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SIERRA LEONE

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SIERRA LEONE

SELECTED ISSUES

March 24, 2020

Approved By
The African Department

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CONTENTS

BOXES

FIGURES

TABLES

FIGURES

BOOSTING HUMAN CAPITAL, ACCELERATING DEVELOPMENT, AND LOWERING INEQUALITY IN SIERRA LEONE[1]

Indicators of human capital in Sierra Leone have generally improved over the past two decades, despite major setbacks during the Ebola health crisis. However, education and health outcomes continue to lag behind most other countries. The Government's National Development Plan 2019-23 targets substantially boosting human capital, including through their Free Quality Education for All program—the focus of this paper. This paper finds that the gains from providing each child with at least lower secondary education could, in the long-term, boost GDP by 40 percent, substantially lower income inequality, and generate additional revenues through higher individual incomes. Moreover, closing gender gaps in education across income groups or increasing the quality of education could yield gains of 8 and 27 percent of GDP, respectively. With limited fiscal space, evidence-based prioritizing, sequencing and targeting of policies—coordinated across sectors—is critical for sustained improvements to human capital outcomes.

A. Motivation

1. Promoting education is the backbone of the Sierra Leone's Government's economic and social development strategy. Developing human capital through education is the leading theme of the Government's 2019-23 National Development Plan (NDP). Its premise is that in a nation with educated, empowered, and healthy citizens, people will be capable of realizing their fullest potential. This, in turn, would support economic diversification and growth, provide the skills for structural transformation and competitiveness, support a peaceful and cohesive society, and thus boost the economy's resilience to shocks.

2. Indeed, the literature highlights the large economic pay-offs of higher human capital and the distributional benefits of more equal access to education. A vast literature provides theoretical and empirical evidence that higher human capital translates into higher growth and better development outcomes (see e.g., Barro 2001; Krueger and Lindahl 2001). For sub-Saharan Africa, recent work has shown that the benefits from boosting and equalizing access to education could be substantial. In Senegal, successfully implementing a policy that ensures all children receive a minimum of 5 years of education could raise GDP by 8 percent (IMF 2019a). In Nigeria, lifting the level of education of girls in each income quintile to that of boys would boost GDP by 5 percent (IMF 2019b). The distribution of human capital within the population also matters, with inequality of opportunities in general, and unequal access to education in

[1] Prepared by Vivian Malta, Monique Newiak (both IMF), and Mathew Sandy (Sierra Leone Ministry of Finance). This paper has benefitted greatly from engagement with the Sierra Leonean authorities and development partners. The authors appreciate comments during a seminar with staff from the Sierra Leone Ministry of Finance (Yakama Jones) and the Bank of Sierra Leone (Morlai Bangura), and comments from Irish Aid (Mary O'Neill), DFID (Roisin Parish, Annie Homer, Colin Bangay and Penny Walker-Robertson) and the Delegation of the European Union to Sierra Leone (Serena Bertaina).

particular, being linked to less equal distributions of income (e.g., Galor and Zeira, 1993; Gonzales and others, 2015).

3. Motivated by the Government's policy agenda and development aspirations, this paper confirms the potential benefits of increasing education in Sierra Leone.

- ***While there has been progress in human capital development in Sierra Leone over the past two decades, major challenges remain***. While many human capital indicators have improved, health outcomes in Sierra Leone lag most countries, and there are challenges in both the quantity and quality of education.

- ***Educational attainment varies widely across demographic groups****—by income, between boys and girls, and with a substantial rural-urban and regional divide*.

- ***Sierra Leone's government has initiated a range of promising policies to address these challenges***, including its Free Quality Education (FQE) flagship program to improve education and health outcomes.

- ***The economic benefits of boosting completion rates for boys and girls could be massive***. In the long term, lifting educational attainment to lower-secondary completion rates for all children could increase Sierra Leone's GDP by about 40 percent, lower income inequality by 7 points on the Gini scale, and permanently increase the revenue-to-GDP-ratio by 1.8 percentage points. Intermediate targets to achieving this goal could also yield significant gains. For instance, leveling the playing field for boys and girls in education alone could boost GDP by more than 8 percent, suggesting low-hanging fruit to development outcomes. Separately, increasing the quality of education at current enrollment and completion levels could boost GDP by 27 percent.

- ***Continued implementation of reforms, with a strong focus on the quality of the education, will be critical***. The FQE program's focus on the quality of education requires curricula that are tailored to the skills that will be crucial for children to be competitive in the current and future labor market. Eliminating the constraints that prevent girls from attending school—such as targeted interventions to build appropriate sanitary facilities as well as addressing harmful traditional practices that contribute to adolescent fertility—will be important to ensure *all* children benefit from the program. To that end, strong collaboration with other Ministries, including the Ministry of Health, is critical. Continued monitoring through timely data (such as through the newly launched education data hub to provide viable web-based information on education infrastructure and facilities) will help provide the appropriate information for further decision making.

