent compared to 23.5 percent).⁹⁹ The poor were less likely to use savings or take loans to cope with a shock than the non-poor, and more likely to sell assets (17.6 percent versus 7.8 percent), reduce food consumption (14.2 percent versus 10.6 percent), and receive government assistance (4.8 percent versus 1.3 percent).

⁹⁸ Paraguayan Household Income and Expenditure Survey 2011-2012 (EIGyCV 2011-2012). The EIGyCV contains a unique and detailed shock module that asks households about economic shocks (such as bankruptcy and job loss), natural disasters (such as floods and droughts), family shocks (such as abandonment by the head of the household), and crime and health shocks over the past 12 months, as well as the coping strategies employed.

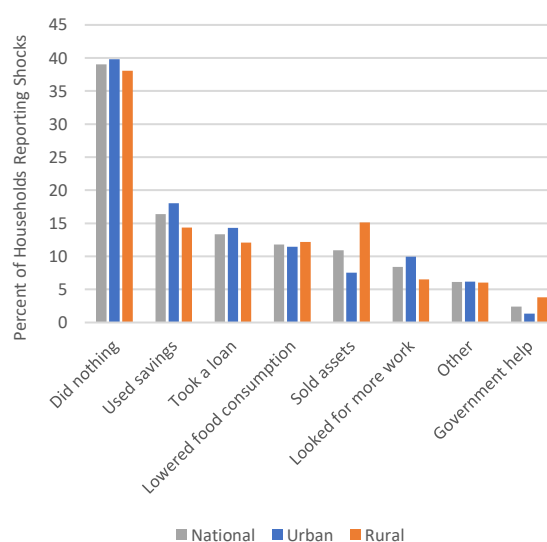
⁹⁹ A poor household was defined by a household head with less than 9 years of schooling, and any of the following housing characteristics: dirt floor, overcrowded (3+ people per room), or lack of flushing toilet. Assets or income were not used as they may be directly affected by the shocks.

Figure 85. Reported Household Shocks and Coping Strategies, 2011-2012

(a) Incidence of Shocks



(b) Coping Strategies Employed if Reporting a Shock

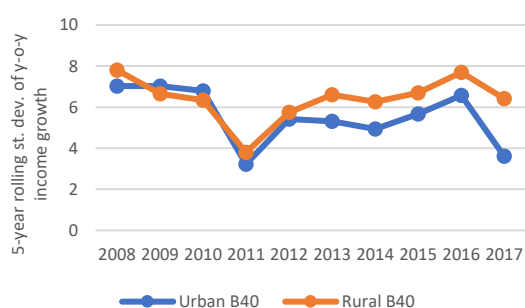


Source: Authors' calculations based on EIGyCV 2011-2012.

Source: Authors' calculations based on EIGyCV 2011-2012.

136. **In urban areas exposure to risks is high and safety nets are scarce.** Income-growth volatility of the bottom 40 percent—measured by the standard deviation of year-over-year household per capita income growth over rolling subsequent 5-year periods—has exhibited similar levels and trends across rural and urban areas since 2008 (Figure 85). Economic shocks such as losing a job or bankruptcy, and crime shocks, tend to be higher in urban areas, while exposure to natural disasters tend to be higher in rural areas (Figure 85, Panel (a)). However, climatic events are not only a rural phenomenon, but in recent years have affected urban households. For example, in 2014, flooding in Asunción displaced over 75,000 people. This is linked to the country's increasing vulnerability to hydro-meteorological hazards, due to limited urban planning and also difficulties for local governments to implement and enforce urban planning requirements, which results in the irregular occupation of land near rivers. At the same time, urban safety nets are weaker than rural ones. The conditional cash-transfer program Tekoporã—which covers 35 percent of rural households in the bottom quintile—only reaches 8 percent of urban households in this group. Ongoing rural-urban migration means that a growing number of poor households will be vulnerable to such risks.

Figure 86. Household per Capita Income Growth Volatility of the Bottom 40 by Area, 2003-2018



Source: Authors' calculations using EPH.

Notes: Volatility measured by the standard deviation of year-over-year household per capita income growth over rolling subsequent 5-year periods.

3.2.2 Vulnerable population groups

Indigenous peoples

137. **Indigenous peoples in Paraguay are considered the most socially excluded group in the country.** With a population of 120,000, indigenous people represent only 2 percent of the total Paraguayan population. This minority is, however, a very diverse social group composed of 19 ethnicities and five linguistic groups, living in 493 communities across the country. Only 6 percent of the indigenous population resides in urban areas. The departments of Boquerón, Presidente Hayes, Canindeyú, and Caaguazú are home to two thirds of this demographic group. Although the northern department of Alto Paraguay is home to a small population overall, over a quarter of the residents of this department are indigenous. As well as generalized social exclusion, the 2016 household survey is testament to poor living conditions among indigenous communities.¹⁰⁰

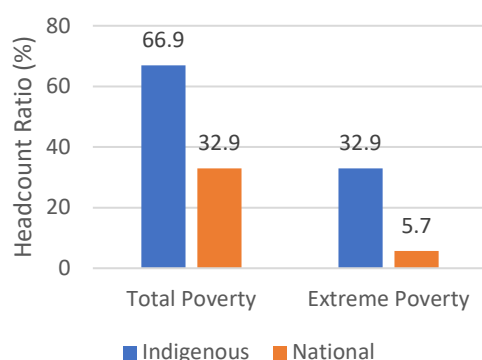
138. **Indigenous people enjoy significantly fewer development opportunities than other Paraguayans.** Paraguayan indigenous people live on a third of the average national per capita household income. In 2016, they earned, on average, approximately 550,000 Guaraníes per capita monthly compared to 1.6 million Guaraníes per capita monthly in the total population. The official poverty rate for the indigenous population is more than double national poverty rates, and extreme poverty figures are nearly six times higher than national rates (Figure 87, Panel (a)). The living conditions of indigenous people are much worse than those of the average Paraguayan, with limited access to basic services and education. While less than 6 percent of the national population above 15 years of age is illiterate, 29 percent of the indigenous population is unable to read and write. Indigenous household heads obtain about half as many years of schooling as the national average, with an average of four years of schooling compared to 8.2 years nationally. 96 percent of indigenous households lack access to advanced sanitation and 80 percent do not have access to improved water sources, compared to national averages of 22 percent and 10 percent of households, respectively (Figure 87, panel (b)). At the national level electricity is nearly universal, but only half of

¹⁰⁰ For the first time, in 2016 national household survey *Encuesta Permanente de Hogares* (EPH) was expanded to include indigenous populations. The survey included over 5,000 additional observations to account for this group.

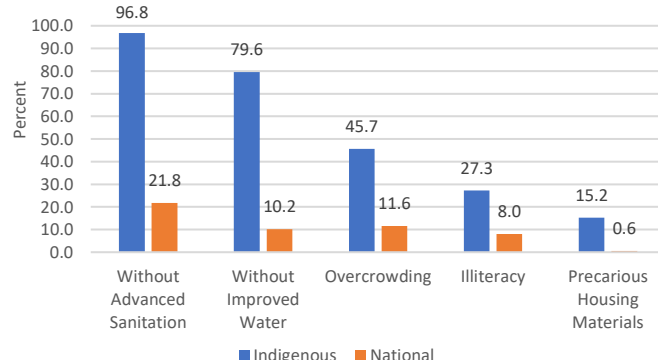
indigenous dwellings have access to electricity. About 15 percent of indigenous dwellings are built with precarious materials, and 46 percent of indigenous households live in overcrowded conditions.¹⁰¹ Given that indigenous households are typically composed of more members, and have more children than national averages (five versus four, and two versus one, respectively), it seems likely that broader development opportunities for the indigenous population will remain limited without improvements to living conditions.

Figure 87. Poverty and Living Conditions of Indigenous People, 2016

(a) Poverty rates



(b) Living conditions



Source: Authors' calculations using EPH

Notes: Advanced sanitation includes flush mechanisms that prevent human contact with excreta: sewer systems, septic tanks and cesspools. Improved water sources include piped and bottled water, well with pump and artisanal well. Overcrowding is defined as more than three people per room. Precarious housing materials include: *Piso de tierra y pared de madera, estaqueo, adobe, tronco de palma, cartón, hule, madera de embalaje, otros, o no tiene pared, y techo de paja, tronco de palma, cartón, hule, madera de embalaje u otro.* (translation: earthen floors, wooden walls, wooden poles, adobe, palm trunks, cardboard, rubber, packaging timber, straw roofing, no walls, and other).

139. Recently, the main social assistance program made a special outreach effort to include indigenous peoples, but delivering formal land tenure continues to be a challenge. In 2015 the Social Action Secretariat—responsible for implementing the Tekoporã program—approved the inclusion of indigenous families through a detailed “Protocol of Attention to Indigenous Communities,” respecting their cultural diversity and autonomy, and ensuring their participation in the entire implementation process. As of 2017, the program includes around 20,000 beneficiary families and the government expects to cover 100 percent of the total 28,000 existing indigenous families by the end of 2018. While progress with granting secure land title has been made, land-tenure insecurity continues to affect indigenous peoples disproportionately.

Guaraní monolingualism

140. Although indigenous peoples account for only 2 percent of the population, the indigenous language Guaraní is spoken by over seventy percent of the population. Paraguay is unique in Latin America even when compared to other multilingual countries, such as neighboring Bolivia, where a majority of the population is indigenous.¹⁰² Native languages are commonly spoken by different indigenous groups in other multilingual countries in Latin America, but rarely are spoken by people of mixed ancestry. According to the

¹⁰¹ Precarious materials and overcrowding conditions are estimated according to “Unsatisfied Basic Needs” definitions used in Paraguay’s census.

¹⁰² Gynan, S. N. (2001). Language planning and policy in Paraguay. *Current Issues in Language Planning*, 2(1), 53–118.

EPH 2017, 40 percent of the non-indigenous Paraguayan population speaks monolingual Guaraní, while 30 percent of the non-indigenous population is bilingual in both Guaraní and Spanish. Only 27 percent of the non-indigenous population speaks monolingual Spanish. Rural areas are home to 66 percent of monolingual Guaraní speakers, while over 90 percent of monolingual Spanish speakers live in urban areas.

141. **Although 70 percent of the population speak some Guaraní, monolingual Guaraní speakers face significant challenges.** In 2017, the poverty rate for monolingual Guaraní speakers was 3.7 times higher than monolingual Spanish speakers (42 percent compared to 11.5 percent). And over 80 percent of illiterate household heads were monolingual Guaraní speakers. Even within rural areas, monolingual Guaraní speakers are nearly twice as likely to be living in poverty than non-monolingual Guaraní speakers (44 percent compared to 23 percent), as per the 2017 EPH.

142. **Persistent gaps in educational attainment and performance limit future opportunities for monolingual Guaraní speakers.** Gaps in educational performance and attainment between monolingual Guaraní and Spanish speakers have been documented since the 1980s.¹⁰³ Despite an educational reform in 1994 and positive trends in educational attainment, substantial gaps have persisted.¹⁰⁴ In 2017, 44 percent of monolingual Guaraní speakers aged 25+ had not completed six years of education. Bilingual Spanish and Guaraní speakers and monolingual Spanish speakers, meanwhile, obtain an average of 11 years of schooling, with only 10 percent of this population not completing primary education. Such education gaps remain even when considering that monolingual Guaraní speakers reside primarily in rural areas (Figure 87). Significant gaps in educational performance have also been documented in standardized tests, such as the TERCE 2013, where monolingual Guaraní speakers in sixth grade scored 92 points lower in reading and 46 points lower in math than monolingual Spanish speakers.¹⁰⁵

143. **Poor educational outcomes of the monolingual Guaraní have translated into reduced labor market productivity and low wages.** Monolingual Guaraní speakers appear to face many barriers in the labor market, as they are more likely to be unemployed, have a higher probability of being in informal work, and earn a lower wage. As of 2015, monolingual Guaraní speakers earned approximately 28 percent less than other groups, after controlling for other worker characteristics.¹⁰⁶

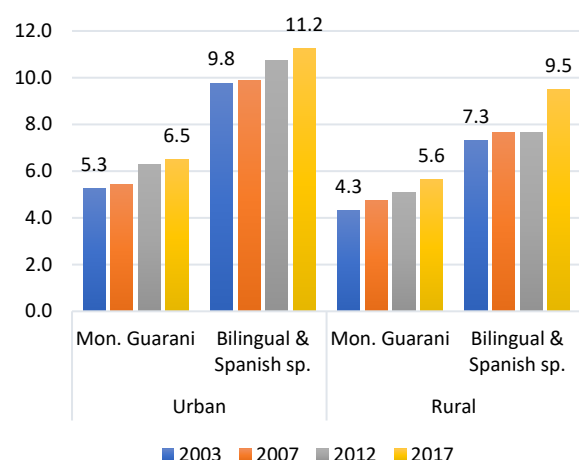
¹⁰³ Corvalan, G. (1984). Education in the Mother Tongue and Educational Achievement in Paraguay in *Prospects: Quarterly Review of Education*, 14(1), 95–106; Patrinos, H. A., Velez, E., & Psacharopoulos, G. (1994). Language, education, and earnings in Asunción, Paraguay in *The Journal of Developing Areas*, 57–68.

¹⁰⁴ Gayoso de Ervin, L. E. (2016). *Essays on the Economics of Education and Language of Instruction*. Washington State University, Pullman, WA.

¹⁰⁵ Ibid., 2016. Test scores are standardized to a mean of 500 and standard deviation of 100. Therefore, monolingual Guaraní speakers in 6th grade scored 0.92 standard deviation lower in reading and 0.46 standard deviation lower in math than monolingual Spanish speakers.

¹⁰⁶ Ruppert Bulmer et al, *Paraguay jobs diagnostic*, 2017.

Figure 88. Gaps in Educational Attainment. Years of Schooling by Language and Area (adults 25+)



Source: Authors' calculations using EPH.

Family agriculture

144. **Most people in rural areas still rely on family agriculture.** From 2003 to 2017 the percentage of households in rural areas relying on family agriculture fell from 84 percent to 76 percent, as Paraguay observed a structural shift in economic production away from agriculture toward services. However, the share of households that depend on family agriculture remains very high, and the impressive growth of commercial agriculture was not matched by this sub-sector, or even by rural households who do not rely on family agriculture.¹⁰⁷ While household per capita income among rural households that do not rely on family agriculture grew by 47 percent between 2003 and 2017, income among households involved in family agriculture only did by 18 percent. Furthermore, the difference is more pronounced if one only accounts from primary labor income, which grew by 49 percent among the former group and only by 3 percent among the latter. This is consistent with the fact that few family farmers have been able to adopt new technologies, and productivity from most crops cultivated in family farms has stagnated (and in some cases has deteriorated).¹⁰⁸ Cotton production, which used to be the key cash crop among family farms, has fallen by more than 90 percent in the last 10-15 years, leaving many family farms without a suitable substitute (See Figure 89, Panel ((b))).

