

Guinea

Incidence of Fiscal Policies on Poverty and Inequality in Guinea

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Incidence of Fiscal Policies on Poverty and Inequality in Guinea

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Acronyms

CC	Concentration Coefficient
CEQ	Commitment to Equity
CPIA	Country Policy and Institutional Assessment
DGD	General Directorate of Customs
DNI	National Tax Directorate
DNTCP	National Directorate of the Treasury and Public
ECD	Early Childhood Development
ELEP	<i>Enquête Légère pour l'Evaluation de la Pauvreté</i>
FGP	Fiscal Gain to Poor
GDP	Gross Domestic Product
INS	National Institute for Statistics
LORF	Organic Law on Public Finance
PIT	Personal Income Tax
PNSBF	<i>Programme national de bourses de sécurité sociale</i>
PPP	Purchasing Power Parity
SABER	Systems Approach for Better Education Results
SAM	Social Accounting Matrix
SCD	Systematic Country Diagnostic
VAT	Value-Added Tax

Executive Summary

To improve its fiscal system compared to its neighbors in West African countries, Guinea has increased its effort in the mobilization of domestic resources. Provision of high-quality public services through more effective resource mobilization and management, may be a pathway for achieving the structural transformation needed for sustainable and inclusive growth. However, both how resources are mobilized and how they are spent can have positive or negative effects on the well-being of the poorest and most vulnerable populations. Analyses such as the fiscal incidence study can be useful for informing and directing fiscal policy towards decisions that are more supportive of reducing poverty and inequality. The purpose of this is to estimate the impact of fiscal policies, such as decisions on taxation (direct and indirect taxes), subsidies, social spending including public transfers such as cash and food transfers and in-kind transfers in education and health, among others on poverty and inequality in Guinea. It also offers reflections on some potential reforms such as the removal of oil subsidies or the increase in value-added taxes. The following main conclusions emerge from this study:

- i. To reduce poverty and inequality, it seems essential to increase social spending, with particular emphasis on health spending, and pre-university and vocational education, where public spending seems to have benefited the poor more. Also, direct transfers are found to be pro-poor, and provide evidence in support of the social safety nets program for the most vulnerable populations planned under the recently adopted national social protection policy.
- ii. The richest deciles of the population are the largest contributors to indirect taxes. However, these indirect taxes appear to be slightly regressive - the share of income paid in indirect taxes is slightly higher for the poor than for the rich - and poverty increasing. Therefore, any potential VAT reform should take account of the structure of consumption, especially for poor people. In fact, increasing VAT rate as in 2016 from 18 to 20 percent would probably have had some adverse effect in terms of consumption loss, even if the effect on poverty and inequality is negligible given the size of informal sector.
- iii. Indirect subsidies to electricity and water appear to be regressive and unaffordable for the poorest people. Provision of electricity and water services, through increasing supply, will benefit the poor. More investments in these services may induce a decrease in the tariffs, and an increase in the services in medium term.
- iv. Despite the fiscal burden to the country, the fuel subsidy benefits the better-off more. The direct effect of a possible fuel subsidy removal is then progressive, with the richest people paying more than the poorest people. It may however increase poverty significantly, especially when this suppression translates into an increase in the prices of transport and some basic necessities. This could therefore require some mitigations measures, such as safety nets, to minimize the impact on this reform on poor households.

1 Introduction

1. **Despite abundant natural endowments, including mining and favorable agroclimatic conditions, Guinea remains a low-income country where poverty reduction and shared prosperity have not materialized over the past decades.** Poverty remains widespread at around 55 percent during the 2000s and may have increased to nearly 58 percent in the mid-2010s. Poor households live mostly in rural areas and are usually engaged in agriculture, with large regional disparities. This is the result of a poor growth performance characterized in the recent years by the twin shocks of Ebola and low commodity prices. In fact, the macroeconomic performance was marked by persistent low, declining, and volatile growth rates. The average gross domestic product (GDP) growth rate of 3.3 percent, recorded during 1987–2016 is below the Sub-Saharan Africa average rate of 3.7 percent.

2. **The country, which is significantly vulnerable to several shocks, faces multiple challenges that prevents it from translating its opportunities into higher incomes for households.** Even if Guinea is not a fragile country according to the World Bank’s definition,¹ it has been considered as being on the fringe of fragility due to internal and external shocks it is facing, including political instability and health shocks (for instance, the Ebola epidemic) among others. Moreover, given the low investment levels, lagging infrastructure, and limited financial intermediation, the economic growth has been too low to contribute to poverty reduction. In fact, the relatively high inequality and the low economic growth may explain why poverty is stagnating or increasing. Moreover, consumption growth did not appear to be pro-poor during the past years.

3. **It emerges from the Guinea Systematic Country Diagnostic (SCD)² that weak fiscal management is one of the major constraints that prevent the country from experiencing sustainable and inclusive growth.** The direct taxation system is marked by a dependence on taxes on international markets, while very little progress is being made in improving tax administration and widening the tax base among others. It is then important for Guinea to improve domestic revenue mobilization, especially because there are large gaps compared to neighboring countries. For instance, the tax revenue of Senegal was on average 6 percent of GDP higher than that of Guinea, reflecting the potential to increase the direct tax revenue in this country.

4. **As for Guinea’s public expenditure, the ratio to GDP has almost doubled over 2007–2015 but with a decline in 2016.³** In fact, the expenditure accounts for about one quarter of GDP in 2016, with a slight upward trend since the beginning of 2010s. Social sectors have seen increasing support from the government, with a share in the national budget going from about 12 percent in 2013 to nearly 23 percent in 2016. This is largely due to increases in health, pre-university education, and literacy subsectors. On the other hand, social protection remains a marginalized sector with less than 1 percent of the national budget. Moreover, the level of public ECD (Early Childhood Development) expenditure is inadequate, with high private costs that may be a barrier to access, especially for the poorest households.⁴ As a result, the access to early

¹ According to the World Bank, fragile countries are characterized by either (a) a harmonized average CPIA country rating of 3.2 or less, or (b) the presence of a United Nations and/or regional peace-keeping mission.

² World Bank Group (2018).

³ World Bank (2017).

⁴ SABER-ECD (2013).

childcare and education is limited in the country, with low access to essential health and maternal interventions and inadequate level of access to essential nutrition intervention.

5. **It is necessary to strengthen the management of fiscal and natural resources to increase the mobilization of domestic resources.** As pointed out in the Guinea SCD, better fiscal management, by providing better public services and more effective resource mobilization, may be a good conduit for achieving structural transformation. In fact, improving the financial capacity of the government will also result in the increase of its ability to finance the country's development. This is also with a view to exploring strategies, programs, and priority actions for the mobilization and efficient management of domestic resources, that the Government of Guinea, through the Ministry of Economy and Finance and the Ministry of Budget, organized an international forum on resource mobilization from November 10 to 12, 2016, in Conakry.

6. **Poverty and inequality may be reduced by better programming of public expenditure.**⁵ Indeed, more inclusive fiscal spending is a way to turn natural resource wealth into productive assets for poor households. It should improve the financial capacity of the government and hence, its ability to finance the construction and maintenance of infrastructure. For instance, better natural management in electricity and water sectors would enable the government to reduce its subsidies for both sectors for more efficient use of public expenditure. The saved amount could also be used to finance a social protection program, especially because the country has just adopted a national social protection policy. This will contribute to the redistribution of wealth.

7. **Better fiscal management may require conducting a tax and benefit incidence analysis.** The fiscal incidence study estimates the impact on poverty and inequality in the country of taxation (direct and indirect taxes), subsidies, and social spending including public transfers such as cash and food transfers and in-kind transfers in education and health, among others. It may then analyze the expenditures, taxes, and exemptions that have the greatest impact on reducing poverty and inequality. For example, in a situation often characterized by lack of financial resources, this study may prove to be one of the tools of trade-off between the sectors to be prioritized in public spending. It also helps identify the types of reforms that could have a greater impact on reducing poverty and inequality and could therefore be a useful accompaniment to the implementation of tax reforms. The Commitment to Equity (CEQ) is one of the tools currently used to carry out these studies.

2 Guinean public revenue and expenditures⁶

This section provides a general overview of the Guinean tax system and budget expenditures during 2000 to 2016. It describes the different tax categories and their importance in the tax system. Expenditures will also be presented according to the different destinations and the type of

⁵ Government can contribute to reducing poverty and inequality in two ways: (a) an indirect approach by creating the conditions for private sector development (markets) and (b) a direct approach through fiscal policies. Thus, beyond their effects on economic growth, taxation and public spending also remain instruments for reducing poverty and inequality.

⁶ The public expenditure database is by the BOOST, which is a program developed by the World Bank in more than 45 countries. This program seeks to improve the efficiency and transparency of public financial management systems, the access to budget data and analysis, and to facilitate decision-making on government expenditures and revenues.

expenditures to understand the budgetary choices for the future analysis of the effects of these expenditures on the reduction of poverty and inequality.

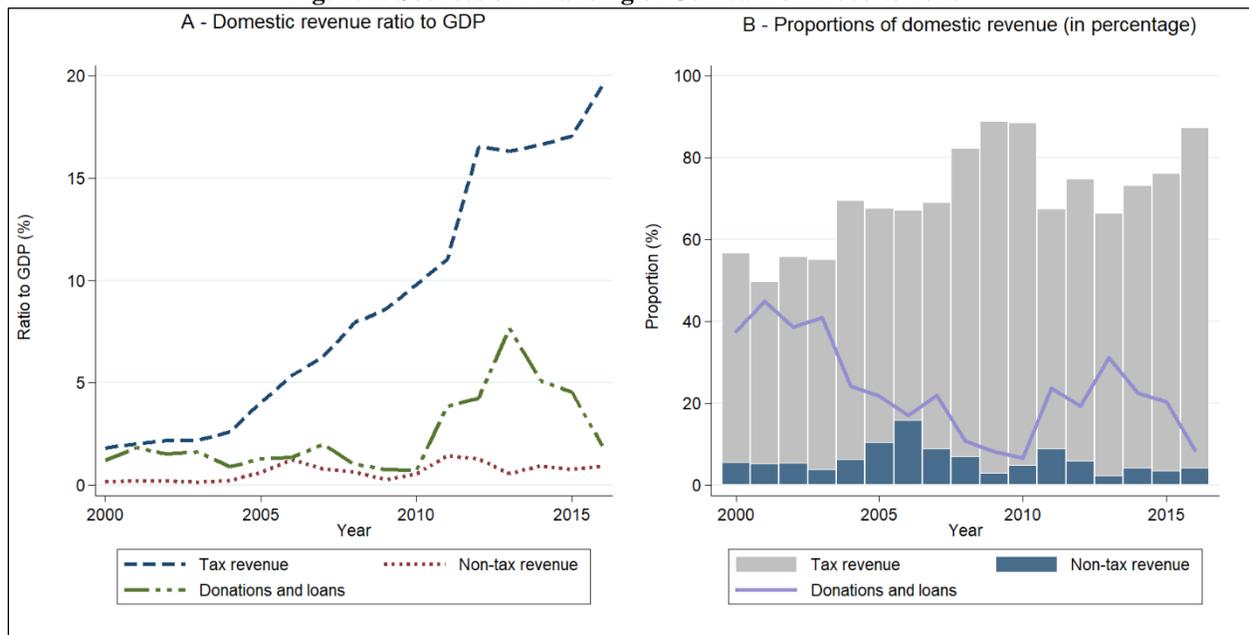
2.1 Guinea's public revenue

2.1.1 Overview of sources of revenue

8. **The Guinean authorities recognize the need to reform public finance.** To finance its fiscal policy, the Guinean State uses traditional sources of financing: domestic revenue including tax revenues and nontax revenues and external resources consisting mainly of donations and loans. For Guinea, as for many countries, most of the revenue of the State comes from the tax system. With a view to mobilizing domestic resources to make Guinea a middle-income country by 2035, the authorities initiated public finance reforms. These initiatives resulted in the adoption of a Law on the Unity of State Funds, a new Organic Law on Public Finance (LORF), a new Public Procurement Code, a new Investment Code, and so on.⁷

9. **The sources of public revenue remain dominated by taxes.** Throughout the period from 2000 to 2016, tax revenues contributed more than 60 percent to the public resources (see Part B of Figure 1). According to Part A of Figure 1, there are three different stages in the evolution of tax revenues.

Figure 1. Sources of Financing of Guinea from 2000 to 2016



Source: Ministry of Budget.

10. **The three stages in the evolution of tax revenues are a stagnation, a relatively low growth, and a significant growth.** In fact, there was a stagnation during the first stage from 2000 to 2003, marked by a high dependence on external sources (donations and loans) on an average of 40 percent of total revenue. This low level of tax revenue may be explained by the low-efficiency

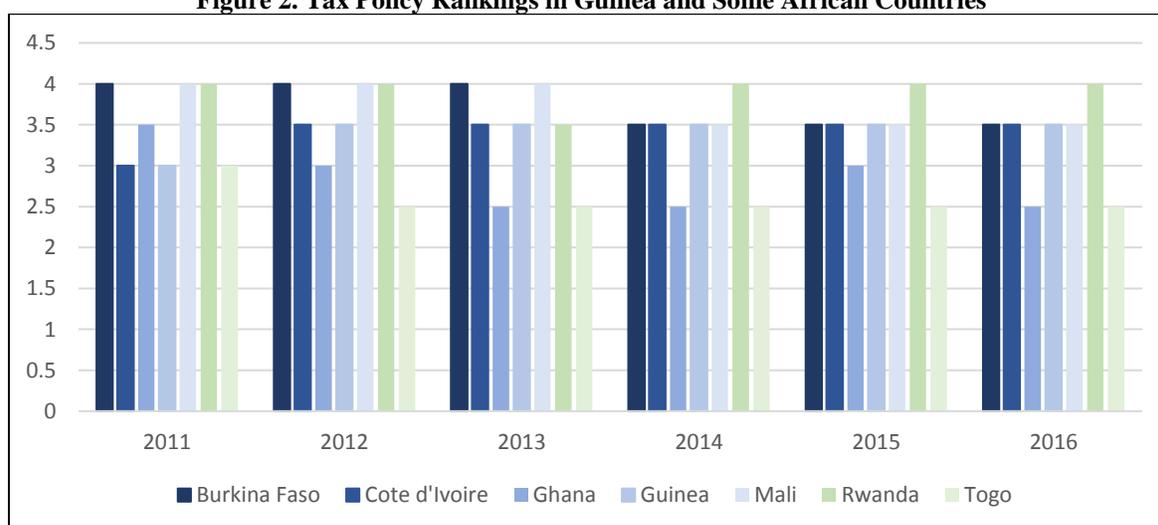
⁷ Forum on the Mobilization and Effective Use of Guinea's Internal Resources, November 2016.

tax system. After adopting a General Tax Code in 2004, Guinea began a second stage characterized by a growing trend from 2004 to 2010, during which nontax revenues and donations and borrowings remained constant. These growing dynamics are also supported by the mining sector, driven by rising commodity prices. With macroeconomic governance and public finance reforms initiated in 2011, there has been a significant increase in tax revenues in 2011, marking the third phase in the evolution of tax revenues from 2011 to the end of the period in 2016.