B. Stylized Facts

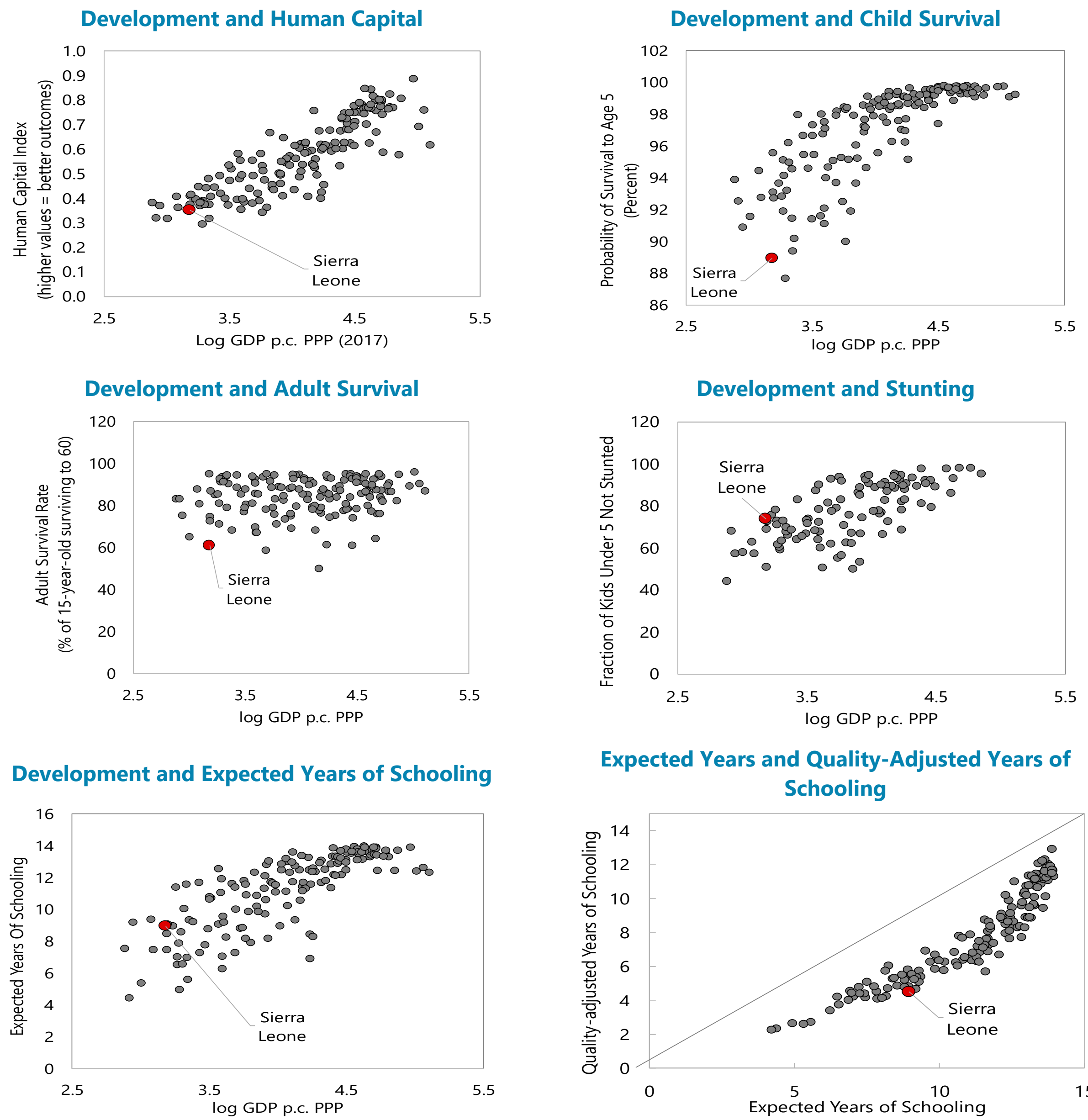
4. Overall human capital outcomes, including in education and health, are challenging in Sierra Leone (Figure 1). The World Bank's Human Capital Index—capturing several dimensions of national health and education outcomes globally—ranks Sierra Leone among the seven countries with the largest human capital challenges worldwide. Weak health indicators are the main driver of this result. The likelihood that a child will die before his or her fifth birthday is second highest in the world: 11 in 100 children do not survive to that age. One in four children under the age of five is stunted. Only about three in five 15-year-olds survive to the age of 60. Education outcomes also remain challenging. Although children complete an average of 9 years of education, the suboptimal quality of education results in learning outcomes on par with receiving only 4½ years of education of high quality. These indicators highlight the challenges in a country that was once referred to as the "Athens of West Africa" around independence in 1961, particularly as population growth alone is going to put pressure on an education system that is under strain even at the current demand for schooling.