145. **While poverty rates among family farmers has declined, households relying on family agriculture still have a higher risk of being poor relative to rural households that do not.** Accompanying the shift away from agriculture is a noticeable increase in the gap in poverty rates between households that rely on household agriculture and those that do not. For example, in 2003 households engaged in family agriculture were 1.4 times more likely to be in poverty (Figure 89, Panel ((a))). By 2017, this rate had more than doubled to 3.4 times. Exposure to risk is high for agricultural households and the capacity to mitigate and/or manage those risks is extremely limited. Agricultural households in rural areas were more than twice as likely to report a

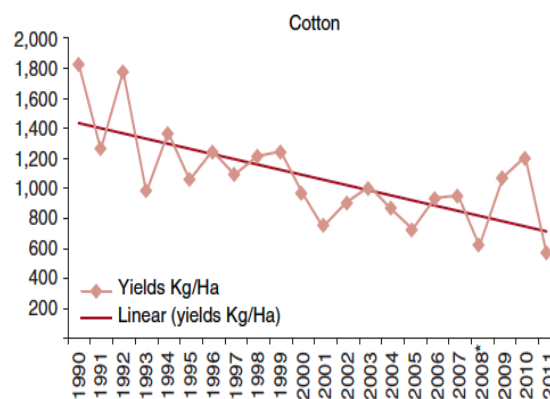
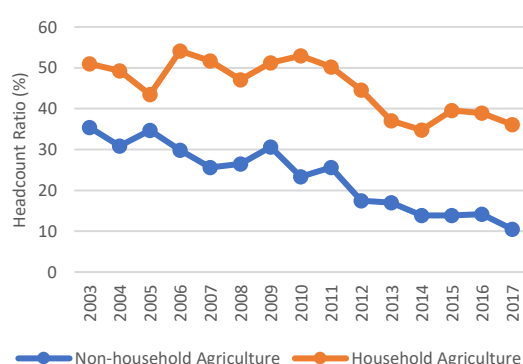
¹⁰⁷ A household is classified as relying on family agriculture if any household member reports working in own-farm independent agriculture activities. Differences with non-family agriculture households are even more pronounced if we only select households where the household head works in own farm.

¹⁰⁸ Arce, Caballero & Arias, 2015

negative shock than non-agricultural households in the 2011-2012 EIGyCV, with 34 percent of rural agricultural households reporting at least one shock in the past 12 months versus 16 percent of rural non-agricultural households. This disparity was driven by more rural agricultural households reporting being affected by natural disasters (20 percent compared to 2.4 percent of rural non-agricultural households) and sickness or accidents (11 percent compared to 5.6 percent of rural non-agricultural households). Exposure to shocks can push these households further into poverty and have significant consequences for the human capital accumulation of their children. Selling assets and reducing food consumption were the most-cited coping strategies of rural agricultural households for dealing with shocks, at 16.8 percent and 13.4 percent respectively.

Figure 89. Poverty and Cotton Production in Household Agriculture

(a) Poverty Rates and Household Agriculture (Rural), 2003-2017 (b) Yields in Family Agriculture, 1990-2011



Source: Authors' calculations using EPH

Source: Arce, Caballero & Arias, 2015

Notes (b): Households rely on family agriculture if any member of the household works in family agriculture.

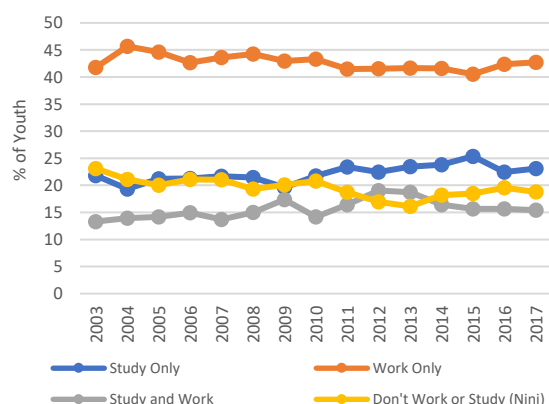
146. **Multiple constraints limit these households' income-generating capacity both within and outside family farms.** On the one hand, various constraints keep these households in low-productivity agriculture, including limited access to markets, finance, technology, and land. Restrictions to physical and financial capital are also combined with low human capital, further limiting the capacity of family farms to adopt new technologies. On the other hand, limited human capital and poor connectivity prevent these households from engaging in alternative economic opportunities outside of agriculture that could provide them with both additional earnings and more diversified sources of income. A deeper understanding of these constraints and their interactions, as well as the heterogeneity that exists across family farms, is needed for more effective policy action, but it is evident that multiple constraints will need to be tackled if these households are to become more productive.

Young people

147. **The youth population has increasingly accumulated skills on the job and completed more years of schooling.** Since 2003, the proportion of young people (aged 15 to 29) both working and studying increased by two percentage points, while at the same time the percentage of youth neither working nor studying, i.e. the "nini" population, declined by 4.3 percentage points (Figure 90, Panel (a)). More young people are now focusing solely on studying and the percentage of young people working without studying has trended downward. By 2017, the youth population had obtained, on average, over a year and a half of schooling more than the adult population (age 30 to 65).

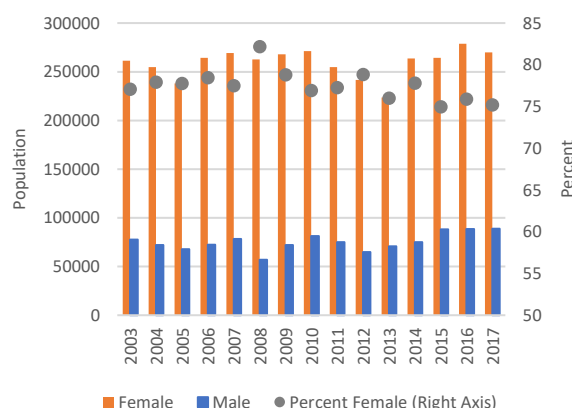
Figure 90. Trends in the Youth Population (Aged 15 to 29)

(a) Composition of Youth, 2003-2017



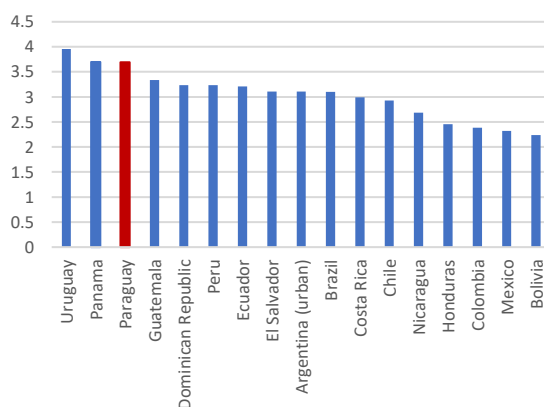
Source: Authors' calculations using EPH.

(b) Ninis by Sex, 2003-2017



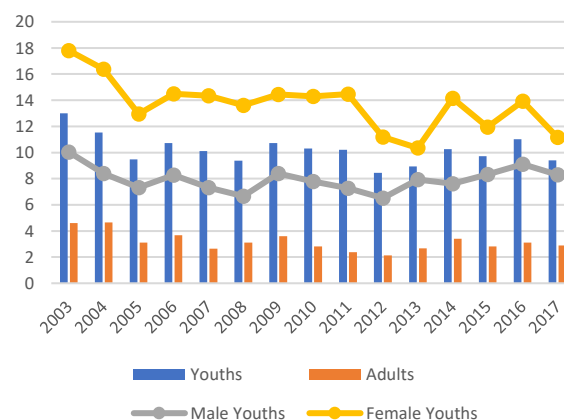
Source: Authors' calculations using EPH.

(c) Youth-adult unemployment ratio (Age 15 to 29 / Age 30 to 64), 2015



Source: Authors' calculations, SEDLAC.

(d) Unemployment rates by age group and sex, 2003-2017



Source: Authors' calculations, EPH.

148. While the percentage of *ninis* in Paraguay, at 18 percent, is slightly below the Latin American average of 21 percent, this segment is particularly at risk of reduced employment opportunities and lower wages throughout their life. A recent study suggests that a 1 percent increase in the proportion of male and female *ninis* (age 15 to 20) is associated with a 7 percent and 3 percent reduction in earnings 20 years later in life, respectively.¹⁰⁹ This is an alarming statistic given the noticeable increase in both male and female *ninis* accompanying the labor market slowdown following 2013 (Figure 90, Panel (a)). In Paraguay, the majority of *ninis* are women (75 percent) from households with lower socioeconomic status. *Ninis* are both a rural and urban problem, with 52 percent of *ninis* found in urban areas, according to the 2017 EPH. In 2017, 43 percent of *ninis* had not completed 9 years of mandatory schooling. Furthermore, the household per capita income of *ninis* was about half that of household per capita income of non-*nini* young people (963,000 versus 1,733,000 Guaraníes) and the head of household of *ninis* had, on average, 1.4 years of schooling less

¹⁰⁹ De Hoyos, R., Popova, A., & Rogers, F. *Out of school and out of work: a diagnostic of *ninis* in Latin America* (Washington, D.C.: The World Bank; 2016).

than the household head of non-nini youths (7.2 versus 8.6). Because ninis neither accumulate human capital through education nor on-the-job experience, they are at a significant risk at perpetuating poor socioeconomic outcomes.

149. **Unemployment rates among young people and adults in Paraguay are low relative to other countries, but the youth-to-adult unemployment ratio is among the highest in Latin America (Figure 89, panel (c)), suggesting young people face disadvantages in the labor market.** Despite a decade of job growth, the youth population continues to face a difficult transition from education to employment in high quality jobs. In 2017, the youth unemployment rate was 9.4 percent compared to 2.9 percent for adults, and young women have generally faced much higher unemployment rates than males.¹¹⁰ The gap in youth-to-adult unemployment exists despite youths completing, on average, 1.6 years of schooling more than adults.¹¹¹ Young people who do work tend to be in informal employment, with 77 percent of working young people in informal work, compared to 68 percent of adults, as per the 2017 EPH. Young people are nearly twice as likely to undertake unpaid family labor than adults (10.9 percent versus 5.6 percent in 2017). Additionally, even young people in paid employment are two times more likely than adults to earn less than the national minimum wage (15.1 percent versus 7.8 percent in 2017). Without policies to improve youth transitions into the labor market, any additional rewards from the demographic dividend may remain out of reach. Instead, demographic pressures risk becoming a source of societal tension if young people continue to be excluded from productive roles in the economy.

3.3 Public service delivery

150. **Education attainment has increased since 2003, but important educational disparities persist across geographic and socio-economic groups.** Net enrollment rates in basic education remained constant at around 90 percent since 2003, while enrollment in middle education increased more rapidly, from 36.8 percent to 52.2 percent between 2003 and 2016.^{112,113} But access to education exhibits persistent gaps across income levels (Figure 90). While school attendance for basic education varies little by socio-economic status, this changes radically when children start middle education. In 2016, the difference in enrollment rate between the top and bottom income quintile was 35 percentage points. While the gap between rural and urban children is smaller, school enrollment in rural areas remains around 16 percentage points lower than urban areas (59 percent versus 43 percent in 2016).

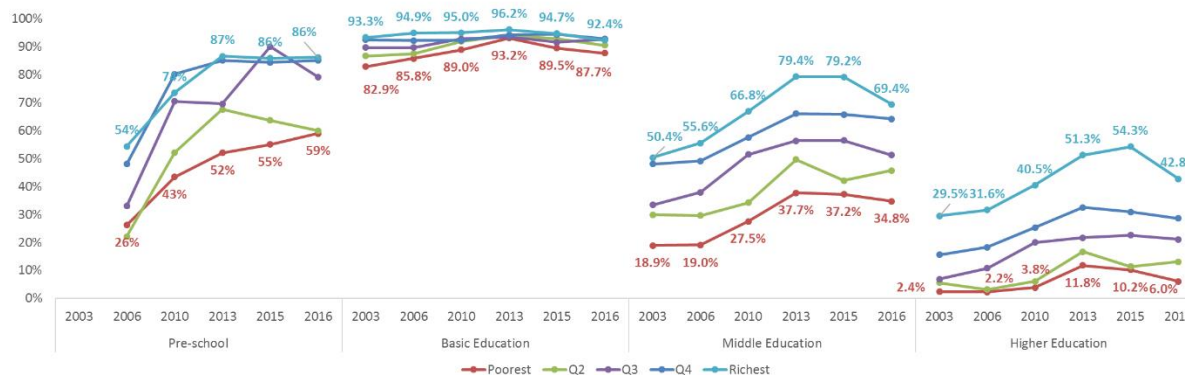
¹¹⁰ EPH 2017.

¹¹¹ This figure is based on the educational attainment of youths and adults active in the labor market, who obtained approximately 10.8 and 9.2 years of schooling, respectively.

¹¹² The Education System in Paraguay has three levels: the first level includes Initial Education (before 4 years of age) and Basic education (pre-school and three cycles of 3 years); the second level includes Middle Education; and the third level Higher Education. In principle, the first two levels of education are free and mandatory since 2010.

¹¹³ Enrollment is calculated based on assistance reported in EPH. Due to lack of access to enrollment data for children under 5 years old, statistics for each level of education was calculated for the following age groups: pre-school education 5, basic education 6-14, middle education 15-18, and higher education 18-21 (World Bank 2018c).

Figure 91. Net Attendance Rate by Level of Education and Household Income Level, 2003-2016



Source: World Bank 2018c.

151. **Access to early education improved substantially across all income levels, but progress in higher education has been skewed towards the better-off.**¹¹⁴ Pre-school enrollment among 5-year-olds has increased dramatically in the last years, more than in any other education level. Furthermore, increased access was observed across all income levels, though the enrollment gap between the bottom and top quintile remained constant at about 28 percent. This progress responds to large investments made in the sector. Enrollment in higher education, on the other hand, increased moderately. Moreover, gaps in access between households in the bottom and higher quintiles of the income distribution, as well as across geographic areas, have increased. In 2003, only 2.4 percent of young people in households in the bottom quintile were enrolled in higher education compared to 29.5 percent among young people in the top quintile. In 2016, enrollment among young people in the bottom quintile increased to 6 percent while enrollment among young people in the top quintile increased to 42.8 percent. The enrollment gap between rural and urban areas is smaller than among income groups, and the gap has decreased slightly. In 2003, enrollment rates were 5.1 percent and 29.7 percent in rural and urban areas, respectively. By 2016, those rates had increased to 12 percent and 31.2 percent.

