INTERNATIONAL MONETARY FUND

IMF Country Report No. 16/262

GUINEA

SELECTED ISSUES

July 2016

This Selected Issues paper on Guinea was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on July 8, 2016.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org
Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

GUINEA

SELECTED ISSUES

July 8, 2016

Approved By
Abebe Aemro Selassie

Prepared by Luisa Charry, Mathilde Perinet, Romain Bouis, Henry Mooney, and Patrick Petit

CONTENTS

DEBT, INVESTMENT AND GROWTH IN GUINEA

This paper presents the results of the application of the Debt, Investment and Growth model (Buffie et al., 2012) to the case of Guinea. The model application allows simulating the macroeconomic implications on growth, fiscal policy and debt sustainability of scaling-up of investment. A scenario analysis comparing the results under different investment paths is also presented. The results suggest that Guinea stands to benefit substantially from a scaling-up of public investment. Model-based estimates suggest that the GDP per capita benefits from the authorities PIP could stand in the vicinity of 2–4 percent. However, ensuring that the expected growth and poverty reduction gains are realized requires the implementation of an accompanying fiscal strategy to preserve macroeconomic stability.

A. Introduction

1. Guinea is contemplating a major public infrastructure program during the period 2016–21. The pillar of the Post-Ebola Recovery Plan (Table 1) of Guinea's long-term development strategy (Vision Guinea 2035) is a massive scaling-up of public investment to foster high and inclusive growth. Guinea plans to undertake a significant Public Investment Plan that envisages sizable investments on the order of 13 percent of GDP per year during the 2017–21 period. The government has prioritized the electricity sector and discussions for the construction of the Souapiti hydropower dam (450-MW) are well advanced. Funding for this ambitious program, estimated to cost USD 1.567 billion (23% of GDP) is likely to be a combination of equity and the contraction of new non-concessional debt. The government envisions also the implementation of several programs with large investments in the agriculture sector, and the rehabilitation and expansion of roads. These additional projects have not been the subject of feasibility studies, but preliminary indications put the total cost at about 4 percent of GDP per year over the next five years.

2. The planned fiscal expansion could jeopardize macroeconomic stability despite the expected growth dividends. Recent analyses based on case studies show that public investment surges are weakly associated with long-term positive growth impacts, as these tend to be beset by poor project selection, and financed by borrowing that rarely finances itself (Warner, 2014). Buffie et al. (2012) show that positive results are contingent on the country's structural conditions such as the authorities' public investment management capacity, the rate of return to public investment, and the economy's absorptive capacity. They also show how, even under optimistic assumptions on the rates of return, debt sustainability concerns can arise. One of the policy implications of these findings is the need for these strategies to be analytically supported by sound macroeconomic frameworks that adequately capture the nexus public investment and growth, illustrate the policy trade-offs, and the strategies to increase the likelihood of a successful implementation.

Table 1. Guinea: Cost and Funding of the Post-Ebola Priority Action Plan by Sector
(Millions of USD)

	Costs	
	Total	Percentage of total
Health, Nutrition and Water, Sanitation, and Hygiene for All	1584.4	61.5
Health	1176.0	45.6
Hydraulics	408.4	15.8
Governance, Peace Consolidation and Social Cohesion	119.3	4.6
Civil service and protection, territorial administration, and communication	74.8	2.9
Public funding	44.5	1.7
Education, Social and Child Protection, and Basic Services	290.2	11.3
Education	163.3	6.3
Social action	126.9	4.9
Socio-economic Revitalization	583.4	22.6
Agriculture, Livestock, fisheries, and environment	187.0	7.3
Trade and industry and ICT	214.1	8.3
Transportation	4.5	0.2
Public works	177.8	6.9
Transportation and public works	182.3	7.1
Total Costs	2577.2	100
Total Funding Obtained	812.0	31.5
Government Contribution Fund	231.7	9.0
Funding to be sought	1533.6	59.5

Source: Guinean authorities.

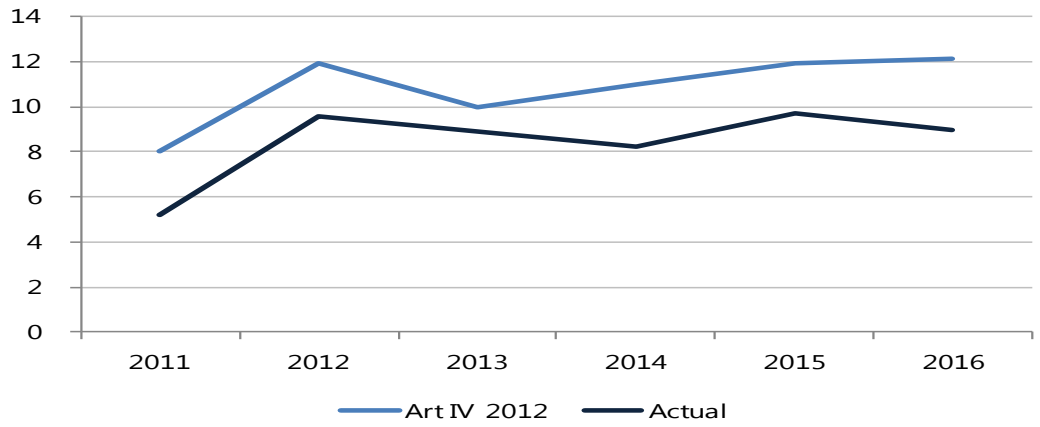
3. This paper applies to Guinea the model developed by Buffie et al. (2012) to analyze alternative public investment trajectories and their effects on growth, debt sustainability, and fiscal adjustment. The paper is organized as follows. Section B presents the elements of Guinea's PIP. Section C presents the results of the simulation of three alternative investment paths. The exercise aims at illustrating the levels of fiscal effort required under alternative financing options. Section D closes with a discussion of the importance of implementing policies to increase public investment efficiency and productivity to increase the PIP's growth dividends.

B. Public Investment in Guinea

4. Public infrastructure needs in Guinea are large and have been at the center of the government's development strategy for the past five years. Addressing Guinea's massive public infrastructure gaps was the pillar of the growth strategy to correct the impact of several decades of poor governance. Policies implemented until 2010, including by the military regime, led to economic stability, low growth, high inflation, a rapid loss of reserves, as well as dismal access to infrastructure and basic social services. With the election of President Alpha Conde in end-2010, Guinea engaged in an ECF- supported program to restore macroeconomic stability and growth. Against the backdrop of soaring commodity prices, the strategy aimed at extracting large revenue from new mining sector investments to finance the scaling up of public infrastructure and the diversification of the economy.

5. However, investment has been lower than expected. A 15 percent of GDP revenue windfall from the resolution of a long-standing dispute with Rio Tinto over the large Simandou iron-ore deposit allowed the public investment rate to increase from 5.7 percent of GDP in the 2000–11 period to 9.1 percent of GDP during 2012–15. However, limited fiscal space along with a series of shocks that buffeted the Guinean economy resulted in public investment rates lower than those anticipated, and large public infrastructure investment needs still prevail (Figure 1).[1]

Figure 1. Guinea: Public Investment in Guinea: Comparison Between the Projections of the Last Article IV (2012) and Outcomes
(Percent of GDP)



Source: Guinean authorities.

6. The government's strategy is focused on fostering economic growth, through large investment to unlock the country's considerable potential, especially in the electricity and agricultural sectors. The construction of the Souapiti dam will allow Guinea to tap its massive hydropower potential of 6,000 MW, and become a major producer and net exporter of electricity to the neighboring Senegal, Gambia and Guinea-Bissau. It will also increase local electricity supply to businesses and households. In addition, the authorities are contemplating large investments in the sector of roads to connect people and markets, agriculture to reach food security, and to rehabilitate the health sector to prevent epidemics like Ebola. The authorities expect the new investment projects to boost growth both during the construction and operation phases.

[1] Most notably the Ebola epidemic in 2014–15, and the 2015 fall in commodity prices.

7. The Souapiti hydroelectric dam is one of the authorities' key projects. An Engineering, Procurement, and Construction[2] contract has been signed in January 2016 between the Chinese company China International Water and Electric Corp. (CWE) and the Guinean Government to build the dam, which would be delivered in 2021. Under the terms of the contract, which amounts to 1.382 USD billions, 15 percent of the financing would be done by the Guinean Government in the form of equity and the remaining 85 percent would be financed through a commercial loan from EXIMBANK China.[3] The equity component would be funded from a sale of the State's stake in Kaleta (a 240-MW hydroelectric dam constructed by CWE in 2016), possibly to CWE.

8. Financing for the additional projects is also not yet secured. The main programs envisioned are to reach food security by doubling rice production mainly through the development of irrigation capabilities, rehabilitating the health infrastructure, and extending the roads network. In addition, this investment program will lead to higher current spending, including on wages, for maintenance and operations.

9. The size of the required investment could imply significant consequences for Guinea's **debt and fiscal sustainability**. Static debt sustainability analyses typically fail to account for the investment-growth nexus, which could lead to underestimating the effects of investment on growth and overestimating the effects on debt sustainability. In light of the growth benefits expected to be derived from the implementation of the Souapiti project, staff prepared a scenario analysis using the Debt, Investment & Growth model (based on Buffie et al (2012)) to assess the impact of the PIP on Guinea's debt vulnerabilities. The model captures the investment-growth link, and allows to identify the mix of debt and/or fiscal adjustment required to finance a given investment trajectory, given a path of grants and concessional debt. Key insights from the analysis indicate that for the strategy to contribute to unlock Guinea's growth potential, the program needs to be accompanied, among other factors, by (i) gradual implementation; (ii) capacity building in macroeconomic management; (iii) improved revenue mobilization; (iv) advances in budgeting, governance and PFM processes; (v) progress in structural reforms that increase public investment efficiency and economic productivity; and (vi) limited recourse to non-concessional finance.

[2] An EPC contract (*turnkey*) is a particular form of contract where the contractor is made responsible for the engineering, procurement and construction activities. When the project is completed, the contractor hands over the project to the owner.

[3] To be signed. Preliminary discussions on the terms include 20 year-maturity, 2 percent interest rate, and 5 year-grace period (grant element of 22.7 percent).

C. A Model-based Debt Sustainability Analysis: Main Features and Calibration

10. The model is a two-sector small open economy dynamic stochastic general equilibrium model. The supply-side of the economy is modeled with a traded and a non-traded sector, with both production functions including private and public capital. The government collects revenue from the consumption tax and user fees from infrastructure services, and spends on interest payments, transfers and infrastructure investments. The path of investments in public infrastructure, grants and public concessional debt are exogenously given, and derived from current macroeconomic forecasts. Transversality conditions (to identify a solution for the maximization problem) are met through a fiscal reaction function, with the consumption tax rate and transfers as instruments. The model can also be closed by allowing the path of commercial debt (domestic or external) to be endogenously determined (given values for the fiscal instruments).

11. The model captures features specific to low-income countries. First, the model takes into account the difficulties faced by low-income countries in making productive public investments. In particular, it accounts for the fact that public investments do not systematically translate into effective public capital (captured through an *efficiency* parameter s). Likewise, the impact of effective public capital on growth depends on its *rate of return*, which can vary across investment projects. In addition, countries that invest massively may also be facing *absorptive capacity issues*: large scale investments can lead to cost overruns because of coordination issues or supply bottlenecks. The model also captures some of the dynamics of credit-constrained economies by including optimizing and *hand-to-mouth* consumers and limited access to international markets. Finally, the model can simulate the effects of various shocks that may affect low-income countries such as terms of trade shocks, as well as shocks to risk premiums and total factor productivity.

12. The model's parameters and key macroeconomic ratios are chosen to replicate as close as possible the main features of the Guinean economy (Table 2). Macroeconomic indicators (debt ratios, public infrastructure investment to GDP ratios) are reported for 2016 (first recovery year after the Ebola outbreak). We discuss below the rationale behind some of the key parameters in the calibration:

- The *ratio of non-savers to savers* is fixed at 1.2, on the basis of the Financial Inclusion Database, which report that 45.2 percent of the population aged 15+ saved in the past year.
- The values for the *capital's share in value added in the traded and non-traded sectors* (α_x and α_y) are those of Buffie et al. (2012). These parameters were estimated from the matrices assembled by the Global Trade Analysis Project and the International Food Policy Research Institute. For Sub-Saharan African (SSA) countries, the GTAP database leads to a capital share of around 55–60 percent for the non-tradable sector, and 35–40 for the tradable sector.

- The value of the *rate of return on infrastructure* (R) is set at 30 percent. Dalgaard and Hansen's (2005) macro-based estimations suggest rate of returns between 15 and 30 percent. We opt for the upper limit of the estimates given Guinea's low initial capital stock levels. It takes into account the direct and indirect effects that the Souapiti project will have on businesses' production, profitability, and investment.
- The efficiency of public investment (*s*) and the efficiency of public investment at the steady state (*s_bar*) are fixed at 30 percent. The concept of efficiency refers to the extent to which an increase in public investment translated into public capital (*s bar* is associated with the efficiency of steady-state public investment whereas *s* is associated to the efficiency of the investment surge). Pritchett (2000) estimates the efficiency of investment to be between 0.08 and 0.49 in Sub-Saharan countries. We opt for a value of 30 percent given Guinea's fragile status.
- The *user fees for infrastructure services* (μ) are calculated as a share of recurrent costs, set at 50 percent based on Briceno-Garmendia et al. (2008) estimates for SSA countries.