5. The Ebola health crisis was a significant setback for health and education outcomes. The immediate impact of the Ebola crisis on health outcomes was dramatic and it spilled over into other health areas, including as health resources shifted to Ebola-related programs (Save the Children, 2016). In addition, UNICEF (2017) reports that the direct consequences of the Ebola outbreak on the education sector were substantial and reversed some of the progress towards the Millennium Development Goal of achieving universal primary education: all schools closed and therefore 1.7 million primary and secondary students did not attend school for at least nine months; the crisis left 3,300 Sierra Leonean orphans who are less likely to be educated than their peers; deaths of teachers increased pupil-teacher ratios; and maintenance of school infrastructure stopped. The UNICEF report estimates the indirect cost of lost future human capital due to the crisis at 8.8 to 9.8 percent of 2016's GDP.

6. Nonetheless, the past two decades have seen positive changes in a number of health outcomes (Figure 2). Under-five and maternal mortality rates remain high but have halved since 1996. Diphtheria immunization rates for 12-23 months-old children have more than doubled since the early 2000s, reaching 90 percent in 2017. However, progress has stagnated in some areas, with the incidence of malaria remaining at around 38 percent, having hardly moved in half a decade and is now twice the sub-Saharan African average. The incidence of tuberculosis barely changed over the past decade, while the averages for sub-Saharan Africa, and low-income and lower-middle income countries declined substantially. Meanwhile, Sierra Leone's public health expenditures, at 1.6 percent of GDP remain among the lowest worldwide.

7. School enrollment rates have improved over the past two decades (Figure 3). Primary enrollment rates are close to 100 percent on a net basis, and above 100 percent on a gross basis (suggesting enrollment of kids beyond the expected age for primary education)—and girls and boys face virtually the same likelihood to be enrolled at the primary level. Secondary enrollment rates have also increased markedly to close to 43 percent in 2017, similar to the sub-Saharan African average, while 95 girls are enrolled for every 100 boys at that level.

Figure 1. Sierra Leone: Development, Health, and Education

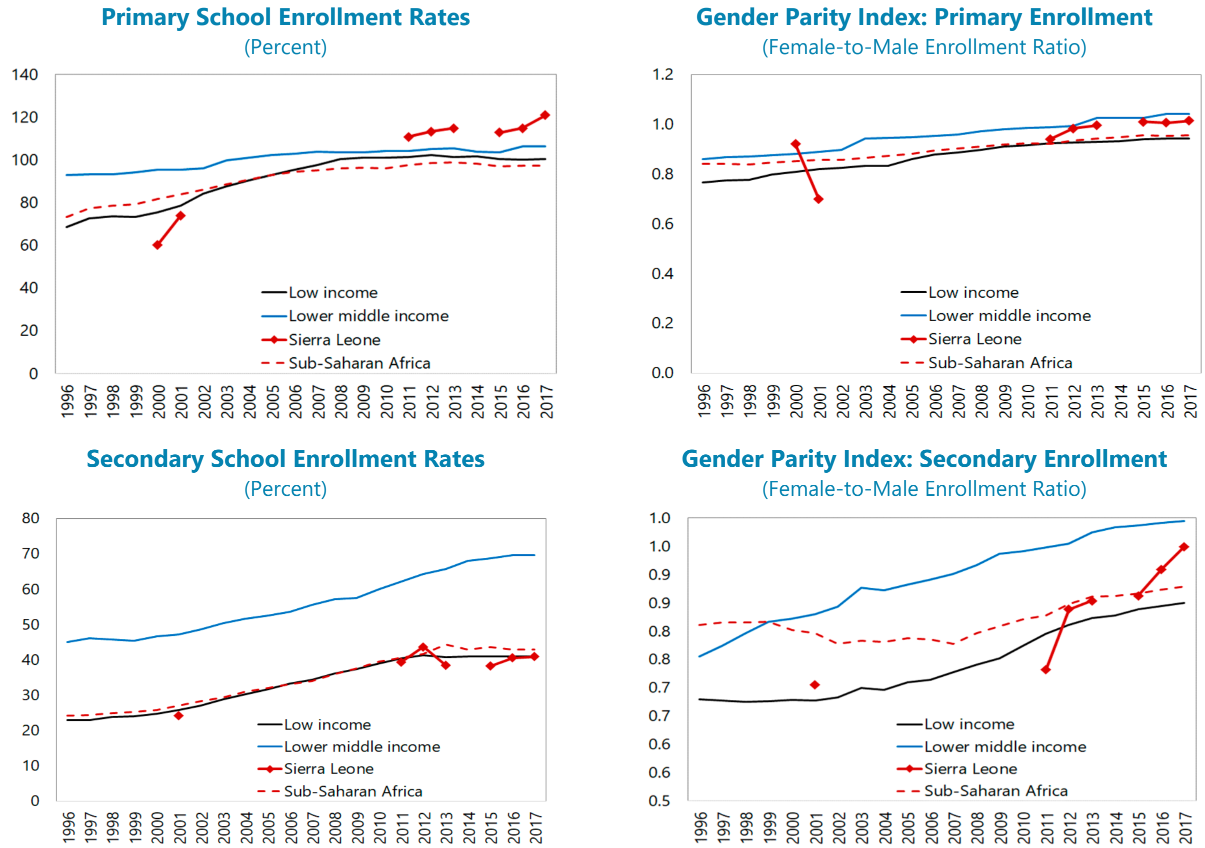


Source: World Bank Human Capital Project.