152. **Gender gaps in education outcomes are small or non-existent.** Gender gaps are not observed across educational attainment and at a minimum level of proficiency, nor are they observed across additional education indicators, such as enrollment, transition from educational stages, repetition of years, completion of schooling, and out-of-schooling rates. In many cases males perform slightly worse than females, but these differences are negligible.¹¹⁵ Reasons for not attending school, however, differ between girls and boys. One in five school-aged females cite family reasons as the reason for not attending school, while school-aged males not attending school were much more likely to cite economic reasons.

153. **The private sector plays a very limited role in the provision of education services in the two compulsory levels, but it is more likely to be used among higher-income households and it has better education outcomes.** Public institutions represent 86.2 percent of all education institutions and serve 77.5 percent of students. The remaining services are provided by private institutions (8.4 percent of institutions) and private-subsidized ones (5.4 percent of institutions). Around 77 percent of students enrolled in private

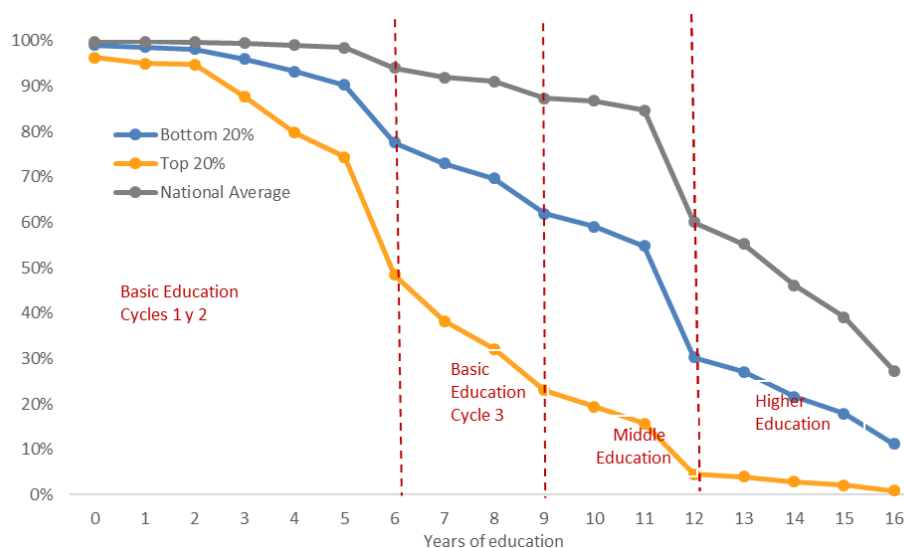
¹¹⁴ World Bank, 2018c.

¹¹⁵ UNESCO Institute for Statistics (UIS) database, <http://data.uis.unesco.org>.

institutions in the initial and basic education levels belong to the top two quintiles of the income distribution. Similarly, 83 percent of students enrolled in private institutions in middle education belong to those quintiles. Learning outcomes measured by the standardized tests SNEPE 2015 show that students in private institutions perform above the national mean, and the difference with public institutions grows as students progress between grades. Among students in 9th grade, the difference in the mean score is close to half standard deviation¹¹⁶.

154. **Large differences between gross and net enrollment rates show that many students are enrolled outside of the relevant age group, and most dropping-out occurs when completing an education cycle or level of education.** For example, 23.7 percent and 40 percent of students enrolled in cycles 1 and 2 of the basic education level do not attend the grade corresponding to their age. This gap increases by the time students reach the third cycle (grades 6 to 9) reaching 46.7 percent of students, which increases drop-out rates before starting middle education. Reasons behind these patterns include a limited preparation at the initial level, late entrance into the formal system, and high repetition rates during the basic education level. Looking at the education profile of 27 to 30-year-olds (the population that should have recently finished higher education if they proceeded normally through the education system), suggests that most drop-outs occur between education cycles or levels (Figure 91), though substantial drop-out among the bottom 20 percent is also observed within education cycles.

Figure 92. Education Level Among 27-30 year-olds, 2016



Source: World Bank 2018c.

155. **Overall, a low quality in schooling has continued despite stronger government spending on education in recent years.** Section 2.2.3 shows that Paraguay's learning outcomes are more in line with outcomes among lower-middle income countries than with higher-middle income countries, and that several outcomes have deteriorated in recent years. Yet between 2003 and 2012, real public spending on education grew by 9.4 percent annually. After 2012, growth in public education spending slowed slightly, but continued to grow by 7.3 percent annually.¹¹⁷ This increase puts Paraguay among those countries that

¹¹⁶ This difference is on school averages, without controlling for socio economic status.

¹¹⁷ BOOST Database, 2016. Ministerio de Hacienda.

spend more in education as a share of public expenditure (21.3 percent in 2016), although as a share of GDP or in terms of expenditure per-student the country still lies behind countries with similar income levels. In 2014, countries in the region with similar levels of income spent almost twice as much per student as Paraguay (adjusting for differences in the cost of living). Furthermore, as shown in Figure 66 panel (b) (section 2.2.3), the country shows lower educational outcomes even when compared with countries that spend similar resources per student.

156. Inefficiencies in the education sector have prevented increased public spending from translating into better outcomes, and in some cases public allocation of resources may be perpetuating socio-economic gaps.

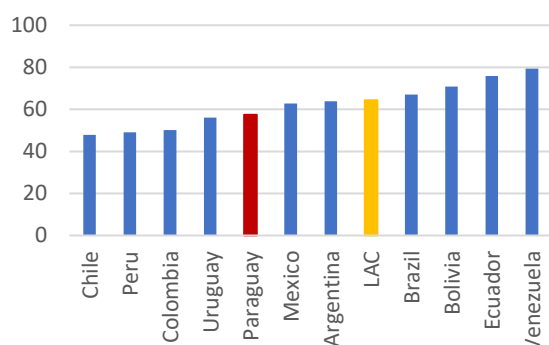
The allocation of financial resources from the national development fund (Fondo Nacional de Inversión Pública y Desarrollo, FONACIDE), targeted to fund school infrastructure and school meals, is determined by factors exogenous to the sector. Teaching policies do not link career development to performance, and teacher training policies are not aligned to student needs. Three of the four departments with the highest poverty rates—San Pedro, Caaguazú, and Concepción—have the lowest per-student expenditure levels. Teachers with less training and experience are systematically assigned to schools with children from poorer socio-economic households. Investment in infrastructure is low, even as a large share of schools do not meet minimum quality standards. Based on the 2008 school census, 11 percent of schools in urban areas are in good condition, 72 percent are in regular condition, and 17 percent are deficient. The corresponding rates in rural areas are 0.3 percent, 36 percent, and 64 percent, respectively.

157. Paraguay shows mixed progress with regards to sexual and reproductive health. On the one hand, progress has been pronounced in reducing teenage pregnancy. Teenage motherhood has been shown to have negative effects on maternal outcomes as well as on children born to adolescent mothers (including a higher risk of maternal mortality, fetal death, and infant mortality) even after controlling for unobservable confounding factors.¹¹⁸ Between 2003 and 2015, the adolescent fertility rate fell from 75 births per 1,000 women aged 15 to 19 years to 57 births, placing Paraguay below the LAC average of 64.3 and just above the adolescent fertility rates of regional aspirational comparators (Figure 93, Panel ((a)). However, over the same period the maternal mortality rate remained one of the highest in South America. In 2015, the figure of 132 deaths per 100,000 live births was nearly double the LAC average of 67 (Figure 93, Panel ((b)). High maternal mortality rates—together with a low share of women in parliament—help explain the poor performance of Paraguay in the UNDP’s Human Development Gender Inequality Index, where the country ranks fourth out of 22 countries in the LAC region.

¹¹⁸ Joao Pedro Azevedo et al. *Teenage Pregnancy and Opportunities in Latin America and the Caribbean: On Early Child Bearing, Poverty and Economic Achievement* (The World Bank; Washington, D.C.; 2012).

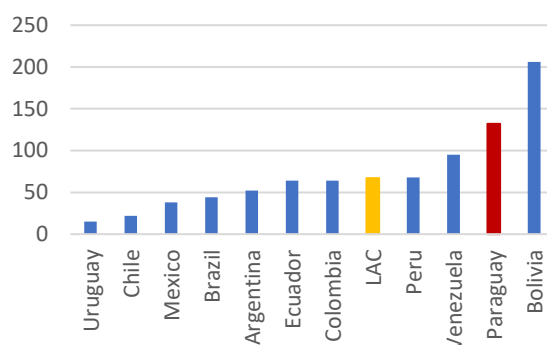
Figure 92. Adolescent Fertility Rate and Maternal Mortality

(a) Adolescent Fertility Rate (Births per 1,000 Women ages 15-19), 2015



Source: Human Development Report, 2015.

(b) Maternal Mortality Ratio (Deaths per 100,000 Live Births), 2015



Source: Human Development Report, 2015.

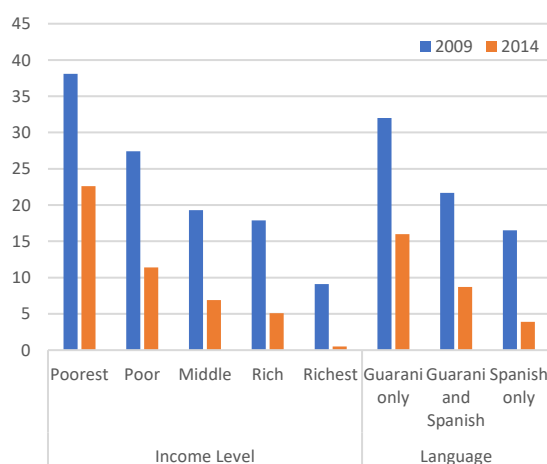
158. **Health outcomes in the broader population have improved but at slower rate than other countries in the region, despite high health spending.** Paraguay's life expectancy at birth has increased from 63.8 years in 1960 to 72.9 in 2014, while the regional average went from 60 years to 75 in the same period. Lower than expected outcomes despite high spending on health may be partly explained by a health system that relies heavily on private spending. Although public health spending in Paraguay increased steadily from 2003 to 2016, from 5.2 percent to 12.5 percent of total public expenditure, it has remained similar to regional averages and just below the OECD average as a percentage of GDP.¹¹⁹ In contrast, private and out-of-pocket (OOP) health expenditures as a share of total health expenditures have remained much higher than regional and OECD averages, and as a result, total health spending as a percentage of GDP is above regional and OECD averages. In 2014, public (private) health expenditure in Paraguay was 4.5 percent (5.3 percent) of GDP while public (private) spending in the OECD was 6.7 percent (2.5 percent) of GDP.

159. **Paraguay operates a fragmented healthcare system that favors the well-off and contributes to high private health spending.** In the public sector, the health ministry (Ministerio de Salud Publica y Bienestar Social, MSPyBS) operates a network of clinics and hospitals that is available to all. But anecdotal evidence suggests that the quality of care in MSPyBS can be much lower than care provided by the Instituto de Provision Social (IPS), which provides contributory insurance to the formally employed and runs its own network of clinics and hospitals. With high informality rates, health insurance coverage is low, especially among lower-income quintiles and the indigenous population. Less than 5 percent of the poorest quintile of the population has any health insurance. This figure rises to 53 percent in the richest quintile. Lacking health insurance, 23 percent of those in the poorest quintile are at risk of catastrophic OOP expenditure, defined as OOP expenditure greater than 25 percent of income, in contrast to just 0.5 percent of those in the richest quintile (Figure 94, Panel (a)). High OOP expenditures are estimated to push 10 percent of the population in the poorest income quintile below the US\$3.20 poverty line and contribute to a 3.1 percent higher poverty rate nationally (Figure 94, Panel (b)).

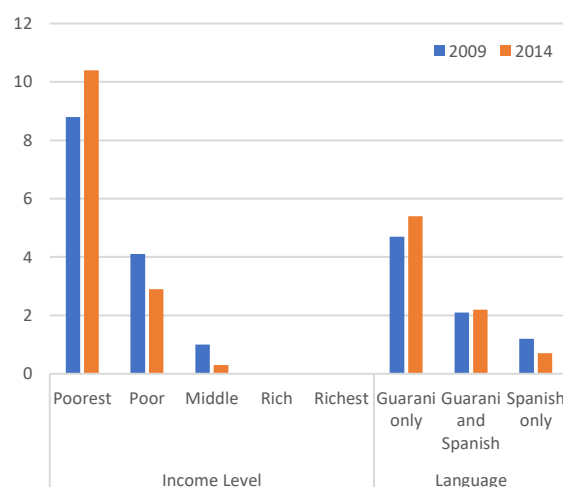
¹¹⁹ BOOST, 2016.

Figure 93. Health Care Equity

(a) Risk of Catastrophic Expenditures (Percentage of people with OOP expenditure greater than 25 percent of income)



(b) Risk of Impoverishing Expenditures (Percentage point increase in poverty rate using \$3.20 per day line)



Source: World Bank 2018c.

Notes: Calculated from EPH data. Catastrophic expenditures in health measures if a household's out-of-pocket spending exceeds a household's ability to pay for health, and measured as the fraction of households for whom out-of-pocket expenditures exceed the chosen threshold. Impoverishing expenditures occur when a household is forced by adverse health events to divert spending away from nonmedical budget items such as food, shelter and clothing, to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Both measures are used in the SDG monitoring framework.