11. **Thanks to these finance reforms, Guinea has improved its score in the World Bank’s ranking of tax policy performance.** According to Figure 2, the country’s score increased from 3 in 2011 to 3.5 in 2015 on a scale of 1 to 6. However, since 2012, Guinea is stagnating with this score of 3.5 out of 6. This score places Guinea over Togo, at the same level as Côte d’Ivoire, Mali, and Burkina Faso, but below the score of Rwanda. Given the proximity of the tax and domestic revenue curves, the domestic financing of the country comes in part from taxes. As a result, the pace of growth has decreased since 2014 due to the fall in commodity prices. Moreover, as shown by Table 1, Guinea seems to have relatively high tax rates compared to a number of selected African countries.

12. **Other sources of government revenue (donations and loans) remained constant in value in the 2000s, before increasing in 2010 after the first democratic presidential elections.** Donations and borrowings contributed more than 40 percent on average to public revenue and remained practically at the same level until 2003. When tax revenues started to increase from 2004, donations and borrowings remained constant until in 2010. The country benefited from significant external financing over 2011 to 2014, the period of completion of the Heavily Indebted Poor Countries (HIPC) Initiative,⁸ and peaked in 2013.

Figure 2. Tax Policy Rankings in Guinea and Some African Countries



Source: World Development Indicators.

⁸ Completion point reached on September 25 and 26, 2012 (Board of Directors of the World Bank and the International Monetary Fund [IMF]).

Table 1. Tax Rate in Guinea and Selected African Countries

	Corporate income tax	VAT (standard)	Total tax rate on companies 1/ (2014)	Ranking "Paying Taxes"
Burkina Faso	27.5	18	41.3	153
Cote d'Ivoire 3/	25	18	51.9	176
Guinea	35	20	68.3	184
Mali	30	18	48.3	149
Niger	30	19	48.2	156
Senegal	30	18	47.3	183
Tanzania	30	18	43.9	150
Africa 4/	28.8	...	46.5	...

Source: World Bank: www.doingbusiness.org

1/ The total tax rate measures the amount of taxes and mandatory contributions payable by the business in the second year of operation, expressed as a share of commercial profits.

2/ Reflecting the total tax rate, number of annual tax payments, and the time spent on paying taxes.

3/ The corporate tax rates for companies in telecommunications, information technology and communications is 30%.

4/ Source: Tax Foundation at <http://taxfoundation.org/article/corporate-income-tax-rates-around-world-2015>.

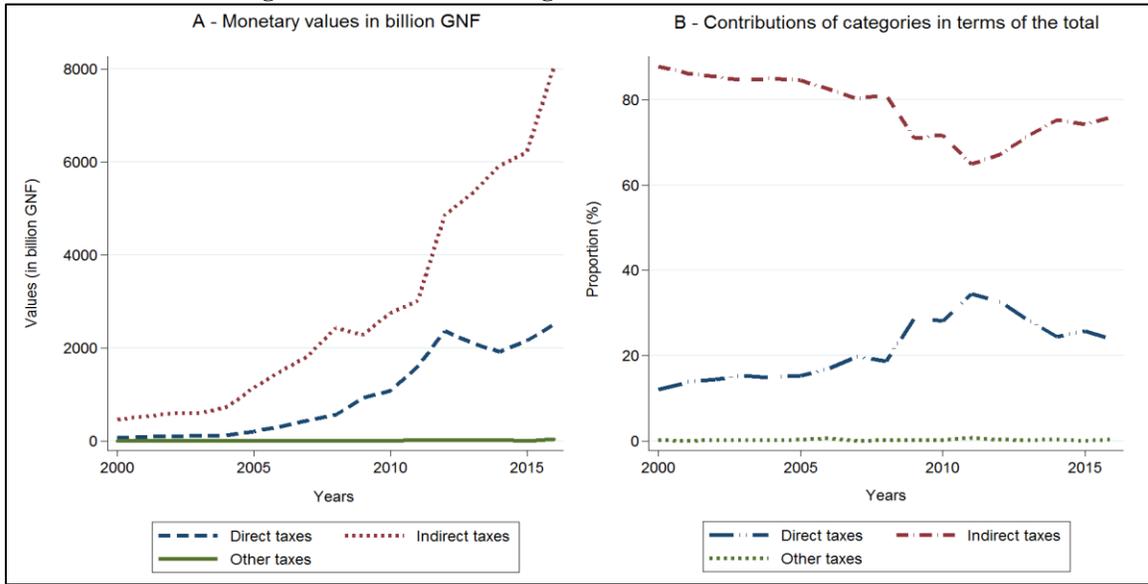
2.1.2 Tax revenue

13. **The Guinean tax system is structured around direct and indirect taxation, in addition to royalties, duties, and fees, and so on.** It is applied by the General Directorate of Customs (DGD) (customs taxation) and the National Tax Directorate (DNI) (domestic taxation). Nontax revenues, for their part, are mobilized by the National Directorate of the Treasury and Public Accounting (DNTCP).⁹ The General Tax Code of 2004 triggered an increase in direct taxes as well as indirect taxes. Other tax revenues, mainly tax stamps and registration revenue, remained almost constant.

14. **Recently, revenue mobilization improved due to higher indirect and direct tax revenues.** Obviously, indirect taxes have remained higher than direct taxes (Figure 3) despite the fact that heritage taxes are included in direct taxes in this analysis. The value added tax (VAT) rate, set at 18 percent in 2004 when the General Tax Code was adopted and increased to 20 percent in 2015, is among the highest in the subregion. This partially explains the increase of indirect tax revenues from 8.6 percent to 9.7 percent of GDP between 2015 and 2016. VAT was the main source of tax revenue for taxes in 2015 with almost 25 percent, followed by the mining tax (23 percent) and the other corporate tax. As of 2011, indirect taxes were up sharply due to public finance reforms. However, direct taxes decline slightly before resuming a weak growth rate from 2014.

⁹ Forum on the Mobilization and Effective Use of Guinea's Internal Resources, November 2016.

Figure 3. Three Main Categories of Taxes from 2000 to 2016

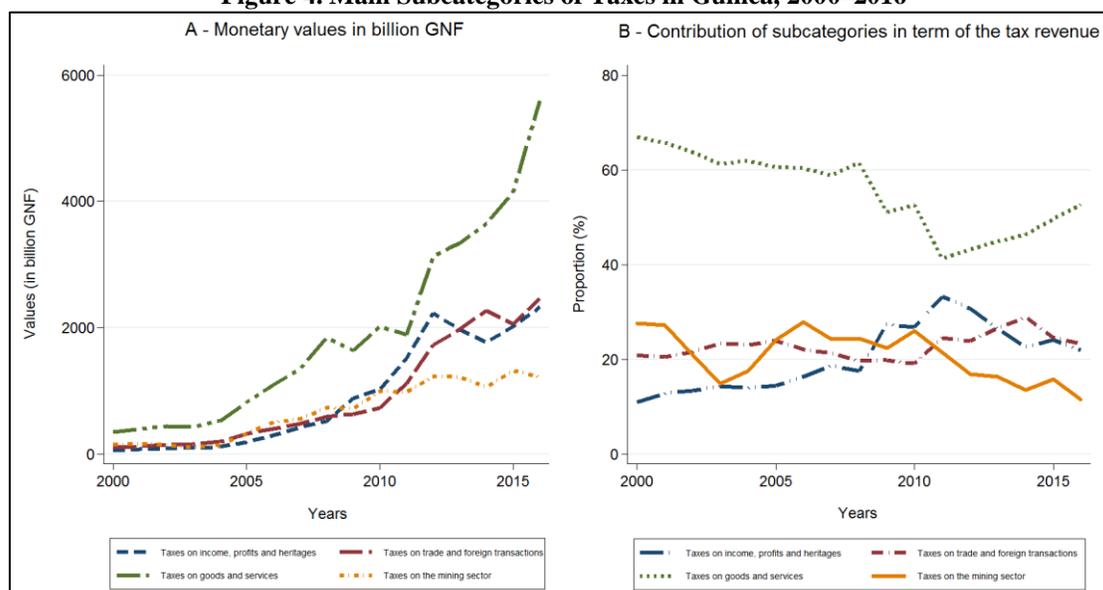


Source: Ministry of Budget.

15. **The evolution of direct taxes is probably driven by that of mining taxes, while that of indirect taxes remains determined by taxes on goods and services.** As can be seen in Figure 4, there is a rise in tax revenues from the mining sector. On the other hand, the performance of the indirect tax is attributable mainly to taxes on goods and services, generally borne by households. These taxes have steadily increased since 2004 with a better pace from 2011, which probably explains the growth of indirect taxes noted earlier. Taxes on income, profits, and heritages and taxes on trade and international transactions have had almost the same rate of change throughout the period and are the second largest source of tax revenue after goods and services. Heritage taxes have not grown despite the 2004 General Tax Code and the 2011 public finance reforms. In 2015, foreign trade taxes fell because of the Ebola epidemic, which paralyzed business with the outside world. However, taxes on goods and services have kept pace.

16. **The mining sector has contributed a lot to Guinea’s tax revenues.** It exclusively contributed to between 20 percent and 27 percent of total tax revenues from 2000 to 2002, and between 21.5 percent and 24 percent during 2005–2011, with a first decrease between 2003 and 2004 (see Part B of Figure 4). Revenues in the mining sector have been affected by costs related to the deterioration of the prices of mining products so that their contribution to total tax revenues dropped in 2014 to 13.5 percent. Taxes on mining products have contributed to the dynamic of rising taxes on goods and services from 2004 onward, with a better pace from 2011. Throughout the period, taxes on goods and services contributed more to revenues, with a share of about 60 percent of total revenues from 2000 to 2010 and more than 40 percent from 2010 to 2016.

Figure 4. Main Subcategories of Taxes in Guinea, 2000–2016



Source: Ministry of Budget.

17. **In terms of tax revenues, Guinea’s position relative to other African countries is rather mixed.** Using data from the IMF on selected African countries, we find that Guinea’s tax income as a percentage of GDP is higher than the average for low-income countries but lower than the average for middle-income countries (see Table 2). Compared to Burkina Faso, Mali, and Tanzania, Guinea’s total tax revenue is higher in terms of the percentage of GDP. However, efforts still need to be made to improve the level of direct taxes whose level is lower among the selected countries.

Table 2. Tax Revenue by GDP in Guinea and Selected African Countries

	Total revenue	Tax revenue	Direct taxes	Indirect taxes			Mining	Other taxes	Non-tax revenue
				Goods & services	Intern. trade	Total			
Senegal	19.8	19.8	6.1	10.6	2.8	13.4	0.3		
Côte d'Ivoire	19.7	16.0	4.3	8.2	3.3	11.7	0.2	3.7	
Middle-income Africa	18.3								
Niger	18.1	16.1						1.8	
Guinea	17.8	17.0	2.7	7.6	3.6	11.2	3.1	0.8	
Low-income Africa	16.3								
Burkina Faso 1/	16.1	14.3						1.8	
Mali 2/	14.6	14.0	4.3			9.7	-1.1	0.7	
Tanzania 3/	12.8	11.6	4.4		0.9			1.2	

Source: International Monetary Fund; Country Reports.

1/ Non-tax revenue includes 0.5 percent of GDP in royalties from gold.

2/ In 2015, Mali revised its national accounts, resulting in an upward revision of about 20 percent.

Under the old GDP, revenue would have been equivalent to about 18.3 percent of GDP.

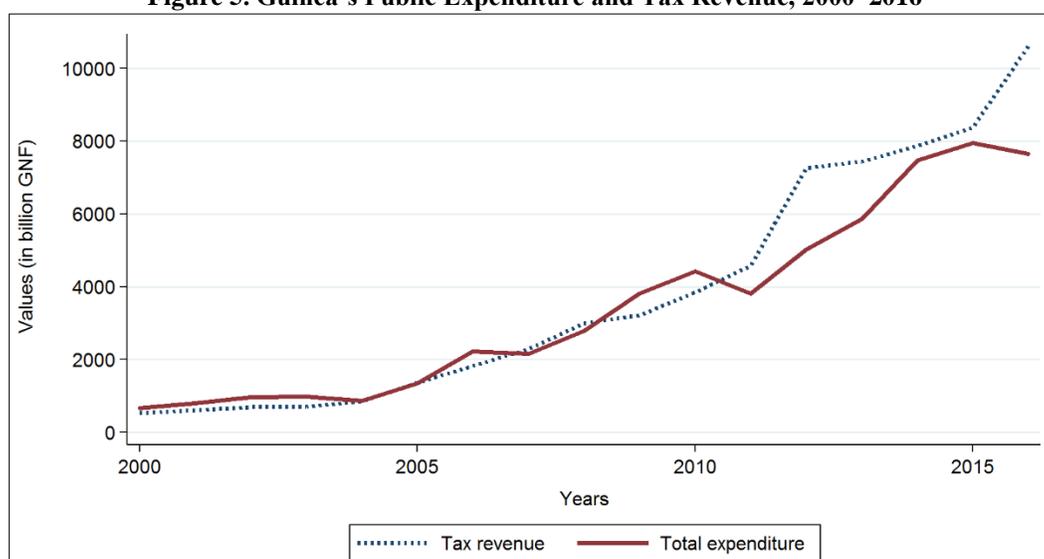
3/ Fiscal year 2014/15.

2.2 Guinea's public expenditure

2.2.1 Expenditure versus revenue

18. **Tax revenue and public expenditure followed roughly the same trends.** Over 2000 to 2016, the total expenditures of the Guinean government have grown as for the tax revenue. Indeed, from 2000 to 2004, expenditures remained almost constant but higher than tax revenues. From 2004, when tax revenues started to increase, expenditure also moved in the same direction until 2010, when, unlike tax revenue which kept the same pace, expenditure experienced a slowdown. The growth trend resumed from 2012 until 2015. After the funding of the various Ebola disease response programs in 2015, there is a shrinking of spending in 2016. Note also that twice, tax revenues were greater than expenditures—first between 2007 and 2008 and then from 2011 until the end of the period. This reflects efforts in domestic resource mobilization for country funding.