Figure 2. Sierra Leone: Health Outcomes

Source: World Bank World Development Indicators.

Figure 3. Sierra Leone: Educational Attainment, 1996-2017



Source: World Bank World Development Indicators.

8. **Yet, the final level of education and completion rates vary considerable depending on an individual's demographic characteristics and the location of his or her household** (Figure 4). While school enrollment rates have increased over the past two decades, they do not imply that all who attend school will complete schooling.

- ***The level of education varies widely across income groups***. A boy in the bottom 20 percent of the income distribution is more than five times as likely to receive no education than a boy that belongs to the richest family. A boy from the richest 20 percent of households is more than ten-times more likely to complete secondary education or achieve higher education than a boy from the poorest 40 percent of households.

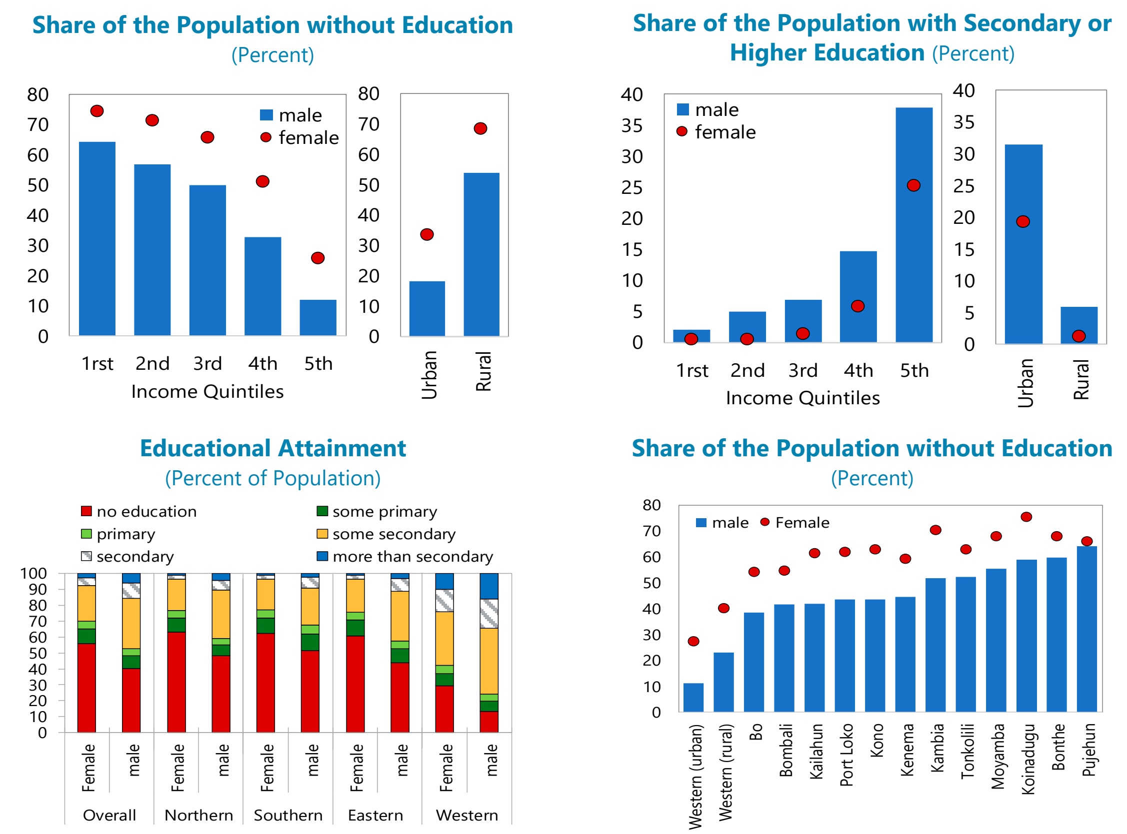
- ***Large gender gaps in education persist across all income groups.*** The probability of a girl receiving no education is more than 10 percentage points higher than for a boy in every income group. Secondary or higher school attainment increases disproportionately with income for boys, but only shows a large pick up for girls for the richest income quintile. Hence, while enrollment levels are similar for boys and girls, girls are more likely to drop out and not complete their education.

- ***The rural-urban divide in education is also substantial.*** Children in rural areas are two to three times more likely not to receive any education, boys (girls) in urban areas are five (16) times more likely to complete secondary or higher education than boys (girls) in rural areas.

- ***There are strong regional disparities.*** For instance, a boy from Pujehun is almost six times as likely to *not* receive any education than a boy from the Western Urban Area.