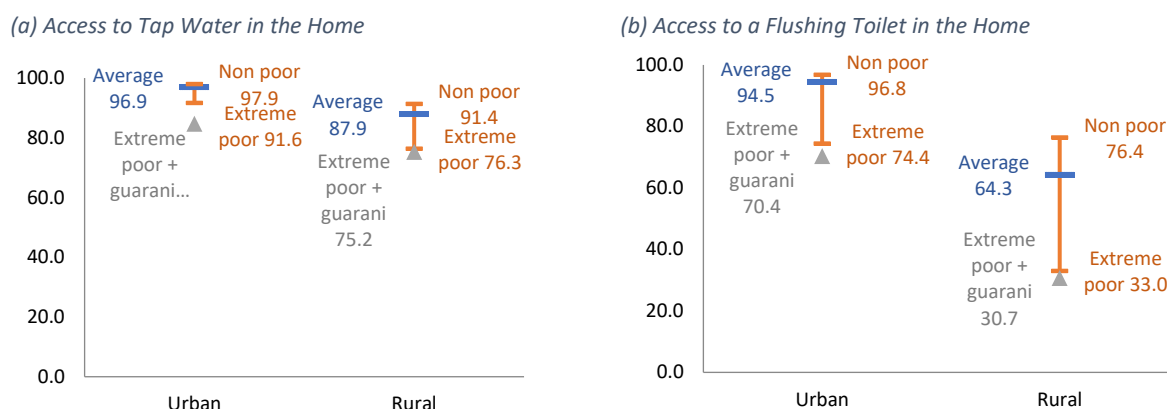
160. **The fragmentation of the health system leads to inefficient and duplicated networks of service provision.**¹²⁰ The allocation of budgeting follows historical norms, leading to uneven allocation of resources across space and with a poor connection with demand. Lack of information technology infrastructure increases administrative costs, makes information sharing more difficult, and prevents appropriate tracking of the distribution of inputs such as medicines. Despite households spending 22 percent of their budget on pharmaceuticals, medicines are consistently scarce and 78 percent of OOP expenditures are on medicines.

161. **In basic water and sanitation services, Paraguay has made large gains in recent years, but gaps continue to exist across socioeconomic status and geographic locations.**¹²¹ Access to basic water and sanitation services depend to a large extent on whether a child is born in rural or urban areas, the socioeconomic status of the family, and the language spoken in the household (Figure 95). Almost half of all children born in rural areas do not have access to flushing toilets inside their home, while almost all children born in urban areas have access. The situation is significantly worse for those born in extremely poor households. Less than one in four children in poor families in rural areas have advanced sanitation, falling to less than one in five if the family only speaks Guaraní. A child born in rural areas has a 76 percent chance of having tap water in the home, with the probability increasing to 97 percent in the city.

¹²⁰ World Bank, 2018c.

¹²¹ Gaps in access to safely managed—as opposed to basic—water and sanitation services, though larger in rural areas are very large in both rural and urban areas. See Labor and human capital section for more details.

Figure 94. Access to Tap Water and Flushing Toilets by Socioeconomic Status, 2017



Source: Authors' calculations using EPH.

162. **Achieving improved access, quality, and efficiency in water and sanitation services will require stronger institutional arrangements, with increased coordination and planning, and greater accountability.** The service-delivery capacity of the state water firm (Empresa de Servicios Sanitarios del Paraguay, ESSAP) would need to improve to raise access and quality in urban areas, while the national environmental sanitation service (Servicio Nacional de Saneamiento Ambiental, SENASA) would need to develop infrastructure for those currently without services in more remote and dispersed populations, including poor and highly-vulnerable indigenous communities. The government has estimated that it will need US\$5.85 billion to reach the Sustainable Development Goal on Water and Sanitation that sets out to “ensure availability and sustainable management of water and sanitation for all by 2030.”¹²² The current commitment of US\$140 million per year for the 2013-2018 period is well below annual investment needs. Ad-hoc, small private sector providers known as *aguateros* have taken over the market not serviced by ESSAP,¹²³ but *aguateros* are often too small to be self-sustainable. Increased private participation may help cover the finance gap in water and sanitation, but regulatory reforms seem necessary to attract investment.

163. **Unplanned expansion of cities exacerbates the challenge of service provision.** Cities in Paraguay are growing rapidly, without the necessary infrastructure and coordination required to meet the needs of the population. For example, build up land in Asunción grew at a rate of 9 percent between 1999 and 2010, and only 9.5 percent of the new built up was added within the city boundaries, leaving many disconnected. With over 90 percent of growth in land following a leapfrog pattern the challenges for service provision are deepening and the need for better land use planning in and around cities has become more evident. Outside Asunción, medium and small cities are also expanding fast.

164. **A fragmented system—with effective cash programs coexisting with costly and less efficient in-kind programs -- hinders the social assistance in Paraguay to achieve its full potential impact.** Public expenditure on Social Assistance (SA) has more than doubled in real terms in the past decade and reached 1.7 percent of GDP in 2016. This increase lifted Paraguay from being one of the lowest spenders on SA in the region to the mean of upper middle-income comparators. At the same time, the supply of programs has grown.

¹²² UN Sustainable Development Goals, SDG 6. Available at: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

¹²³ In 2006 it was estimated that *aguateros* served about 20% of the total population. UN-HABITAT. Meeting Development Goals in Small Urban Centres: Water and Sanitation in the Worlds Cities, 2006.

Paraguay already has, on paper, an almost complete suite of interventions, with ten government agencies delivering more than 30 programs that tackle poverty, support economic inclusion, and build human capital among different groups of vulnerable populations. Coordination between programs has been limited and their performance has varied significantly. The two largest cash SA programs, *Pension Alimentaria Adultos Mayores* and the conditional cash transfer *Tekoporã* are well targeted but the latter is underfunded, so that only 40 percent of the bottom quintile of the population receives a cash benefit, well below the performance of any comparable Latin American country. Meanwhile more is spent on less efficient in-kind programs and categorical veteran-focused pensions.¹²⁴ The two largest in-kind programs (school meals and housing) absorb more than half of sectoral spending but are not well-targeted and have high unitary costs (school meals, at more than US\$2 per day per student, cost five times more per person than Tekoporã).

165. **An important next step for the social assistance system will be to build an integrated social information system for the identification of the poor and vulnerable, as well as a monitoring and evaluation system of the main social programs.** The planning secretariat (Secretaría Técnica de Planificación, STP) has invested in the development of an instrument to identify through proxy means testing the poor and extreme poor, but this has been implemented only in parts of rural areas of Paraguay and, to date, no window for the public to apply to any social assistance program exists. The lack of leadership by a single institution for planning and monitoring social policy has hampered the development of a single social registry that could serve as efficient gateway to multiple social programs; instead today a self-standing registry of beneficiaries in Gabinete Social coexists with a separate targeting tool administered by STP (*Ficha Social*) and multiple program information systems in different implementing agencies. STP conducts a regular monitoring of outputs (but less so for outcomes) of different social programs, while the Unidad Técnica del Gabinete Social has worked on evaluations of technical design and implementation of major programs but to date, quantitative impact evaluations are missing for all but one program (Tekoporã).

166. **Paraguay presents imbalanced social assistance spending across the life cycle.** The prioritization of spending does not involve a clear rationale of pursuing the highest return in terms of poverty alleviation or human capital accumulation.¹²⁵ Compared to OECD countries, most of Paraguay's social protection spending is skewed towards the "old age and survivors" function, despite having a much younger demographic profile than OECD countries. Benefits to war veterans and non-contributory pensions are generous and regressive, contributing to increased income inequality. Massive investment in children only starts at the age of six, through the education system. *Tekoporã*, like other conditional cash transfers in the region, has proved effective in stimulating human capital accumulation among the poor, and thus maximize the existing investment in social services at very low cost to the state. Other Programs with a focus on early childhood (parental trainings offered to Tekoporã beneficiaries), daycare centers for vulnerable children (Abrazo), and nutritional support (PANI) do exist, but resources are limited and often not fully utilized due to capacity constraints. Formal pre-school education is expanding, although its delivery model (part-time shifts) and geographic targeting criteria (where infrastructure already exists) are unlikely to prioritize vulnerable populations (e.g., single parents and the working poor).

¹²⁴ World Bank, 2018c.

¹²⁵ World Bank, 2018c.

4. Sustainability

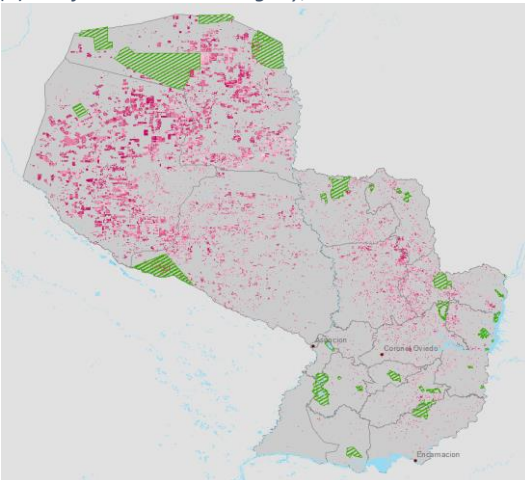
4.1 Environmental sustainability

167. **Paraguay would need to develop a management system for its abundant natural capital which is a key driver for growth.** As described in Chapter 2, Paraguay has abundant natural capital representing about 35 percent of GDP. Paraguay's natural resource base (land, energy, and water) is an important contributor to the economy. However, this natural capital is undermanaged now, leading to overexploitation of natural resources, growing degradation of ecological systems, and vulnerability to climate change and weather variations, that may represent a social, environmental, and economic liability.

168. **Logging and clearing of land for charcoal/biomass, agriculture and cattle ranching have produced extensive forest degradation and deforestation.** Since 2005, deforestation was entirely driven by the expansion of pasture. Prior to that, from 1990 to 2005, pasture also represented the major driver of deforestation (nearly 70 percent) followed by agricultural production (nearly 25 percent) (Figure 96, Panel ((b))).¹²⁶ While charcoal is not a major deforestation source, Paraguay is one of the world's top five charcoal exporters, ranked by weight.

Figure 95. Deforestation in Paraguay and Major Drivers

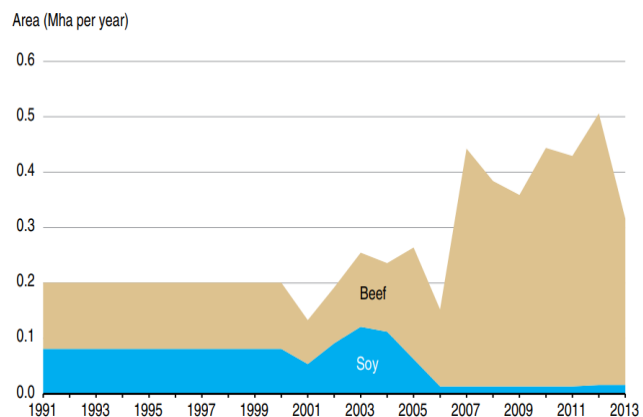
(a) Deforestation in Paraguay, 2000-2014



Note: Darker color intensity indicates more recent deforestation.

Source: World Bank staff using Hansen et al (2017)

(b) Deforestation Drivers in Paraguay (1991-2013)



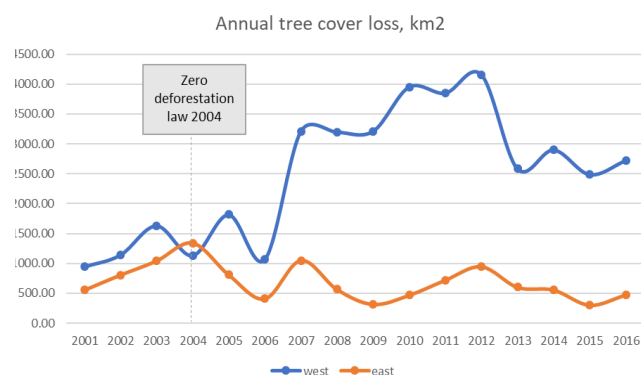
Source: Beckham et al. (2017), "International Trade and Deforestation: Potential Policy Effects via a Global Economic Model".

169. **Two major policies have been established to limit deforestation in the country, but with limited enforcement.** In 1973, a country-wide forest law was established whereby 25 percent of privately-owned forested land must be set aside and protected from clearing. In 2004, a zero-deforestation law was enacted prohibiting any new forest clearings in Eastern Paraguay. Later extended in 2013, it remains in force on a temporary basis and is due to elapse in December 2018. Evidence suggests that this measure is not effectively implemented nor strongly enforced. Figure 96 shows the deforestation trend in the Eastern Region which has not declined substantially over time. On the other hand, deforestation in Western

¹²⁶ De Sy, V., et al. Land use patterns and related carbon losses following deforestation in South America. *Environmental Research Letters* 10.12 (2015).

Paraguay, in the Chaco, has increased considerably in the last ten years. While firm evidence is lacking, some observers hold that the 25 percent law is perceived to be ineffective due to weak enforcement.

Figure 97. Annual Tree Cover Loss, km2, 2001-2016



Source: World Bank staff using Hansen et al (2017)

170. **The loss of natural forest is critical and, if it continues, will likely cause substantial damage to the broader ecosystem.** The expansion of soybean and pasture poses multiple threats to the forest biome. Paraguay ranked among the top 11 countries in terms of total deforestation between 2000-2013, and is one of the biggest deforesters in relative terms with respect to total forest cover, with deforestation of around 15 percent.¹²⁷ When a relatively small share of the forest biome is transferred into agricultural land, its regulating services (e.g., erosion control and watershed protection) can be relatively easily substituted by additional water regulation (reservoir construction, etc.). However, if a substantial part of the forest is lost, vital functions of the ecosystem are lost and artificial substitutes are not adequate, creating soil erosion, risk to water resources, threats to biodiversity, the risk of forest fires, and the release of greenhouse gases).¹²⁸ At the current rate of deforestation, ignoring the legal limit of 25 percent, in 24 years all Chaco forest cover would all be gone, and the effects will be mostly irreversible.

171. **Loss of natural forest are substantially impacting the economy in Paraguay.** Comprehensive estimates of deforestation costs, including the associated cost to the loss of forest biome and its regulating services, suggests that the continuation of current deforestation practices in Paraguay result in annual forest losses of a value estimated at a minimum of 1 percent and possibly as high as 4 percent of annual GDP.^{129,130} The annualized cost of deforestation in the Chaco, where there is no zero-deforestation law, is estimated in the range 0.5-4.0 percent of GDP. While only 2 percent of total deforestation cost is attributed

¹²⁷ Hansen, Matthew et al. High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science*. 2013, 342, 6160, 850-853.

¹²⁸ World Bank. Análisis del Costo económico de la Deforestación en Paraguay. Informe Avance, *Programa Apoyo Estratégico para el Desarrollo del Corredor del Bosque Atlántico en el Paraguay* (P161498), 2017, unpublished paper.

¹²⁹ Ibid., 2017.