Figure 5. Guinea's Public Expenditure and Tax Revenue, 2000–2016

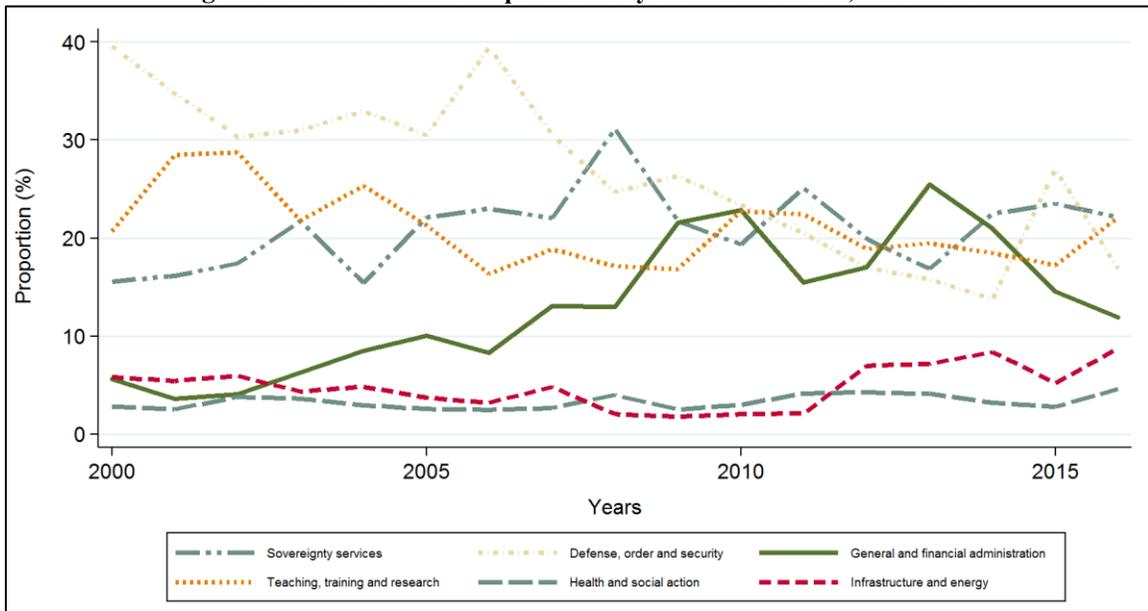


Source: Ministry of Budget.

2.2.2 Public expenditure by sector

19. **Throughout 2000–2016, two broad groups of sectors may be identified according to their share in the total expenditures.** The first group consists of three sectors that are (a) the defense of order and security; (b) the service of sovereignty; and (c) education, training, and research. Most of the Guinean State's budget is directed toward this group, with an average share of 23 percent of the overall budget each (see Figure 6)—that is about 70 percent of the budget for these expenses. This group includes education that is directly related to poverty reduction. Sovereignty expenditure and defense, order, and security expenditure account for a large part of the budget. More than 30 percent of the budget is allocated to defense, order, and security from 2000 to 2007. Starting in 2008, these expenditures began to fall slowly, reaching 14 percent in 2014 before resuming a sharp rise of 13 percentage points in 2015, dropping in 2016 to 17 percent of total expenditure. Education averaged 21 percent of the budget during the period with a maximum share of 29 percent in 2002 and a minimum level of 16 percent in 2006.

Figure 6. Guinea's Public Expenditure by the Main Sectors, 2000–2016

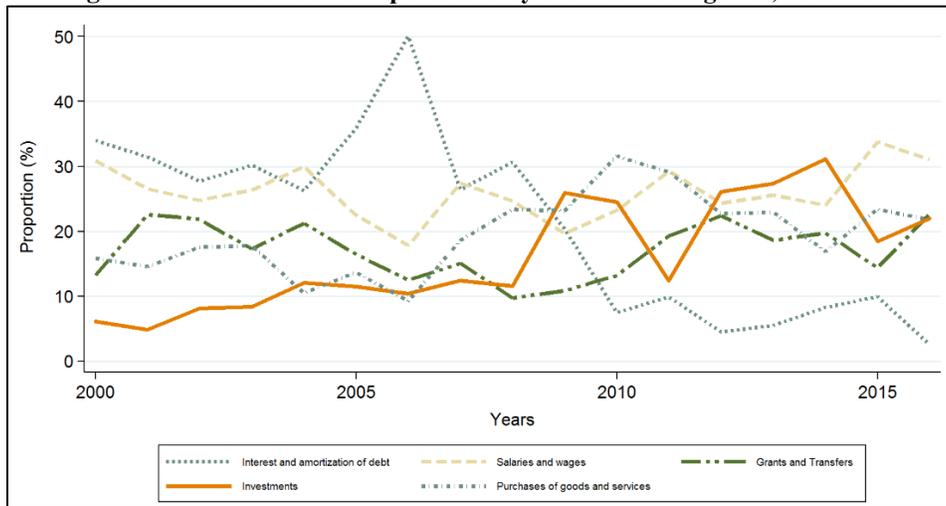


Source: Ministry of Budget.

20. **The second group is more important in terms of number of sectors involved but low in terms of budget share allocates.** On average, only 30 percent of the budget is allocated to these expenses: (a) health and social action, (b) general and financial administration, and (c) infrastructures and energies (Figure 6). In this group, there are important sectors for the service of the community such as health and social action which is under-budgeted at only 3 percent on average of the budget with a tendency almost constant over all the period. This allocation seems too low to provide enough health facilities to the communities and to ensure access to health services by the entire population. In short, only education, one of the sectors which has a proven and well-documented impact on poverty and inequality, account for an almost acceptable part of the budget. On the other hand, health, social service, and subsidies (especially agricultural production) are underfunded while unproductive sectors in terms of return on investment such as sovereignty service, defense, security, and order occupy most of the budget.

21. **There are also some disparities in the levels and evolutions of the contributions of the main categories of public expenditure.** These categories include investments, interest and debt amortization, salaries and wages, goods and services, and grants and transfers. Figure 7 shows an opposite movement between investment expenditures and those for the payment of interest and amortization of debt. Until 2008, over 30 percent on average of public expenditure was allocated to debt (interest and amortization). In 2006, the interest and amortization of debt reached 50 percent of the total expenditure of the country. With the reforms of the HIPC Initiative, the share of expenditure allocated to external commitments has significantly decreased—from 31 percent in 2008 to 8 percent in 2010. This decline was made in favor of investments which went from 11 percent in 2008 to 26 percent in 2009. Investments fell drastically in 2011 and returned to their pace in 2012 before suffering the effects of the Ebola epidemic again in 2015. Transfers and subsidies ranged between 10 percent and 20 percent of expenditure.

Figure 7. Guinea's Public Expenditure by the Main Categories, 2000–2016

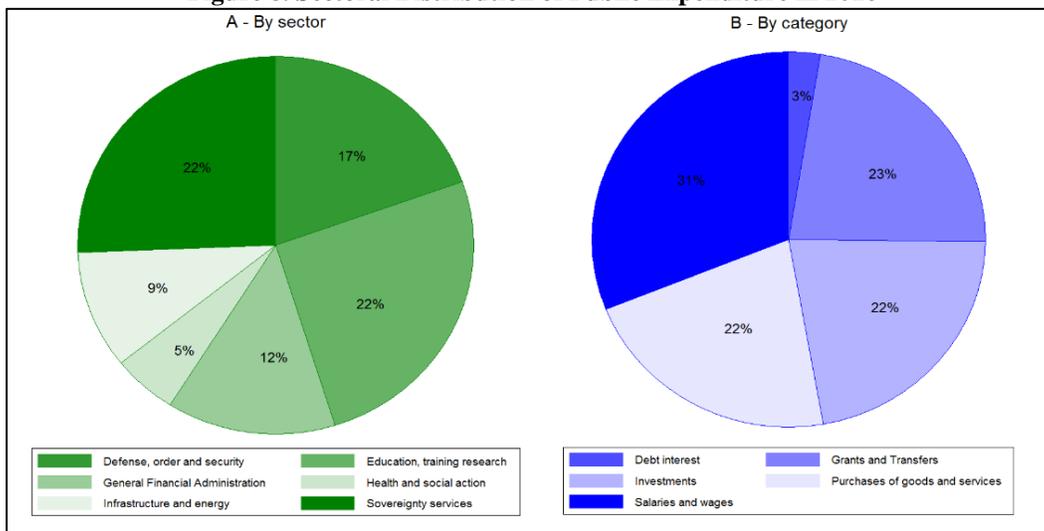


Source: Ministry of Budget.

2.2.3 Public expenditure by sector

22. **Except for education expenditure, spending on the other social sectors (including health) is very low.** Despite recent efforts to reduce sovereignty and defense spending for social sectors, in 2016, the share of the budget allocated to the health sector and social action remains relatively low (Part A of Figure 8). Health and social work is an important sector where the government should be more important because of the recent health crisis (Ebola epidemic) in the country. The shares allocated to sovereignty and defense services are still high in 2016. The government is still making efforts in education by allocating a significant share in 2016. There is also an improvement in the level of grants and transfers (Part B of Figure 8).

Figure 8. Sectoral Distribution of Public Expenditure in 2016



Source: Ministry of Budget.

3 Fiscal incidence analysis for Guinea

3.1 The main assumption

23. **The fiscal incidence analysis for Guinea using the CEQ methodology was especially challenging because the most recent household survey is from 2012.** Most of the CEQ studies carry out a fiscal incidence analysis using a household survey and a fiscal policy framework from the same year. However, in our case, applying the 2012 fiscal policy to the household survey would not allow us to examine the distributional impact of the different policy changes since 2012. Therefore, we apply the fiscal policy structure of 2016 to the 2012 household survey data. A number of methodological precautions must however be taken. We deflated all the tax revenues and public spending figures in 2016 by the change in the Consumer Price Index between 2012 and 2016. The adjustment factor is 0.65.

3.2 Impact on poverty and inequality

24. **Fiscal policy in Guinea increases poverty and has nearly no effect on inequality.** Indirect taxes are responsible for the impoverishment impact of fiscal policy in Guinea. Indeed, from market income to disposable income, only 0.68 percent of the individuals are fiscally impoverished, meaning that they became poorer due to the fiscal policy (Table 3). Yet, from market income to consumable income, nearly 58 percent of individuals became poorer due to indirect taxes. Indirect subsidies are too small in size to counterbalance the negative effects of indirect taxes, leading to a worsening of households' livelihoods.

Table 3. Poverty and Inequality Indexes for Different Income Concepts

Type of Income	Gini Index	Headcount Index National Poverty Line (%)	Headcount Index US\$1.25 PPP (%)	Headcount Index US\$2.5 PPP (%)
Market income (pre-fiscal income)	0.319	55.2	28.7	77.0
Net market income	0.317	55.2	28.7	77.1
Gross income	0.318	55.1	28.6	77.0
Disposable income	0.317	55.2	28.6	77.1
Consumable income (post-fiscal income)	0.319	58.5	32.3	79.5
Final income	0.317			

Note: PPP = Purchasing power parity.

Table 4. Fiscal Impoverishment

	From Market Income to Disposable Income	From Market Income to Consumable Income	From Market Income to Final Income
Fiscal impoverishment index (as % of population) <i>National Poverty line</i>	0.68	57.55	44.25
Fiscal impoverishment index (as % of population) <i>US\$1.25 per day, PPP 2005</i>	0.26	31.88	21.96

25. **Fiscal policy in Guinea is yet to benefit poor people.** The Fiscal Gain to Poor (FGP) rate measures the proportion of the poor who receive more benefits than they pay taxes. From market

income to consumable income, only 1 percent of the poor received more benefits than they paid in taxes (see Table 5).

Table 5. Gains to the Poor as a Result of the Fiscal Policy

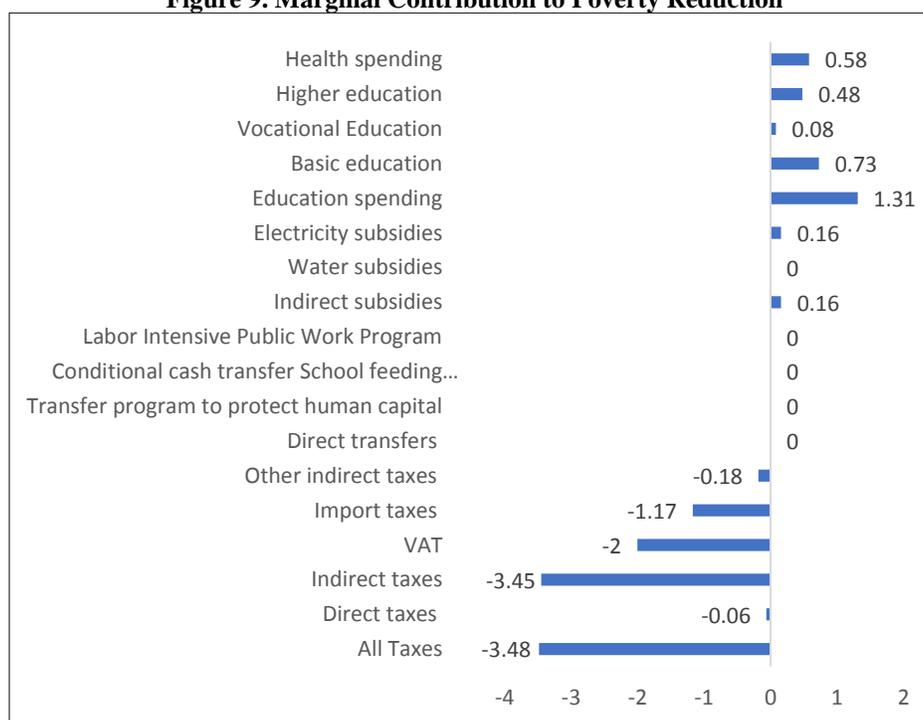
	From Market Income to Disposable Income	From Market Income to Consumable Income	From Market Income to Final Income
Proportion of the poor who received a positive net fiscal gain (FGP) National Poverty Line (%)	1.51	0.95	13.22
Proportion of the poor who received a positive net fiscal gain (FGP) US\$1.25 PPP (%)	0.69	0.45	8.94

3.3 Marginal contribution to poverty and inequality reduction

3.3.1 Marginal contribution of poverty reduction

26. **Unlike public spending, taxes tend to increase poverty.** Marginal contributions to poverty reduction measure how each fiscal intervention affects the poverty rate. Indirect taxes are the main poverty increasing fiscal intervention while the contribution of direct taxes seems to be negligible. Among these taxes, there is the VAT which contributes to about 60 percent to the increase of poverty, followed by import taxes with a contribution of more than 33 percent (see Figure 9). On the other hand, education spending appears to be one of the biggest contributors to poverty reduction, with a contribution twice as high as for health spending.