Figure 4. Sierra Leone: Education Gaps by Income Group and Household Location

(2013 Demographic and Health Survey)



Source: Demographic and Health Survey.

C. Government's Policy Initiatives

9. **Recognizing these challenges, the Government's new NDP 2018–23 prioritizes education to accelerate human capital development**. The FQE plan envisions delivering free quality primary and secondary education by increasing access and expanding quality. It also aims at enhancing the overall governance in the education sector. Prior to launching the plan, the government conducted a nation-wide survey of schools and educational facilities to determine

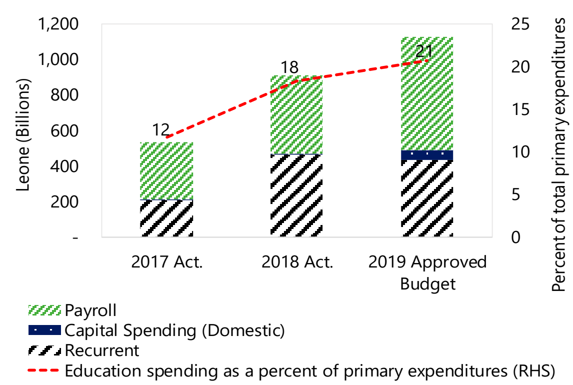
the number of beneficiaries and cost involved. A cut-off date (school year ending June/July 2018) helped cater to only those who were already registered in government and government-assisted schools to control cost.

10. Since launching the FQE program, the Government has begun implementing measures to increase access to education. Its overall approach to boost quality focuses on enhancing the governance of the sector, recruiting and training teachers, improving the curriculum, rehabilitating schools and building new schools. Specific measures include:

- ***Leadership***. The President appointed two Ministers of Education, with responsibilities respectively for basic and secondary and for tertiary and higher education. Moreover, a special presidential appointee for the FQE program coordinates and monitors government policies on the initiative and supports the two Ministers.

- ***Financing allocation***. The Government allocated 21 percent of recurrent budget to education (including tertiary and technical and vocational education and training (TVET)) in the first year of the FQE initiative—just within the SDG target. To help ensure it reaches this target, it has stepped up efforts to improve budget execution, targeting a break from past years where allocations were also high but final outcomes were below budget (Figure 5). The Government has also incorporated the payroll of university lecturers and professors into the public payroll, ring-fencing their portion from their usual transfers provided in the national budget.

Figure 5. Education Spending, 2017–19
(Billion Leone; Percent of Primary Expenditures)



- ***Program implementation***. The Government procured an initial 50 new school busses and rolled them out at the start of the 2019/20 academic year in September 2019. The teaching service commission launched a performance management training for almost 1,700 teachers and completed the process of recruiting 5,000 teachers. The government procured 6 million exercise books and supplied them to all government and government-assisted primary and secondary schools. Preliminary data suggest that the provision of school feeding has increased from 95 thousand to more than 128 thousand pupils since the launch of the FQE program, and the aim is to expand the program to 428 thousand students. Support to tertiary institutions increased through scholarships for engineering and science courses at public universities. The government also gives special attention to technical and vocational education to boost youth employment.

- ***Monitoring***. Education surveys prior to and after the introduction of the FQE help assess preliminary progress one year after the introduction of the program. The Government has established a Directorate of Science, Technology and Innovation (DSTI) to accelerate progress towards the SDGs and provide support to stakeholders in the education sector. The DSTI helped develop a web-based geographic information system for all government and government-assisted schools, which aims to reduce the time for analyzing education survey results.

- ***Governance***. The Government has stated its commitment to fight corruption in the sector, including through highly visible—yet sometimes controversial—indictments of officials that facilitated cheating in public exams. The special appointee for the FQE program works with development partners to setup the education basket fund that would help raise additional funding for the FQE. The Government has also established the teaching service commission to oversee governance of the education payroll, regulate and monitor the conduct and performance of teachers.

D. Estimating the Macroeconomic Gains from Boosts to Education

11. Motivated by large education gaps and the Government's intention to address them, this section quantifies the macroeconomic gains of different education policies. It uses a micro-founded general equilibrium model with heterogenous agents. The model helps quantify the macroeconomic and distributional effects of different education policies, including those targeting specific groups. For each education policy, the model implies a new steady state in the long run (i.e., within a few generations), when new education levels and quality are transmitted to the entire labor force.

12. The model captures the labor market (employment, income), income distribution, education outcomes, gender inequality, and the Government as follows:

- ***Households*** consist of parents and children, or only parents (when children left home to form their own families). Parents make joint decisions for the entire household in terms of consumption, labor supply and savings. In this setting:

  - *Men always work* and decide on how much labor to supply in the formal and informal sectors.

  - *Women can work.* If women work, the family incurs a cost that captures women's fewer time spent in home production (including raising children and other household responsibilities traditionally performed by them) and social norms (attitudes towards working women and the type of jobs women can perform). The model captures these barriers through the gap in labor force participation rates between men and women. When a woman works, she and her husband decide together how much labor she supplies in the formal and informal sectors.