Table 2. Guinea: Calibration Parameters

Parameter Description	Parameter value (in Percent)
Sensitivity Analysis	
Initial return on infrastructure investment	30.0
Efficiency of public infrastructure investment	30.0
Steady state efficiency of public infrastructure investment	30.0
User fees for infrastructure services (% of recurrent costs)	50.0
Consumption tax rate (VAT) ceiling	24.0
Country Specific Values	
Public infrastructure investment to GDP ratio	8.9
Consumption tax rate (VAT)	20.0
Public domestic debt to GDP ratio	20.8
Public concessional debt to GDP ratio	27.6
Public external commercial debt to GDP ratio	0.6
Grants to GDP ratio	3.6
Oil revenues to GDP ratio	0.0
Remittances to GDP ratio	1.5
Private external debt to GDP ratio	0.0
Real interest rate on public domestic debt	5.0
Real interest rate on public external commercial debt	6.0
Country Specific Parameters	
Trend per capita growth rate	1.6
Imports to GDP ratio	35.8
NS/S - Labor ratio of Non-Savers(NS) to Savers(S)	1.2
Capital's share in value added in the Traded sector	40.0
Capital's share in value added in the Non-Traded sector	55.0
Absorptive capacity	0.0

D. Scenario Analysis

Unconstrained Tax Adjustment

13. Three alternative scenarios are simulated. A baseline scenario, under which the public investment rate is kept constant at current levels (9 percent of GDP) in the short –run and decreases over time, a first alternative scenario that incorporates the additional investments required for the construction of Souapiti (Alt-Souapiti) that takes the public investment rate to 15 percent during 2017–21, and a second alternative scenario that includes all the public investments foreseen under the Post-Ebola Recovery plan (public investment rate of 16 percent during the scaling-up period and permanently higher onwards), including the construction of Souapiti. In the three cases, the consumption tax rate is allowed to adjust to close any financing gaps arising from the implementation of the investment program (i.e. debt is exogenously determined). Across all three scenarios, the path of concessional debt and grants are assumed to be identical.

14. The expected growth dividends would be significant (Figure 3). Real GDP per capita would be higher by 1.5 to 2.5 percent in the next five years. Over the medium-term, the average GDP growth rate would be of 1.48 and 1.63 percent for the first and second alternative scenarios, against 1.40 for the baseline (Table 3). Furthermore, under the baseline scenario some "crowding-in" of public investment could be possible as the increased savings would allow an increase in the private investment rate.

15. However, in the short to medium-term a large fiscal adjustment would be required to finance the increased investment. Given the paths for debt and grant financing, the consumption tax rate would have to increase from 20 percent in the baseline scenario to 28–30 percent in the alternative scenarios.[4,5] This increase would be also accompanied by lower private consumption and investment (crowding out effects). Furthermore, such a large increase in the tax rate would prove much difficult to implement.

Debt Financing

16. The fiscal adjustment required would still be large under alternative financing structures. Figure 4 presents the results if the increase in the tax rate is capped at 25 percent (still a large adjustment) and the difference is funded with additional external commercial debt. In this set-up, the growth dividends would be larger (3–3.5 percent increase in per capita GDP under the alternative scenarios), as tapping external savings would prevent the fiscal expansion

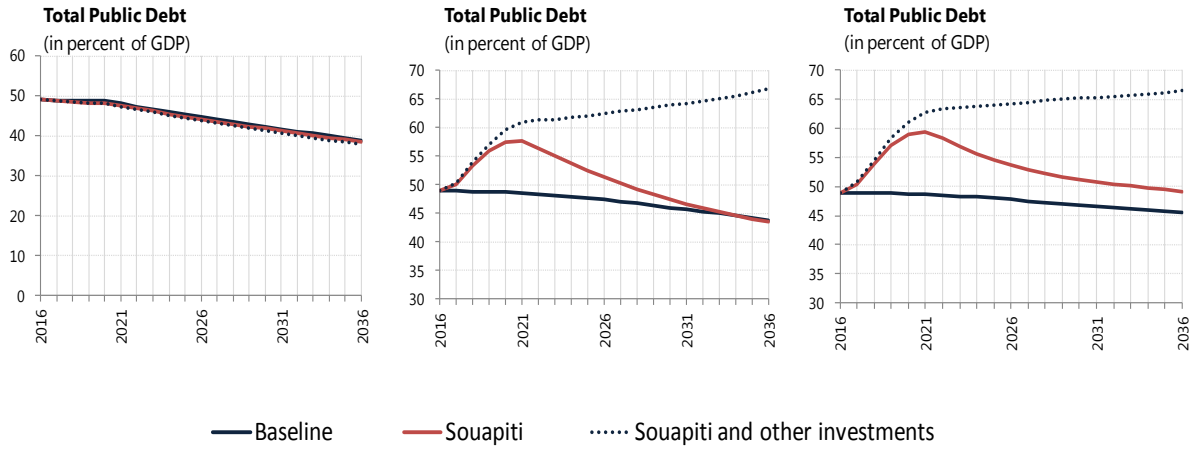
[4] The increase in the tax rate in the baseline scenario after 2020 would be required to cover the lower access to concessional debt.

[5] Note that the model is not set-up to capture the equity component of the Souapiti financing, which would suggest an overestimation of the tax adjustment required.

to crowd out the private sector. However, debt sustainability concerns might arise: just the implementation of Souapiti would be accompanied by an increase in the debt to GDP ratio to 60 percent of GDP in the short-run, increasing Guinea's vulnerability to external shocks. Meanwhile, sustaining a permanently higher investment rate would risk placing the country in an unsustainable debt path (Figure 2). On the other hand, a funding strategy relying on domestic debt would still result in an increase in the debt vulnerabilities while lowering the growth dividends, as a result of the crowding-out effects (Figure 5).

Figure 2. Guinea: Total Public Debt Across Scenarios

a) Unconstrained Tax Adjustment, b) Commercial debt and c) Domestic Debt



On the Role of Structural Factors

17. A third line of analysis illustrates the role that structural factors play in determining the success of public investment surges by analyzing the sensitivity of the simulations to changes in the investment efficiency parameter: an increase in the efficiency coefficient from 0.3 to 0.6 (equal to the average for a Sub-Saharan Low Income country) in the baseline scenario leads to higher output gains (GDP per capita growth would reach 3.2 in the short-run), higher private consumption and investment, and reduces the burden on tax adjustment (Figure 6 and Table 3). We then also increase the rates of return of investment, in this case from 30 percent to 50 percent (arguably a very optimistic assumption) as well as the user fees from 50 to 85%. Again, while the impact on GDP, private consumption and investment are positive, the fiscal adjustment remains significant, illustrating the challenges in project prioritization (choosing only those with the highest expected social return levels).

Box 1. Guinea: Enhancing the Efficiency of Public Investment

Public investment supports the provision of social and economic infrastructure and can boost economic growth. As shown in the theoretical and empirical literature, the economic dividends depend on the efficiency of investments (Chakraborty and Dabla-Norris, 2009; Gupta et al. 2014). In particular, Warner (2014) shows that investment booms can have a limited impact of growth because of weak project appraisal, selection and management procedures. For countries at the lowest quartile in public investment efficiency, jumping to the highest quartile would double the impact of their investment on growth (IMF, 2015).

The efficiency of public investment depends on Public Investment Management Practices (PIM), which includes a large range of characteristics from three main categories. A good planning of investment levels is crucial to ensure the fiscal sustainability and establish priorities across projects. The proper allocation of spending requires transparent multi-year budgeting, clear and competitive project appraisal and selections. As a final step, the implementation of the investment project in a timely manner, with a transparent budget execution while avoiding cost overruns is also crucial. In addition, putting in place ex-post audit procedures increases incentives for sound appraisal, selection, and implementation stages.

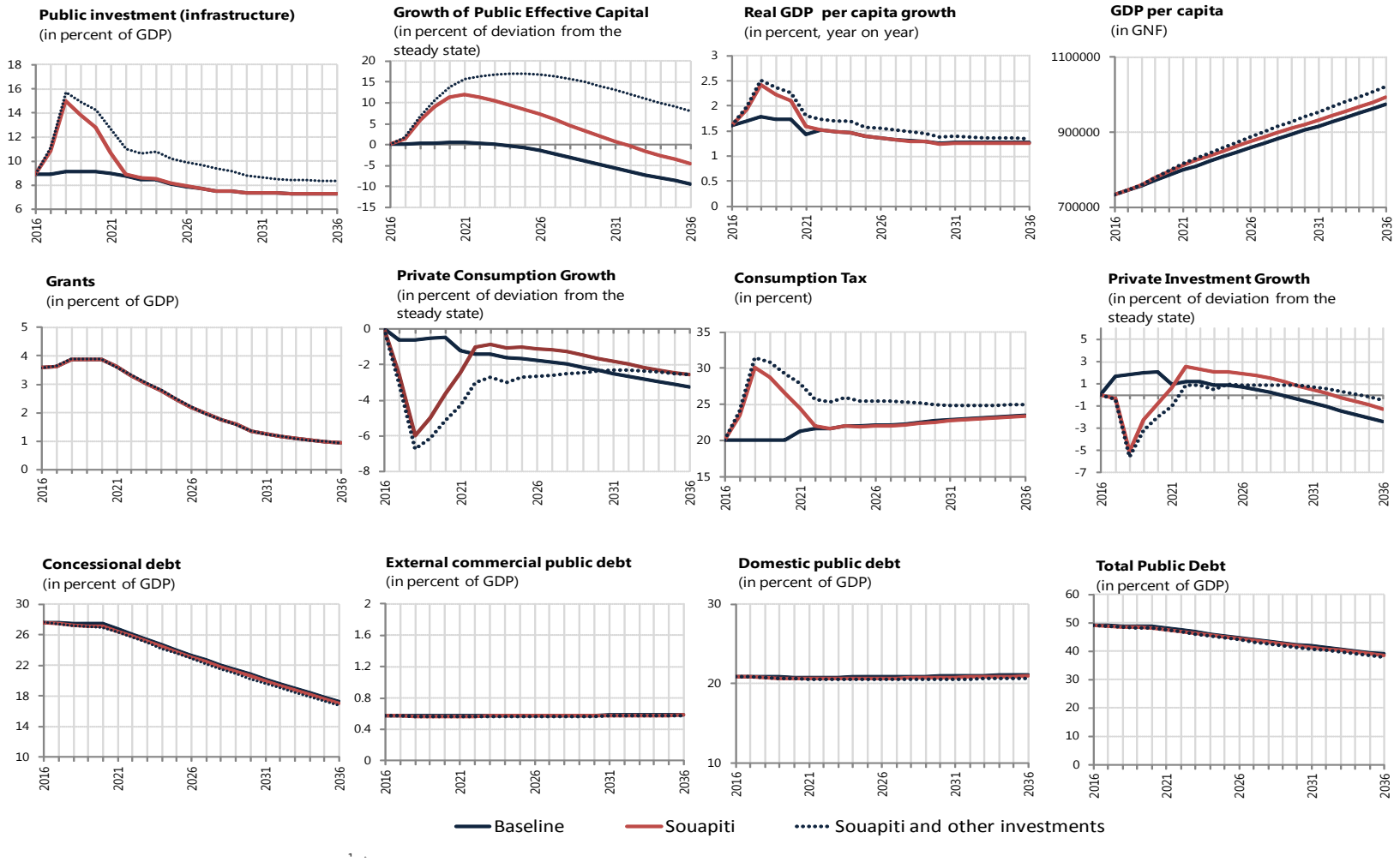
Guinea would benefit from an improvement in all aspects of Public Investment Management. Guinea is facing difficulties in its medium-term budgeting and planning process. Therefore, improvements could be done in investment selection, prioritization of projects, and estimates of the feasibility and the projected expenditures for each project. Advances in these areas would prevent rent seeking behaviour and cost overruns.

Table 3. Guinea: Growth and Private Investment Dividends from Different Investment and Financing Options

	Growth Dividend	Private Investment
Unconstrained Tax Adjustment		
Baseline	1.40	0.10
Alternative Scenario 1	1.48	0.30
with higher efficiency of investment (s and s bar at 0.6)	1.50	1.74
with higher efficiency of investment (s and s bar at 0.6) and higher rate of return, and higher user fees	1.62	5.03
Alternative Scenario 2	1.63	-0.21
Tax Adjustment and External Commercial Debt		
Baseline	1.41	0.47
Alternative Scenario 1	1.47	0.68
Alternative Scenario 2	1.70	2.15
Tax Adjustment and Domestic Debt		
Baseline	1.38	-0.49
Alternative Scenario 1	1.46	-0.64
Alternative Scenario 2	1.54	-2.96

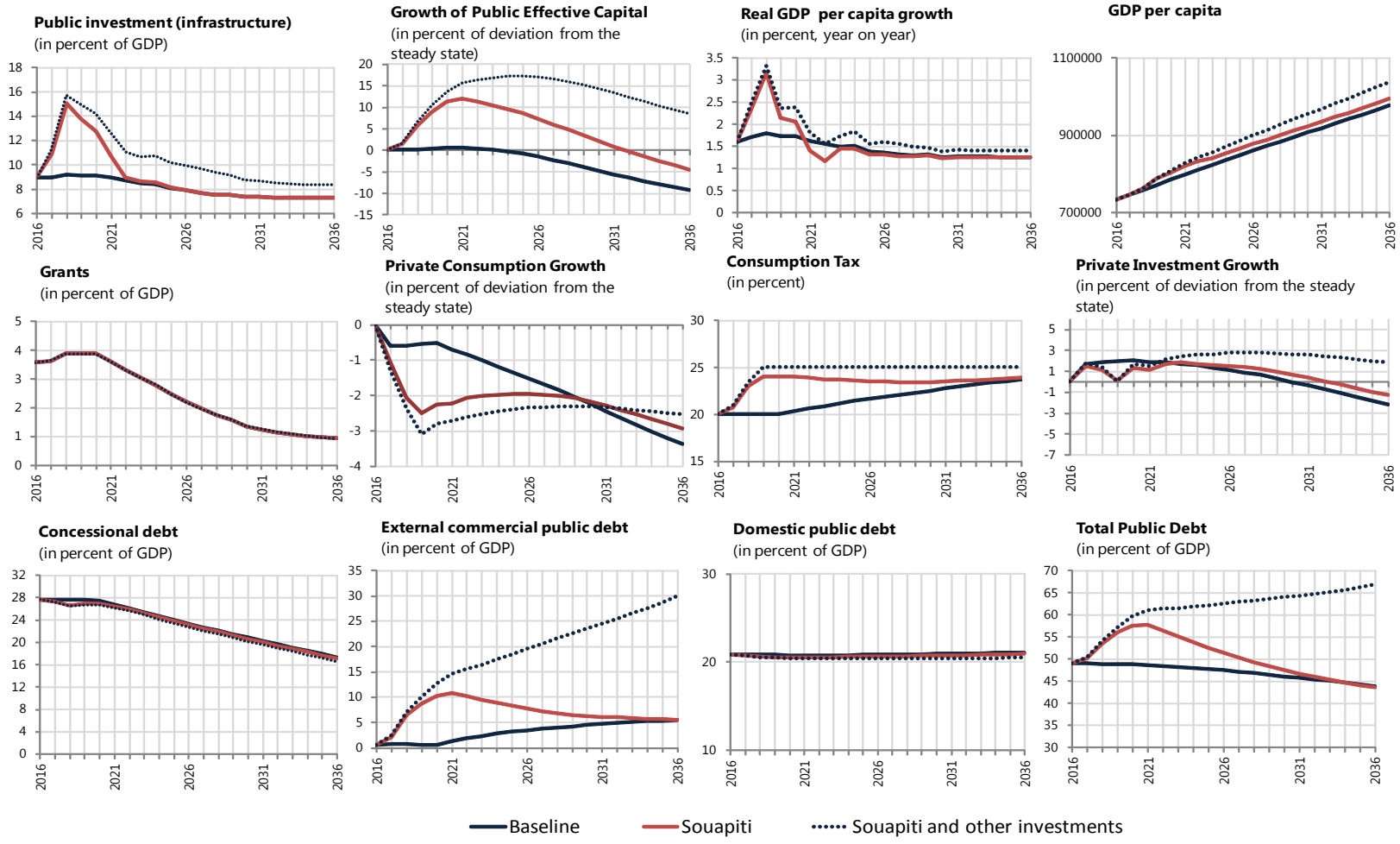
Note: the growth dividend is measured as the average growth rate of the real GDP per capita from 2018 (investment peak) to 2036; the 'consumption' and 'private investment' columns measure the average growth rates in consumption and private investment over the same period.
Source: Authors' calculations