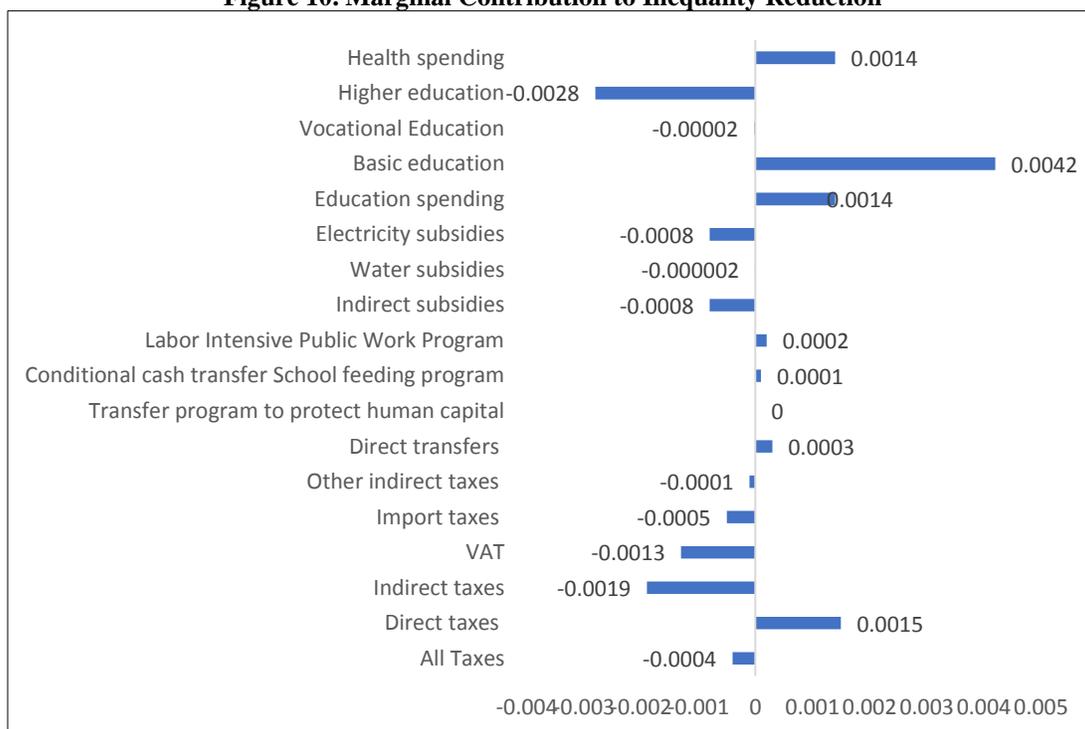
Figure 9. Marginal Contribution to Poverty Reduction



3.3.2 Marginal contribution of inequality reduction

27. **While education expenditure seems to play an important role in reducing inequalities through basic education, it also increases inequalities through higher education.** Marginal contributions to inequality reduction measure how each fiscal intervention affects the Gini Index. A positive marginal contribution means that the fiscal intervention is inequality reducing. Results show that basic education is the most inequality-reducing fiscal intervention in Guinea, followed by health spending and direct taxes and to a lesser extent by direct transfers (see Figure 10). On the other hand, indirect taxes (mainly VAT) and indirect subsidies tend to contribute to the inequality increase. However, the biggest contribution to increasing inequality seems to come from higher education.

Figure 10. Marginal Contribution to Inequality Reduction



3.4 Redistribution effects of fiscal policies

28. **The concept of progressivity, regressivity, pro-poorness, and the use of the Kakwani index.** In this section, we assess how progressive social spending in education and health is in Guinea in 2016. Public spending is progressive (regressive) if the benefits from that spending as a share of the household income falls (rises) with the income. Public spending is pro-poor if it is progressive in absolute terms. Pro-poor spending indicates that the per capita spending decreases with the household income. We use the Kakwani index—the difference between the Gini index for the household income and the concentration coefficient (CC) of a particular spending—to assess the progressivity of this spending. Spending is progressive if the Kakwani index is positive and regressive if the Kakwani index is negative. Box 1 elaborates on the tools used to assess the progressivity and pro-poorness of spending, taxes, and transfers.

Box 1. Definition of Progressivity, Regressivity and Pro-poorness of Government Spending, Taxes, and Transfers

Let's assume a population of N individuals ranked in ascending order of their pre-tax or pre-transfer income y_i , so that $i = 1, 2, \dots, N$. Let R_i be the cumulative proportion of the ranked population up to the i^{th} individual; then the Gini index (G), which estimates the magnitude of income inequality, is given by the following equation:

$$G = 1 - \frac{2}{\bar{y}} \sum_{i=1}^N w_i y_i (1 - R_i), \text{ with } \bar{y} = \sum_{i=1}^N w_i y_i,$$

where \bar{y} is the weighted average pre-tax or pre-transfer income in the total sample, while w_i is the sampling weight associated to each individual, and standardized so that their sum is equal to one.

Let's assume that each individual i is paying a tax t_i , and that the population of N individuals are still ranked by original pre-tax income. The Concentration Coefficient (CC) of the tax is obtained by the following equation:

$$CC = 1 - \frac{2}{\bar{t}} \sum_{i=1}^N w_i t_i (1 - R_i), \text{ with } \bar{t} = \sum_{i=1}^N w_i t_i,$$

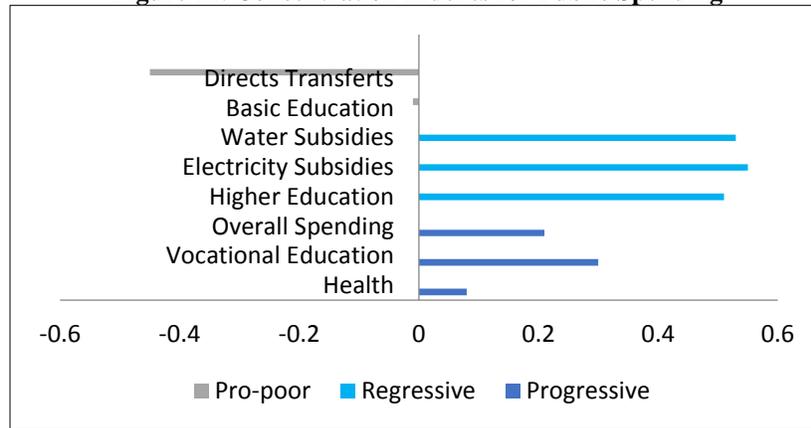
where \bar{t} is the weighted average tax in the total sample. For a given tax intervention, the Kakwani coefficient, which is calculated by subtracting the Gini from the CC , is often used to understand the distributive effect of an intervention. A taxation is said to be progressive when higher income or wealthy people are paying higher tax rates than less wealthy people, which corresponds to positive Kakwani coefficients. The reverse is considered to be regressivity and holds with negative Kakwani coefficients.

In the case of a transfer (or more generally public spending), the CC of the transfer may be estimated in the same way as with the tax, except that the Kakwani coefficient is calculated by subtracting the CC from the Gini. The transfer is considered as progressive when the Kakwani coefficient is positive and regressive otherwise. As noted by Enami et al (2017), while cash transfers are unlikely to be regressive, this may happen with some kinds of transfer, including subsidies and spending on tertiary education which appear to be sometimes regressive. In all cases (taxes and transfers), the intervention is neutral if the Kakwani coefficient is null. Moreover, in the case of transfers, there is a distinction in the literature between a relatively progressive transfer and a transfer which is progressive in absolute terms. When the absolute size of the transfer declines with income in per capita terms, it is considered as progressive in absolute terms or equivalently as pro-poor (Enami et al, 2017). Then, the pro-poorness means that the poorest people receive the highest amount of transfer, and this amount decreases gradually for people as their income per capita increases. For more details, see also Hill et al (2017) and Lustig and Higgins (2018).

3.4.1 Public spending

29. **Despite some differences in the redistribution of public expenditure components, overall, spending seems to be progressive.** Direct transfers appear to be the public expenditure component that is really pro-poor, as illustrated in Figure 11. This result seems trivial, especially when the beneficiaries are well targeted among the poor population. Basic education seems also to be pro-poor but to a lesser extent. Improving targeting may still be necessary to maximize the pro-poorness effect. On the other hand, and without being pro-poor, health and vocational education are progressive in that these expenditures are more equitably distributed than household consumption among the population. For their part, indirect subsidies (electricity and water) and higher education spending are regressive.

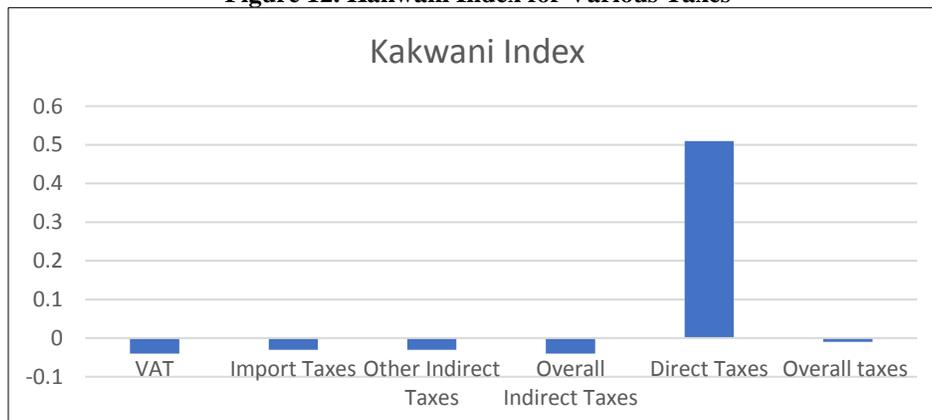
Figure 11. Concentration Indexes for Public Spending



3.4.2 Tax system

30. **Direct taxes are very progressive, but the tax system as a whole is regressive.** In fact, as illustrated by Figure 12, direct taxes are progressive. Even if progressive taxes have direct effects on the reduction of inequality, their relatively small share in developing countries like Guinea, where the tax system is dominated by indirect taxes, tends to limit its redistributive effects. Figure 12 shows also that indirect taxes (including VAT and import taxes) are slightly regressive. As a result, the taxation system in Guinea is regressive.

Figure 12. Kakwani Index for Various Taxes



3.5 Who benefits from social spending in Guinea?

31. **We combine administrative data on public spending with household survey data (ELEP 2012)¹⁰ to identify who benefits from social spending in Education and Health.** From administrative data, we calculate the per capita public spending by student at each level (preuniversity, university, and vocational education). The per capita public spending by student per level is the total spending in education for a particular level divided by the number of students enrolled at that level of education. We then use the ELEP 2012 to identify the level of education

¹⁰ ELEP: *Enquête Légère pour l'Evaluation de la Pauvreté.*

and the type of school (public or private) for individuals enrolled in school. For those attending public schools, we allocate the per capita benefit according to their level of education.

3.5.1 Education spending

32. **The results show that households receive significantly higher preuniversity education benefits than university and vocational education benefits (see Figure 13).** Moreover, spending in preuniversity education is progressive everywhere. University education benefit is the most important benefit from spending in education for the richest 20 percent (9th decile to 10th decile).

33. **Spending in preuniversity education is pro-poor while that in university education is regressive.** Table 6 indicates that 50 percent of spending in preuniversity education benefits the poorest 50 percent while only 15 percent of spending in university education benefits the same population. Moreover, 51 percent of spending in tertiary education benefits the richest 20 percent. Kakwani indexes show that spending in preuniversity education is pro-poor, spending in vocational education is progressive without being pro-poor, and spending in university education is regressive. Spending in tertiary education benefits more rich people because the poor do not have access to a high level of education. Furthermore, overall spending in education is progressive.

Figure 13. Education Spending and Redistribution

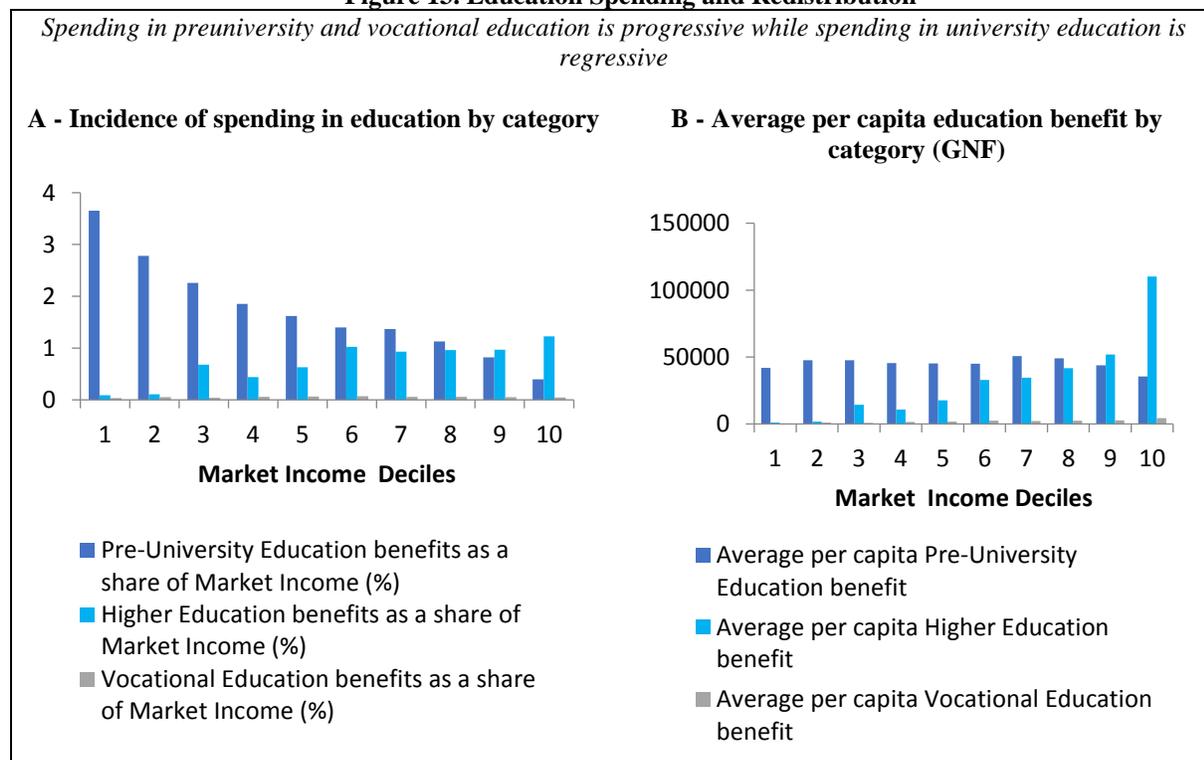


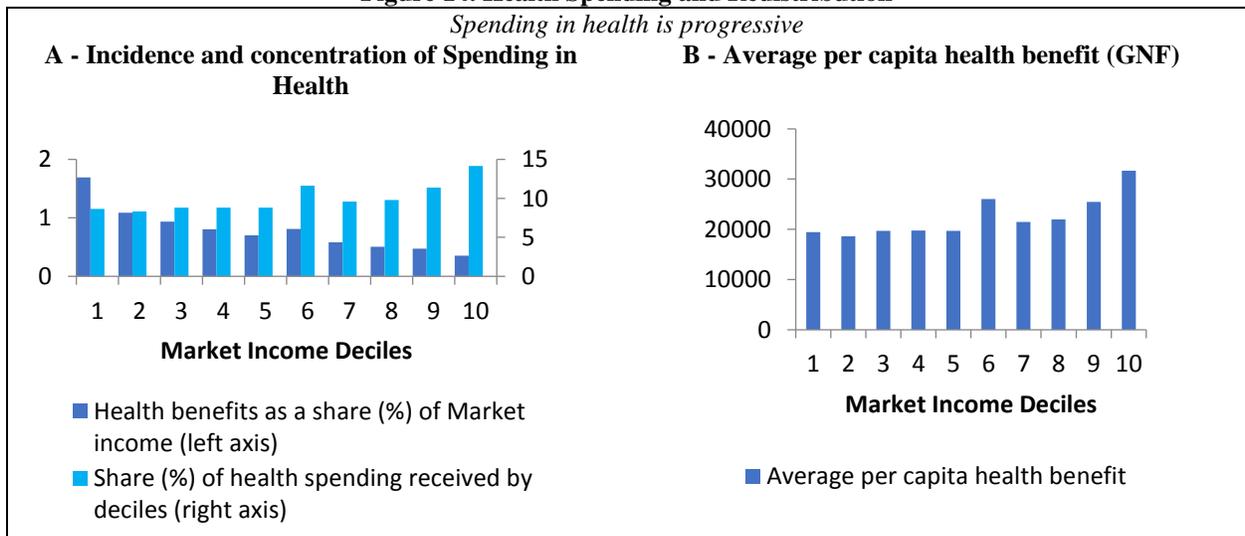
Table 6. Education Concentration by Decile

