

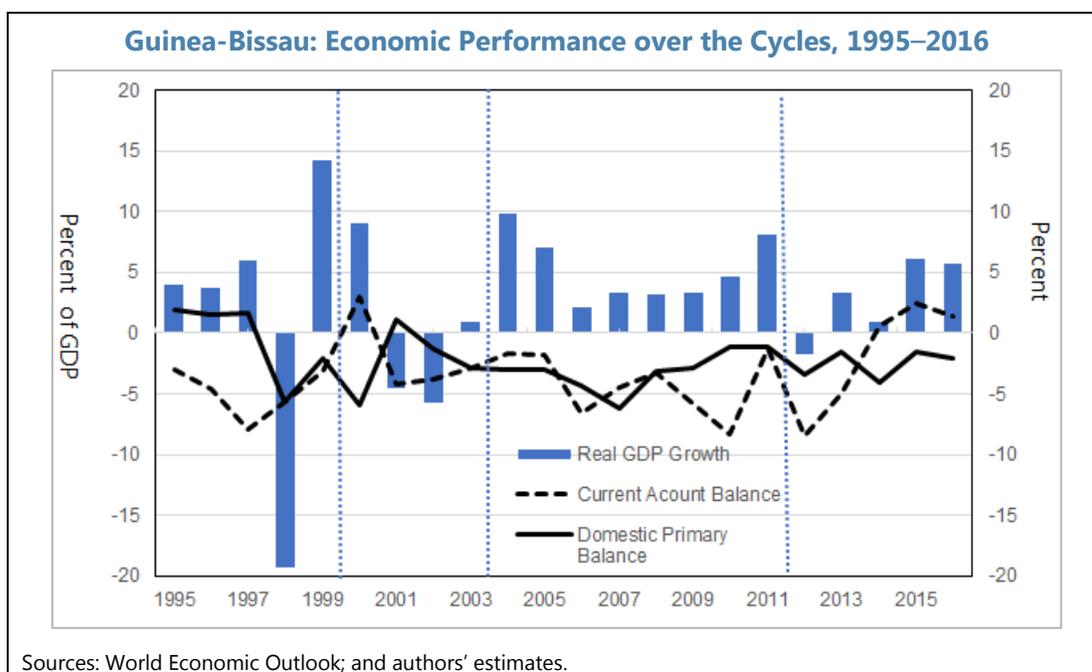
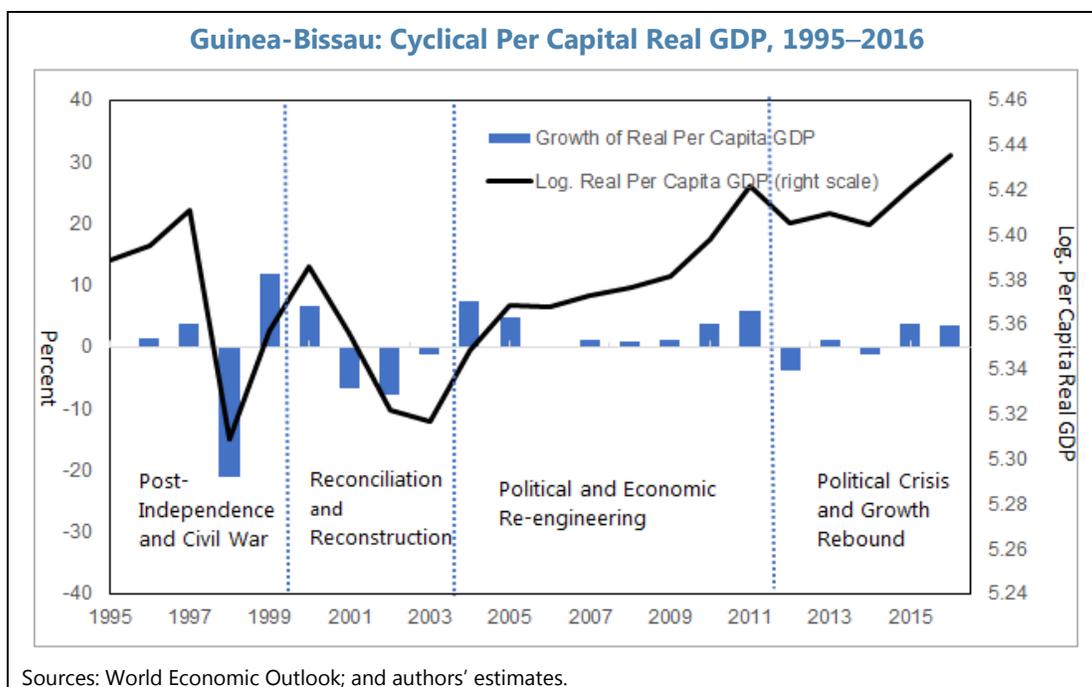
IMPACT OF ECONOMIC STRUCTURE AND POLICY ON POVERTY INCIDENCE AND DISTRIBUTION¹