Figure 3. Guinea: Unconstrained Tax Adjustment



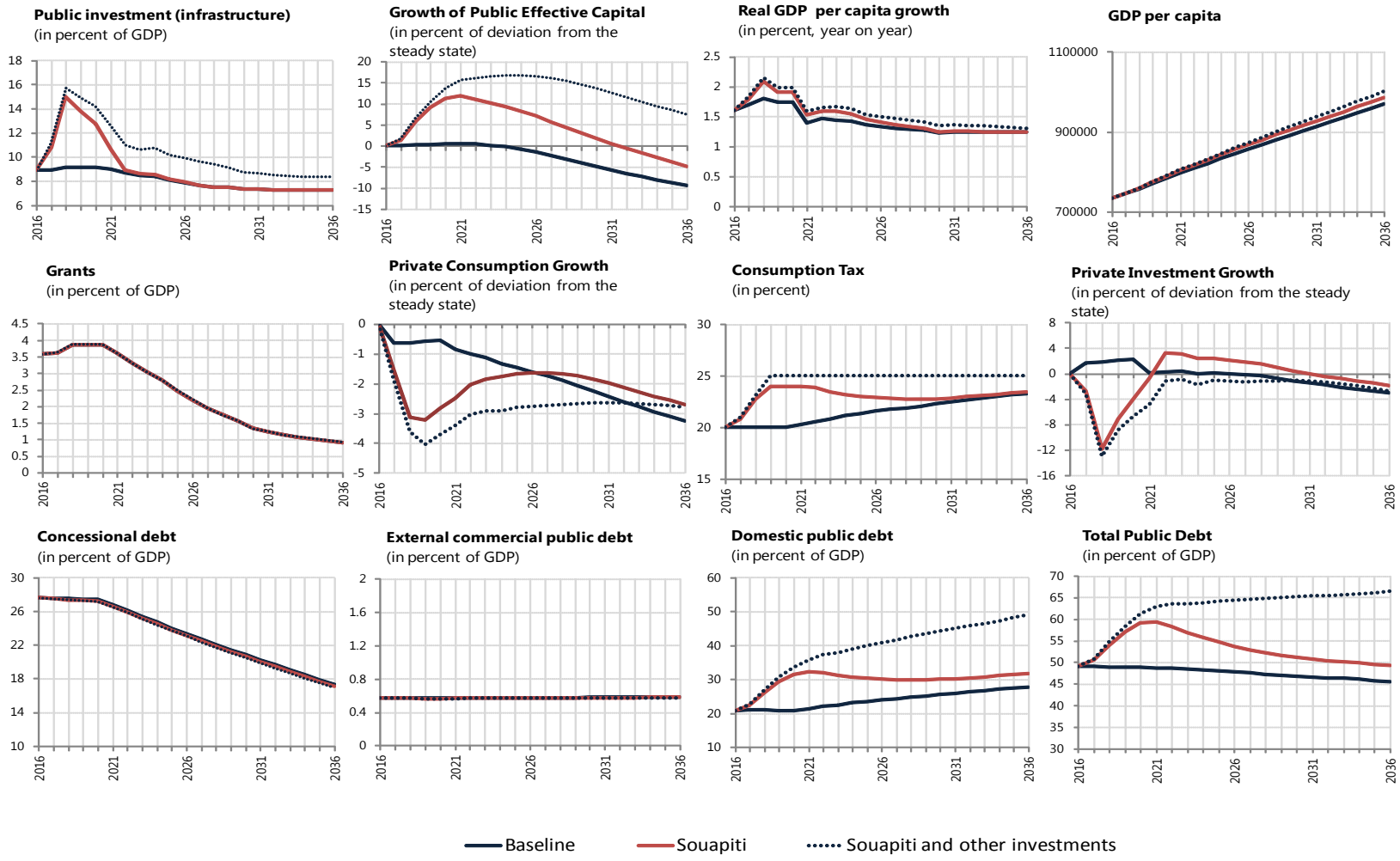
Source: Authors' calculations.

Figure 4. Guinea: Tax Adjustment and External Commercial Debt



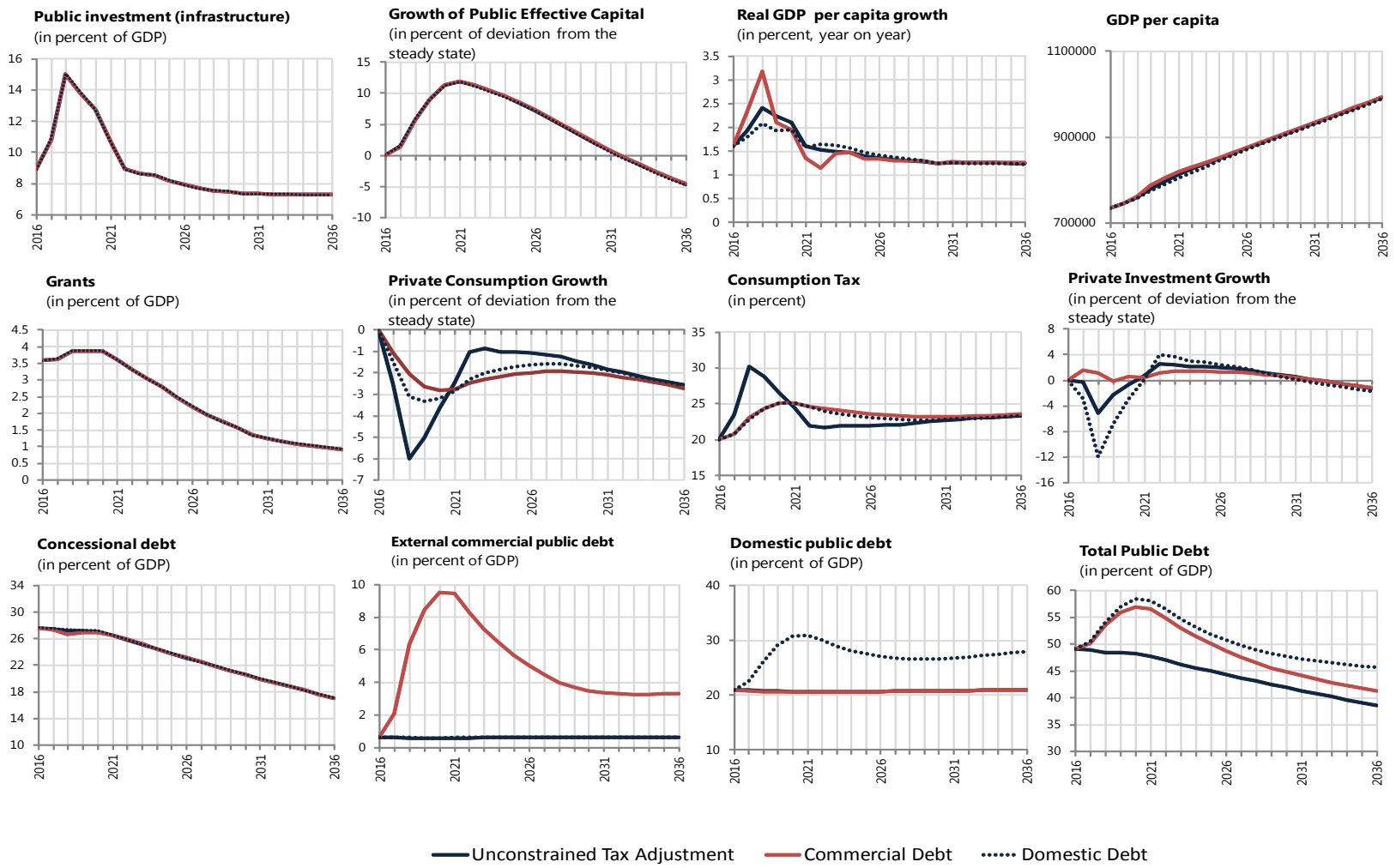
Source: Authors' calculations.

Figure 5. Guinea: Tax Adjustment and Domestic Debt



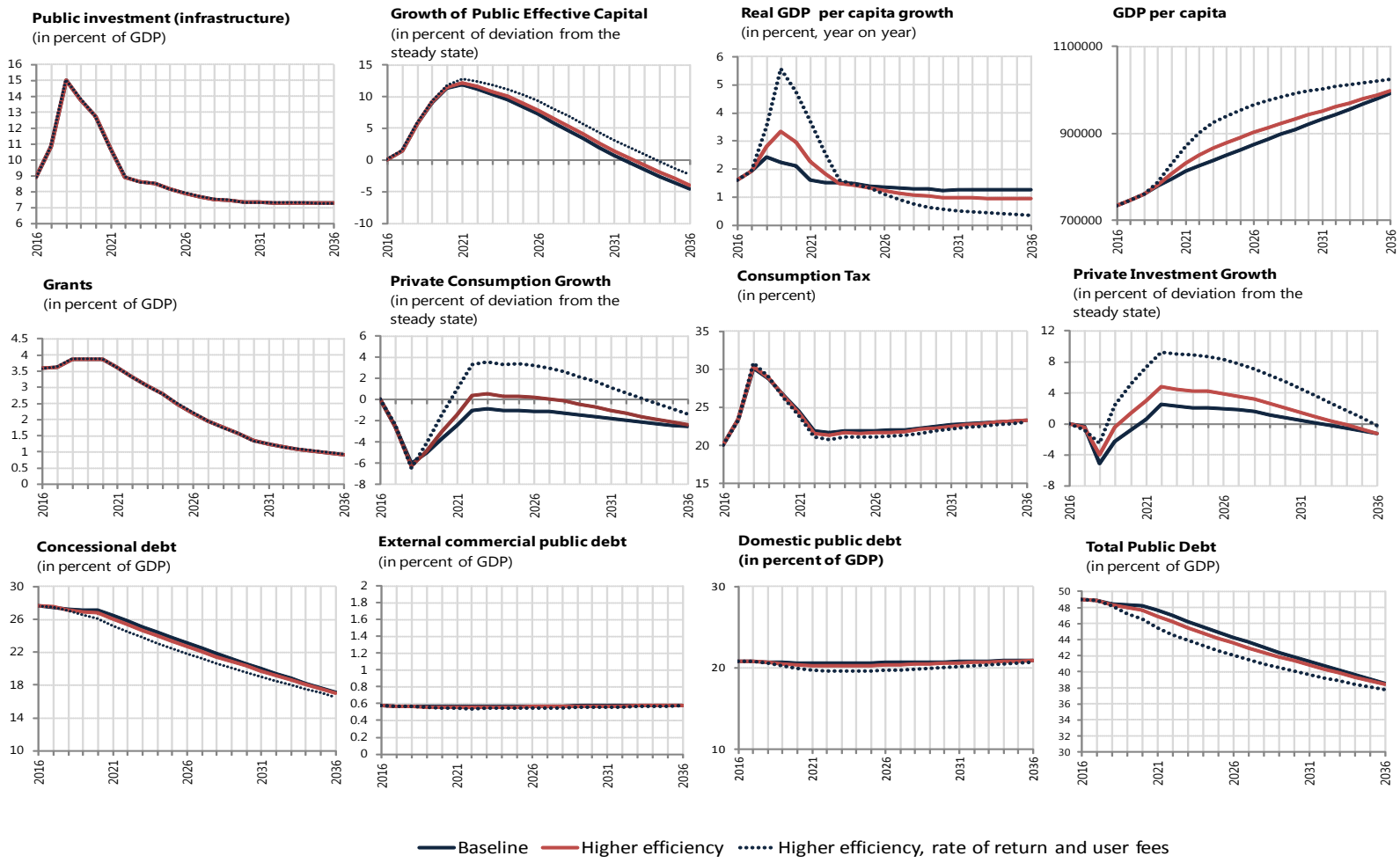
Source: Authors' calculations.

Figure 6. Guinea: First Alternative Scenario Under Different Financing Options



Source: Authors' calculations.

Figure 7. Guinea: The Importance of Structural Factors



Source: Authors' calculations.

E. The Elements of a Fiscal Adjustment Strategy

18. Results from the scenario analysis suggest the need to build fiscal space to free resources to finance investment. The key elements of a sensible fiscal strategy that ensures the projected scaling up of infrastructure investment does not compromise fiscal sustainability include: (i) effective revenue mobilization; (ii) advancing the fiscal reform agenda to better execute spending through the adoption of a Medium Term Budgeting Framework (MTBF) and further advances in Public Financial Management (PFM) reform; and (iii) continued reliance on concessional financing.