Market Income Deciles	Share of Preuniversity Education Spending Received (%)	Share of Vocational Education Spending Received (%)	Share of University Education Spending Received (%)	Cumulative Share of Preuniversity Education Spending Received (%)	Cumulative Share of Vocational Education Spending Received (%)	Cumulative Share of University Education Spending Received (%)
1	9.25	2.04	0.33	9.25	2.04	0.33
2	10.54	4.77	0.57	19.80	6.81	0.90
3	10.53	4.48	4.52	30.33	11.29	5.42
4	10.02	7.31	3.38	40.35	18.61	8.80
5	10.06	9.25	5.55	50.40	27.86	14.35
6	9.95	12.10	10.38	60.35	39.96	24.74
7	11.21	11.26	10.91	71.56	51.22	35.65
8	10.85	12.96	13.13	82.41	64.18	48.77
9	9.71	13.90	16.40	92.12	78.08	65.18
10	7.88	21.92	34.82	100.00	100.00	100.00

3.5.2 Health spending

34. **Health spending appears to be progressive.** To assess the progressivity of spending in health, we identify individuals in the household survey who use the public health care system and allocate the per capita health benefits to them. The results show that spending in health care is ubiquitously progressive without being pro-poor.

Figure 14. Health Spending and Redistribution

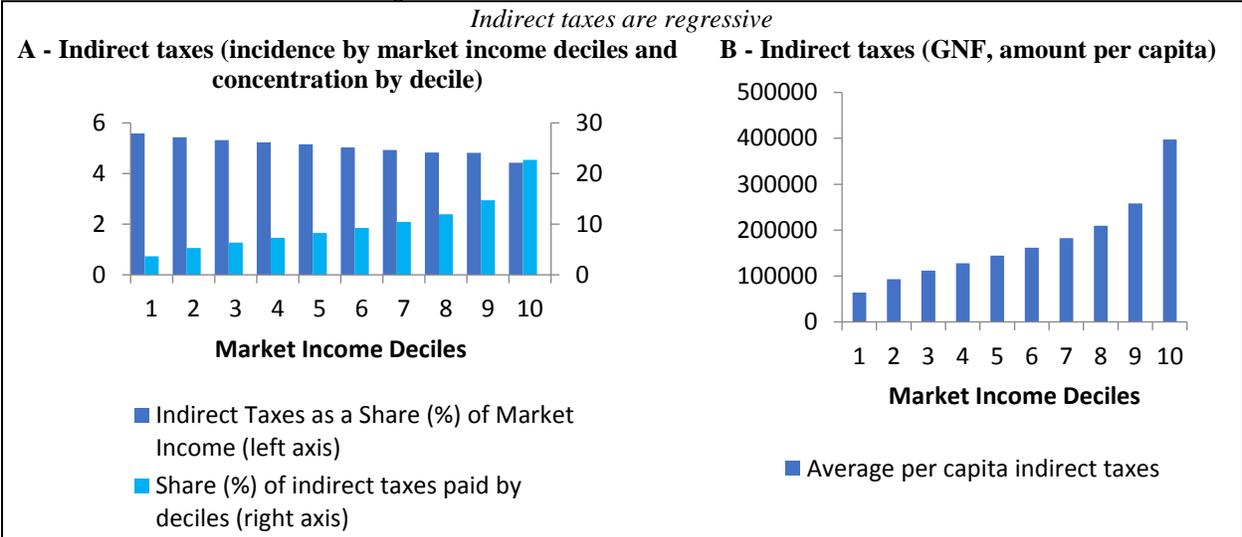


3.6 Who pays indirect taxes in Guinea?

The informal sector in Guinea is large and tax evasion can be significant, even in the formal sector. As a result, the incidence analysis uses the effective taxation rate obtained directly from the Social Accounting Matrix (SAM) for the VAT, import duties, and other indirect taxes.

35. **Indirect taxes appear to be slightly regressive, and they are increasing poverty.** For the VAT, the effective rate applied to each product represents the direct effect of VAT on consumers. In an economy with exempt sectors, VAT has an indirect effect on prices through the VAT paid on inputs. In general, producers can claim VAT refunds for the inputs used. The VAT is therefore levied only on the final product. In exempt sectors, there is no VAT paid directly on final goods, but VAT has an indirect effect. Indeed, VAT implies higher producer prices as producers cannot claim VAT refunds for the inputs they use to produce the final good. We use the SAM to compute the indirect effect of VAT in exempt sectors. The total effect of VAT is thus equal to the sum of the direct effect and the indirect effect. The results in Figure 15 show that indirect taxes are slightly regressive as the value of the Kakwani index (-0.04) is negative. This is because of the magnitude of these taxes.

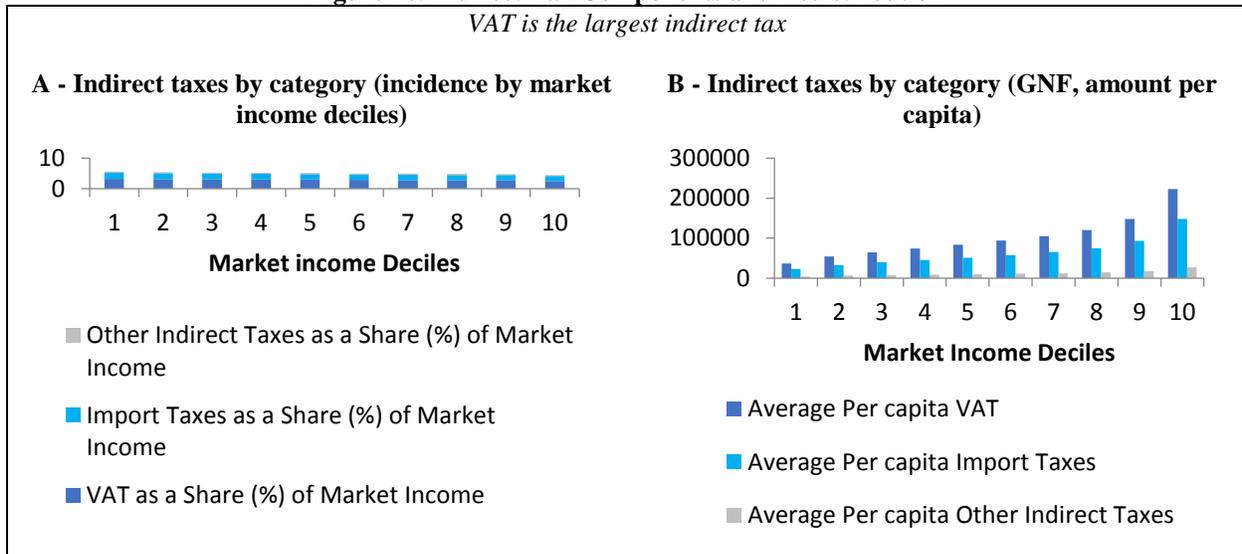
Figure 15. Indirect Taxes and Redistribution



36. **The richest deciles are the largest contributors to indirect taxes.** The 30 percent richest households pay 50 percent of all indirect taxes. In absolute terms, the average per capita amount paid in indirect taxes per decile increases with income (Figure 15A and Figure 15B). Analysis of the different categories of indirect taxes reveals that they are all slightly regressive. VAT is the largest indirect tax in both relative and absolute terms, followed by import taxes and other indirect taxes (Figure 16A and Figure 16B).

Figure 16. Indirect Tax Components and Redistribution

VAT is the largest indirect tax

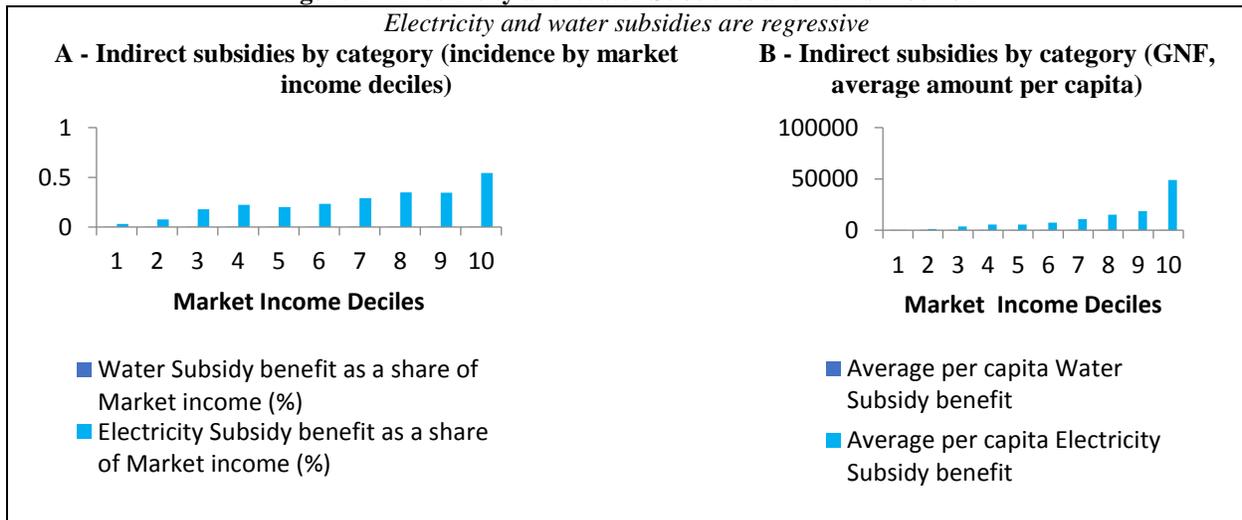


3.7 Who benefits from indirect subsidies?

37. **Both electricity and water subsidies are regressive.** We also assess who benefits from indirect subsidies of water and electricity (Figure 17). The results show that electricity subsidies are globally regressive (Kakwani index = -0.23). Water subsidies are also globally regressive (Kakwani index = -0.21). This can be explained by the fact that electricity and water service are not yet affordable for the poorest. As a result, only better-off households benefit from these subsidies. Electricity subsidies exceed water subsidies in absolute or relative terms.

Figure 17. Electricity and Water Subsidies and Redistribution

Electricity and water subsidies are regressive



3.8 Who pays direct taxes?

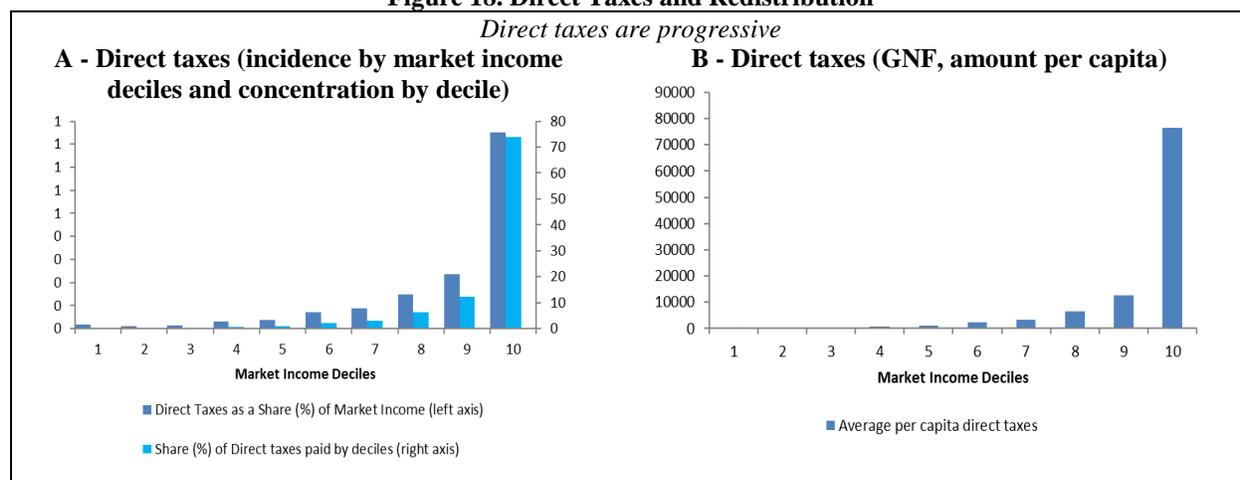
38. **The personal income tax (PIT) appears to be progressive.** The 2012 ELEP survey misses a lot of different income variables. We are only able to examine the distributional impact

of the PIT on wage income. Due to the high level of informality and without any other variable to identify workers in the formal and informal sectors, we assume that only individuals working in the public administration, public enterprises, and big private companies are in the formal sector and therefore, pay the PIT on their wage income. Self-employed and individuals working in small private business units are assumed to work in the informal sector. It is also worth noting that as the PIT is levied at the source, we assume that wages reported in the survey are net of taxes. We then compute the before-tax wage using a backward approach. The tax rates for the PIT on wage income follow a progressive structure for monthly deductions, as depicted in Table 7. Results show that PIT on wages is progressive in Guinea. Moreover, the richest decile bears an overwhelming burden as the top 10 percent pays more than 70 percent of total PIT on wages collection. While this may reduce inequality, it also raises equity concerns (39. Figure 18).