Political instability and conflict have held back inclusive economic growth in Guinea-Bissau. This chapter analyzes the incidence of poverty under alternative growth paths—the status quo versus a more diversified growth path with less dependence on cashew—based on the latest available light household survey. Diversification resulting merely from a redistribution of growth between occupational sectors is found to result in a slightly higher overall poverty rate, reflecting the current concentration of poverty in cashew-dependent rural areas. With a growth dividend, a diversified growth path reduces poverty unambiguously, with lower incidence and a more equal distribution. The results highlight the importance of reforms to improve aggregate productivity, as well as sectoral policies to protect the poor in the areas where they are concentrated.

A. Background

- 1. Political instability and conflict since independence have adversely impacted economic growth and poverty alleviation in Guinea-Bissau.** Following independence in 1974, bouts of political tension and instability, culminating in the 1998–99 civil war, eroded gains made during brief periods of stability. National reconciliation and restructuring efforts in the immediate post-civil war period (including the Government of National Union, the National Reconciliation and Reconstruction Program, and the elections of 1999) helped restore peace, but stability was short-lived and gave way to a series of coups. During 1996–2003, per capita GDP declined by an average of 1.3 percent per year, extreme poverty averaged 53.9 percent, and inflation 14.7 percent per year. This was a period of institutional deterioration, falling economic activity, and plummeting social indicators.
- 2. The period of 2004–11 witnessed greater stability and improved economic outcomes, albeit punctuated by military interventions.** The Emergency Economic Management Plan adopted by the government following elections in early 2004 imposed budgetary discipline and led to the drafting of a Poverty Reduction Strategy Paper that highlighted the need to address the declining living conditions and high poverty. During this period of political and economic re-engineering, real per capita GDP growth turned positive to average just under 2 percent per year, and inflation moderated to 3.2 percent a year. This period of relative political stability and economic advancement was abruptly ended by a coup in 2012.
- 3. The period since 2012 has witnessed swings in the country's terms of trade and related improvements in growth and external balances.** Falling cashew prices coupled with economic disruptions from the coup resulted in real per capita GDP declines of on average 1.3 percent per year during 2012–14. Elections and restoration of constitutional order in 2014 along with surging cashew prices and lower oil prices supported a subsequent sharp improvement of the current account and higher growth.

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4. The history of conflict and political instability has scared social development. Extreme poverty increased from around 43 percent in 1992 to 64 percent just after the civil war in 1999. Economic improvements during the period of political and economic reconstruction helped moderate extreme poverty to 54 percent in 2002, but poverty nevertheless rose to 67 percent in 2010. With the notable exception of literacy, where Guinea-Bissau scores relatively well, the country has fallen behind its regional peers on most indicators of human development and poverty alleviation.

5. Structure of the analysis. The next section summarizes results from the 2010 cross-sectional light household survey (ILAP). The following section summarizes results from an analysis of the impact of economic diversification on poverty and its incidence across occupations. The analysis assumes two alternative paths to economic diversification; one that assumes redistribution of sectoral growth rates away from cashew (a pessimistic growth path) and the other based on an assumption of expansion across all sectors of the economy (a more optimistic growth path). The final section concludes.