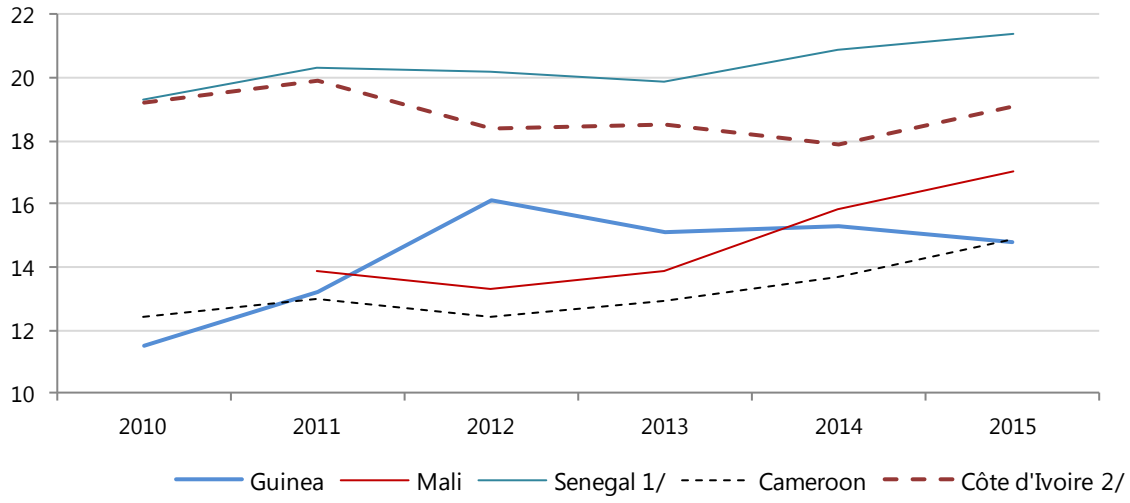
Pillar I. Policies to Improve Revenue Mobilization

19. Mobilizing domestic non-resource revenue could perhaps be the single most important public finance challenge in Guinea in the next decade. After some progress up to 2012, non-mining revenue regressed significantly in 2013 and has more or less remained constant at around 15 percent of GDP since then (Figure 8). This stands in sharp contrast with the performance of comparable countries. For example, in Senegal tax revenue was on average 6 percent of GDP higher than in Guinea during 2010–15, of which 30 percent for direct income taxes alone. Mali and Cameroon, which both started at lower levels than Guinea have now caught up.

20. A tax revenue assessment[6] shows that Guinea's tax potential could reach 3–5 percent of GDP. Tightening the control of the commercial tax base will be a crucial element to tapping this potential. Available information suggests that over ¾ of commercial imports crossing the border (and on which duties are paid) do not show up in turnovers declared to the Tax Department, pointing to a large under-declaration of sales and likely distribution through informal and/or undeclared channels. Advances in taxpayer identification, information collection and strengthening of the audit procedures would improve tax compliance. Income taxes will need to be simplified and expanded to new taxpayers and the rates and thresholds will need to be revised to increase revenue and correct the imbalances introduced in 2011. Excises will need to be streamlined and revised upwards, and fuel taxes increased and stabilized through a specific duty within a price structure that automatically adjusts to international prices. Selected additional revisions to mining conventions could be undertaken and the new mechanisms on transfer prices properly implemented. A rapid roll-out of real estate taxation and a gradual elimination of tax exemptions should also be considered.

[6] IMF, 2015, "Revenue Needs, Tax Potential and Revenue Mobilization in Guinea".

Figure 8. Guinea: Non-resource Revenue (Excluding Grants)
(Percent of GDP)



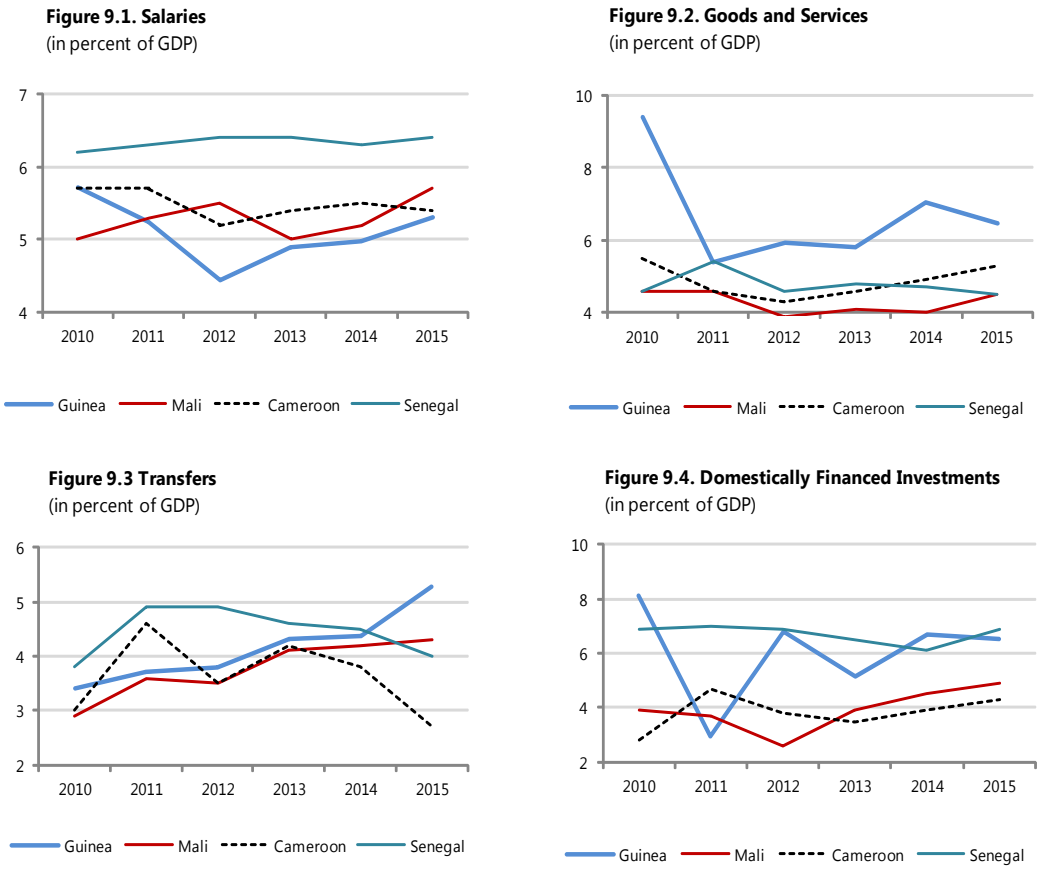
1/ Includes some revenue from the mining sector.
2/ Includes up to 1.8 percent of GDP in oil revenue.

Source: IMF Staff calculations.

Pillar II. Strengthening Fiscal Institutions

21. Budget execution in Guinea has been characterized by a stop-and-go pattern in the past years, reflecting the volatility of revenue and credit constraints, in which domestically-financed investment has played an adjustor role. All major expenditure categories (as a share of GDP) display higher volatility in Guinea than in comparable countries. In particular, domestically-financed investments have shown considerably higher volatility, reflecting the continued use of this line to keep the budget within the available financing envelope and limiting the contribution of fiscal policy to sustain economic growth (Figure 9).

Figure 9. Guinea and Comparable Countries: Recent Evolution of Main Expenditure Items
(Percent of GDP)



Sources: Guinean authorities; and IMF Staff calculations.

22. Implementing a MTBF will help authorities to better manage the budget, and improve its contribution to growth, by stabilizing expenditure levels. In general terms, a MTBF is mainly anchored on revenue forecasts derived from a consensual macroeconomic forecast and strategic spending priorities drawn from the Poverty Reduction Strategies and other high-level development programs. This double anchor ensures that the level of planned expenditures is consistent with available financing, and that their composition is aligned with national priorities. These anchors also help broaden the legitimacy of the budget and budget processes beyond the realm of short-term politics by relying on a wider social consensus to counterbalance proponents of self-interested opportunistic deviations.

23. Adoption of an MTBF would dovetail with and strengthen many other necessary expenditure management initiatives. A major goal of these initiatives should be to stabilize the evolution of main expenditure aggregates (see Figure 9) and free up resources that can be better used to spur growth. Key initiatives should include:

- *Wages and Salaries*: (1) Maintain the efforts to purge the payroll from ghost workers; (2) Implement a full review of existing posts in order to gradually streamline or reallocate non-necessary excess capacity; (3) Review the (now annual) wage settlement processes with unions; (4) Standardize and make more transparent the many types of remuneration (*primes de craie*, etc.); (5) Gradually expand staff in the health and education sectors (in line with the PRS).
- *Transfers and subsidies*: (1) Agree with EDG on a multiyear plan to phase out subsidies and raise electricity tariffs in the short to medium term; (2) Review subsidies policies to other sectors, such as higher education, which might be regressive.
- *Investments*: (1) Adopt a multiyear investment framework in which projects are selected and prioritized based on cost-benefit analyses in line with the PRS, and implement transparent evaluation processes to evaluate construction timelines and costs; (2) Identify financing (domestic vs. foreign) and international partners for key projects; (3) Perform ex-post evaluations.

24. Effective revenue mobilization, adoption of a MTBF along with sustained advances in PFM could help identify additional external support. Most traditional donors have very stringent accountability frameworks and need to report on the use of aid resources. For this reason, they are more likely to participate and engage through sustainable long-term commitments if they understand the authorities' expenditure strategy and value efforts to increase own-revenues. Inviting donors to participate in the elaboration of the MTBF would further strengthen their resolve and create the atmosphere of trust necessary to implement longer term financing agreements and financial commitments.

25. Strengthening Public Investment Management (PIM) institutions will improve the rates of return of the planned investments. Yields from improving investment execution processes could be as high as 40 percent.[7] Guinea's capital budgeting process suffers from lack of coordination among ministries, there is no mechanism to prioritize the various investment projects, and the investment budget has typically borne the weight of fiscal adjustments. The investment program should include clear selection criteria based on cost-based analysis framework aligned with the development strategy. Allowing some carryover of appropriations, when feasible, could help protect priority investments from short-term pressures. Authorities agreed in principle with the policy proposals, stressed that in the short term the Souapiti project was the priority, and that in the medium term other measures (such as the introduction of a MTBF) could be considered for a second round of reforms.

[7] IMF (2015), "Making Public Investment More Efficient".

26. Authorities should also explore new financing vehicles, such as Public-Private Partnerships (PPP), with caveats.[8] These agreements can carry significant fiscal risks through the issuance of contingent. Annual payments or user fees could depend to the terms of financing obtained by the private party, in which case authorities and/or users would be exposed to international interest rate and exchange risks. Maintenance and repair costs could also eschew to the government if damages were related to political instability or natural disasters. For these reasons, a scrupulous analysis of PPP terms is necessary.

27. Continued reliance on concessional financing, and efforts to improve management of debt, contingent liabilities and PPPs would help contain the buildup of debt vulnerabilities. While Guinea continues to face a moderate risk of external debt distress, short term vulnerabilities have increased significantly.[9] It will be important to carefully monitor the accumulation of new debt to avoid a rapid increase in the burden of debt service given limited budget flexibility and the need to preserve priority spending. A better coordination and management of debt is also warranted.

F. Concluding Remarks

28. Guinea stands to benefit substantially from a scaling-up of public investment. Increased capital in the energy, transport, health and education are a critical priority to unlocking Guinea's long-term potential and improving resilience. Model-based estimates suggest that the GDP per capita benefits from the authorities PIP could stand in the vicinity of 2–4 percent. However, ensuring that the expected growth and poverty reduction gains are realized requires the implementation of an accompanying fiscal strategy to preserve macroeconomic stability.

29. The strategy to build up fiscal space should be all-encompassing. Revenue mobilization will be essential to sustaining increased public investment rates, and closing tax revenue gaps could yield additional resources for up to 5 percent of GDP. Savings in the current spending budget can also free space to finance investment. Significantly improving PFM processes would contribute to unlock donor support while strengthening PIM institutions will improve the rates of return of the planned investments. Continued reliance on concessional financing, and efforts to improve management of debt, contingent liabilities and PPPs would also help contain the buildup of debt vulnerabilities

[8] A typical PPP involves the financing, construction and operation of a public asset (e.g., a road) by a private partner who is then compensated by users of the assets or by direct payments from the government. The asset is handed over to the government at the end of pre-determined period. PPPs can thus avoid directly increasing the debt and help circumvent liquidity constraints.

[9] See EBS 16/14.

REVENUE NEEDS, TAX POTENTIAL AND REVENUE MOBILIZATION IN GUINEA

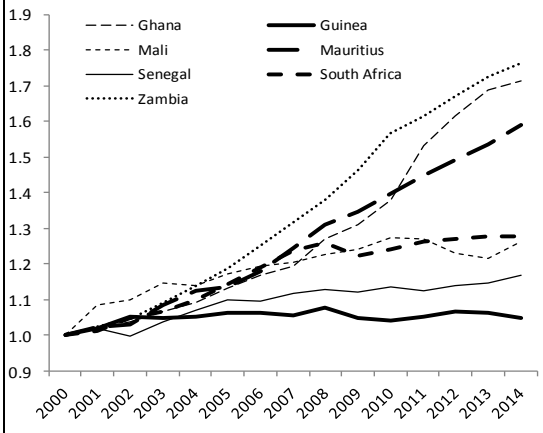
A. Introduction

1. The Guinean authorities intend to significantly increase public investments in the coming years in order to boost growth. However, given the limited capacity to raise debt and foreign aid, domestic resource mobilization will be a central part of the growth strategy. What are the financing needs of an infrastructure program capable of lifting Guinea's growth rate? Can authorities meet these needs with additional domestic revenue and if so, to what extent? This note estimates the tax potential of the Guinean economy in order to identify realistic revenue objectives, guide the authorities in their effort to improve the tax system, and finance their growth strategy.

B. Determing the Revenue Target

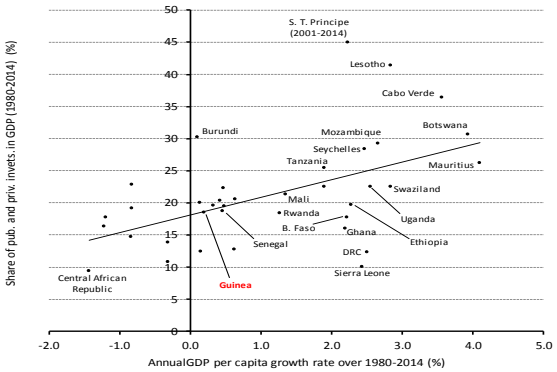
2. Income per capita in Guinea has not progressed in the past 15 years (Figure 1). Boosting growth will demand significant private and public investments, but Guinea's performance on that count has been disappointing: with an average of 18.5 percent of GDP in total investment between 1990 and 2014 (Figure 2), Guinea is well below best-performing African countries (Mauritius, Botswana, Mozambique, etc.).