Table 7. Tax Rates for the PIT on Wage Income

	Chargeable Income (GNF)	Rate (%)	Tax Payable (GNF)	Cumulative Income (GNF)
First	1,000,000	0	0	1,000,000
Next	4,000,000	5	200,000	5,000,000
Next	5,000,000	10	500,000	10,000,000
Above	10,000,000	15	—	—

Figure 18. Direct Taxes and Redistribution



3.9 Who benefits from direct transfers?

40. **The impact of three direct transfers programs in Guinea are analyzed in this section:** (a) labor-intensive public work program, (b) cash transfer to protect human capital program, and (c) conditional cash transfer program (school feeding).

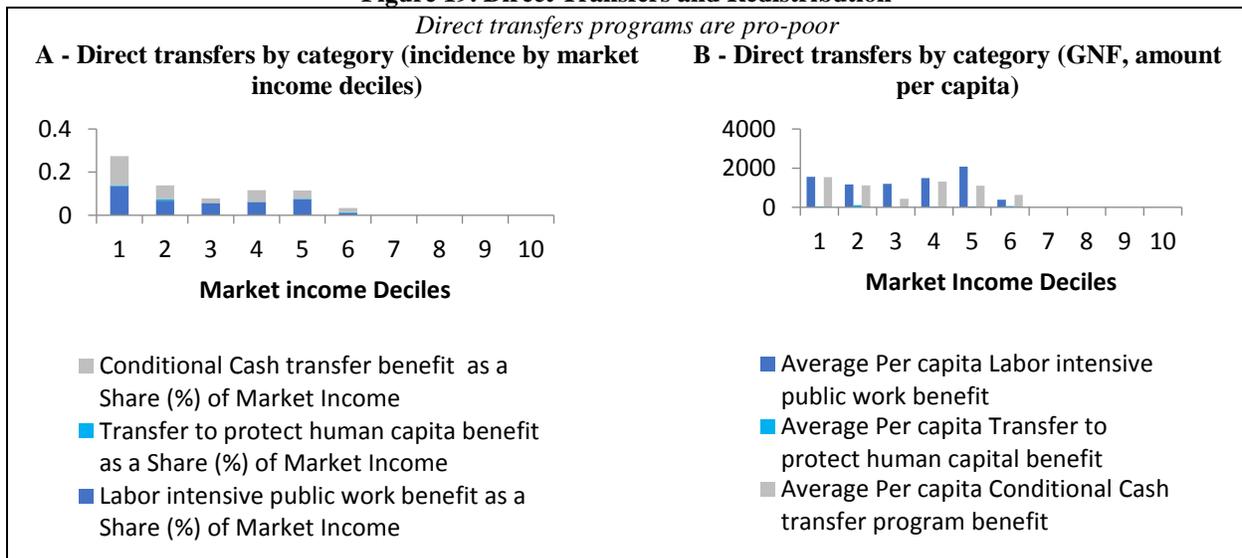
41. **The labor-intensive public work program aims at providing income for vulnerable groups including women and youth in selected urban and peri-urban areas in Guinea.** Funds have been allocated by region according to population data. The beneficiary-targeting process combines a self-selection approach (the daily remuneration rate is currently set at GNF 35,000 for 30 days of work, which is slightly lower than the market rate) and community-based selection. A

targeting committee was created in each community to select beneficiaries among all those who would have registered after the sensitization campaign. At least 40 percent of beneficiaries are women. The communities themselves select a highly labor-intensive microproject and send their proposal to the communes for official submission to the Safety Net Unit. The Safety Net Unit would validate the selection of microprojects and ensure that they comply with safeguard policies. Nongovernmental organizations were recruited to conduct sensitization campaigns, meeting predefined criteria, to implement microprojects, supervise their implementation, and make payments to beneficiaries.

42. **The cash transfer to protect human capital program aimed at transferring cash to households in selected communities.** The amount to be transferred is proportional to the number of children who are below 14 years while differentiated amounts are tested (US\$10 and US\$20). Transfers are conditional upon children’s health being regularly checked at health centers (for children under 6 years) and school attendance (for children between ages 7 and 14). The National Institute for Statistics (INS) has been recruited for data collection, beneficiary identification, and the production of beneficiary cards. The Safety Net Unit contracted the *Credit Rural de Guinée* to transfer cash to the beneficiaries. Agents from the INS supervise compliance with the conditionalities.

43. **The World Bank, jointly with the World Food Programme, implemented a School Feeding Program in selected communities.** All children enrolled at schools where the program is implemented benefit from it. In addition, girls get a bottle of 5 liters of oil every month to bring home, upon complying with the condition. This would permit to compare conditional cash transfer programs to school feeding programs and determine the most appropriate design for scale-up.

Figure 19. Direct Transfers and Redistribution



44. **The three direct transfer programs appear to be progressive.** The number of beneficiaries is adjusted taking into account the variation in the population between 2012 and 2016, while the per capita benefit is deflated using the 2012 prices. Beneficiary for each program is randomly selected using the eligibility conditions of each program. Not only are all the three direct

transfers program progressive, but they are also pro-poor, meaning that they reduce poverty. This is because direct transfers in Guinea are well targeted.

3.10 Some recent fiscal policies in Guinea

3.10.1 Value added tax reform

*In February 2016, with the purpose to increase tax revenues, Guinean authorities have increased the VAT rate from 18 percent to 20 percent, before returning to the initial situation in 2017. The main concern about this increase was the possible adverse effect on poor households as the reform had to result in higher prices for goods and services, especially for poor people. In the following paragraphs, the VAT rate increase from 18 percent to 20 percent is simulated to assess the possible effect on households' well-being.*¹¹

45. **On average, the increase in prices resulting from the VAT rate increase may be low, given the size and the informal sector.** The analysis estimates the price changes resulting from the VAT rate increase. The post-reform VAT effective rate is computed first, relying on the assumption that the tax evasion behavior does not change after the reform. Then, household consumption data are used to compute the budget shares of the various sectors of the SAM, defined as household expenditure on a given sector divided by total household expenditure (see

46. Table A.1 in the annex).¹² These shares are multiplied by the corresponding price increases and then summed across sectors to estimate the percentage decline in household real income due to the VAT reform. Finally, the total real income effect is averaged for each income group to obtain the total income effect for each income quintile. The latter is the incidence of the VAT reform.

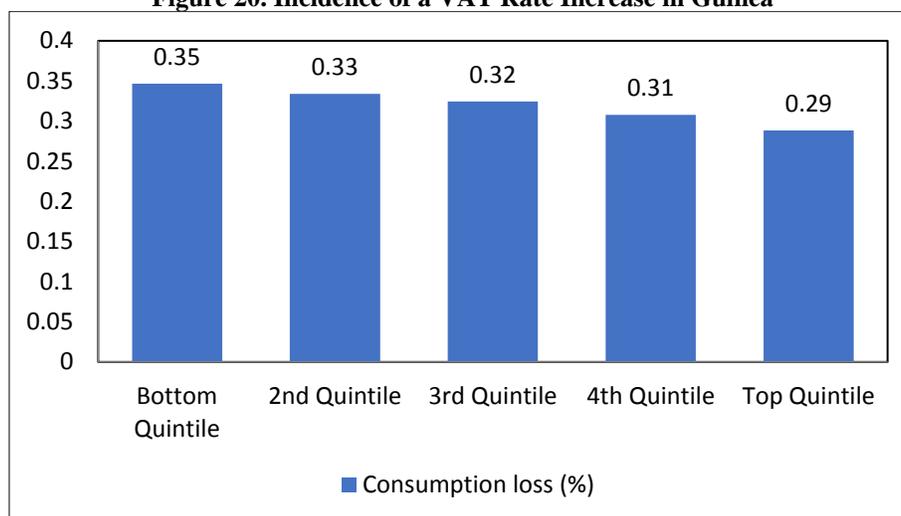
47. **Even if there is some adverse effect of the reform in terms of consumption loss, this effect appears to be low.** Figure 20 shows that the VAT reform will have an adverse effect on poor households and is regressive in its overall distributional impact. Households in the bottom per capita consumption quintile incurred a higher proportional reduction in real consumption as a result of the reform than households in the top quintile. The regressive nature of the reform is consistent with the consumption patterns of poor households, who disproportionately rely on unprocessed agricultural products that have the highest VAT effective rate (4.8 percent). However, as expected, the magnitude of this adverse effect is low, ranging from 0.29 to 0.35, depending on the quintile of consumption. The consumption loss experienced by the households in Guinea is much smaller than those of Newhouse and Zakharova (2007), who simulated the impact of a VAT

¹¹ The ELEP 2012 data are used to evaluate the distributional impact of the VAT reform. The informal sector in Guinea is large and tax evasion can be significant, even in the formal sector. As a result, the simulation analysis uses the effective taxation rate obtained directly from the SAM instead of the statutory rates of 18 percent (pre-reform) and 20 percent (post-reform). Only the first-order effect of higher prices on household real income is examined, which likely overstates the burden of the reform. The estimated reduction in household real income assumes that household and firm demand is fixed. The estimates ignore any consumption adjustments by households, as well as input adjustments by firms, and therefore should be interpreted as the upper bounds on the magnitude of income effects. In addition, for simplicity, firms are assumed to pass on all increases in their costs to their customers in the form of higher output prices.

¹² In fact, all the items consumed by households are mapped into the 23 sectors of the SAM, with the VAT effective rate ranging from 0 percent to 4.8 percent.

rate increase from 10 percent to 12 percent in the case of the Philippines.¹³ This is because we use effective rates instead of statutory rates, resulting in lower price changes following the reform.

Figure 20. Incidence of a VAT Rate Increase in Guinea



48. **As a result of the low effect on consumption, the effects on poverty and inequality appear to be negligible.** In fact, as shown in Table 8, the VAT reform has a negligible negative impact on poverty and inequality measures.

Table 8. VAT Reform and Changes in Poverty and Inequality Measures

	Before Reform	VAT Reform
Inequality measures		
Share of consumption, poorest 20%	7.2%	7.2%
Share of consumption, richest 20%	42.3%	42.3%
Ratio of richest 20% to poorest 20%	5.9	5.9
Gini index	31.7%	31.7%
Poverty measures		
Poverty rate	55.2%	55.3%
Poverty gap	18.4%	18.5%
Poverty severity	8.4%	8.4%

3.10.2 Fuel subsidies

The Government of Guinea devoted a substantial part of resources to subsidize the following petroleum products: kerosene, gasoline, and diesel fuel. However, given the decline in the international prices by the mid-2010s, the subsidies granted through the reduction of taxes on petroleum products, during the first half of the 2010s, have progressively vanished. The question today is to know what the strategy of the Guinean authorities will be if the international oil price retrieves its level of the first half of the 2010s. To inform this decision, a removal of fuel subsidies is simulated from the situation prevailing around 2012, and the impact on well-being is analyzed.

49. **The removal of fuel subsidies may affect households' well-being through a direct and an indirect channel.** Relying on the price structure of these products, it is found that a removal of

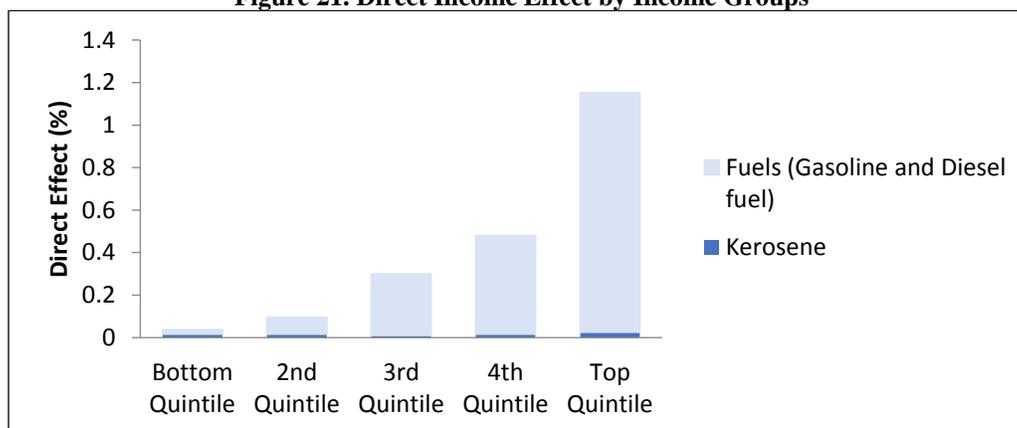
¹³ Newhouse and Zakharova (2007) found a welfare loss ranging from 2.4 percent to 2.7 percent.

fuel subsidies will increase the kerosene price by 19 percent and the fuel (gasoline and diesel fuels) prices by 16 percent. The effects of higher fuel prices on households' welfare are modeled through two channels—direct and indirect effects. The direct effect reflects the higher prices paid by households for the petroleum products they consume directly (for example, for cooking, heating, and lighting).¹⁴ The indirect effect arises when the high fuels result in higher prices for other goods and services consumed by households. Because a high proportion of fuel is consumed as an input to the production of other goods and services, the magnitude of the indirect effect is expected to be relatively high.¹⁵

Table 9. Direct and Indirect Effects of Fuel Subsidy Removal

	Bottom Quintile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile	All Households
Real Income Effect (%) (Direct effect due to)						
Kerosene	0.018	0.017	0.012	0.018	0.026	0.018
Fuels (gasoline and diesel fuels)	0.019	0.078	0.287	0.462	1.126	0.394
Direct effect	0.037	0.094	0.299	0.480	1.152	0.412
Indirect effect	4.848	5.067	5.235	5.335	5.143	5.125
Total effect	4.885	5.161	5.534	5.815	6.295	5.537
Share of the burden						
Kerosene	5.385	5.994	8.189	17.788	62.660	100
Fuels (gasoline and diesel fuels)	0.190	1.133	5.665	13.300	79.803	100
Direct effect	0.345	1.278	5.742	13.445	79.426	100
Indirect effect	5.543	10	15.360	23.406	45.507	100
Total effect	4.855	8.805	14.088	22.075	49.874	100

Figure 21. Direct Income Effect by Income Groups



¹⁴ The direct effect is computed by multiplying the budget share of each petroleum product by its price increase (19 percent for kerosene and 16 percent for gasoline and diesel fuel).