¹³⁰ Costs of deforestation is compared to business-as-usual scenario. Forest values included in the analysis are divided in two categories: (i) non-wood value of forest land, i.e., recreational value, habitat/species protection, non-wood forest products, watershed protection, and (ii) forest values, i.e., carbon storage, sustainable timber harvest, and bushmeat harvest. These values are difficult to estimate, and therefore meta-analysis are used and a range of alternative costs is provided. Non-wood values are taken from Siikamäki et al. (2015), while forest values are taken from Brancalion et al. (2012), Naidoo& Ricketts (2006), and Siikamäki et al. (2015). Further, the analysis incorporates a risk adjusted parameter considering that losses are non-linear on the deforestation level. The analysis uses 40% as the key parameter, from which economic losses from deforestation are amplified. In other words, after that point, the cost of deforestation is significantly higher.

to indigenous communities, significant deforestation on private lands affects their traditional livelihoods. Rural poor communities are strongly negatively affected because they derive substantial income from forest resources (food, game, fuels, etc.). Deforestation also degrades critical ecosystem services such as soil fertility and watershed protection with additional negative implications for poor households.

172. **Loss of natural forest particularly affects rural and indigenous communities, increasing social instability.** Indigenous communities, whose livelihoods and land are linked to the forest, are under pressure from commercial agribusiness. Land disputes with indigenous peoples have erupted across the country. A third of indigenous communities are engaged in a land-related conflict, such as encroachment on their territory by outsiders, overlapping land titles, or protesting illegal leases given to soy cultivators.

Box 6: Deforestation in Paraguay: key challenges and policy options for reforms

Recent agricultural development in Paraguay is based on expansion of soybean production in Eastern Paraguay and cattle ranching in Western Paraguay (the Chaco). This expansion is concentrated in the forestland that is an ecologically unique: the Chaco and the Atlantic Forest. The success of the Paraguayan agribusiness sector has by large been fueled by the conversion of natural ecosystems, especially forests: about 94 percent of the Atlantic forest has already disappeared and the high pressure on forests has now shifted to the Chaco. The forest loss is estimated approximately 240,000 hectares per year, although the National Forestry Agency has reported rates greater than 300,000 hectares during 2011-2015 period.

Potential options to mitigate the negative and cumulative impact of current land governance on Paraguay's remaining forest cover comprise a set of policy reforms, regulations, and economic incentives, combined with more effective sanctions to improve compliance with environmental regulations, namely:

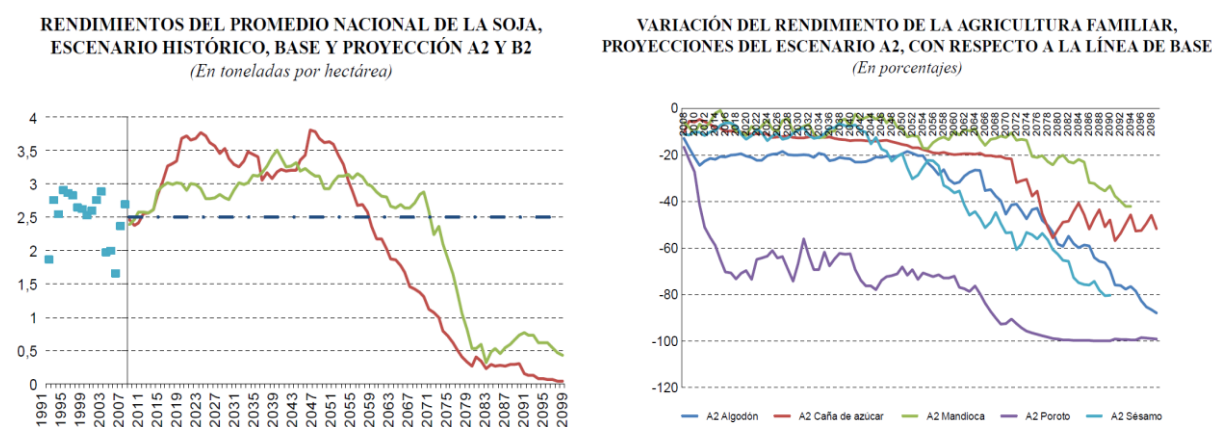
- **Environmental and legal framework:** (a) promote large-scale ecological landscape corridors to increase ecological connectivity and to enhance the viability of otherwise isolated natural populations; (b) enshrine the 'zero deforestation law' in permanent legislation and ensure country-wide application of the 25 percent forest conservation policy. Under current economic and political incentives (e.g., to increase to 20 million head of cattle by 2020), maintaining this law could reduce pressure, and mitigate future environmental risks.
- **Institutional and capacity building:** (a) increase budget allocation and strengthen institutional capacity for environmental enforcement agencies, to ensure compliance with environmental legislation. Supervision of compliance with environmental and forest permits is inadequate (e.g., in 2014, *Secretaria de Ambiente – SEAM* only had 11 environmental officers to cover and monitor compliance with environmental regulations across the entire country); (b) provide technical resources to monitor deforestation in real time and take necessary actions. Currently deforestation is monitored through satellite analysis by local NGOs – and these activities must be at the Government level to increase compliance.
- **Rural cadaster:** (a) Strengthen the *Sistema de Información de Recursos de la Tierra – SIRT*; upgrade its platform to connect with other agencies' databases, to expand the land titling regularization process; (b) develop a reliable and modern rural cadaster (land registry) which is crucial to strengthen land governance and property rights. A rural cadaster would facilitate the recovery of property tax and increase the fiscal revenues.
- **Economic instruments and market-access promotion:** (a) encourage tax policies and instruments that adequately reflect forest resource scarcity to reduce economic incentives toward deforestation. Land taxes are currently negligible, and the agricultural sector has preferential treatment particularly in income and value-added taxes, thereby contributing minimally to public revenues. Likewise, payment schemes for conservation are not widely applied, although a legal framework exists; (b) promote access to premium agricultural markets where reputational risk is fundamental. Currently, the Paraguayan beef industry encounters little economic pressure to stop clearing forests because it exports to lower-value markets that impose few limits on imports beyond sanitary controls.

- **Transparency and justice system accountability:** (a) improve transparency and access to environmental/land information and justice. Currently, public access to environmental information and data is limited. Lack of transparency makes it difficult for non-state actors to monitor compliance with environmental legislation; (b) strengthen the justice system, including by creating ad-hoc environmental courts. Judges need to be trained in specialized environmental issues to be able to better apply the current legislation.

173. **Agriculture is a major engine of growth in Paraguay, but is highly sensitive to climate variability.** Globally, Paraguay is the most exposed country, along with Bolivia, to “Agricultural Productivity Loss Risks” in South America, as per the Center of Global Development’s ranking.¹³¹ Long-term estimates suggest that variability in precipitation is likely to vary from +9% to -10% t in Paraguay, with the largest increase in the southern part of the Eastern Region and the largest reductions in the northern Chaco. Similarly, runoff projections show substantial changes to current trends from the period 2030-2060 and higher differences by the end of the 2070-2100 period.

174. **Climate change is expected to cause important shifts in agricultural production patterns during the next 100 years (Figure 98).** Climate change will lead to an increase of productivity of industrial agriculture for around 30 years and then fall considerably—especially in the case of soybean harvests. However, family farming will show a significant reduction in its productivity from the beginning of the period, impacting mostly small-scale crop production such as cotton, sugarcane, cassava, kidney beans, and sesame.¹³²

Figure 98. Climate Change Impacts on Paraguay’s Agricultural Productivity



Source: CEPAL (2014).

175. **Paraguay faces various climate hazards, with droughts, heat waves, extreme rainfall, and floods posing significant development challenges.** Nearly 43 percent of Paraguay’s GDP is exposed to climate risk, as well as 46 percent of its total population.¹³³ According to the international disasters database EM-DAT, during the 1990–2014 period, floods represented nearly 40 percent of total climate hazards by frequency,

¹³¹ Center for Global Development, *Mapping the Impacts of Climate Change*, 2013. Available at: <https://www.cgdev.org/page/mapping-impacts-climate-change>.

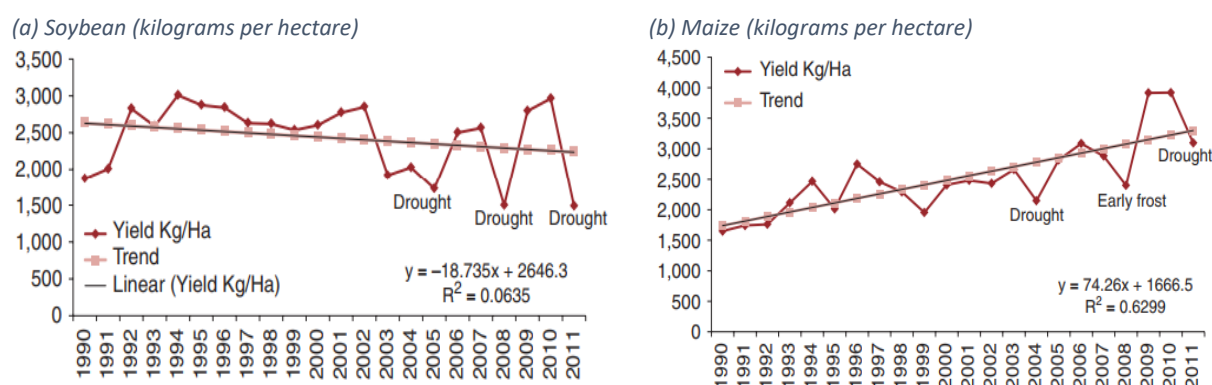
¹³² Ibid., 2014.

¹³³ GFDRR. *Disaster Risk Management in Latin America and the Caribbean Region*. GFDRR Country Notes, 2010. Available at: <https://www.gfdr.org/sites/default/files/publication/drm-country-note-2010-all-notes.pdf>

followed by storms (25 percent), and droughts (21 percent). In terms of economic consequences, wildfires represent nearly 44 percent of total costs, followed by storms (40 percent) and floods (16 percent).¹³⁴ Recent forecasts indicate that the adverse consequences of climate change are likely to include more frequent and severe extreme weather events (including hurricanes, floods, droughts, and heat waves).

176. **In Paraguay, droughts, flooding, temperature extremes, and shifts in the timing of rain patterns are the main climate risks agricultural producers face.** Paraguay loses approximately US\$237 million on average every year, or 5.4 percent of agricultural GDP, due to production risks. The most important production risk comes from droughts. Losses have reached US\$1bn in years in which extreme weather events have occurred. The main risk for soy production is severe drought every three to four years (the most recent events include 2005, 2008, and 2011) since irrigated agricultural lands constitute only 3 percent of the total.¹³⁵ In commercial farming, summer drought accompanied by high temperatures has a significant impact on soybeans, whereas maize, which is also relevant for family farming, is mainly affected by winter drought and early frosts (Figure 99). Family farming crops, like sesame, cotton, sugar cane, and vegetables, also suffer from the impact of recurrent droughts. Cassava (manioc), the main consumption staple of family farms, is relatively tolerant to water deficits and is only affected by severe droughts.¹³⁶

Figure 99. Main Causes of Losses for Main Industrial Agricultural Products



Source: Arce, Caballero & Arias (2015)

177. **Health risk factors caused by indoor air pollution are particularly prominent within rural areas.** As mentioned in Chapter 2, biomass is the main energy source for the rural population, posing a considerable environmental and health risk for local inhabitants. The consumption of firewood and other solid and liquid fossil fuels inside homes is associated with chronic obstructive respiratory diseases and acute respiratory infections, particularly in women and children under the age of five. Based on recent estimates for Paraguay, from 1990 to 2010, damages associated with indoor air pollution were substantially higher than

¹³⁴ Prevention Web, *Paraguay Disaster & Risk Profile*. Available at: <https://www.preventionweb.net/countries/pry/data/>. Data retrieved February 12, 2018.

¹³⁵ Food and Agriculture Organization of the United Nations. *Information System on Water and Agriculture (AQUASTAT)*, 2012. Available at: <http://www.fao.org/nr/aquastat/>

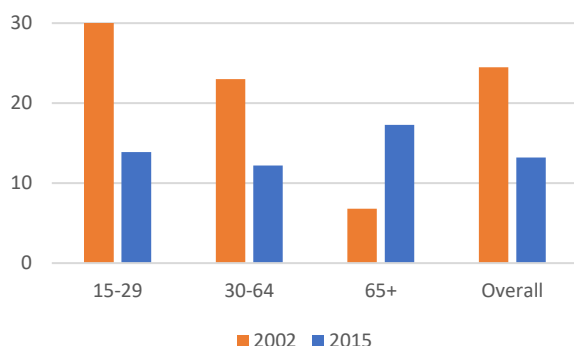
¹³⁶ In 2011, due to drought, family farming incurred the following losses: cassava, US\$94 million or 38% of value of production (VOP); sesame, US\$13 million or 46% of VOP; and cotton, US\$3 million or 26% of VOP. See: Carlos Arce et al. *Paraguay Agricultural Sector Risk Assessment: Identification, Prioritization, Strategy, and Action Plan*. Washington, D.C., The World Bank, 2015.

outdoor air pollution. In 2010, losses from premature death related to household air pollution from cooking with solid fuels represented US\$90 million (2011 PPP), compared to ambient PM2.5 (particulate) exposure (US\$73 million), making up by far the greatest environment-related health risk factor.¹³⁷

4.2 Social sustainability

178. **The social context is recently changing, with a growing middle class and larger percentages of citizens willing to engage in civic life and participate in the political debate, generating stronger pressures on government to deliver.** Over the last 25 years, the incidence of international migration has substantially decreased. Consistent with these trends, survey data show that citizens—especially younger generations—are less willing to migrate outside the country (Figure 100). Whether driven by better economic opportunities in Paraguay or deteriorating opportunities abroad, a larger share of population is willing and able to engage in civic life. Furthermore, the young report being more willing to engage and voice their demands (Figure 101), including by taking advantage of fast growing diffusion of social media (largely via smartphones). Younger generations are also less likely to enter in the job market (Figure 102) and show higher levels of distrust towards the authorities (Figure 103). Finally, as discussed earlier, the middle class almost doubled since 2003, becoming—at 38 percent of the population—the second largest group, just below the vulnerable population. As their country’s economic situation improves, Paraguayan are no longer satisfied with only having access to the same public services they had in the past. Addressing social demands of these groups should be a priority to ensure the social sustainability of the current development model.

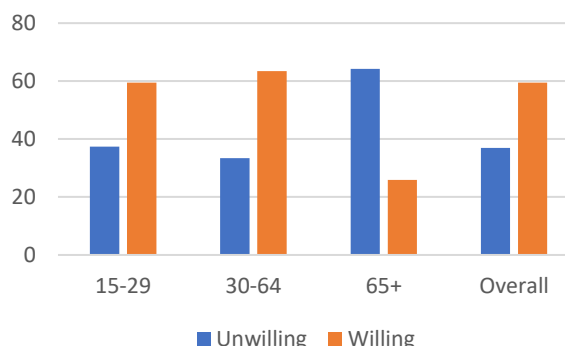
Figure 100. Citizens’ Propensity to Migrate by Population Groups in Paraguay, 2002 and 2015



Source: Latinobarometro 2002 and 2015.