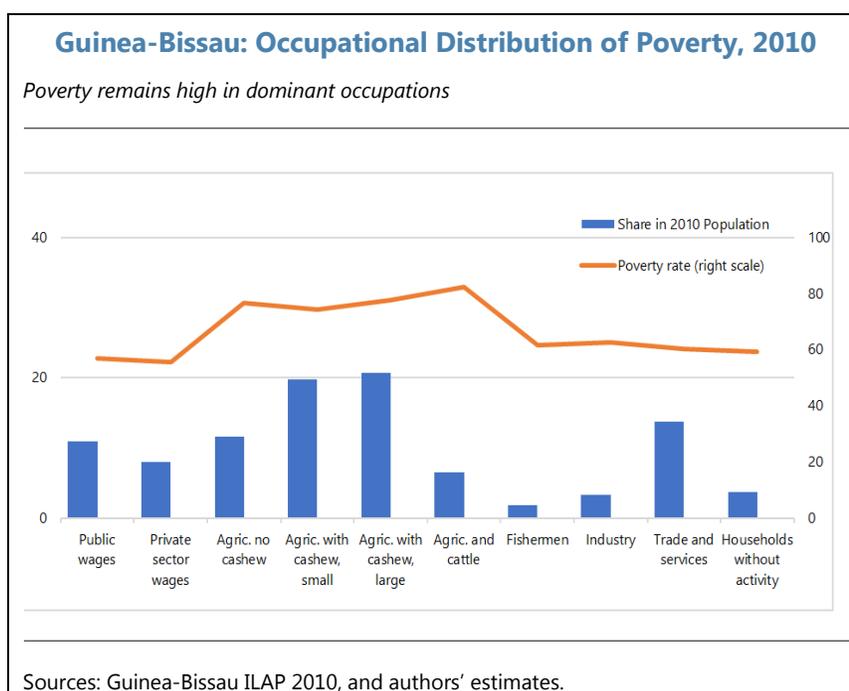
Guinea-Bissau: Selected Social Indicators, 2006–15
(in indicated measures)¹

	Per capita Income	Poverty Headcount	Income Distribution	Adult Literacy Rate (% 15 and older)	Human Development Index
Benin	753	53.1	43.4	34	0.460
Burkina Faso	585	49.5	37.5	31	0.375
Cote d'Ivoire	1,278	29.0	43.2	42	0.444
Guinea Bissau	518	67.1	50.7	59	0.410
Mali	689	49.9	36.0	31	0.405
Niger	357	56.0	34.2	17	0.325
Senegal	994	38.0	40.3	48	0.461
Togo	510	54.9	44.1	60	0.461
Regional Average ²	711	49.7	41.2	40	0.418
Sub-Saharan Africa	1,556	44.1	...	61	...

Source: World Development Indicators, 2015; and authors' estimates.
¹ Poverty headcount measures percent of population that earn less than \$1.90 a day (in PPP terms). Income distribution is measured by the GINI coefficient--the lower the more equal income/wealth distribution. Human development measures the composite index (average achievement in the three basic dimensions of human development- a long and healthy life, knowledge and a decent standard of living as prescribed by the United Nations. Per Capita Income measures GDP per Capita (at Constant 2010, US\$).
² A simple average of indicators for Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo.

B. Results from Cross-Sectional Household Survey (ILAP 2010)

6. Guinea-Bissau's population is small with a large rural proportion and high concentration in cashew farming. Out of a population of about 1.8 million, about 60 percent live in households that have the primary sector as the main source of employment and income. Some 40 percent are engaged in cashew production, split roughly equally between small and large plantations. Another 20 percent or so are engaged in other areas of agriculture and fisheries. The remaining roughly 40 percent work mainly in the tertiary sector.



7. Per the 2002 and 2010 ILAP surveys, poverty has been consistently highest in rural areas and occupations while overall poverty has increased over time. Poverty incidence at the national level, measured as the proportion of the population living on less than US\$2 (in 2010 PPP terms) per day, increased by 4.6 percentage points between 2002 and 2010. Extreme poverty (i.e. living on US\$1 per day) increased during the same period by some 11 percentage points to 33 percent. In 2010, urban poverty was 58.6 percent and rural poverty 76.4 percent; these figures indicate 5.3 and 6 percentage point increases, respectively, relative to 2002. Extreme poverty increased more in the rural than in the urban areas, increasing the poverty differential across the urban-rural divide.

C. Poverty Under Alternative Policies and Structure

8. The analysis utilizes the 2010 ILAP along with the semi-accounting input-output model of the national economy (TCHINTHOR). It estimates the evolution of national poverty during 2010–22 under alternative growth paths—the status quo and two more diversified growth paths.² The semi-accounting model of the national economy is based on a Social Accountancy Matrix (SAM) that links the different sectors of the economy to the income of the different family categories. In the absence of information on the evolution of population since 2010 and of monetary inputs and outputs across different sectors, agents, and economic activities since 2013, the analysis necessitated three assumptions. First, population across all the households in each category is assumed to grow at an estimated national population growth rate of 2.2 percent a year.³ Second, the monetary flows across different variables in the SAM remain proportional to those in 2013. Finally, income is assumed to grow at the same rate for every family with a household head working in each occupational category.