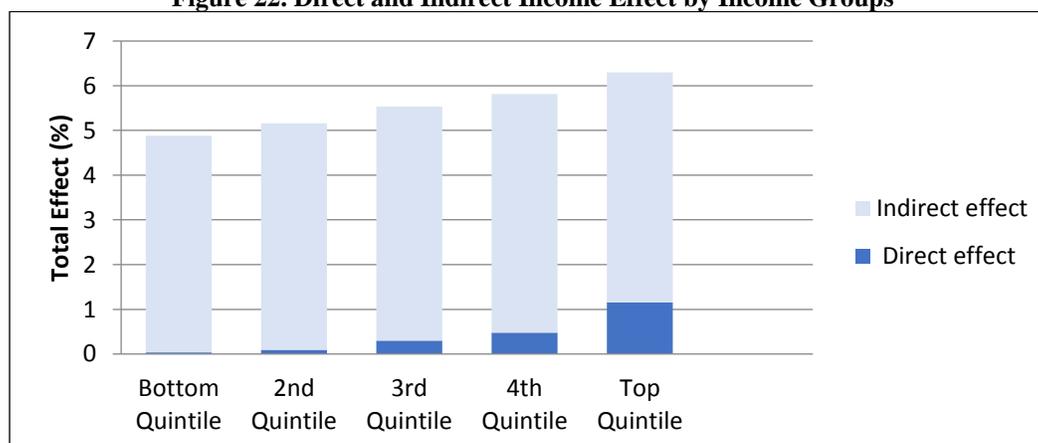
¹⁵ The estimation of the indirect effect requires a simple pricing model and information on the energy intensity of the different sectors of the economy. The latter information typically comes in the form of an input-output matrix. Applying the model to these data results in an estimate of the price increase for each sector. As with the direct effects above, these price increases can be multiplied by the corresponding budget share for each sector to estimate the indirect effects. The indirect effect can be estimated by aggregating across the different sectoral effects for each household. The indirect effect is then added to the direct effect to obtain the total effect of the price increase on each household.

50. **The direct effect of the fuel subsidy removal is progressive, with the richest people paying more than the poorest people.** Table 9 and

51. Figure 21 show the incidence of a fuel subsidy removal in Guinea. The bottom quintile will be worse off by 0.04 percent due to the direct effect, while the top quintile will lose 1.15 percent of its purchasing power. The direct effect of the price increases is therefore progressive. Moreover, the direct effect of the gasoline and diesel fuel is more important than the effect of the kerosene.

52. **While the indirect effect is affecting all people regardless of their consumption level, the total effect also appears to be a little progressive.** After taking into account the indirect effect, the total effect of the price increase is 4.89 percent for the bottom quintile and 6.3 percent for the top quintile, meaning that the total effect of the price increase is also progressive. However, the poorest quintile bears less than 5 percent of the burden of the price increases while the top quintile bears almost 50 percent of this burden. It is worth noting that the magnitude of the indirect effect is much greater than the magnitude of the direct effect (Table 9 and Figure 22).

Figure 22. Direct and Indirect Income Effect by Income Groups



53. **The removal of fuel subsidies may increase poverty significantly.** Table 10 provides an illustration of the poverty and inequality impact of the fuel subsidies' removal. While a removal of fuel subsidies has a limited positive impact on the income distribution, it increases the different poverty measures. The limited impact is due to the more important indirect effect which equally affects almost all categories of households.

Table 10. Fuel Subsidies' Removal and Changes in Poverty and Inequality Measures

	Before Reform	VAT Reform
Inequality measures		
<i>Share of consumption, poorest 20%</i>	7.2%	7.240%
<i>Share of consumption, richest 20%</i>	42.3%	42.1%
<i>Ratio of richest 20% to poorest 20%</i>	5.9	5.8
<i>Gini Index</i>	31.7%	31.4%
Poverty measures		
<i>Poverty rate</i>	55.2%	59.3%
<i>Poverty gap</i>	18.4%	20.5%
<i>Poverty severity</i>	8.4%	9.5%

4 Fiscal Incidence Analysis in West Africa: A Comparative Review

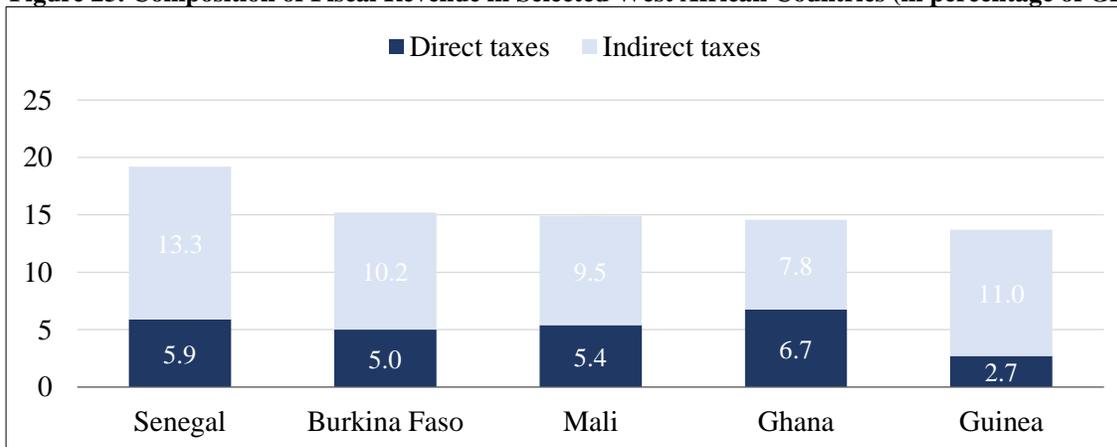
The previous chapter documents the impact of fiscal policy interventions on inequality and poverty in Guinea. Although this exercise for Guinea reveals some insights, it is still useful to bring these results into a subregional context to assess how the country fares among its peers. Since the inception of the CEQ Institute in 2015, there has been an increasing number of fiscal incidence analyses for a set of countries around the world. Inchauste and Lustig (2017) provide an overview for eight low- and middle-income countries, of which the Sub-Saharan countries are Ethiopia, Ghana, South Africa, Tanzania, Tunisia, and Uganda. In other terms, these findings show that there are some knowledge gaps for West African countries.

This section therefore strives to summarize existing evidence on completed and ongoing fiscal incidence analyses for the following West African countries: Burkina Faso, Ghana, Guinea, Mali, and Senegal. The review begins with an overview of each country's fiscal revenue composition. The discussion of the reported Gini coefficients and the poverty indices in these selected studies follows. Section 4.3 summarizes the progressivity and pro-poorness as well as the marginal contribution of government spending, transfers, and taxes in these West African countries. Section 5 is the conclusion.

4.1 Government revenue mobilization through taxes

54. **Taxes as a share of GDP differ in significant ways across West Africa.** The ability of governments, especially in developing economies, to mobilize fiscal revenue through taxes remains essential to improving public services and infrastructures and to alleviating poverty. Figure 23 displays the share of direct and indirect taxes to GDP in selected West African countries. It highlights that taxes as a share of GDP differ in significant ways across the selected countries in the subregion. For instance, the overall share of both direct and indirect taxes to GDP ranges from 19.2 percent (highest) for Senegal to 13.7 percent (lowest) for Guinea.

Figure 23. Composition of Fiscal Revenue in Selected West African Countries (in percentage of GDP)



Source: For Ghana, based on Younger, Osei-Assibey, and Oppong (2017, Table 1); for Guinea, based on IMF Article IV Country Report (2016, Table 2b, year 2015); for Burkina Faso, Mali, and Senegal, based on Cabrera, Martinez-Aguilar, and Marzo (2017, Figure 1); own compilation.

55. **Another important insight is that, in a context of high informal economic activity, indirect taxation remains the most important source of revenue collection in the selected countries.** For instance, Figure 23 shows that indirect taxes represent more than 80 percent of total government tax revenues in Guinea and nearly 70 percent in Senegal. This is in line with evidence established in the Sub-Saharan context, where the regional average hovers around 70 percent (Cabrera, Martinez-Aguilar, and Marzo 2017). To put this in perspective, direct taxes are mostly from wages and salaries. Yet, informal economic activity predominates the economic landscape in these countries. Recent estimates for Sub-Saharan Africa show that the size of the informal economic activity (as share of GDP) in Burkina Faso, Guinea, and Ghana is between 30 percent and 40 percent. In Mali and Senegal, it is estimated between 40 percent to 50 percent of national output (Medina, Jonelis, and Cangul 2017). The preeminence of informal economic activity means low direct taxation avenues for the government in these countries.

4.2 Fiscal policy and inequality

56. This section presents reported Gini coefficients and poverty headcount ratios by CEQ income concepts for the selected West African countries for which a fiscal incidence analysis has been carried out thus far. Beforehand, Table 11 presents how contributory pensions are treated in these studies. In fact, there is no consensus on how to treat contributory pensions in the fiscal incidence literature. Some studies argue for treating contributory pensions as individual savings or deferred income, while others treat these pensions as a government transfer, especially in systems with large subsidized component (Inchauste and Lustig 2017).

Table 11. Treatment of Contributory Pensions and Subsequent Market-Income Concept Used

Country (Year of Study)	Contributory Pensions Treated as...	Market-Income Concept Used
Guinea (2018)	Direct transfers	Market income (pre-fiscal)
Ghana (2017)	Deferred compensation	Market income + pensions
Senegal (2017)	Deferred income	Market income + pensions
Mali (2018)	Direct transfers	Market income (pre-fiscal)
Burkina Faso (2018)	Direct transfers	Market income (pre-fiscal)

Source: Own compilation.

Note: Definition for Ghana is from Younger, Osei-Assibey, and Oppong (2017); Mali from Hounsa and Sanoh (2018); Senegal from Cabrera, Martinez-Aguilar, and Marzo (2017); and Burkina Faso from Backiny-Yetna (2018).

57. **Fiscal systems in most West African countries reduce inequality but Guinea remains the exception.** Table A.2 in the annex displays reported Gini coefficients for these various studies. The market-income Gini, based on market income as defined for each country in Table 1, ranges from 0.319 to 0.491. The country with the highest market-income Gini is Mali (0.491), followed by Ghana (0.437), Senegal (0.394), Burkina Faso (0.367), and Guinea with the lowest market-income Gini (0.319) in the subregion. In addition, results in Table A.2 indicate that once in all in-kind transfers are accounted for (as part of ‘final income’), the Gini coefficients across nearly all countries, apart from Guinea, decline from market income between 0.022 points (for Mali) and 0.044 points (for Senegal). In other terms, fiscal system in each of these countries reduces inequality.

58. **Furthermore, independently of the market-income concept used, fiscal systems in the subregion are not poverty reducing.** First, it is worth noting that in terms of poverty, the case studies in Table A.2 mostly report national poverty line, apart from the studies for Guinea, Ghana,

and Mali that also report incidence of extreme poverty (at both the international per capita poverty line of US\$1.25 and US\$2.50 per day in PPP). Nonetheless, looking at the respective national poverty line, one striking fact emerges. Across all countries (Guinea, Ghana, Mali, Senegal, and Burkina Faso), the results show an increase in poverty as a result of taxes and transfers in those countries. For instance, in the case of Burkina Faso, the poverty headcount rate increases from 40.9 percent (at market income) to 48.5 percent (at consumable income). Similarly, in the case of Senegal, Guinea, Mali, and Ghana, the poverty headcount rate increases by 4.6, 3.3, 2.4, and 2.2 points, respectively.

4.3 Progressivity and pro-poorness, marginal contribution of government spending and taxes

59. As noted in Inchauste and Lustig (2017), beyond the points discussed in Section 4.2, decision makers may wish to know the extent to which the poor benefit from government spending on education, health, and from other transfers. A couple of tools have been proposed to investigate these queries.

60. **The direction of progressivity and pro-poorness of most social spending for education and health and transfers appear to be consistent across most of the countries in the subregion.** However, for taxes (direct and indirect), the results are mixed.

61. Table A.3 (in the annex) displays the progressivity and pro-poorness of government spending on education, health, and transfers and taxes across the selected West African countries for which comparable estimate is available.¹⁶ Emerging results of this cross-country comparison can be summarized as follows:

- Total education (all levels) spending is progressive in at least three countries—Guinea, Mali, and Burkina Faso, where data are available.
- Preschool spending appears to be progressive in both Mali and Senegal and pro-poor in Ghana.
- Primary spending is pro-poor in Ghana and Senegal and progressive in Mali.
- Secondary spending is mostly progressive in most countries where data are available.
- Tertiary education spending tends to be regressive across all countries with available estimates.
- Health spending is progressive in all the countries under the current review.
- Transfers are mostly pro-poor, apart from Burkina Faso where they are progressive.
- Direct taxes are progressive in Guinea, Mali, and Burkina Faso and regressive in Senegal.
- Indirect taxes are mostly regressive, apart from Mali where they are progressive.

62. Furthermore, an assessment of the marginal contribution for some fiscal interventions for which data are available reveals the following insights (Table A.4 in the annex):

- Spending for education and health is both inequality and poverty reducing across all countries where data are available.

¹⁶ This section strives to give an overview of emerging trends across the countries under study here. Detailed estimates for each country are provided in Table A.5.a–A.5.d in the annex.

- Direct transfers are mostly inequality and poverty reducing, except in Guinea where they are neutral in terms of poverty reduction and in Burkina Faso, where they are inequality increasing.
- Tertiary education spending in Guinea, Mali, and Senegal appears to be on one hand poverty reducing and on the other hand inequality increasing.
- Redistributive effects of direct taxes appear to be mixed, while indirect taxes are mostly inequality and poverty increasing.

4.4 Conclusion

63. Recent completed fiscal incidence analyses for Guinea, Mali, Ghana, Senegal, and Burkina Faso provide some basis for comparing the evidence for West Africa. The current section highlights the emerging trends in terms of revenue mobilization composition as well as the progressivity and pro-poorness and the marginal contribution of fiscal interventions to inequality and poverty in the subregion.

64. From a broader perspective, a couple of takeaways emerge for West Africa. First, in terms of revenue mobilization, indirect taxes remain the largest source of revenue, and there is also a predominance of informal economic activity in the subregion. In fact, that large informal sector may explain the low revenue mobilization through direct taxes. The second takeaway is that the fiscal systems in these countries are globally inequality reducing (apart from the fiscal system in Guinea) and are all not poverty reducing.

65. Moreover, the progressivity, the pro-poorness, and the marginal contribution of fiscal interventions analysis shows some significant results as well. First, the direction of progressivity and pro-poorness of most social spending for education and health and transfers appear to be consistent across most of the selected countries. However, for taxes, the results are somewhat mixed. For instance, total spending on health is progressive in all the selected countries, while spending on tertiary education is also consistently regressive in almost all these countries. Similarly, transfers are virtually pro-poor (as expected) in all these countries apart from Burkina Faso. On the other hand, direct taxes are mostly progressive (apart from Senegal), and indirect taxes are regressive in most cases. The second insight is that marginal contribution of these fiscal interventions is not linear across countries. For example, while spending for education and health is both inequality and poverty reducing in all the countries where data are available, tertiary education spending in Guinea, Mali, and Senegal appears to be poverty reducing and inequality increasing. Similar mixed redistributive effects are found for direct taxes.