Figure 1. Guinea: GDP per Capita in Selected Sub-Saharan Countries, 2000–14 1/



Source: WEO.
1/ 2000 = 1. Based on inflation-adjusted national currency.

Figure 2. Guinea: Investment and Growth in Sub-Saharan Africa 1/

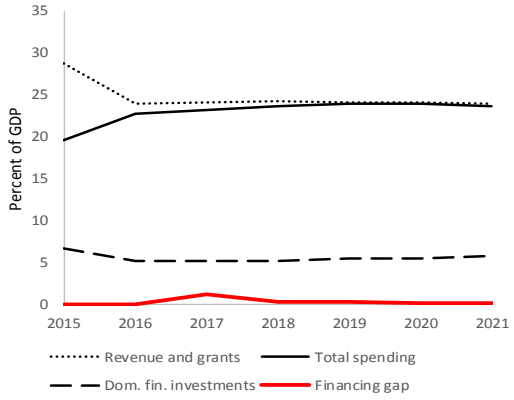


Sources: WEO; and IMF staff calculations.
1/ Excludes oil producers and Zimbabwe. Using all available data for each country.

3. Based on Figure 2, Guinea would need to sustainably increase overall investment by roughly 7 to 8 percent of GDP in order to reach average per capita growth rate of about 3.0 percent, and by roughly 10 percent of GDP to catch up with the best African performers and enjoy annual per capita GDP growth rate of 4 to 5 percent (i.e., enough to double income per capita in about 15 years). This would probably require a minimum increase of 5 percent of GDP in public investment.[1]

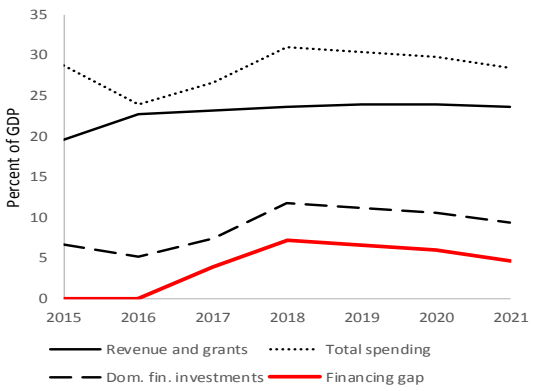
4. Such a performance and ensuing revenue needs would dovetail with plans discussed with the authorities during the 2016 Article IV mission. The Souapiti dam, significant increases in public infrastructure spending, irrigation projects, higher spending on education and health infrastructure and ensuing outlays in goods and services, personnel and transfers outlined in the mission's alternative scenario would generate additional public investments of 6.5 percent of GDP by 2018, plus an additional 0.4 percent additional spending in personnel, goods and services, and transfers in the same year (Figures 3 and 4). The financing gap however would swell from almost nil in 2016 to 7.2 percent of GDP in 2018, before stabilizing between 3 and 4 percent of GDP in the long run, for average financing needs of about 5 percent over the medium term.[2]

Figure 3. Guinea: Base Scenario



Source: IMF staff calculations.

Figure 4. Guinea: Alternative Scenario



Source: IMF calculations.

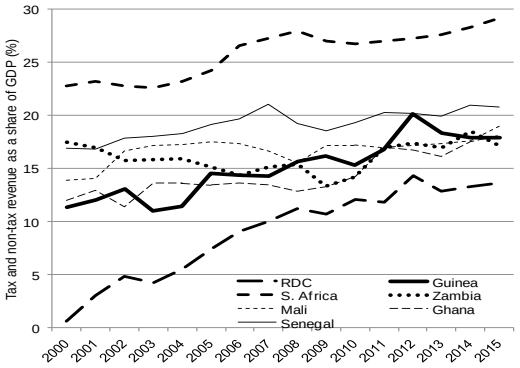
[1] Nearly two-thirds of current overall investments in Guinea come from the private sector, a fifth from the national budget, and the remaining from foreign aid (based on 2011-2013 averages). Keeping these proportions and assuming a 10 percent of GDP increase in public and private investments would represent a 2 percent of GDP increase in budget-financed public investments, a 6.3 percent of GDP increase in private investment and 1.7 percent of GDP increase in foreign-financed projects. This is not realistic, as the conditions for such large increases in private and foreign-financed investments are not met, and as a result, domestically-funded investments would probably need to increase by a minimum of 5 percent of GDP so that overall investment and growth reach the level of best African performers.

[2] These figures take into account the reduced transfers to *Électricité de Guinée* following the introduction of Souapiti.

C. Guinea's Recent Revenue Performance

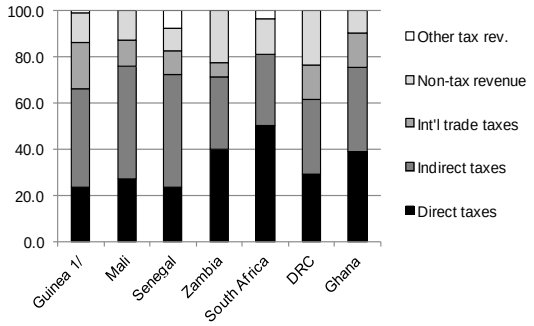
5. Compared to other African mining and/or neighboring countries, Guinea's revenue performance has been relatively good, increasing from 11.4 to 17.9 percent of GDP from 2000 to 2015 (Figure 5). Yet, this represents a progress of merely 0.4 percent of GDP per year and at that pace, it would take 13 years to reach the target mentioned above. A significant and immediate effort is therefore needed to change the course of the revenue collection effort. Guinea's tax structure provides some indications on potential sources of additional revenue (Figure 6). The country is heavily reliant on international trade as well as indirect taxes, two thirds of which are collected at the border (e.g., VAT, fuel taxes, etc.). In contrast, direct taxes are less important than in other mining countries, including Mali and DRC.

Figure 5. Guinea: Tax and Non-tax Revenue in a Selection of African Countries



Source: Authorities, IMF staff calculations.
1/ 2015 is projected data.

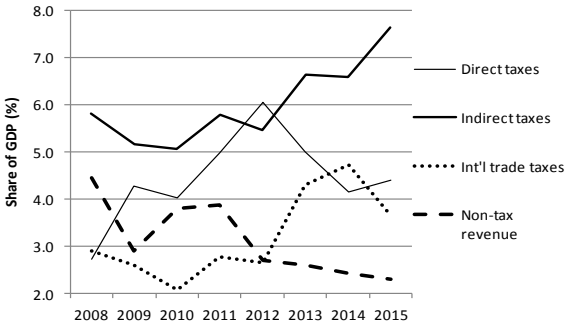
Figure 6. Guinea: Tax Structure in Guinea and Comparable Countries



Sources: Authorities; and IMF staff calculations.
1/ Mining revenue were allocated to Direct and Non-tax revenue to improve comparability.

6. Worryingly, this situation is not improving. Between 2008 and 2014, the performance of indirect taxes has markedly improved, and that of international trade taxes moderately so, while direct taxes had a very mixed performance and non-tax revenue fell. Again, given that most of the international trade and indirect taxes are collected at the border, it is clear that control of the domestic tax base is problematic. This also reflects the weakening commodity prices, which affect main direct taxes (corporate income tax) and non-tax revenue (royalties).

Figure 7. Guinea: Evolution of the Tax Structure 1/



Sources: Authorities; and IMF staff calculations.
1/ Mining revenue were allocated to Direct and Non-tax revenue to improve comparability.

D. Revenue Mobilization and the Tax Potential in Guinea

7. Can Guinea increase its Revenue-to-GDP ratio by at least 5 percent of GDP in the medium term? This depends on the extent to which it already uses its tax potential. In this section, we discuss the determinants of the tax potential and estimate it for Guinea, with available data.

Determining the tax potential: a brief overview of the literature

8. The tax potential depends mainly on the size of the economy and on the capacity of the authorities to access different tax bases at a reasonable cost and without jeopardizing the population's basic needs. There is no easy way to determine the tax potential, but the literature generally tends to proceed through international comparisons, taking into account a host of differences between countries: taking all relevant characteristics into account, if a country has a lower tax-to-GDP ratio than another one with the same characteristics, it is assumed that it could improve its performance to at least the same level as the comparator country. An econometric relationship is therefore established between various measures of tax-to-GDP (i.e., total tax, VAT, income tax, etc.) and what is considered to be a complete set of relevant factors. Fitted (estimated) values based on regression estimates are then used to estimate the tax potential and the difference between actual and fitted values can provide objectives for revenue mobilization.

9. Bahl (1971) provides a good description of the early literature on the tax potential, while Stotsky and WoldeMariam (1997), Sen Gupta (1997), Teera and Hudson (2004), and more recently Le et al. (2008 and 2012), Thomas and Treviño (2013), and Khwaja and Iyer (2014) together provide a good overview of more recent developments. The focus of the literature has shifted in time. It was for example initially concerned with development issues such as the relationship between tax levels, tax structure and income in the development process, and more recently with the distinction between tax potential and tax effort or with specific issues, such as the impact of corruption and governance on tax levels. However, in the process of studying tax levels, all contributions are recurrently concerned with finding a complete set of explanatory factors as well as with econometric issues. Indeed, given the absence of a strong theoretical framework to describe the relationship between tax potential (or tax structure) and various socio-economic, political or geographic factors, *ad hoc* rationales are proposed to include certain factors, leaving it to empirical work to accept or reject them. In general, the following factors are considered:

Table 1. Guinea: Main Explanatory Factors Considered in the Literature	
Factor	**Rationale**
GDP per capita	Higher income past a certain threshold necessary for survival should be associated with more available resources that can be taxed.
Share of agriculture in the GDP/ industrial structure	An important agricultural sector is often associated with low level of development and subsistence agriculture, which together do not offer much scope for taxation.
Openness to international trade	International trade often transits through specific channels (ports, airports, roads) that provide specific points at which economic activity can be easily taxed.
Presence of natural resources	On one hand, mineral (oil, mining) and forest resources can be seen as "gifts of nature" that can be taxed over and beyond economic activity also present in other countries. On the other hand, they also represent an easy source of revenue and could provide a disincentive to raising non-resource revenue.
Importance of international aid	International aid can provide a disincentive to raise own revenue since resources are more easily available with foreign donors.
Debt-to-GDP ratio	A high debt can represent a very binding constraint that can be addressed in the long run solely with additional domestic resources.
Gvt. investment-to-GDP ratio	Heavy official investment programs can demand significant resources, hence recourse to tax and non-tax resources.
Urban density	A highly concentrated population is associated with higher income levels, but also with lower collection costs.
Whether the country is landlocked	Landlocked countries can be seen as less open to trade and less developed.

Econometric issues are mainly about problems arising from the data at hand. The use of panel data techniques (e.g., fixed vs non-fixed effects, structure of error terms etc.), lag structures, colinearity between regressors, and other data-driven issues have been addressed in various ways - see for example Sen Gupta (1997), and Khwaja and Iyer (2014).

Data

This paper relies on the most common tax measures and explanatory factors found in the literature to assess the determinants of tax potential in Guinea. Dependent variables are tax-to-GDP ratios provided by the International Center for Tax and Development over the period 1987 to 2013,[3] for 38 non-oil Sub-Saharan African countries. Angola, Equatorial Guinea, Congo Republic, and Gabon[4] were excluded given their highly peculiar tax structures. Total revenue excluding grants, non-tax as well as tax revenue and within it direct and indirect tax revenue, which are further subdivided into personnel income tax, corporate income tax, goods and services tax and international

[3] ITCD was favored over other sources, given its long time horizon (1980 to 2013). However, availability of various dependent variables limits most regressions to the 1987-2013 period.

[4] Chad was included, as oil revenue started in 2004. The inclusion of country fixed effects mitigate the impact of oil.

trade taxes together provide nine initial dependent variables. Independent variables are mostly from the World Bank's World Development indicators (WDI) and from the IMF's World Economic Outlook (WEO) and new investment database. Country fixed effects[5] were used, thus in the end excluding recourse to other country-related categorical variables, such as mining or African sub-region.

Table 2. Guinea: Regressors Used for this Study 1/

Variable	Source	Note	Exp. sign
GDP per capita	WDI	2005 constant USD GDP divided by population (WDI variables NY.GDP.MKTP.KD / SP.POP.TOTL)	+
Openness to trade	WDI	Sum of the shares of exports and imports in GDP (WDI variables NE.IMP.GNFS.ZS + NE.EXP.GNFS.ZS)	+
Government investment	IMF	FAD public investment database	+
Agricultural output	WDI	Share of agriculture in GDP (WDI variable NV.AGR.TOTL.ZS)	-
Industrial output	WDI	Share of industry in GDP (WDI variable NV.IND.TOTL.ZS)	+
Foreign aid	WDI	Net official development assistance received as a percentage of gross national income (WDI variable DT.ODA.ODAT.GN.ZS).	-
Share of population living in rural areas	WDI	WDI variable SP.RUR.TOTL.ZS	-
Share of population living in urban areas	WDI	WDI variable SP.URB.TOTL.IN.ZS	+
Government consumption	WDI	WDI variable NE.CON.GOVT.ZS	+
Inflation	IMF	World Economic Outlook	-
Debt service	WDI	Total debt service as a percent of GNI. WDI variable DT.TDS.DECT.GN.ZS	+
External debt	WDI	External debt stock as a percent of GNI. WDI variable DT.DOD.DECT.GN.ZS	
Mining dummy	Author	1 for Botswana, DRC, Ghana, Guinea, Mali, Namibia, South Africa, and Zambia; 0 for other countries.	ND
Landlocked country dummy	Author	1 for Central African Republic, Uganda, Niger, Rwanda, Chad, Burkina Faso, Ethiopia, Mali, Burundi, Malawi, Zimbabwe, Swaziland, Botswana, Lesotho, and Zambia; 0 for others.	-

1/ Not all regressors were used in the final set of results. See Table 3.

[5] Haussman tests were performed to decide on whether random or fixed effects should be used. Random effects were rejected for direct and indirect taxes, as well as total revenue, taxes on goods and services and international trade taxes. Fixed effects were used for all regressions in order to present results for a single representative model.