9. Three alternative growth paths are considered. Under the status quo—i.e. with cashew production as the dominant income-generating activity—we assume continued expansion of cashew production under favorable terms of trade. An alternative growth path (the economic diversification path) has two branches. The first assumes similar overall

	2016	2017	2018	2019	2020	2021	2022
Status quo							
Real GDP Growth	5.8	5.5	5.0	5.0	5.0	5.0	5.0
Cashew Exports	161.7	211.9	204.5	201.9	205.6	207.3	211.2
Pessimistic Diversification							
Real GDP Growth	5.8	5.5	5.0	5.0	5.0	5.0	5.0
Cashew Exports	161.7	206.5	185.5	160.5	137.2	109.4	87.7
Optimistic Diversification							
Real GDP Growth	5.8	5.5	5.6	5.8	5.8	5.9	6.5
Cashew Exports	161.7	211.9	204.5	201.9	205.6	207.3	211.2

¹ Real GDP growth is denoted in percent and cashew exports in billions of CFAFs.

² While earlier researchers (e.g. Creppy and Wodon (2006)) analyzed the effect of growth variations on poverty incidence in Guinea-Bissau, this chapter examines the impact of redistributing growth among occupations.

³ This could pose problems, particularly if the elasticity of head of household occupation to the economic evolution of different economic activities is high. While unfortunately available information does not allow for the estimation of these elasticities, factors such as limited access to credit make it reasonable to think that in the context of Guinea-Bissau these might not be too high in the short run.

growth as under the status quo but with a shrinking cashew sector offset by expansion in other sectors (such as public employment, trade and services). The second branch allows some improvement in overall growth rate under the additional assumption of full delivery of gains from the structural reform agenda, particularly enhancing efficiency in the public service delivery in a more transparent governance environment that supports economic diversification.

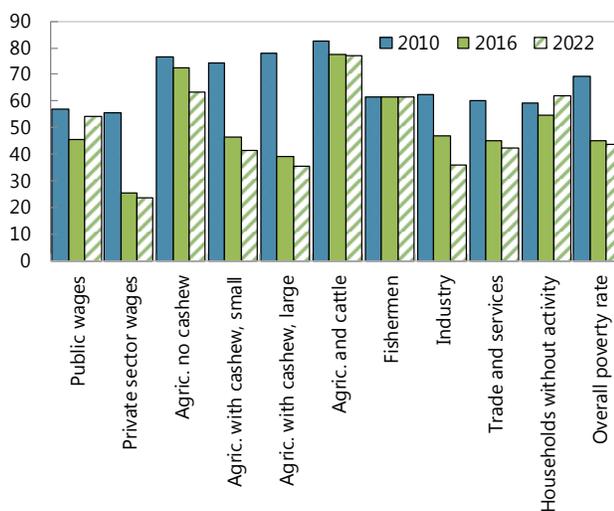
10. Maintaining the current growth path reduces poverty, albeit unevenly across occupational groups.

Under this scenario, cashew production and related activities are assumed to continue to be the main drivers of economic expansion. Hence, in a period of relatively robust economic growth, driven mainly by cashew production and export, the model predicts an important but far from sufficient reduction in poverty during 2010–16. Overall poverty in 2016 is estimated at 45.2 percent. Even with continued robust growth rates under this *status quo* scenario, however, the projected reduction in poverty rates slows down sharply by the end of the estimation period in 2022. Households that depend on private sector wages along with those engaged in cashew production and industry and trade services witness the largest estimated declines in poverty. Overall poverty declines by some 25 percentage points to 43.7 percent by 2022; urban and rural poverty rates see similar declines to 35.4 and 52.4 percent, respectively.

11. Poverty incidence increases under a pessimistic diversification scenario relative to the status quo.

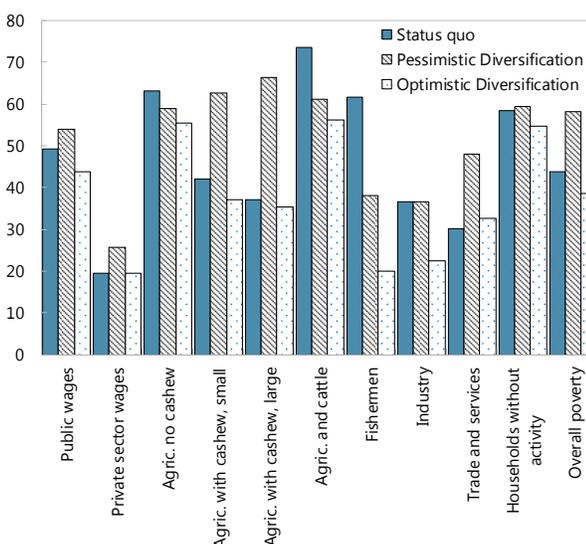
Overall poverty incidence under this diversification scenario is slightly higher in the long term, mainly because of the assumption of declining cashew output

Guinea-Bissau: Poverty Incidence under the Status Quo, 2010–22 (in percent)



Sources: Guinea-Bissau ILAP 2010, and authors' estimates.