66. Overall, these findings highlight the similarities and differences of fiscal interventions in terms of their progressivity, pro-poorness, and marginal contribution to inequality and poverty in the subregion. One of the implications is that fiscal interventions should factor in country- and subregion-specific context, such as prevailing labor market conditions.

5 Conclusion and Policy Implications

The Guinean fiscal system seems to be weak compared to several African countries. When tax rates appear to be relatively high in Guinea, while the country's total tax revenue is higher than the low-income countries average in terms of the percentage of GDP, there is still a need of efforts to improve the level of direct taxes. Moreover, to succeed in increasing the mobilization of domestic resources, it is necessary to strengthen the fiscal the fiscal management. Assessing the distributional impact of the current fiscal policies (tax system and public spending), and potential reforms may be helpful for that end. The fiscal incidence analysis in Guinea shows the following findings:

- ✓ Regarding social spending, health spending seems to be progressive as well as vocational education, while preuniversity education appears to be pro-poor. For its part, spending in university education turns out to be regressive.
- ✓ Even if the richest deciles of the population are the large contributors to indirect taxes, these indirect taxes appear to be slightly regressive and poverty increasing.
- ✓ Poor people benefit less from indirect subsidies to electricity and water which appear to be regressive. Despite the subsidies, electricity and water services are not yet affordable for the poorest. This suggests that an emphasis should be placed on rather on developing the supply of these services including to the poor. In fact, more investment may induce a decrease in the tariffs, and an increase in the services in medium term.
- ✓ A VAT reform should take account of the structure of consumption, especially for poor people. Increasing VAT rate as in 2016 from 18 to 20% may have some adverse effect in terms of consumption loss, even if the effect on poverty and inequality is negligible given the size of informal sector.
- ✓ Regarding the fuel subsidy removal, its direct effect is progressive with the richest people paying more than the poorest people. It may however increase poverty significantly, which requires some mitigations measures to minimize the impact on poor households.

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Annex

Methodology of allocating Taxes and Public spending

Public Spending

We identify in the survey households who benefit from social spending in education and health. Health benefits are allocated only to individuals who have reported using the public health care system. The per capita health benefit is allocated them. From administrative data, we calculate the per capita public spending by student at each level (preuniversity, university, and vocational education). The per capita public spending by student per level is the total spending in education for a particular level divided by the number of students enrolled at that level of education. We then use the ELEP 2012 to identify the level of education and the type of school (public or private) for individuals enrolled in school. For those attending public schools, we allocate the per capita benefit according to their level of education.

Indirect Taxes

The informal sector in Guinea is large and tax evasion can be significant. As a result, the incidence analysis uses the effective taxation rate obtained directly from the Social Accounting Matrix (SAM) for the VAT, import duties and other indirect taxes. We classify items consumed by households into the different sectors of the SAM and apply the corresponding effective rate of taxation. Indirect effects are also computed using the SAM.

Indirect Subsidies

We also assess who benefits from indirect subsidies of water and electricity. Households are allocated a share of indirect subsidies proportional to their consumption.

Direct Taxes

Due to the high level of informality and without any other variable to identify workers in the formal and informal sectors, we assume that only individuals working in the public administration, public enterprises and big private companies are in the formal sector and therefore pay the PIT on their wage income. Self-employed and individuals working in small private business units are assumed to work in the informal sector. It is also worth noting that as the PIT is levied at the source, we assume that wages reported in the survey are net-of-taxes. We then compute the before-tax wage using a backward approach.

Direct Transfers

We look at the impact of 3 direct transfers programs in Guinea namely: a labor intensive public work program, a cash transfer to protect human capital program and a conditional cash transfer program (school feeding). We randomly select beneficiary for each program using the eligibility conditions of each program adjusting the number of beneficiaries by taking into account the variation in the population between 2012 and 2016. We also deflated the per capita benefit to 2012 prices.

Table A.1. Household Expenditures Shares (%) by Categories

	Bottom Quintile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile	All	Effective VAT Rate (%)
Raw food products	39.24	37.04	34.49	31.56	25.56	30.22	4.79
Other farm products	0.09	0.13	0.10	0.10	0.07	0.09	0.64
Breeding and hunting products	2.72	2.88	3.20	3.69	4.53	3.86	0.08
Forestry	0.92	1.65	2.13	2.33	1.97	1.98	0.00
Fishery products	2.22	3.78	3.90	4.70	4.48	4.23	0.00
Other extractive activities	0.11	0.07	0.07	0.10	0.17	0.12	0.00
Beverages, tobacco, and manufactured food products	27.52	26.30	26.30	24.42	19.44	22.81	3.18
Other manufactured products	15.16	14.89	14.86	15.00	21.05	17.79	2.71
Electricity, domestic gas, and water	0.20	0.36	0.54	0.71	0.83	0.68	4.22
Trade and repairing	0.09	0.10	0.20	0.22	0.30	0.23	0.00
Hotels and restaurants	2.46	1.74	1.78	2.13	2.58	2.27	0.58
Transports and communication	2.87	4.48	5.61	7.09	9.19	7.34	0.80
Financial intermediation	0.00	0.01	0.01	0.01	0.17	0.08	0.99
Real estate	0.46	0.72	0.90	1.01	1.06	0.96	3.45
Public administration	0.06	0.04	0.02	0.05	0.08	0.06	0.00
Education	1.18	1.21	1.59	2.14	2.94	2.28	0.00
Health	4.27	4.04	3.70	4.07	3.85	3.93	0.00
Other services	0.47	0.57	0.53	0.65	1.54	1.03	0.00

Table A.2. Gini Coefficients and Poverty Indexes for CEQ Income Concepts

Country (year of data)	Poverty line: Gini	National Poverty Line: Headcount Index	US\$1.25 per Day at PPP Headcount Index	US\$2.50 per Day at PPP Headcount Index
Guinea (2012)				
<i>Market income (pre-fiscal)</i>	0.319	0.552	0.287	0.770
<i>Market income + Pensions</i>	—	—	—	—
<i>Gross income</i>	0.318	0.551	0.286	0.770
<i>Net market income</i>	0.317	0.552	0.287	0.771
<i>Disposable income</i>	0.317	0.552	0.286	0.771
<i>Consumable income</i>	0.319	0.585	0.323	0.795
<i>Final income</i>	0.319	—	—	—
Ghana (2013)				
<i>Market income (pre-fiscal)</i>	0.438	0.243	0.062	0.267
<i>Market income + pensions</i>	0.437	0.240	0.060	0.264

Country (year of data)	Poverty line: Gini	National Poverty Line: Headcount Index	US\$1.25 per Day at PPP Headcount Index	US\$2.50 per Day at PPP Headcount Index
<i>Gross income</i>	0.436	0.238	0.058	0.262
<i>Net market income</i>	0.425	0.244	0.061	0.269
<i>Disposable income</i>	0.424	0.242	0.059	0.268
<i>Consumable income</i>	0.423	0.262	0.068	0.288
<i>Final income</i>	0.402	0.186	0.031	0.205
Mali (2014)				
<i>Market income (pre-fiscal)</i>	0.491	0.406	0.420	0.755
<i>Market income + pensions</i>	0.491	0.404	0.418	0.754
<i>Gross income</i>	0.491	0.404	0.418	0.754
<i>Net market income</i>	0.486	0.404	0.418	0.756
<i>Disposable income</i>	0.486	0.404	0.418	0.756
<i>Consumable income</i>	0.482	0.430	0.440	0.778
<i>Final income</i>	0.469	—	—	—
Senegal (2015, 2011)				
<i>Market income (pre-fiscal)</i>				
<i>Market income + pensions</i>	0.394	0.463	—	—
<i>Gross income</i>	—	—	—	—
<i>Net market income</i>	—	—	—	—
<i>Disposable income</i>	0.374	0.461	—	—
<i>Consumable income</i>	0.368	0.509	—	—
<i>Final income</i>	0.350	—	—	—
Burkina Faso (2015, 2014)				
<i>Market income (pre-fiscal)</i>	0.367	0.409	—	—
<i>Market income + pensions</i>	—	—	—	—
<i>Gross income</i>	—	—	—	—
<i>Net market income</i>	0.355	0.410	—	—
<i>Disposable income</i>	0.353	0.401	—	—
<i>Consumable income</i>	0.353	0.485	—	—
<i>Final income</i>	0.328	0.363	—	—

Source: Calculations for each country are from respective studies listed in Table 11; own compilation.

Note: — = Not available in authors' analysis.

Table A.3. Progressivity and Pro-pooriness of Government Spending and Taxes

	Education All Levels Spending			Preschool Spending			Primary Education Spending			Secondary Education Spending			Tertiary Education Spending			Health Spending			Transfers			Direct Taxes		Indirect Taxes	
	P	PP	R	P	PP	R	P	PP	R	P	PP	R	P	PP	R	P	PP	R	P	PP	R	P	R	P	R
Guinea	+							+							+	+				+		+			+
Ghana					+			+		+					+	+				+					
Mali	+			+			+			+					+	+				+		+		+	
Senegal				+				+		+					+	+				+			+		+
Burkina Faso	+														+				+			+			+

Source: Based on various country CEQ studies listed in Table 11; own compilation.

Note: P = Progressive; PP = Pro-poor; R = Regressive; Highlighted area = Not directly computed in the study.

Table A.4. Marginal Contribution of Spending, Transfers, and Taxes to Inequality and Poverty Reduction

	Guinea		Mali		Senegal		Burkina Faso	
	Inequality	Poverty	Inequality	Poverty	Inequality	Poverty	Inequality	Poverty
Education all levels spending	+	+	+	+	+		+	
Preschool spending					0			
Primary spending	+	+	+	+	+			
Secondary spending					+			
Tertiary spending	-	+	-	+	-			
Health spending	+	+	+	+	+		+	
Transfers	+	0	+	+	+	+	-	
Direct taxes	+	-	+	-	+	-	+	
Indirect taxes	-	-	+	-	+	-	-	

Source: Based on various country CEQ studies listed in Table 1; own compilation.

Note: “+” stands for fiscal intervention has positive marginal contribution to inequality (poverty), meaning it is inequality (poverty) reducing;

“-” stands for fiscal intervention has negative marginal contribution to inequality (poverty), meaning it is inequality (poverty) increasing;

0 = Neutral in terms of redistribution;

Highlighted area = Not directly computed in the study.

Table A.5. a. Progressivity and Pro-Poorness of Taxes and Transfers, Ghana

	Concentration Coefficient
Education	
Value of free school meals	-0.401
Benefits from public preschool	-0.336
Benefits from public primary	-0.267
Benefits from public JSS/JHS	-0.118
Benefits from public SSS/SHS	0.125
Benefits from public teaching college	0.364
Benefits from public vocational	0.386
Benefits from public polytechnic	0.424
Benefits from public nursing school	0.460
Benefits from public university	0.691
Health	
Outpatient health benefits, scaled	0.040
Inpatient health benefits, scaled	0.048
Subsidies	
Fertilizer subsidy	-0.033
Kerosene cross-subsidy	0.129
Electricity subsidy	0.471
Cash Transfers and Pensions	
LEAP payment (simulated)	-0.289
Retirement benefits	0.395
Social security pension	0.567
SSNIT contributions	0.716
State pension (CAP-30)	0.717
PAYE paid	0.731
Taxes	
Other tobacco excise	-0.174
Cigarette/cigar excise	0.046
Cocoa duties	0.133
Akpeteshi excise	0.134
Import duties	0.415
Spirits excise	0.429
VAT	0.440
Diesel excise	0.484
Communication services excise	0.494
Petrol excise	0.509
Beer excise	0.611
Wine excise	0.613
Soda excise	0.617
Malta excise	0.625
“Taxes on products” of self-employed, informal	0.664
Bottled water excise	0.795
“Taxes on products” of self-employed, formal	0.796

Source: Based on Younger, Osei-Assibey, and Oppong (2017).

Note: Inchauste and Lustig (2017) provide extensive methodological details on how the Kakwani coefficients are computed.

Table A.5.b. Progressivity and Pro-Poorness of Taxes and Transfers, Mali

	Kakwani Index
Education	
Basic education (preschool, primary, and secondary)	0.36
Higher education	-0.08
Overall education	0.21
Health	
All health spending	0.25
Subsidies	
Gas subsidies	-0.19
Electricity subsidies	-0.25
Energy subsidies (gas and electricity)	-0.25
Agricultural subsidies	0.56
Cash Transfers and Pensions	
<i>Jigisemejiri</i> cash transfer program	0.92
Total public spending	0.20
Taxes	
Overall taxes (direct and indirect)	0.12
Direct taxes	0.36
Overall indirect taxes	0.08
Other indirect taxes	0.14
Import taxes	0.04
VAT	0.09

Source: Based on Hounsa and Sanoh (2018).

Table A.5.c. Progressivity and Pro-Poorness of Taxes and Transfers, Burkina Faso

	Kakwani Index
Net education transfers	0.3543
Net health transfers	0.1701
Indirect subsidies	0.0963
Direct transfers including contributory pensions	0.0241
Direct taxes and contribution	0.4991
Indirect taxes	-0.0190

Source: Based on Backiny-Yetna (2018).

Table A.5.d. Progressivity and Pro-Poorness of Taxes and Transfers, Senegal

	Concentration Coefficient
Education	
Preschool education	0.1316
Primary education	-0.0554
Secondary education	0.0463
Cantines scolaires	-0.2448
Tertiary education	0.6328
Tertiary education scholarship	0.5964
Gross education transfers	0.1219
Health	
General Health Expenditures	0.1316
Gross health transfers	0.1008
Contribution to health (100%)-subsidy	-0.4082
Contribution to health (50%)-subsidy	0.1845
Plan Sésame	-0.3225
Free caesarean	-0.3388
Free health care for children, amount	-0.1626

	Concentration Coefficient
Other expenditure CMU	-0.2448
Subsidies	
Electricity subsidy	0.5675
Agriculture subsidy	-0.2313
All indirect subsidies	-0.0803
Cash Transfers and Pensions	
<i>Programme national de bourses de sécurité sociale (PNBSF)</i>	-0.4487
All direct transfers	-0.4325
Contributions and Taxes	
Contributions to health	0.7831
All contributions	0.7831
PIT - wage earners	0.9267
PIT - self-employed	0.9267
Taxes on wages	0.7330
All direct taxes	0.8974
VAT	0.4136
Excise on beverages	0.7002
Excise on oil and derivatives	0.4973
Excise on alcoholic beverages	0.4297
Excise on tobacco	0.3554
Excise on fatty foods	0.3367
Excise on cosmetic products	0.3255
Excise on coffee	0.2485
Excise on tea	0.1356
All indirect taxes	0.4145
All taxes	0.5423
All taxes and contributions	0.5455

Source: Based on Cabrera, Martinez-Aguilar, and Marzo (2017).