Methods

As per standard practice, the data is assembled into a panel and transformed in logs. The following equation is then estimated for the nine dependent variables:

$$R_{i,t} = \alpha_i + \beta X_{it} + \varepsilon_{it}$$

Where: i and t are indices for country and year, α the set of country fixed effects, X is a matrix of regressors and ε the error term (no lags are used). A first round of estimation relied on a standard ordinary least square with fixed effects. The reference country was selected as the one with the highest constant among countries comparable to Guinea,[6] so as to calculate the tax potential as Guinea's fitted value corrected for the difference in constants, thus implicitly identifying a comparator country. Given the particular structure of the error terms' variance-covariance matrix in such panel datasets, a more robust regression was then estimated, correcting for heteroscedasticity within, as well as correlation between panels.[7,8]

E. Main Results

10. Various specifications were tested in turns on the nine dependent variables both for the standard least squares and robust estimation, and econometric estimates are generally in line with the main results of the literature. The second set of regressions broadly confirmed the results of the first set, although the level of significance of the estimated parameters generally decreases and the breakdown of the calculated tax potential changes somewhat. Data availability limits the estimates for corporate and individual income tax to the period 1991 to 1999, and the short period probably explains the less stable coefficients across specifications for those variables. Similarly, the finer the breakdown of tax aggregates (e.g., goods and services or international trade taxes vs. indirect taxes in general), the more diverse and unstable the results are. Results for non-tax revenue are also less conclusive, given the importance of idiosyncratic factors for this revenue category.

[6] For example, Botswana had by far the highest constant for non-tax revenue, but given its endowment in diamonds, it is probably not reasonable to use the difference between Guinea's and Botswana's categorical variables as a measure of Guinea's non-tax revenue potential. Reference countries are specified in Table 3.

[7] Econometric estimation is performed in R, using the *lm* and *plm* procedures. Standard errors for the *plm* procedures are then computed taking into account heteroscedasticity within and correlation across panel.

[8] This may in part be due to the fact that the tax potential was based on fitted values using the average of all countries' fixed effects in the robust technique, due to technical constraints.

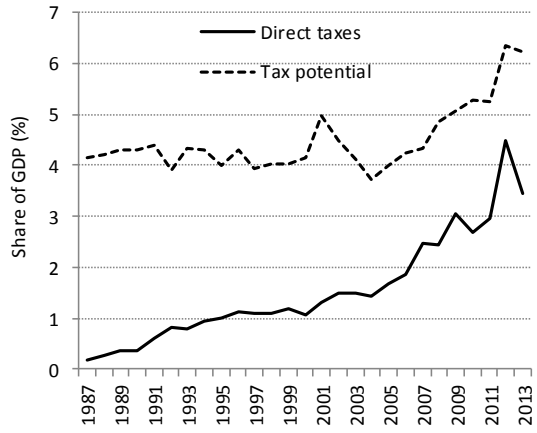
Table 3. Guinea: Estimation Results by Type of Tax [1/ 2/ 3/]

	Total revenue	Tax revenue	Non-tax revenue	Direct tax revenue	Corporate income	Personal income tax revenue	Indirect tax revenue	Goods and services tax revenue	Int'l trade tax revenue
Intercept and reference country	-4.66 *(-13.99)*** (Zambia)*	-4.60 *(-13.905)*** (Zambia)*	-4.25 *(-4.834)*** (Cameroon)*	-6.42 *(-11.658)*** (Zambia)*	-9.89 *(-9.61)*** (Zambia)*	-8.80 *(-8.30)*** (Zambia)*	-3.48 *(-8.25)*** (Senegal)*	-7.33 *(-10.29)*** (Senegal)*	-1.04 *(-1.44)** (Senegal)*
Ginea fixed effect	-0.13 *(-1.39)*	-0.47 *(-5.08)****	-0.16 *(0.74)*	-1.3 *(-9.66)****	-0.74 *(-2.97)***	-0.77 *(-2.78)***	-0.48 *(-5.066)****	0.12 *(0.77)*	-1.12 *(-6.64)****
GDP per capita	0.23 *(5.30)****	0.27 *(6.24)****	0.07 *(0.58)*	0.38 *(5.31)****	0.55 *(4.13)****	0.41 *(3.12)***	0.11 *(1.98)**	0.67 *(6.80)****	-0.66 *(-6.53)****
Openness to trade	0.22 *(6.47)****	0.13 *(3.63)****	0.20 *(1.99)**	0.29 *(4.77)****	0.15 *(1.23)*	0.06 *(0.49)*	0.06 *(1.20)*	-0.09 *(-1.12)*	0.4 *(4.71)****
Foreign aid	0.00 *(0.26)*	0.01 *(0.81)*	0.07 *(1.46)*	-0.02 *(-0.86)*	0.10 *(2.12)**	0.12 *(2.54)**	0.02 *(0.89)*	-0.06 *(-1.50)*	-0.03 *(-0.79)*
Government investment	0.09 *(5.61)****	0.05 *(2.85)***	0.24 *(5.39)****	0.03 *(0.94)*	-0.02 *(-0.42)*	-0.04 *(-0.87)*	0.06 *(2.80)***	0.05 *(1.20)*	0.08 *(1.98)**
External debt	-0.07 *(-4.59)****	-0.08 *(-5.27)****	-0.10 *(-2.38)**	-0.12 *(-5.09)****	0.01 *(0.20)*	-0.09 *(-1.91)*	-0.07 *(-3.53)****	-0.15 *(-4.52)****	0.06 *(1.81)*
Inflation	-0.05 *(-6.06)****	-0.06 *(-7.43)****	-0.03 *(-1.19)*	-0.08 *(-6.12)****	-0.08 *(-3.67)****	-0.06 *(-2.85)***	-0.06 *(-5.49)****	-0.08 *(-4.58)****	-0.04 *(-2.32)**
Government consumption	0.18 *(5.33)****	0.16 *(4.99)****	0.14 *(1.48)*	0.22 *(4.34)****	0.03 *(0.37)*	0.54 *(5.99)****	0.06 *(1.39)*	0.25 *(3.68)****	-0.03 *(-0.44)*
Industrial output	0.13 *(3.25)****	0.13 *(3.46)****	0.06 *(0.58)*	0.06 *(1.08)*	0.14 *(1.30)*	0.3 *(2.80)***	0.13 *(2.77)***	0.27 *(3.35)****	0.06 *(0.76)*
Number of observations	788	772	747	665	425	437	652	618	645
Adj. R-squared	0.86	0.85	0.73	0.82	0.75	0.83	0.82	0.73	0.77

1/ Source: staff calculations.
2/ t-stats are in brackets, under coefficients. Country fixed effects coefficients are excluded to save space, except for Guinea.
3/ Significance levels (p-values): "***": 0.001; "**": 0.01; "*": 0.05.

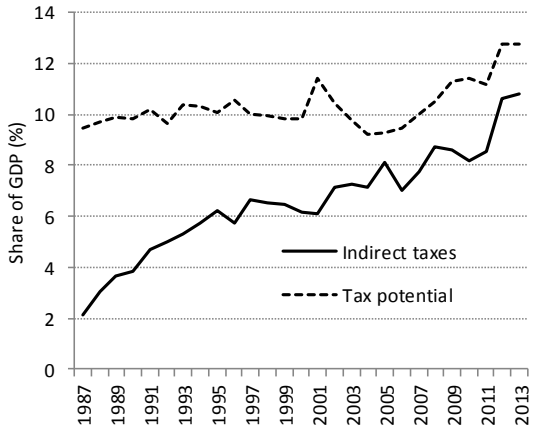
11. The most telling results are for tax revenue, as well as its breakdown into direct and indirect taxes (see Table 3, which provides econometric results for standard least squares for a specification that generally provided best results across all dependent variables).[9] The estimated tax potential in recent years is around 2 to 3 percent of GDP for the former and 1 to 2 percent of GDP for the latter, for a total of 3 to 5 percent of GDP. The tax potential has been relatively stable until the mid-2000s and has significantly increased afterwards, with the significant increase in imports and exports of goods and services. The tax revenue gap narrowed until then and remained stable afterwards. The larger gap for direct taxes is consistent with Guinea's recent tax performance and international comparison of the previous section. Although the gap remains sizeable, estimations suggest that resources needed to finance the authorities' infrastructure and development plans are indeed available to be taxed.

Figure 8. Guinea: Tax potential – Direct Taxes



Source: staff calculations.

Figure 9. Guinea: Tax Potential – Indirect Taxes



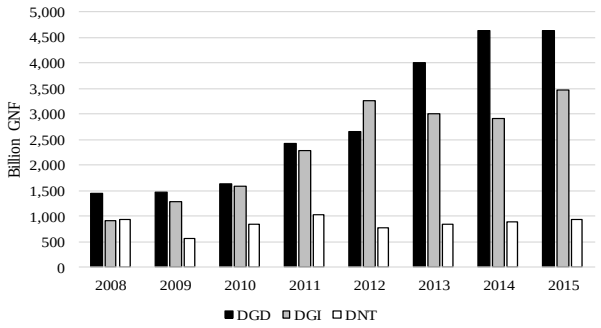
Source: staff calculations.

[9] The landlocked dummy was surprisingly almost systematically significant and positive in regressions without fixed effects. As this could be related to peculiar situations (for example, many landlocked countries are in the vicinity of, or surrounded by South Africa, hence a possible positive influence on the tax to GDP ratio), the variable was dropped in favor of country fixed effects that could thus pick up remaining idiosyncratic factors.

F. Mobilizing Revenue: Issues and Policy Recommendations

12. Collecting direct taxes (i.e., income, real property, etc.) typically demands higher administrative capacity because they require identification of the taxpayer and are tailored to his/her specific circumstances. Indirect taxes, by contrast, are based on the characteristics of a transaction, regardless of the characteristics of the individuals who transact: it requires less information. In many low-income countries, indirect taxes also benefit from the fact that they are mostly collected at the border (customs duty, VAT, excises, etc.), which thus offers a convenient control point to tax agencies (typically customs offices along a border, ports and airports). In this respect, Guinea is no exception: between 2013 and 2015, the share of tax and non-tax revenue collected at customs oscillated between 51 and 55 percent, up from an average of 42 percent in the 2008–12 period (Figure 10).[10]

Figure 10. Guinea: Revenue by Collection Agency



Sources: Authorities; and staff calculations.

13. The key to controlling the direct tax base is to improve compliance through ample and reliable information: taxpayer identification (correct names,[11] addresses – if possible linked to a cadaster- , taxpayer identification numbers, etc.), proper invoicing of labor and consumption transactions, and especially significant analytical capability to cross and compare information are necessary. In addition to a better control of the mining sector taxation and higher fuel taxes to raise non-tax and indirect tax revenue, immediate steps to improve direct taxation should include:

- *Crossing taxpayer-level import figures with declared turnovers.* Based on preliminary data provided by DGD and DGI, the mission estimated in December 2015 that roughly only a quarter of such imports passing through the DGD are finally declared at the DGI.
- *Tighter control of liberal professions.* This is an area where tax base is hard to control, given the absence of a material proof of a transaction (and of its real value) once the service is delivered. The ongoing effort to update the taxpayer registry of professionals at the DGI is a step in the right direction and should be strongly supported.

[10] High non-tax revenue at the DNT in 2008, 2009 and 2010 are related to high minerals prices.

[11] Getting names right is often more difficult than it seems in West Africa: homonyms are widespread.

- *Eliminating tax exemptions*. It remains very difficult to comprehensively identify and quantify exemptions in Guinea, given the absence of a proper tax expenditure assessment: this should be a priority.
- *Revising the taxation of individual wages and income.* Recent salary increases in the public sector and the forthcoming revision to the civil servants' base salary grid is a good opportunity to re-assess the one-off downward tax adjustment provided in 2011.
- *Taxing real property*. Although the overall potential is limited,[12] and the necessary administrative infrastructure heavy, authorities should slowly but systematically start setting up a property tax system.

[12] Best-performing low- and middle-income countries can expect a maximum of 1 to 2 percent of GDP in property taxation revenue, whose performance is often linked to gradual decentralization, and the presence of a functioning cadaster and construction permit system.

References

Bahl, R. W., (1971), "A Regression Approach to Tax Effort and Tax Ratio Analysis". IMF Staff Papers 18(3): 570-612.

Khwaja, M. S., Iyer, I. (2014), "Revenue potential, tax space, and tax gap". World Bank Policy Research Working Paper No. 6868, World Bank.

Le, T. M., Moreno-Dodson, B., Rojchaichaninthorn, J. (2008). Expanding taxable capacity and reaching revenue potential: cross-country analysis. Policy Research working paper; no. WPS 4559, World Bank.

Le, T. M., Moreno-Dodson, B., Nihal, B. (2012), "Tax Capacity and Tax Effort: Extended Cross-Country Analysis from 1994 to 2009". World Bank Policy Research Working Paper No. 6252, World Bank.

Sen Gupta, A. (1997), "Determinants of Tax Revenue Efforts in Developing Countries." IMF Working Paper 07/184, International Monetary Fund.

Stotsky, j. g., WoldeMariam A. (1997), "Tax Effort in Sub-Saharan Africa." IMF Working Paper 97/107, International Monetary Fund.

Teera, J. M., Husdon, J. (2004), "Tax performance: a comparative study," Journal of Internaitonal Development 16:785-802.

Thomas, A., Treviño, J. P. (2013), "Resource Dependence and Fiscal Effort in Sub-Saharan Africa" IMF Working Paper WP/13/188, International Monetary Fund.

FINANCIAL DEVELOPMENT AND INCLUSION IN GUINEA

This paper provides an overview of financial access and inclusion indicators, related causal factors, and both current and possible reform priorities for Guinea.