> ➢ *Children go to school.* Their future productivity and incomes depend on the amount of human capital accumulated, including education. Their level of education depends on government expenditures on education, household incomes and the child's gender, calibrated in line with the stylized facts presented in the previous section.

- ***Firms hire employees, produce formal goods, and pay corporate taxes***.

- ***There are formal and informal labor markets***. Working men and women receive income and, when employed in the formal sector, they pay taxes on their wages.

- ***An individual's human capital depends on education (and its efficiency) and previous experience in the labor market***. Here, the note uses data to estimate the current returns on actual years of education in a first step. It then highlights separately the gains from increasing the quality from each year of education.

- ***The Government provides education, buys formal goods, and taxes households and firms***. This paper assumes that the cost of providing an additional year of education is linear with respect to the number of schooling years.

13. **The following data help to tailor the model to the context in Sierra Leone**.

- *The labor market.* The Sierra Leone 2014 Labor Force Survey provides information on the structure of the labor market and gender income gaps. Here, women's earnings are just a fraction of men's earnings in the formal and informal sector. A relatively narrow gender gap in labor force participation rates (2 percentage points) helps inform the estimate of the cost of women's work in the model. The share of people in vulnerable employment (86 percent according to the World Bank Development Indicators) proxies the share of informal employment, while the IMF (2017) estimates the size of the informal sector in Sierra Leone to be just above 58 percent of GDP.

- *Education.* The Demographic and Health Survey 2013 provides a comprehensive overview of educational attainment across households of different income and gender—as discussed in Section B. The 2014 Labor Force Survey provides estimates to quantify the gains from obtaining higher levels of education, and the returns from additional work experience.

- *Income distribution.* Both the 2011 and 2018 Integrated Household Surveys serve as a reference point for the distribution of income.

- *Fiscal.* Data from the Sierra Leone Ministry of Finance and IMF staff estimates inform parameters related to taxation, such as the taxes on goods and services (2.7 percent of GDP) and excises (1.1 percent of GDP), while the UNESCO Institute for Statistics and the World Bank Development Indicators inform estimates on spending on education.

Box 1. Development Partners' Support in the Education Sector

Development partners are actively engaged in the education sector. Leading partners are the Department for International Development (DfID), Irish Aid, and the World Bank (including Global Education for All), the UN (including UNICEF, UNESCO, UNDP and the World Food Program (WFP))—who recently received funding from bilateral organizations, such as the Japan International Cooperation Agency (JICA), e.g. for expansion of the school feeding programs, and the European Union. Through Irish Aid funding, UNFPA is also working with the Ministry of Basic and Senior Secondary Education on the roll-out of Comprehensive Sexuality Education.

DfID is supporting the "Le Wi Lan" ("Let Us Learn") program. The program helps provide education to 463 thousand children, build classrooms and help teachers to deliver education with new lesson materials. DfID has allocated almost GBP 13 million as of May 2019 and is working with the authorities to estimate the total amount of resources that need to be allocated to the education sector (Mambo 2019).

The World Bank directly supports the Government's FQE program. Project support amounts to US$40 million. This intervention succeeds the Revitalizing Education Development in Sierra Leone (REDISL) Project that closed in 2017. The Government is also leveraging World Bank support to provide school bus services for children in primary and secondary schools.

Bilateral development partners, such as USAID, JICA, Irish Aid and Germany, often channel their support through UN agencies and non-governmental organizations (NGOs). The World Food Program is supporting School Feeding, currently targeting to feed almost 29,000 children, with the aim of reaching 35,000 children by end of 2019. UNICEF and the Global Partnership for Education (GPE) are supporting various education programs. The GPE approved a grant of US$17.2 million in January 2019 to increase equitable access to education and improve learning outcomes for approximately 1 million girls and boys in public pre-primary and primary schools, with a focus on the most vulnerable children.

The EU's 'Support to the Education Sector in Sierra Leone' program reinforces the Government's efforts to provide equitable access to high quality learning for all. The EU's five-year project that started in December 2016 is aligned with national education policies and targets, and aims to improve: (i) education system management; (ii) primary teaching and learning; (iii) management and delivery of technical and vocational education; and (iv) equitable access to secondary education. The project is implemented by a Project Coordination and Compliance Unit embedded in the two ministries of education, with support from a Technical Assistance Team to ensure capacity building in the main institutional partners at central and decentralized level, particularly in four focal districts (Port Loko, Bombali, Bo, Kenema). GIZ, the German Agency for International Cooperation, implements the TVET-related component of the project.

14. As in every model, there are a number of caveats and simplifying assumptions to be mindful of when interpreting the results. In this instance:

- ***Other exogenous factors***: The model abstracts from changes in other constraints or sources of changes in labor market conditions in the analysis. For instance, changes in infrastructure and the business environment are not endogenous, and the labor market clears—implying no unemployment even under strong labor force participation growth. While the number of children enter into the model through some parameters, the model also does not account for demographic change—a factor that could be explored in an analysis of future population dynamics and their impact public service delivery.