Note: The graph shows responses to the following question: “Did you and your family considered the possibility to go and live in another country?”

Figure 101. Motivation for Civic Engagement by Population Groups in Paraguay, 2016



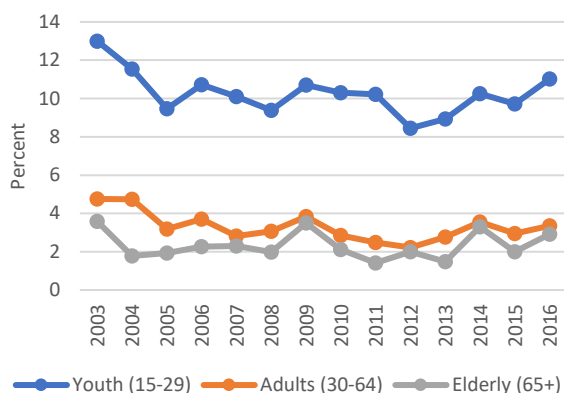
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Source: Latinobarometro 2016.

Note: The graph shows responses to the following question: “Are you willing to join protests to defend your democratic rights?”

¹³⁷GBD 2016. Global Burden of Disease Study 2016. Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2016. Available at: <http://ghdx.healthdata.org/gbd-2016>

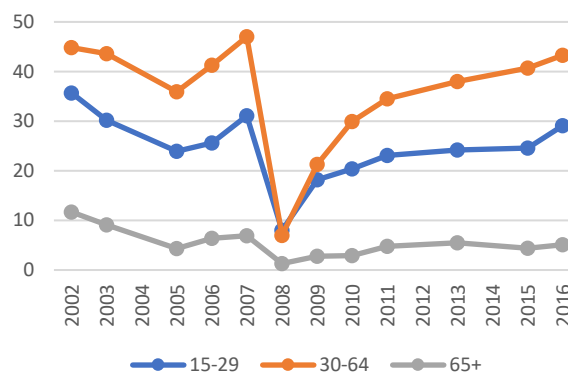
Figure 102. Unemployment Rates by Population Groups in Paraguay



Source: Authors' calculations based on EPH.

Note: the graph shows unemployment data by age group.

Figure 103. Level of Distrust in Public Institutions by Population Groups in Paraguay



Source: Latinobarometro 2016.

Note: The graph report percentage of respondents who expressed "little" or "no trust" in government.

179. **The growing demands of societal groups call for inclusive and accountable institutions and the evolvement of the social contract.** The middle-class perception that rights and opportunities are not guaranteed to everyone equally has created dissatisfaction and caused protest and polarization in the political discourse. If not properly addressed, such discontent can eventually lead to social unrest, violence and political decay.¹³⁸ Nonetheless, this discontent can also act as an important opportunity to further strengthen institutions and public services towards a new social contract. Historical experience in multiple global contexts shows that the increasing mobilization of social groups and growing levels of political engagement associated with economic modernization require inclusive institutions, able to adapt to new demands and needs and channel them into the policy-making process. In the Paraguay context, this would imply improving the land governance system, as well as enhancing progressivity in the tax system and providing citizens with opportunities to engage with the state and hold authorities to account.

180. **Institutional mechanisms allowing citizens and civil society organizations to interact with authorities and actively engage in the policy-making process can play an important role in addressing sustainability challenges.** The successful experience of subjecting the Conditional Cash Transfer (CCT) Program Tekoporã to social audit under the GPSA Project Ñañoimoirũ illustrates progress in empowering citizens to participate in the development process, removing barriers against those who are often excluded, especially women and marginalized groups from rural areas. Despite these encouraging signals, the capacity of ordinary citizens and infomediaries (civil society, the private sector, and the media) to act upon available information remains weak. The demand for information and data remains limited in Paraguay, especially outside the Asunción area, and helps to explain why transparency initiatives have yet to translate into greater government responsiveness and accountability (See Box 7). This is due to limited public knowledge of legal entitlements, insufficient efforts to proactively disclose information and disseminate data, and low literacy

¹³⁸ See, for example: Samuel, P. Huntington, *Political order in changing societies*. (New Haven, Yale University Press, 2006).

in using and analyzing data to monitor public policies, combined with limited institutionalized opportunities for civic engagement.¹³⁹

Box 7: Making transparency work for accountability and development in Paraguay

Beginning in 2013, Paraguay's government launched an ambitious program of transparency reforms to improve accountability and tackle corruption in public administration. "Transparent and efficient public administration" and "open government and transparency" have been identified as cross-cutting strategic development goals in the National Development Plan (NDP) 2014-2030. Consistent with these goals, the government joined the Open Government Partnership in 2012 and launched an ambitious package of reforms in fiscal transparency, open contracting, access to information and Open Data. An important Transparency law was enacted in 2014 (Law No. 5189/14) requiring all public offices to disclose information regarding the use of public funds to pay salaries. Later on, the reform process included measures on fiscal transparency and procurement reforms (open contracting) and culminated in the adoption of the Access to Information Law (Law 5282/14), followed by the launch of the Open Data Portal and the issuing of national guidelines for the publication of datasets by public institutions.¹⁴⁰ If they are sustained, these reform efforts have the potential to improve the quality of public-sector governance and development outcomes, by empowering citizens to hold government authorities accountable and creating new business opportunities for the private sector.

Transparency, however, is a necessary but not sufficient condition for accountability, and does not automatically generate it. On the one hand, given the cross-cutting nature of transparency reforms, interagency coordination, effective communication channels, appropriate institutional mechanisms, and clear accountability frameworks across the entire government are all necessary elements for effective implementation. On the other hand, to make transparency work for accountability and development, governments need to adopt additional initiatives and policies. These can be grouped into 'supply-side' initiatives that focus on providing access to information, such as public information laws, open data programs, financial disclosure and open contracting, and 'demand-side' initiatives that focus on the re-use of public information and facilitate citizens' interactions with state authorities, such as participatory budgeting, citizen scorecards and social audits. The following actions could be considered priorities:

- (i) Establish institutional mechanisms and processes that boost transparency by enabling citizen participation in the policy-making process and facilitating their interaction with government.
- (ii) Institutionalize and expand opportunities for civil society organizations and citizens to engage in direct monitoring and feedback on public sector service delivery, taking advantage of digital technologies.¹⁴¹
- (iii) Adopt an Open Data policy, in the framework of a long-term strategy focused on financial sustainability and the development of a data ecosystem.¹⁴²

¹³⁹ For example, findings from the 2017 Open Budget Survey suggest that Paraguay provides few opportunities for the public to engage in the budget process. <https://www.internationalbudget.org/wp-content/uploads/paraguay-open-budget-survey-2017-summary-english.pdf>

¹⁴⁰ For further details see: Government of Paraguay, Technical Secretary of Social and Economic Development Planning (STP). 2016, *De las promesas a los hechos: Transparencia, control y defensa del patrimonio público*. Asunción: Paraguay.

¹⁴¹ According to the 2015 Permanent Household Survey (DGEEC), Paraguay has more mobile telephone lines per inhabitant than countries such as Colombia, Chile and the USA. Moreover, the number of social media users as percentage of total population is the highest in the LAC region (83%), ahead of Costa Rica (78%), Uruguay (74%), Mexico (73%), Chile (69%), Colombia (68%) and Brazil (63%).

¹⁴² For instance, in Catalonia (Spain), internal government savings of EUR 2.4 million made in the first full operational year of its open geospatial data initiative (largely by avoiding collection of information the government already had) were double the set-up

(iv) Facilitate access to justice for ordinary citizens in case of denials of information requests.

(v) Build the capacity of government and non-governmental stakeholders in analyzing and using information and data.

Source: World Bank 2018a and World Bank 2018b

4.3 Fiscal sustainability

181. **Paraguay's public debt level does not raise immediate sustainability concerns.** After reaching 60 percent of GDP in 2002, public debt dropped continuously to 13 percent of GDP in 2011, helped by a restructuring of domestic debt in 2004 and primary fiscal surpluses in the following years. Public debt has been on an upward path since then due to moderate fiscal deficits, reaching 22 percent of GDP in 2016, but remains one of the lowest among comparator countries, on a par with Chile. Most of the public debt, issued in foreign currency, will mature in the medium to long-term. The IMF's 2017 Debt Sustainability Analysis projects a stable path for public debt up to 2022, anchored by the Fiscal Responsibility Law and real growth of GDP.¹⁴³

182. **Benefits paid to the elderly are generous, and while not yet posing a challenge to fiscal sustainability, expose the country to fiscal strains in the long term.** The private-sector pensions system, managed by the Instituto de Provision Social (IPS), awards the average retiree with 104 percent of his or her final yearly earnings, compared to an average of 52 percent for OECD countries and 62 percent among 26 LAC countries. Given the temporarily favorable ratio of contributors to beneficiaries, the system is still able to generate surpluses, but these cannot be expected to last as the population ages and a newly-formalized labor force retires. The public pension system, managed by the Caja Fiscal (CF), is similarly generous and offers additional benefits in the form of early retirement to teachers and uniformed personnel. In contrast to the IPS, the CF is already deficit-financing 25 percent of its expenditures, which are expected to increase further. Finally, 35 percent of over-65s benefit from the non-contributory social assistance program Adultos Mayores. This currently spends 0.47 percent of GDP, but will have to be allocated increasingly greater resources, as the 65+ population is projected to grow by 50 percent in the next decade and double within 20 years.

183. **In addition, the shifting burden of diseases, continued formalization of the economy, and demographic changes will put the fiscal sustainability of the IPS health system to test.** Greater formalization of the economy and the shifting burden of diseases from communicable to non-communicable and chronic diseases that are costlier to treat have placed financial strain on the IPS. Revenue data for the IPS health program are available only from 2016, but overall costs for 2014, 2015 and 2016 far exceeded revenue levels for 2016.¹⁴⁴ In effect, the IPS has been subsidizing its health program from its pension program for

and operational costs incurred during the four years of project. See:
http://inspire.ec.europa.eu/reports/Study_reports/catalonia_impact_study_report.pdf

¹⁴³ IMF, *Article IV Consultation, Press Release and Report. IMF Country Report No. 17/233*. 2017. Available at: <https://www.imf.org/en/News/Articles/2017/06/02/pr17204-imf-staff-completes-2017-article-iv-mission-to-paraguay>

¹⁴⁴ BOOST, 2016.

several years.¹⁴⁵ Continued formalization of the economy, along with shifting disease and demographic trends, will continue to put stress on the IPS health program unless financial reforms are implemented to improve its future fiscal sustainability.

184. **Moreover, fiscal risks incurred by state-owned enterprises (SOEs) would need to be monitored carefully.** The SOE sector in Paraguay consists of nine companies, with turnover exceeding 11 percent of GDP. Moreover, most of their loans are backed through government guarantees, constituting considerable contingent liabilities. Paraguay lacks a comprehensive framework to identify, assess and disclose fiscal risks or evaluate the country's susceptibility to risk, and there is substantial evidence of low financial performance and poor service delivery by SOEs. In previous instances, the failure to disclose and prepare for such risks has resulted in additional government obligations, larger public debts, and, occasionally, refinancing difficulties.¹⁴⁶ Establishing a functional model to assess fiscal risk of SOEs in Paraguay will require a sustained effort.

185. **Finally, structural reforms would be necessary to ensure that growing investment needs do not undermine fiscal sustainability.** While the current public debt level is relatively low, Paraguay faces a significant infrastructure gap that requires greater public investment. Additional expenditure not supported by commensurate efforts to mobilize domestic revenue or adjust inefficient spending elsewhere could gradually lead to elevated debt levels and eventually derail sustainability. Paraguay has already been experiencing fast reversals of debt trajectories, including between the late 1990s and the early 2000s.

5. From challenges to priorities

186. **The preceding diagnostics suggest that Paraguay can achieve significant growth and make it more inclusive and sustainable if it increases efforts to tackle its structural challenges.** While significant social gains have been achieved, a quarter of the population still lives in poverty. Advances to reduce the *concentration* of wealth and power would need to continue, especially providing voice and participation to the most vulnerable. Overcoming *institutional inheritance* would result in higher-quality public services. Improving the *quality of public services* would be key, following the focus in recent years on expanding access. Improved services and transparency will improve *formality*; and improved transparency will also lead to a more sustainable use of the natural wealth. To meet the country's expectations, an acceleration of growth is needed, but, even more importantly, said growth needs to become more inclusive and sustainable. *Demographic pressures*—especially a large and growing youth population, and rapid urbanization—require a dynamic private sector and active labor markets to absorb them.

187. **Therefore, to make further progress towards the twin goals and to converge with high-income countries in living standards, the development model would need to evolve.** The policy priorities, to be identified by the SCD, will need to both reflect Paraguay's defining characteristics (*endowments*,

¹⁴⁵ World Bank, 2018c.

¹⁴⁶ SOEs recorded a deficit equivalent to 1% of GDP in 2000, as tariff increases were insufficient to offset rising operational costs, creating losses and severe cash-flow problems. At that time, the finances of national oil company PETROPAR had been deteriorating over a period of two years, as the cost of imported oil rose by over 200% while prices were only increased by 70%. Similarly, the state telecommunications company (ANTELCO) did not adjust its tariffs between 1994 and the end of 2000, and experienced a failed attempt of privatization in the early 2000s, which eventually led to the transformation of the company into a new SOE, COPACO.

demographics. and institutional inheritance) and take into account constraints imposed by its main structural challenges (*concentration, informality, and inefficient provision of public services*).

5.1 Prioritization filters

188. Based on this assessment of Paraguay's development process, the following selection criteria for potential policy priority areas were identified: **a) Poverty impact**—while poverty has been reduced in recent years, sustaining this trend is a core objective and priority policies should address it; **b) Inequality impact**—income inequality is also lower today than it was fifteen years ago, but it remains high and the country confronts the challenge to continue and accelerate this process; **c) Vulnerability**—Priority policies should not only be effective in reducing poverty and inequality, but also sustainable, in order to ensure that their impacts persist over time. In this context, vulnerability should refer to fiscal, environmental, and socio-political implications; and **c) Tackling mutually reinforcing structural challenges**—the current development model is characterized by high levels of concentration, informality, and inefficient provision of public services, all of which are mutually reinforcing.