A. Introduction

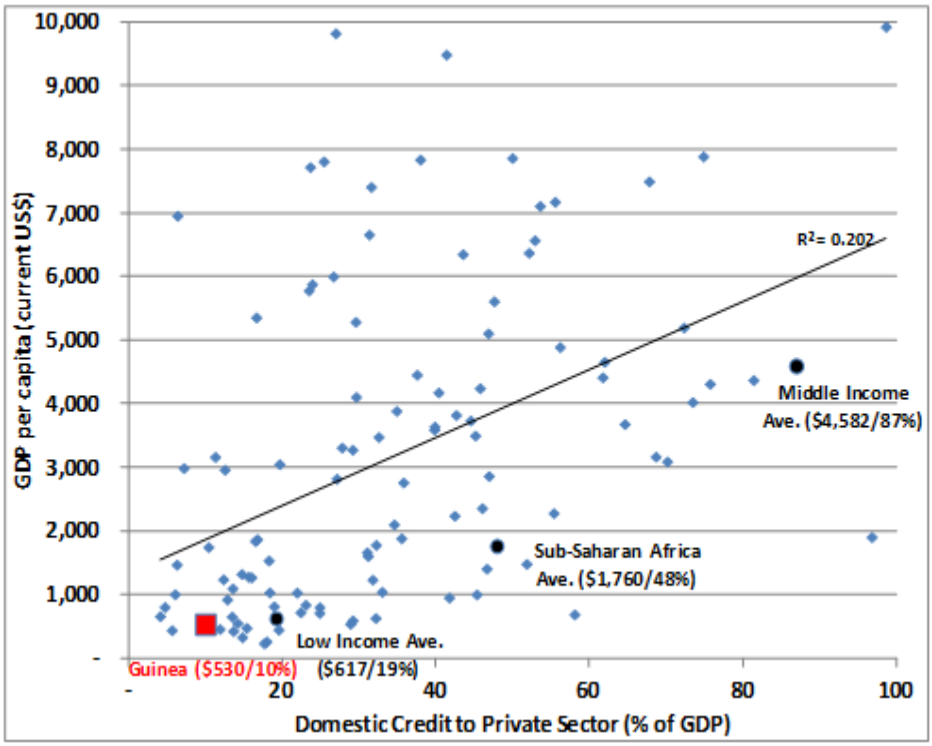
1. Recent research suggests strong positive linkages between financial sector development, access to financial services, and economic development. For example, evidence presented in the World Bank's 2014 Global Financial Development Report found that financial inclusion (FI)— defined as the proportion of individuals and firms that use financial services—is important for development and poverty reduction, and that the poor benefit considerably from the use of basic payments, savings, and insurance services. Similarly, for firms, particularly small and newly-established enterprises, access to financial services is associated with stronger innovation, job creation, and growth performance. Other research also finds a strong positive relationship between financial inclusion and income equality. In this context, FI-supporting policies are becoming increasingly recognized as pillars of sound, effective, and comprehensive strategies aimed at accelerating inclusive growth.

2. This note provides an overview of financial access and inclusion indicators, related causal factors, and both current and possible reform priorities for Guinea. Section B presents indicators of financial market depth, development, and access for Guinea and compares its performance against that of other countries in the region, at similar levels of development, and beyond. Section C provides an overview of country-specific challenges facing Guinea related to FI that helps to explain its performance, as well as possible reform priorities in the near term. Section D presents the government's current initiatives aimed at promoting financial sector development and inclusion and their preliminary results. Section E discusses potential new areas of focus.

B. Financial Sector Development and Access in Guinea

3. Guinea displays one of the shallowest financial sectors in the world in absolute terms, as well as relative to many other low income countries and others in the region. While any assessment of financial sector development depends on the selected metric, Guinea's ratio of domestic private credit to GDP of 10 percent in 2013—a common indicator of financial sector depth—was well below the average for other low-income countries (19 percent), other Sub-Saharan African countries (48 percent), and many other comparable countries (see Figure 1). This ratio rose to 15 percent in 2015, though comparable cross-country data was not available for that year.

Figure 1. Guinea: Financial Sector Depth and Development, 2013



Note: Sample limited to countries and regional averages with GDP per capita of less than US$10,000.
Source: World Bank, World Development Indicators Database and staff calculations

4. .Other financial sector development and access indicators are also weak, including those related to the size and composition, breadth, and diversity of the financial services sector, as well as physical access to services. While the number of institutions has grown rapidly in recent years (commercial banks increased from 7 in 2005 to 15 in 2015), access to financial services for the poor remains limited, and microfinance institutions (MFIs) offer mostly micro-credit and relatively few other products or services.[1] Notwithstanding the growing number of credit unions, cooperatives, and other depository corporations (Table 1), financial services remain only marginally-accessible for most of the population of 12 million. Furthermore, long-term financing is virtually unavailable, and represented less than 5 percent of total credit in 2015, with short- and medium-term loans representing 58 and 37 percent, respectively.

[1] As the population of Guinea is mainly Muslim, many micro-entrepreneurs may also refuse conventional microfinance loans due to religious considerations (IsDB, 2013).

Table 1. Guinea: Financial Sector Overview			
	2005	2010	2015
	Number of institutions		
Commercial banks	7	11	15
Credit unions and financial cooperatives	3	6	12
Deposit taking microfinance institutions (MFIs)	2	2	5
Insurance corporations	4	7	10
	Number of branches, excluding headquarter		
Total institutions	166	226	412
of which: commercial banks	29	70	155
	Number of Automated Teller Machines		
Total	12	42	155
of which: in the three largest cities	12	23	92
Source: IMF Financial Access Survey database.			

5. MFIs are facing structural challenges and have been significantly affected by the Ebola crisis. The number of MFI branches in Guinea is large (204 just for deposit-taking MFIs versus 155 for commercial banks in 2015), making the microfinance sector a key channel to expand access to finance. Yet, the sector serves only a small fraction of the demand for services from the low-income population and shows low standards of governance and weak loan repayment performance, having led the Government to suspend a development program.[2] The Ebola crisis has further affected MFIs' capacity to extend credit due to increased NPLs and a disruption of services and transactions.

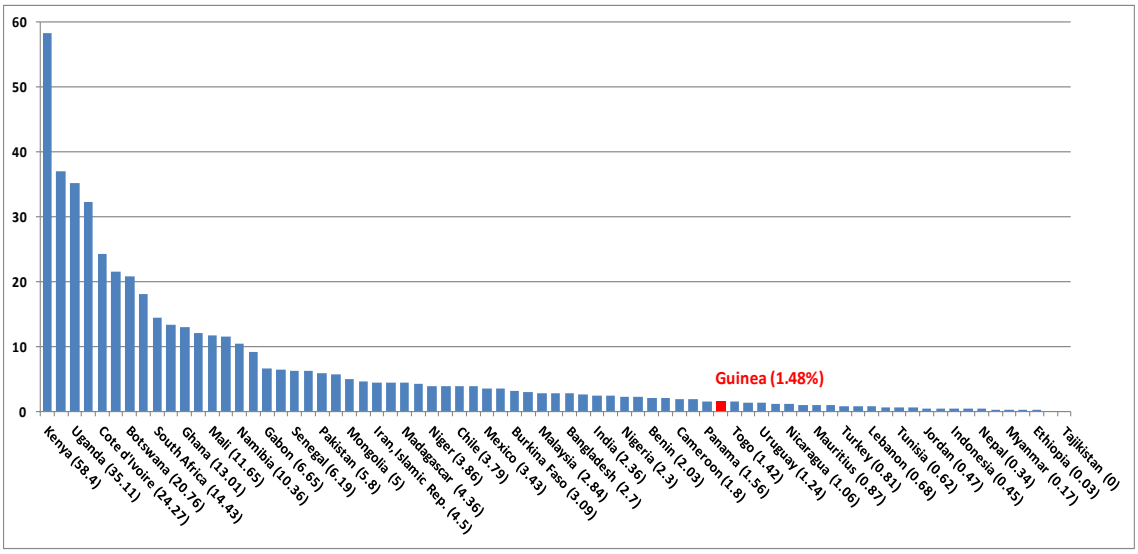
6. While cross-country comparisons are subject to a number of caveats, Guinea compares poorly with other African low-income countries on most indicators of financial access. For example, Guinea had less than 2 commercial bank branches and 1.6 ATMs per 100,000 adults at end-2014, versus 3.4 and 3.9 branches in other LIDCs, and 4.5 and 8.9 for African Frontier Markets, respectively (Table 2). Most banking activities are concentrated in the capital Conakry with very few branches located in other parts of the country. In 2015, about 62 percent of banks' branches and 60 percent of ATMs were in the three largest cities of the country. Other measures related to usage of financial services are also weak. For example, less than 7 percent of adults held deposit accounts and less than 2 percent had outstanding credit at end-2014 (Table 2). This compares with about 13 percent of adults with deposit accounts and 3 percent with loan accounts at commercial banks in other LIDCs.

[2] A microfinance fund of USD18.6 million was established in 2011 under the National Agency for Microfinance (ANAMIF) for lending to youth and women's groups. The fund initially made available USD3.4 million to the three largest MFIs, but canceled this facility after 60 percent was disbursed due to performance concerns. ANAMIF subsequently lent USD1.3 million to 36 women's groups/cooperatives at a zero-interest, but repayments were not taking place on a regularly. ANAMIF has now suspended activities with around USD13 million still available in the Fund until a new strategy is developed.

Table 2. Guinea: Financial Access Indicators					
	Guinea			African LIDCs	African Frontier Markets
	2005	2010	2014	2014	2014
Branches					
Commercial bank branches per 100,000 adults	0.7	1.3	1.9	3.4	4.5
Commercial bank branches per 1,000 km2	0.1	0.3	0.5	2.3	2.6
ATMs per 100,000 adults	0.2	0.7	1.6	3.9	8.9
ATMS per 1,000 km2	0.0	0.2	0.5	3.2	6.0
Credit union and cooperatives per 100,000 adults	0.4	0.5	0.5	3.2	n.a.
Credit union and cooperatives per 1,000 km2	0.1	0.1	0.2	6.3	n.a.
Savings (per 1,000 adults)					
Deposit accounts with commercial banks	19.9	49.6	69.5	129.8	410.2
Deposit accounts with credit unions and cooperatives	0.3	0.8	1.4	16.6	n.a.
Credit (per 1,000 adults)					
Loan accounts with commercial banks	4.0	7.7	17.9	31.3	21.8
Loan accounts with credit unions and cooperatives	0.3	0.8	1.4	16.6	n.a.
Source: IMF Financial Access Survey database.					

7. Guinea is also near the bottom of the list for sub-Saharan African countries in terms of mobile financial services. In 2014, only 1.5 percent of the adult population (defined as people aged 15 and above) had a registered mobile financial services account. This compares poorly with the Sub-Saharan African average of 11.5 percent and the low-income country average of 10 percent in the same year (Figure 2). This rate should, however, continue to grow in the future owing to the entry of two international operators.

Figure 2. Guinea: Mobile Banking, 2014
(Percent of adults with accounts)

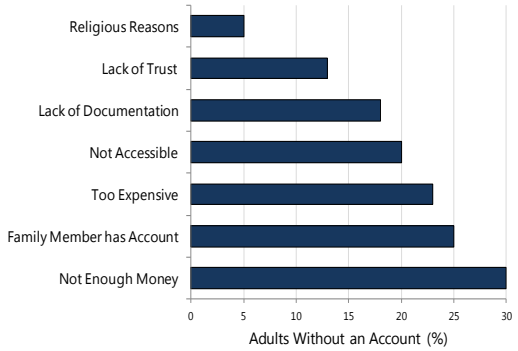


Source: World Bank Financial Inclusion Database.

C. Country Specific Barriers to Financial Inclusion

8. The World Bank's 2014 Financial Development Report provided an extensive analysis of financial development, access, and inclusion issues. This analysis identified seven major reasons why people from both developed and developing countries do nott own formal bank accounts, based on a cross-country survey of 70,000 unbanked individuals across regions. The survey found that a lack of financial resources, high costs of opening and maintaining accounts, a lack of accessibility of financial service providers, and a lack of required documentation, were among the most common reasons for remaining outside of the formal financial system (Figure 3). Many of these impediments to inclusion identified from the cross-country survey are relevant to Guinea.

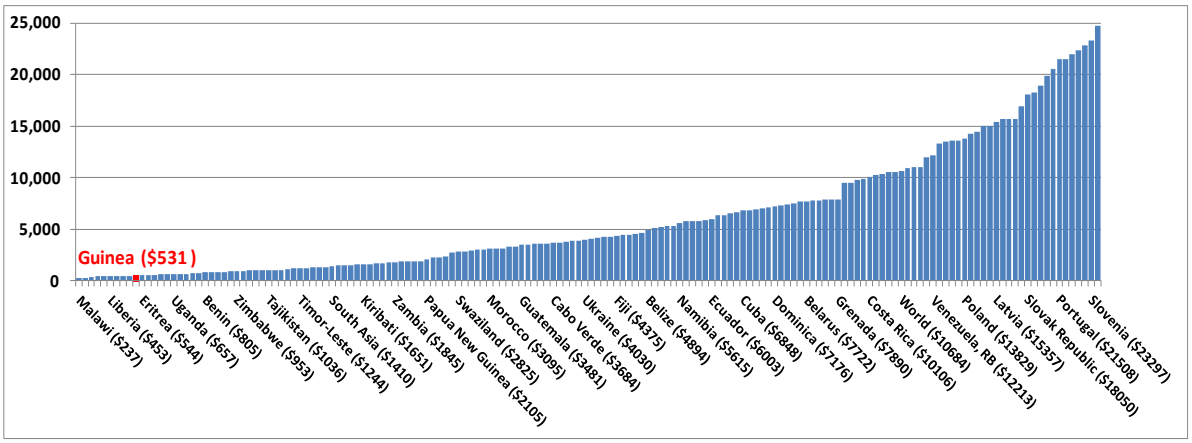
Figure 3. Guinea: Reasons for Not Having a Bank Account



Source: World Bank Financial Development Report 2014.
Note: Respondents could choose more than one reason.