- ***Data input into the model****:* As some of the surveys date back to 2014 or 2013, and there are data gaps, some of the estimated elasticities that inform the model are subject to uncertainty, implying that the results from the calibration are also subject to some uncertainty.

- ***Cost of education****:* The model assumes that increasing school completion rates in the scenarios will increase the cost of public education proportionately—a strong assumption. Forthcoming publications by DfID will highlight the significant total cost of providing all resources for the FQE Program (Mambo 2019). Additional research is also needed on the cost the reforms that would deliver the outputs in the paper.

- ***Public vs. private****:* The model abstracts from the large share of schools that are not funded by government; while the calibration of low education quality subsumes the large share of teachers that are not government approved (and thus not government-funded) and low teacher-student contact times.

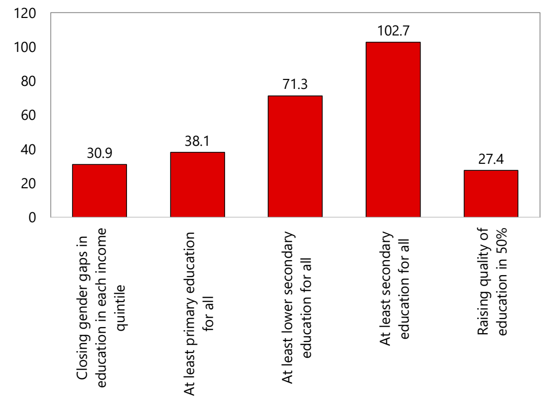
15. The results indicate the macroeconomic benefits of education could be substantial, in the order of up to 40 percent of GDP in the long run. To quantify the gains from education, we test a range of scenarios, with the following main results (Figure 6):

- ***Scenario 1. Closing gaps between boys and girls in access to education within each income quintile***. This measure assumes a substantial increase in girls' education levels while not addressing the educational disparities across income groups. The additional education would boost economic activity through higher female human capital and labor force participation, lifting women's purchasing power with higher wages (+30.9 percent). GDP (here composed of both formal and informal sectors) would increase by 8.2 percent in the long term. With higher skills, more women would join the (more competitive) formal sector, and the formal and informal sectors would grow by 8.6 percent and 8 percent, respectively. Government revenues under current tax policies would be larger by 0.6 percent of GDP in the new steady state. As the widest gender gaps in education are in the bottom of the income distribution, income inequality would decline (1-point drop in the Gini coefficient), and the income ratio of the top 10 percent of the income distribution to the bottom 10 percent would drop by 3.6 percent (from an average income ratio of 9.4 to 9.0).

Figure 6. Sierra Leone: Long-term Impact from Different Education Policies

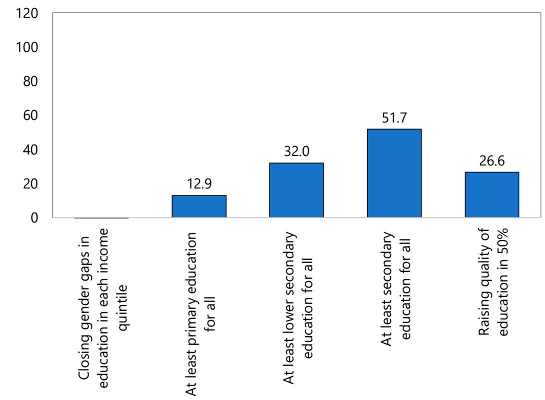
Change in Average Female Earnings

(Percent)



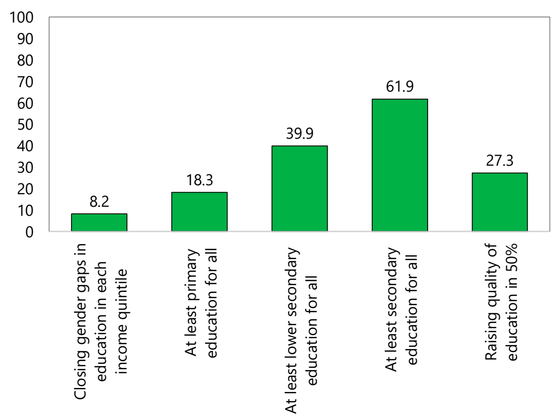
Change in Average Male Earnings

(Percent)



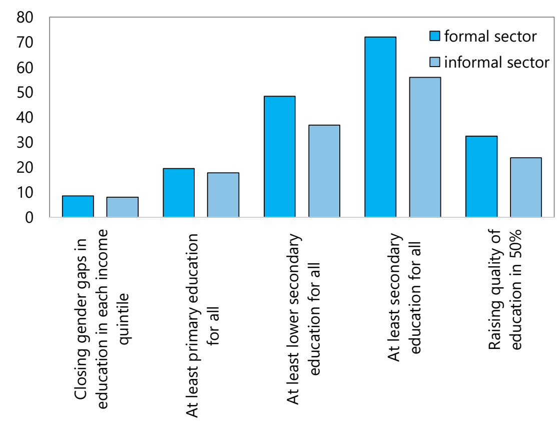
Change in Real GDP

(Percent)