Guinea-Bissau: Estimated Poverty under Alternative Growth Path, 2022 (in percent)



Sources: Guinea-Bissau ILAP 2010, and authors' estimates.

and income.⁴ The rural-urban poverty divide worsens as well. However, differences in poverty rates across occupations are somewhat smaller under this alternative growth path, making it more egalitarian by that measure.

12. Under a more optimistic diversification scenario, growth-enhancing policies unambiguously reduce poverty and income inequality. Under the second alternative growth path—the optimistic diversification scenario—poverty incidence shrinks with enhanced growth rates, reflecting reforms to bolster public service delivery and governance. Income distribution becomes more equal as well, as diversification enhances job opportunities across all non-cashew sectors. Although sensitive to the assumed growth elasticity of diversification, this alternative growth path almost halves overall poverty by 2022 compared to 2010 and it is clearly superior to the other two growth paths. It also outperforms the other two growth paths in declines in both rural and urban poverty rates.

Alternative Poverty Measures and Distributional Analysis

13. Additional poverty measures offer richer perspectives on poverty in Guinea-Bissau.

The main advantage of a simple headcount index of poverty (HCI) used in the foregoing analysis is its simplicity and ease of interpretation. However, it does not tell us anything about changes below the poverty line. Alternative indicators, such as a HCI at a lower (\$1 a day) poverty line, the poverty gap index (PG), the intensity of poverty index (IP), or the average growth in expenditure per capita for each quantile of the income distribution quantify alternative dimensions of poverty.⁵ These

additional measures enable a richer understanding of the evolution of poverty in the different scenarios. The additional indicators confirm the superiority of the optimistic diversification scenario over the other two scenarios. Importantly, the reduction in average expenditure

Guinea-Bissau: Poverty Gap and Intensity Across Scenarios¹ (in percent, unless otherwise indicated)					
	2010	2016	2022		
			Status Quo	Diversification	
				Pessimistic	Optimistic
Poverty HCI (< US\$ 2/day)	69.3	46.6	43.7	48.3	38.7
Poverty HCI (< US\$ 1/day)	33.0	15.7	13.6	23.2	10.2
Poverty Gap ¹	0.32	0.19	0.17	0.25	0.03
Poverty Intensity ¹	0.19	0.1	0.09	0.14	0.02
Change in PC Expenditure (percent per year)					
Total population		9.7	3.0	-0.9	5.7
Poorest half (across deciles)		11.2	3.3	-1.9	6.8
Richest half (across deciles)		9.5	2.9	-0.9	5.7

¹ The poverty gap and intensity indicators relate to the US\$2 per day poverty line
Sources: Guinea-Bissau ILAP 2010, and authors' estimates.

⁴ In this scenario, the value of cashew exports is assumed to decline by 10 percent in 2018 and continue to fall over the medium term, whereas the status quo scenario has cashew exports falling by 3.5 percent in 2018 and then recovering slightly over the medium term.

⁵ The formula used are as follows: Poverty Gap = $\frac{1}{n} \sum_{i=1}^n \frac{z-y_i}{z}$; Poverty Intensity = $\frac{1}{n} \sum_{i=1}^n \left(\frac{z-y_i}{z}\right)^2$, where z indicates the threshold income determining the poverty line, y_i refers to individual income, for agents $i = 1, 2, \dots, n$. Average Change in Expenditure per capita for each decile p of the distribution, (directly related to the *growth incidence curve* defined by Ravallion and Chen (2003) is given by $ACEpc(p) = \frac{Y_{t(p)}}{Y_{t-1(p)}} - 1$, where $Y_{t(p)}$ is income in period t for those families in decile p .

per capita in the pessimistic scenario illustrates the strong relationship between poverty and cashew production in Guinea-Bissau. The low values of the Poverty Gap and the Intensity of Poverty in the optimistic scenario indicate the potential for a combination of good performance of the cashew sector and increasing economic diversification to significantly reduce the incidence of the most severe forms of poverty in the country.

D. Conclusion

14. Conflict and political instability have resulted in high poverty. Sustained strong growth is needed to simply revert poverty back to the levels prior to the 1998 civil war. The analysis finds that growth in cashew production and other agriculture—the areas where poverty is highest—is especially important to alleviate poverty. However, a more diversified growth path that brings higher overall growth reduces poverty more effectively along all dimensions.

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