Figure 4. Guinea: GDP per Capita, 2013

(USD)



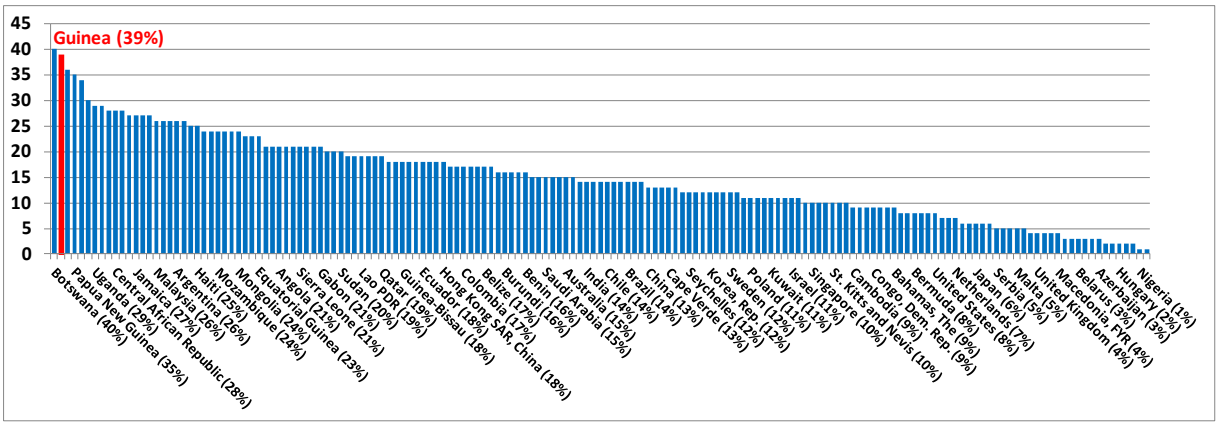
Source: WDI.

9. While Guinea fares poorly with respect to many of the key the factors influencing financial inclusion, the high poverty and low per capita income levels is among the most important factors. Guinea was the 10th poorest country by per capita income (US$530) out of 162 countries for which comparable data were available in 2013 (Figure 4). While low income can only be addressed by broad economic and development policies over long horizons, other commonly-reported barriers to FI are areas where reforms have the potential to improve outcomes over shorter horizons.

10. Increasing competition and lowering the costs of services should be a high priority. Despite the many financial intermediaries in Guinea (e.g., 15 full-service commercial banks), the sector is highly concentrated—3 commercial banks hold about 75 percent of total assets—and retail services display high costs. In this context, a useful indicator of the level of competition is banks' return on equity (ROE). By this measure, Guinea hosts one of the most profitable banking sectors in the world, with an average ROE of 35 percent in 2011[3] (the latest year for which comparable cross-country data was available), placing the country in the 99th percentile of the 177 countries for which cross-country data were available, or the 2nd highest across all income groups and regions (Figure 5).

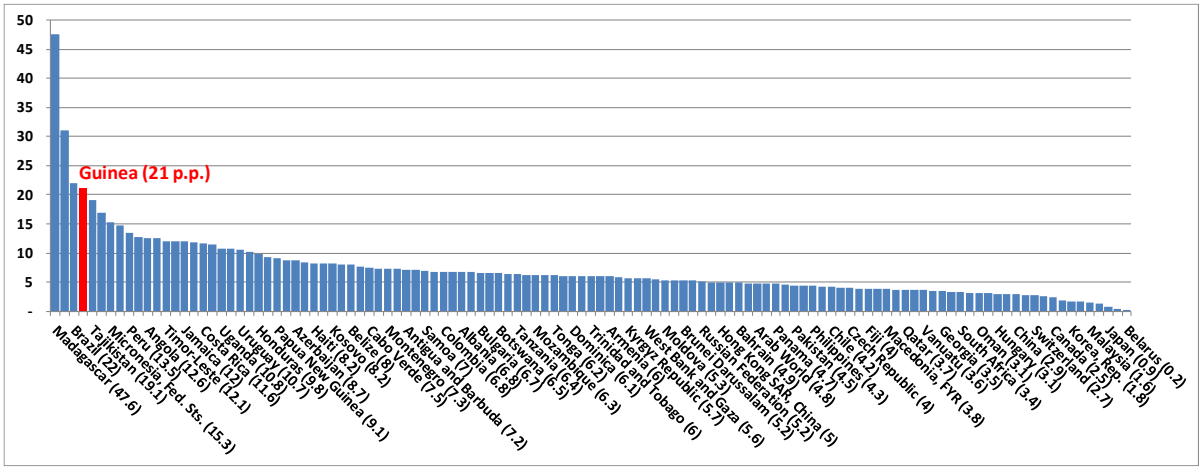
[3] ROE was 27.4 percent in 2015 for Guinea.

Figure 5. Guinea: Return on Equity, 2011
(Percent)



Source: World Bank Financial Development and Structure Data.

Figure 6. Guinea: Interest Rate Spreads 2014
(Percentage Points)

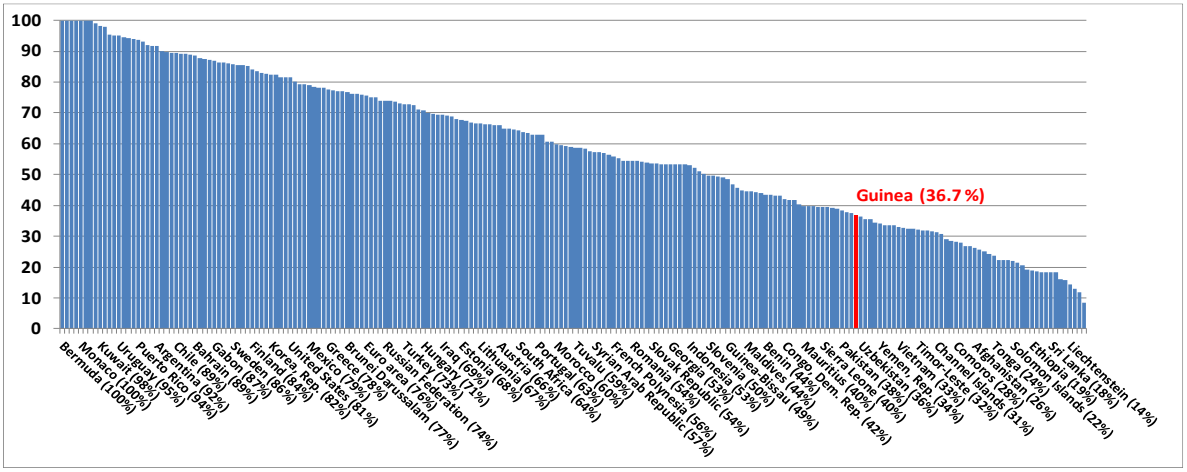


Source: WDI.

11. Another indicator of both the cost of accessing credit and savings incentives is the spread between deposit and lending rates. In 2014, banks in Guinea operated with an average interest rate spread of 21 percentage points, placing it in the 97th percentile of countries assessed, with higher spreads found only in Madagascar, Malawi, and Brazil. Spreads are 7 percentage points higher in Guinea than the average in low- and middle-income countries. While a number of factors can influence outcomes in these areas including sector depth, bank funding and business models, or risk-related considerations, the profitability and costs associated with basic banking services are very high in Guinea. More broadly, developing countries tend to show high bank profitability, as the less profitable segment of the population tends to be excluded from financial services. In this context, promoting greater competition is critical to improve financial access and inclusion (Center for Global Development, 2016).

12. Another challenge reported by respondents to the World Bank financial access survey that is relevant to Guinea relates to the accessibility of financial centers. Guinea is a relatively rural country, with only about 37 percent of the population living in or near an urban center—placing it in the 22nd percentile of the 168 countries surveyed (Figure 7). As bank branches and service points (e.g., automated tellers) are concentrated in urban areas, a lack of physical access to banking services may represent a significant barrier to financial inclusion. Furthermore, Guinea's dismal transport infrastructure exacerbates the problem of rural access to cities and banking outlets.

Figure 7. Guinea: Urban Population, 2014
(Percent of total



13. Other barriers to financial services are also pervasive in Guinea. First, the lack of financial awareness and basic education are closely associated with low levels of financial access and inclusion. In this regard, Guinea scores poorly on most comparable indicators of educational achievement. In 2012, the total adult literacy rate was only 25.3 percent.[4] Other related structural factors create hurdles for those who may wish to establish formal bank accounts and access credit from financial institutions, including the lack of enforceable legal collateral because of the high proportion of rural residents without land title or with informal land rights. It is also likely that a lack of official personal documentation (e.g. required to establish accounts) and religious considerations prevent use and access to certain types of banking services.

14. In summary, Guinea faces a number of barriers to improving FI that are common to countries at comparable levels of development, as well as others that are more country specific. While the level of economic and financial sector development and per capita income are among the most important challenges, these can only be addressed by implementing a comprehensive development program and growth over long horizons. Other country-specific

[4] http://www.unicef.org/infobycountry/guinea_statistics.html

factors, policies, and market failures also constitute important barriers to financial inclusion, many of which can be addressed via focused policies and initiatives with the potential to produce appreciable results over shorter horizons. In line with the challenges outlined above, such initiatives could include:

- **Increasing Competition and Reducing Costs:** Very high costs of financial services—as indicated by high ROE and interest rate spreads—and limited competition should be addressed by a combination of policy and regulatory measures. For example, incentivizing banks to raise the remuneration of saving accounts (which is currently negative in real terms and well below policy rates) would increase the number of depositors and promote financial inclusion.[13]
- **Facilitating Mobile Financial Services:** A growing number of countries—particularly in SSA —have had notable success leveraging wireless and mobile technology to overcome challenges related to limited competition from established providers, diversify services (e.g., insurance products), limited physical access and low population densities, as well as cost-of-service related disincentives. Given the limited penetration of these services to date, this is an area where Guinea may be able to leverage the successful experience of neighbors.
- **Simplifying Regulations:** As is the case in many other developing countries, the authorities may consider ways of modifying 'know your customer' and/or other regulatory hurdles that increase the costs of providing services, particularly to low-profit customers. This would also help reduce costs to consumers, encourage service provision, and overcome documentation challenges.
- **Financial Education:** Initiatives aimed at improving financial education, particularly for rural or undereducated populations and small enterprises, would encourage unbanked individuals and companies to seek out financial services and to diversify the services that they wish to take advantage of from banks.

D. Current Initiatives

15. During the 2011 Alliance for Financial Inclusion world forum in Mexico, Guinea committed to implementing a National Strategy for Financial Inclusion (NSFI). The NSFI was adopted by the government in 2014 with time-bound and verifiable objectives, but to date its implementation has been slow. A recent World Bank mission stressed the need to revise the strategy to take into account the impact of recent developments (e.g., Ebola), to extend the plan beyond microfinance, to broaden the scope of service providers to include mobile insurance companies, and to enhance consumer protection. Authorities also established the National Agency for Microfinance (ANAMIF) in 2011, with a mandate to design, implement, and evaluate government policies for microfinance. This agency has, however, not made much progress. No other agency is mandated to coordinate FI issues centrally.

[13] The central bank does not regulate the remuneration of deposits but the elimination of large excess reserves in the banking system may incite commercial banks to be more competitive in their policy to attract deposits.

16. Authorities are currently establishing a credit reporting system with the support of the World Bank to improve credit risk management and enhance access to credit. A USD10 million World Bank's MSME (Micro, Small and Medium Enterprises) Development Project was launched in June 2013, to improve financial infrastructure to promote access to finance. Initiatives include the implementation of a comprehensive credit registry system at the BCRG, though progress has been slow due to administrative challenges. Another World Bank project intends to extend this credit reporting system to MFIs, which should allow small borrowers to access credit on more equitable terms (e.g., average interest rates on short-term micro-loans are between 36 to 48 percent), and MFIs to extend micro-credits to new clients and sectors. Activity of MFIs is currently concentrated in the trade, catering, and agriculture sectors, and it would be beneficial to expand loans to other social needs, such as housing, and for connection to running water and electricity.

17. In March 2015, authorities adopted new regulations for electronic money and are currently revising the 2005 law on microfinance. In the past, Electronic Money Institutions (EMIs) could only operate via a partner bank. Regulation now requires EMIs to be registered by the central bank, while it specifies the conditions for granting licenses or the authorization to issue electronic money, the conditions to exercise issuance and management of electronic money, and the protection of customers. Authorities are also revising the 2005 law on microfinance to include new elements like depositor' protection, new financial products, transparency of conditions, and competition and taxation issues. In particular, microfinance institutions must offer financial products and services in line with clients' repayment capacity to limit the risk of over-indebtedness and implement an efficient mechanism to quickly address clients' plains and complaints.

E. Potential New Areas of Focus

18. In addition to the initiatives mentioned above, the authorities should take further measures to consolidate progress to date, and set the stage for faster improvements. First, the authorities should designate a central agency (e.g., the ministry of finance) as the main agency responsible for coordinating financial access and inclusion efforts across agencies. Second, one overarching strategy should be developed at the highest level, with components of the strategy delegated to appropriate implementing agencies. This strategy should take full advantage of advice and input from partner government and agencies with experience in the field. Its objectives should be specific and time-bound, with assessments undertaken regarding implementation. Third, regulatory amendments may be required to support the development of mobile and other financial services, which can also leverage the experience and advice of other experienced entities, both to facilitate implementation and avoid undue risks to the system and consumers. Fourth, competition and consumer protection should be considered as parallel objectives involving the regulatory agencies, as well as other agencies of government responsible for related policies. Finally, issues such as property rights and registration, and centrally-available ownership documentation, and other related factors also have important roles to play in enabling and improving the efficiency of consumer financial services, and these should be formally included in any FI strategy.

References

Andrianaivo, M. and K. Kpodar (2011), "ICT, Financial Inclusion, and Growth: Evidence from African Countries," IMF Working Paper, WP/11/73, International Monetary Fund, Washington D.C.

Center for Global Development (2016), Financial Regulation for Improving Financial Inclusion, CGD Task Force Report, S. Claessens and L. Rojas-Suarez (chairs), March, Washington D.C.

García-Herrero, A. and D. Martínez Turégano (2015), "Financial inclusion, rather than size, is the key to tackling income inequality," Working Paper no. 15/05, BBVA Research.

International Monetary Fund (2008), "Financial Sector Assessment: A Handbook," International Monetary Fund, Washington D.C.

IsDB (2013), "Microfinance Makes Businesses Successful in Guinea," IsDB Success Story Series No.13, May, Jeddah.

Mooney, H. (2015), "Papua New Guinea: Financial Inclusion and Access—Supporting Inclusive Growth", Selected Issues Paper for 2015 Article IV Consultation.

World Bank (2012), "The Foundations of Financial Inclusion—Understanding Ownership and Use of Formal Accounts," World Bank, Washington D.C.

World Bank (2014), "Global Financial Development Report—Financial Inclusion," World Bank, Washington D.C.

World Bank (2015), "The Global FINDEX Database—Measuring Financial Inclusion Around the World," World Bank, Washington D.C.