Box 8: Engagement and Prioritization process

Engagement during diagnostics phase. The team held initial internal consultations in Washington, D.C. and Asunción between September and October 2017, which included focal points from all GPs, IFC, and the CMU. Two Paraguay Country Team meetings were devoted to initial brainstorming, presentation, and discussion of emerging storyline. To inform the concept-note preparation, in-country discussions with key informants were held in October, including think-tanks, NGOs, academia, and the private sector. Government officials were purposely excluded from the consultation process at this early stage. The team also benefited from high-level events carried out under the umbrella of the International Commission for Growth, Equity, and Development, which provided a platform for the discussion of Paraguay's key development challenges.

After the concept review, the team held additional in-country consultations in March and April 2018 to validate the diagnostics and receive feedback on the emerging priorities. Given the emerging predominance of institutional challenges, the team organized two half-day closed-door workshops on Institutional Challenges/Political Economy of Development. Additional focus was given to environmental challenges (one-on-one meetings with local experts), gender issues (workshop with high-level officials and experts), and private-sector views (with select ambassadors in Asunción and a field trip to meet representatives of agri-business, *maquila*, banking, and commerce in the departments of Itapúa and Alto Paraná). The broad storyline and main messages were largely endorsed by all actors, and convergence towards a set of priority areas started to emerge. Consultations did not include government officials due to the timing of the political cycle, as general and presidential elections took place in late April 2018.

Engagement for prioritization. The objective of the prioritization process was to identify critical areas for faster, more inclusive and sustainable development. The prioritization process for the identification of opportunities drew heavily on the detailed diagnostics presented in previous chapters, which were in turn shaped by benchmarking exercises, country knowledge, and various consultations with in-country stakeholders and World Bank teams.

To form the long list of potential priorities the team engaged with all focal points. Each team was asked to propose a priority action within their sector and two priority actions outside their sector ("one plus two"), and proposals were then discussed in the team meeting. Based on those inputs, and considering feedback from in-country consultations, the team then proceeded to propose priority areas that were then validated in a workshop. Then all focal points assessed the impact of a selected list of policy actions within each priority area of the four SCD filters: poverty, inequality, vulnerability, and breaking the self-reinforcing links among structural challenges. The result of the process is presented in Table 5.

5.2 Policy priority areas

189. The four main policy priority areas if Paraguay is to reduce poverty and boost shared prosperity in a sustainable manner are presented in Figure 104. The diagnostics, filtered with the four criteria described above and the prioritization process outlined in Box 8, led to the following priority areas: **Accountable institutions, rule of law, and business environment**; **Natural wealth management**; **Quality of public services**; and **Human capital**. The priority areas are discussed in more detail in the following paragraphs, including broad examples of a tentative policy agenda in each.

Figure 104. Policy Priority Areas for Paraguay



Source: SCD team.

190. ***Accountable institutions, rule of law, and business environment:*** Increase trust in public institutions and reinvigorate private sector growth. The diagnostics reveal that Paraguay still scores relatively low on governance-related indicators, representing significant constraints to firms across all sectors. Corruption is perceived as an important constraint: Paraguay ranks 123rd out of 176 countries on the 2016 Corruption Perception Index, with the fifth-highest level of public perceptions of corruption in the LAC region. While some governance reforms have been undertaken, trust in the judicial system remains low, which can undermine business performance and productivity, and thus job creation, as well as social cohesion. The transparency agenda has focused on the supply of information to date; strengthening demand-side accountability of citizens will now be necessary. Promoting a sound business environment so that private sector firms can create jobs calls for a significant improvement in governance, including anticorruption measures, secure property rights, sound justice, and fair competitive conditions. Competitiveness is challenged by implementation of competition policy and the impact of SOEs in numerous sectors.

191. Addressing these challenges requires action on many fronts, including the following: a) *strengthen institutional mechanisms for citizens and civil society organizations to actively engage in the policy-making process (promote transparency)*; b) *reform the judiciary to increase trust in the rule of law and ensure equal treatment to all citizens and all private organizations, enhancing the independence, integrity, and accountability of the courts*; c) *strengthen anti-corruption policies*; and d) *enhance business-environment regulation to increase the efficiency and contestability of markets, in particular: competition policy, trade facilitation, access to finance, insolvency, and business registration*.

192. **Natural wealth management:** Reconcile the productive use of natural capital with its preservation, while maintaining social cohesion. Paraguay is rich in natural endowments (rainfall, fertile soil, and forest) and hydroelectric potential (the Itaipú and Yacyretá binational dams), and the country's recent high growth reflects the successful exploitation of these. However, overexploitation of Paraguay's natural resources, growing degradation of ecological systems, and vulnerability to climate change and weather variations represent a social, environmental and economic liability. About 94 percent of the Atlantic Forest has already disappeared, and at current rates Chaco forest cover will disappear in 24 years. Rapid land conversion and associated market dynamics have not been paired with robust property rights and taxation systems, generating social instability and conflict. About 40 percent of rural properties are untitled or have incomplete or flawed titles, and the tax burden on agriculture is lower than the rest of the economy, despite its high earning potential. Paraguay has not yet adopted an integrated water resources management (IWRM) action plan to promote equitable access to clean freshwater and better protection against water-related hazards such as floods and droughts. Further, 34 percent of rural agricultural households report at least one negative shock in the past 12 months—mostly due to natural disasters—and the most-cited strategies they used to cope with these shocks were selling assets and reducing food consumption.

193. Reforms to better manage this challenge could include the following: *a) build a strong **land** administration system (cadaster, titling, registration) and strengthen institutional capacity to monitor and enforce laws on land use, including forested land; b) adjust the **tax** regime on land and agricultural activities to foster sustainable and equitable land management; c) move towards a more sustainable **energy consumption** matrix, while minimizing environmental and health risks, by reducing the dependence on biomass; d) establish a **stabilization fund** with royalties from the binational hydroelectric facilities to smooth economic and fiscal volatility; and e) mitigate the risk of and increase the country's **resilience to shocks** in the agriculture sector, including through the use of risk financing instruments.*

194. **Quality of public services:** Improve the quality of public services—including infrastructure, public administration, and fiscal system—considering both current gaps and pressing demands from rapid urbanization. The provision of equitable, high-quality services, is critical for increasing firm productivity and human capital. Limited access to services, especially in rural and remote areas, has contributed to social exclusion and gaps in opportunities. According to the World Economic Forum Executive Opinion Survey, inadequate infrastructure and inefficient government bureaucracy are the 3rd and the 4th most problematic factors for doing business in Paraguay. While the contribution of the fiscal system to inequality reduction in Paraguay is positive, it is very small to make a significant difference. Less than 5 percent of the poorest quintile of the population has any health insurance, and 23 percent are at risk of catastrophic out-of-pocket expenditure. The fragmentation of the health system leads to inefficient and duplicated networks of service provision. Regulatory and institutional challenges limit the effectiveness and efficiency of SOEs.

195. To improve the quality of public services, Paraguay can consider the following: *a) fill critical **infrastructure** gaps in transport, electricity, and water and sanitation; b) improve the efficiency and distributional impact of **fiscal policy**, both on the revenue side (e.g. increase progressivity of the PIT) and the expenditure side (e.g. improve efficiency of public health spending, expand well-targeted social programs); c) develop an integrated **social information system** for the identification of the poor and vulnerable through a unified targeting system; d) strengthen **public administration**, by improving coordination and planning, lowering fragmentation and duplication of public functions, and further professionalizing the civil service; and e) improve **SOE performance** by implementing the Corporate Governance Code, strengthening performance contracts, and separating regulatory and service-provision roles.*

196. ***Human capital:*** Reform the education and training systems to better address the demands and needs of the private sector and better prepare young people for productive labor-market participation. While human capital also includes health and nutrition, the special focus on education and skills is motivated by the currently low outcomes of the public education system. The education and training systems are not keeping up with demand from labor markets nor producing high-quality and equitable educational outcomes. According to the 2017-2018 WEF Global Competitiveness Index, an inadequately-educated labor force is the second most cited challenge to doing business in Paraguay, and employers report significant gaps in the skills required for higher-productivity jobs.¹⁴⁷ While the stock of human capital increased due to higher enrollment rates, learning outcomes have not yet improved. The enrollment gaps in pre-school, middle education, and higher education between the top- and bottom-income quintiles are still substantial.

197. Reforms should focus on *a) the strengthening of **financing**-allocation mechanisms in public education so that resources follow students' demands and needs; b) aligning teacher **incentives** to improve student outcomes; and c) increasing the alignment of academic **curricula** and training services with market demands.*

198. **The impact of proposed policy actions within priority areas is likely to vary across different filters.** Table 4 shows the expected strength of the impact of each of the policy actions mentioned above on each of the four filters. For example, judicial reform (under the Priority Area 1) is expected to have a moderate (“+”) direct impact on poverty reduction, a significant (“++”) impact on inequality and vulnerability, and a high (“+++”) potential impact on breaking reinforcing structural challenges. For example, establishing a stabilization fund funded by the royalties from the binational electricity generators would likely have a very significant impact on reducing the vulnerability of the economic model, while its impact on the other three filters would likely be moderate.

199. **Likewise, multiple policy actions are likely to have the strongest impact when combined.** For instance, to alleviate structural challenges, Paraguay may want to concentrate on judicial reform, transparency, anti-corruption efforts, and enhancing business environment regulation (from Priority Area 1), building a strong land administration system and strengthening institutional capacity to monitor and enforce laws on land use (from Priority Area 2), and strengthening public administration (from Priority Area 3). Similarly, if the country wants to have a maximum impact on poverty, the focus should be on financing, teacher incentives and academic curricula in public education (from Priority Area 4), filling critical infrastructure gaps and improving the efficiency and distributional impact of fiscal policy (from Priority Area 3), and mitigating the risk and increasing the country's resilience to shocks to the agriculture sector (from Priority Area 2).

¹⁴⁷ Global Competitiveness Report 2017-2018. World Economic Forum, 2017. Available at: http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017_percentE2_percent80_percent932018.pdf

Table 4. Expected Strength of the Impact of Priority Policy Actions on the Filters.

PRIORITIES	FILTERS			
	Poverty	Inequality	Vulnerability (environmental, social, fiscal)	Reinforcing structural challenges (concentration, informality, inefficient services)
Accountable institutions, rule of law, and business environment				
Strengthen institutional mechanisms for citizens and civil society organizations to actively engage in the policy-making process (promote transparency)	++	++	++	+++
Reform the judiciary to re-establish trust in the rule of law to ensure equal treatment to all citizens and all private organizations, enhancing the independence, integrity, and accountability of the courts	+	++	++	+++
Strengthen anti-corruption policies	+	+	+	+++
Enhance business-environment regulation to increase the efficiency and contestability of markets, in particular, competition policy, trade facilitation, access to finance, insolvency, and business registration	++	++	+	+++
Natural wealth management				
Build a strong land administration system (cadaster, titling, registration) and strengthen institutional capacity to monitor and enforce laws on land use, including forest land	++	++	+++	+++
Adjust tax regime on land and agriculture activities to foster sustainable and equitable land management	++	+++	+++	++
Move towards a more sustainable energy consumption matrix, while minimizing environmental and health risks, by reducing the dependence on biomass	+	+	++	+
Establish a stabilization fund with royalties from the bi-national hydroelectric facilities to smooth economic and fiscal volatility	+	+	+++	+
Mitigate the risk and increase the country's resilience to shocks to the agriculture sector, including through risk financing instruments	+++	++	+++	+
Quality of public services				
Fill critical infrastructure gaps in transport, electricity, and water and sanitation	+++	+++	++	++
Improve the efficiency and distributional impact of fiscal policy , both on the revenue side (e.g. increase progressivity of the PIT) and the expenditure side (e.g. improve efficiency of public health spending, expand well-targeted social programs)	+++	+++	++	++
Develop an integrated social information system for the identification of the poor and vulnerable through a unified targeting system	+++	+	+++	+

Strengthen public administration , by improving coordination and planning, lowering fragmentation and duplication of public functions, and the professionalization of the civil service	++	+	++	+++
Improve SOE performance by implementing the Corporate Governance Code, strengthening performance contracts, and separating regulatory and service-provision roles	+	+	+	++
Human capital				
Strengthen financing -allocation mechanisms in public education so that resources follow students' demands and needs	+++	++	+	+
Align teacher incentives to improve student outcomes	+++	+++	+	+
Increase alignment of academic curricula and training services with market demands	+++	+++	++	++

("+") - moderate impact, ("++") - significant impact, ("+++") - high impact

Source: SCD team.

200. **Building on recent progress, Paraguay has a unique opportunity to adjust its development model—making it more inclusive and sustainable—so that it meets the expectations of the population.** Larger progress can be made if the country advances in all four priority areas identified, as complementarities among them are strong, and the cumulative impact could be overarching. While all priorities are expected to have impacts on all dimensions, some are particularly strong for a given dimension. For example, building human capital through improvement of education to generate higher labor income will likely have a large impact on poverty and inequality. Strengthening the rule of law, making institutions more accountable, and improving business environment will significantly contribute toward breaking the self-reinforcing cycle of concentration, informality, and inefficient provision of public services, while better natural wealth management will reduce current vulnerabilities of the development model. Finally, improving the quality of public services (infrastructure, fiscal policy, and public administration) is expected to have a strong impact across all dimensions.

201. **The identified policy priorities reflect Paraguay's specificities.** Focusing on accountable institutions, rule of law, and the business environment could help to *de-concentrate* the current dualistic economy that is linked to unequal distribution of *endowments* and further boost private-sector growth and diversification. Natural *endowments* were the backbone of recent economic growth, but better natural wealth management can ensure that the fruits of this continue to be shared among the population for years to come. Improving the quality of public services directly addresses the challenges posed by their current *inefficiency* (rooted in *institutional inheritance*), and responds to the pressing demands of *demographic* changes, primarily rapid urbanization. Finally, the focus on human capital, especially education and skills, would position Paraguay to benefit from its *demographic* bonus and maximize the chances of its growing young population to *formalize*, receive better salaries and escape poverty.

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Annexes

Annex 1. Methodological notes

Box A1: New poverty series and improvements to the Permanent Household Survey

In June 2016, the National Statistics office (DGEEC) released a new poverty series that incorporates important methodological improvements. Following the recommendations from the Inter-Institutional Poverty Committee, new poverty lines were adopted based on updated consumption baskets. Additionally, following a careful revision of the 2012 Population Census—which only reached 75 percent coverage, a new series of population weights that better reflect the current structure of the population was adopted. Both updates were done with technical support from international organizations.

Since 2015 the DGEEC has also implemented gradual improvements to the Permanent Household Survey (EPH), which is the main source of information to monitor socio-economic progress. Changes include: updated sampling frame in 2016, and increased sample size and coverage in 2015 and 2016. In particular, 2015 is the first year that EPH covers departments of Boquerón and Alto Paraguay, and 2016 is the first year that EPH is representative for all 17 departments and Asunción, as well as the indigenous population.

In a context of increased urbanization and a growing working-age population, the adoption of an updated sampling frame and population weights are crucial to inform policy. In a context of lower poverty rates, and improved indicators of coverage at the national level, geographical disaggregation and the ability to focus on sub-populations of interest is also important for the development agenda to move forward. Comparability of the long-term series was nevertheless preserved, and all trends described in this document are robust to all these methodological changes.

Box A2: Are year-to-year variations real?

While overall social progress since the early 2000s has been substantial, the evolution of welfare indicators has been irregular. Variability is particularly evident in the evolution of top incomes, which relative to other countries in the region are significantly more volatile (Panel a). It has long been known that household surveys have a limited capacity to capture top incomes. However, Paraguay's high economic volatility together with the degree of concentration of wealth and income, may potentially exacerbate this limitation. While it is not possible to isolate true volatility from sampling variability, work done to date leads to the following lessons:

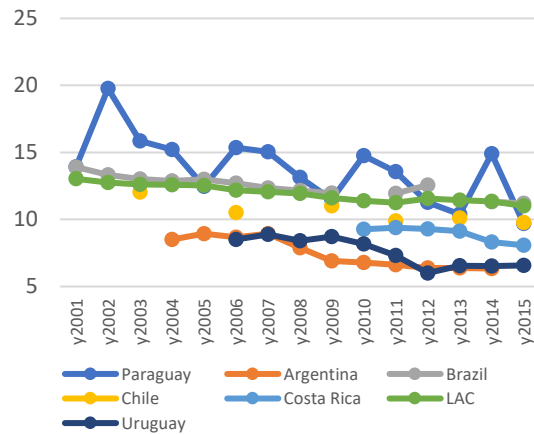
. Sampling variability cannot fully account for the variability observed in the Gini coefficient or shared prosperity trends, and therefore they do reflect in part variations in the economy. For the case of income inequality, other indicators that are less sensitive to top incomes still present substantial variability (Panel b). For the case of shared prosperity, the evolution of median incomes (more robust to extreme values), show the same pattern than the one based on mean income growth (panel c and d).

. There are, however, some signs of potential sampling variability. Mean and median land holdings among households at the top of the distribution can change significantly year to year. For example, median land holdings among the top 5 percent can vary from 40 to 12 one year

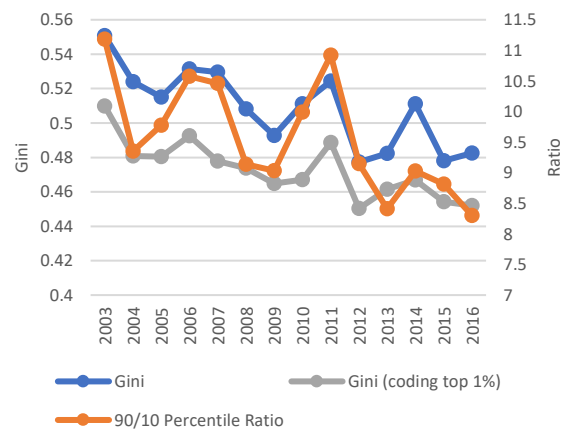
to the next (panel e). Some of the variation is the result of measurement error (it is well documented that self-reported measures of land size suffer from high measurement error), but it is also possible that this is partly the reflection of changes in sample composition.

Figure 105. A Closer Look at Income Variability

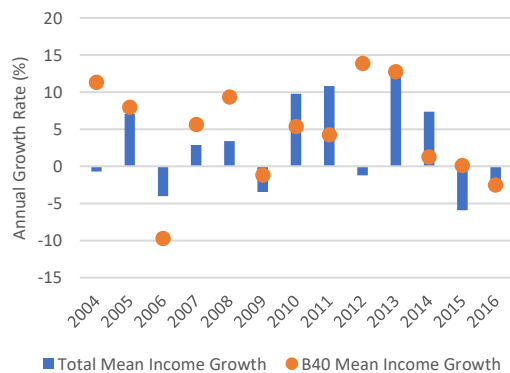
(a) Income Share of Top 1 percent, Paraguay and selected LAC countries



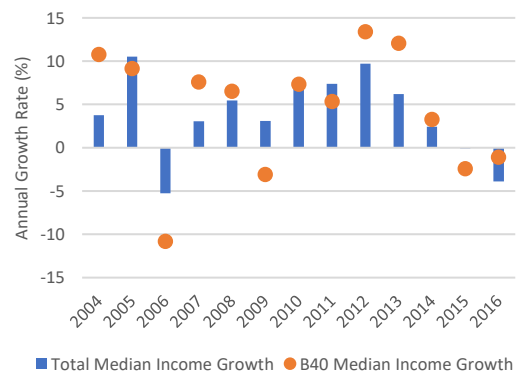
(b) Gini (left) and Percentile Ratio (right)



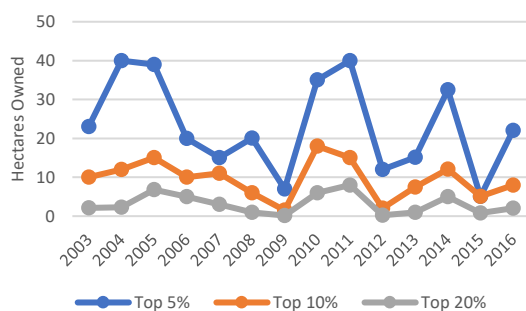
(c) Shared Prosperity



(d) Shared Prosperity Based on Median Income Growth



(e) Median land holdings among top income groups



Source: Own calculations based on EPH. Panel (a) based on EquityLab-SEDLAC.

Annex 2. Poverty Profile and Shared Prosperity

EPH, 2017	Total	Poverty (national poverty lines)				Shared prosperity		
		Extreme poor	Moderate poor	Total poor	Non-poor	B40	T60	T10
National								
Percent of population	100.0	4.4	22.0	26.4	73.6	40.0	60.0	10.0
Percent of households	100.0	3.3	18.2	21.5	78.5	34.1	65.9	13.7
Area								
Urban	100.0	1.5	18.7	20.2	79.8	27.0	73.0	13.6
Rural	100.0	9.0	27.3	36.2	63.8	60.8	39.2	4.2
Departments								
Asunción	100.0	0.7	10.9	11.6	88.4	16.3	83.7	30.8
Concepción	100.0	6.5	37.4	44.0	56.0	63.1	36.9	4.4
San Pedro	100.0	8.1	35.5	43.6	56.4	67.0	33.0	4.6
Cordillera	100.0	3.2	23.7	26.9	73.1	46.1	53.9	5.1
Guairá	100.0	7.0	26.9	33.9	66.1	53.9	46.1	3.7
Caaguazú	100.0	9.0	34.7	43.7	56.3	60.5	39.5	8.1
Caazapá	100.0	13.6	33.4	47.0	53.0	69.2	30.8	3.6
Itapúa	100.0	9.5	23.6	33.2	66.8	48.4	51.6	8.2
Misiones	100.0	5.0	22.5	27.5	72.5	44.0	56.0	10.0
Paraguarí	100.0	6.4	29.5	35.8	64.2	56.3	43.7	3.9
Alto Paraná	100.0	2.6	18.8	21.4	78.6	34.6	65.4	9.5
Central	100.0	1.1	15.1	16.2	83.8	24.6	75.4	10.5
Ñeembucú	100.0	5.0	19.2	24.2	75.8	37.2	62.8	10.5
Amambay	100.0	3.3	12.0	15.2	84.8	31.7	68.3	10.9
Canindeyú	100.0	7.7	30.4	38.0	62.0	52.4	47.6	8.8
Presidente Hayes	100.0	0.6	19.4	20.0	80.0	33.1	66.9	10.5
Demographics								
Female household head (% of HHs)	33.1	33.6	38.0	37.3	31.9	35.7	31.7	27.4
Head speaks only Guaraní (% of HHs)	43.3	83.3	67.5	69.9	36.1	68.9	30.1	13.4
Households with 4 members or more (% of HHs)	55.1	79.6	72.2	73.3	50.0	68.9	47.9	29.8
Average household size	3.9	5.2	4.7	4.8	3.7	4.6	3.6	2.8
Children (aged 0 to 14) per adult (aged 15 to 64)	0.5	1.0	0.9	0.9	0.4	0.8	0.4	0.2
Elderly (aged 65+) per adult (aged 15 to 64)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Children (aged 0 to 14)	29.9	45.1	39.8	40.7	26.0	38.5	24.1	15.6
Adults (aged 15 to 64)	64.0	51.8	55.5	54.9	67.2	56.2	69.1	74.7
Elderly (aged 65+)	6.2	3.1	4.7	4.4	6.8	5.3	6.8	9.7

Source: Authors' calculations based on EPH 2017.

EPH, 2017	Total	Poverty (national poverty lines)				Shared prosperity		
		Extreme poor	Moderate poor	Total poor	Non-poor	B40	T60	T10
Services								
Water access (% of HHs) ^a	93.5	79.6	87.6	86.4	95.4	87.5	96.6	98.8
Hygienic restroom (% of HHs) ^b	83.0	39.8	65.6	61.7	88.8	64.2	92.7	98.0
Sewerage (% of HHs) ^c	9.6	0.5	3.0	2.6	11.5	2.5	13.3	28.5
3 or more people per bedroom (% of HHs)	18.2	42.2	34.5	35.6	13.4	31.5	11.3	2.4
Education								
Children (aged 6 to 10) enrolled in school	98.3	92.7	97.9	96.9	99.1	97.5	99.1	99.2
Children (aged 11 to 16) enrolled in school	91.9	85.5	88.9	88.3	94.0	89.1	94.9	95.6
Children (aged 17 to 18) enrolled in school	63.2	42.6	58.6	55.8	66.4	56.4	68.7	85.5
Adult (aged 25+) did not complete secondary	51.1	87.9	75.2	77.2	44.2	75.0	39.1	19.3
Adult (aged 25+) complete secondary and above	48.9	12.1	24.8	22.8	55.8	25.0	60.9	80.7
Labor (18+)								
Adult active in labor market	74.3	68.9	65.8	66.3	76.4	67.5	77.7	79.1
Adult unemployment rate	4.8	10.5	7.9	8.3	4.0	7.5	3.6	1.0
Adult self-employed (% employed)	31.8	64.0	50.3	52.5	27.3	48.7	24.7	17.4
Adult employed in agriculture (% employed)	19.8	76.7	41.5	46.9	13.8	43.2	9.9	7.3

Notes: ^a source of water in the house or lot, ^b restroom with a toilet connected to a sewerage system or to a septic tank, ^c dwelling connected to a public sewerage system. Source: Authors' calculations based on EPH 2017.

Annex 3. Knowledge and data gaps

202. While working on the diagnostics, the team has used the extensive body of research and data available on Paraguay. However, some important data and knowledge gaps that could further improve the understanding and analysis of the Paraguayan development model have been identified. These include:

- (a) data limitations to understand firm productivity and firm dynamics;
- (b) more detailed data and analysis of non-commercial small-scale agriculture;
- (c) research on the determinants of informality;
- (d) impact of the maquila policy, including tax system and effect on employment;
- (e) panel data on household dynamics and economic mobility;
- (f) analytics on foreign trade dynamics and determinants, including on the impact of MERCOSUR;
- (g) comprehensive view on territorial development, including data and analysis of intergovernmental fiscal relations;

- (h) more analysis of the training system, including supply side characteristics (providers, programs, capacities), characteristics of the target population, analysis of the quality and impact of current training and vocational services; and
- (i) in-depth knowledge of the different layers of bottlenecks in the judiciary system.

Annex 4. Data diagnostics for WBG client countries

Section 1: General Information about the Statistical System	
Legal status of NSO	<u>Government Agency of Ministry of Planning</u>
Statistical Legislation (latest)	<u>Law on Statistics, 2015</u>
NSDS/Statistical masterplan	<u>Estrategia Nacional De Desarrollo Estadístico</u>

Section 2: Micro data						
Type of census/survey	Latest (Year)	Second Latest (Year)	Representativeness	Data Accessibility	Optional Disaggregation (Y/N)	
					Sex	Regional
Censuses						
Population Census	2012	2002	-	-	-	-
Agriculture Census	2008	-	-	No access	-	-
Business/establishment census	-	-	-	-	-	-
Household Survey on income/consumption	<u>2016</u>	<u>2015</u>	-	No access	-	-
Household survey on education	-	-	-	-	-	-
Household survey on health	1990	-	-	-	-	-
Labor force Survey	2016	2015	-	-	-	-
Business/establishment survey	Enterprise Survey 2010	Enterprise Survey 2006	National	External repository	-	-

Section 3: Macro data

Does the country subscribe to the IMF SDDS or participate in the eGDDS?	e-GDDS			
If eGDDS/ SDDS	Periodicity		Timeliness	
	e-GDDS	Country	e-GDDS	Country
National accounts: GDP by Production and Expenditure at Current and Constant Prices.	Q	Q	1Q	70D
Consumer price index	M	M	2M	6D
Central government operations	Q	M	1Q	1M
Balance of payments	Q	Q	1Q	3M
External debt	Q	Q	2Q	105D
Merchandise trade	M	M	12W	30D
Production index	M	M	12W	40D
Employment	A	A	3Q	5M
Unemployment	A	A	3Q	5M
Producer Price Index	M	M	2M	26D

Section 4: Compliance with WBGs core data standards			
	WBG Standard	Compliant (Y/N)	Actual yearly interval or %
Household survey of income or consumption	One every 3 years	Y	1 year
PPP price survey	One every 3 years	N	6 years
CRVS	80% of births registered	N	76%
	60% of deaths registered with cause of death	Y	82%

Section 5: STATISTICAL CAPACITY INDICATORS		Section 6: DATA OPENNESS INDICATORS	
Method	40.0	Open Data Barometer Score	16
Source Data	80.0	Open Data Index Score	<u>44%</u>
Periodicity	90.0		
Overall	<u>70.0</u>		

Section 7: Data for country priorities			
Indicator name	Available (Y/N)	Latest year	Issues

Section 8: Data Gaps Identified and Recommended Actions	
Major Data Gaps Identified	Recommended Actions