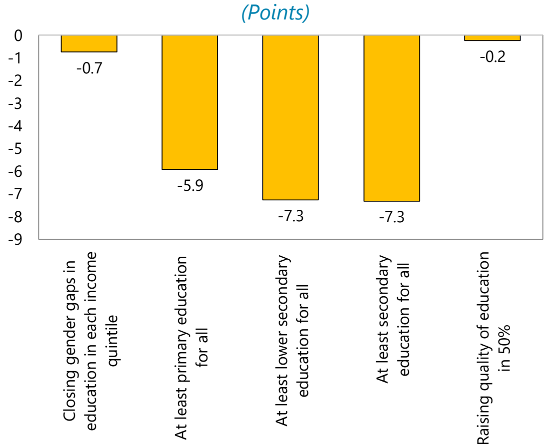
Change in Formal vs. Informal Sector GDP

(Percent)



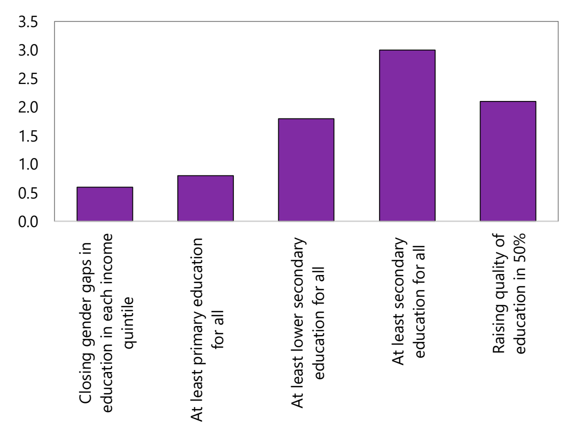
Change in the Gini Coefficient

(Points)



Change in Revenue-to-GDP Ratio

(Percentage points)



Source: IMF staff simulations.

- ***Scenario 2: Ensuring all children complete at least primary education***. In this scenario, education increases for all children that currently do not complete primary education, thus raising girls' education disproportionately. The strong boost in human capital and resulting increase in wages (+38 percent for women; +13 percent for men) increases GDP by more than 18 percent in the long term (19.6 and 17.7 percent in the formal and informal sectors, respectively). However, assuming the policy is not accompanied by anti-discrimination policies to level the playing field for men and women in the labor market, productivity levels (output per hours worked) in the formal sector would drop by 5.1 percent. In contrast, the informal sector would benefit from increased education of the bottom of the income distribution (+28.9 percent in productivity). Under current tax policies and formal sector size, government revenues would increase by 0.8 percent of GDP in the new steady state. As the largest human capital gaps are in the bottom of the income distribution, income inequality would drop substantially, with the Gini coefficient falling by almost 6 points and the income ratio of the top 10 percent of the income distribution to the bottom 10 percent declining by 35.7 percent (from an average income ratio of 9.4 to 6.0).

- ***Scenario 3: Ensuring all children complete at least lower secondary education***. This scenario magnifies the channels discussed in Scenarios 1 and 2, increasing GDP by 40 percent (48.4 and 36.9 percent for the formal and informal sector, respectively). Overall productivity in the formal sector would increase by 9.0 percent, while the informal sector would see a 54.8 percent productivity gain, mainly due to increases in education at the lower end of the income distribution, where informal labor is more common. Increased consumption and wages would boost government revenues by 1.8 percent of GDP. Income inequality would decline significantly (with the Gini coefficient dropping by more than 7 points) as human capital would increase in particular for poorer individuals. The income gap between the top and bottom 10 percent of the income distribution would drop by more than 44 percent (from an average income ratio of 9.4 to 5.2).

- ***Scenario 4: Ensuring all children complete upper secondary education***. This highly ambitious—and thus illustrative—scenario would result in boosting GDP by more than 60 percent (72 and 56 percent in the formal and informal sector, respectively). Labor supply in the informal sector would decline by 12 percent, substituted by more productive work, and productivity in the formal and informal sector would rise by 28 percent and 77.5 percent, respectively. The revenue-to-GDP ratio could increase by 3 percentage points. The Gini coefficient would drop by more than 7 points, while the income gap between the top and bottom 10 percent of the income distribution would drop by more than 45 percent.

- ***Scenario 5. Raising the quality of education by 50 percent (increasing the number of years of quality-adjusted schooling by 50 percent)***. Policies to increase the average quality of education, even in the absence of actions to raise the number of years of schooling, could still boost GDP by 27.3 percent (32.5 and 23.8 percent for the formal and informal sector, respectively), on the back of an increase in human capital across all income groups. Both formal and informal sector productivity would increase (+31.4 percent and +22.1 percent, respectively). Income inequality, however, would remain relatively unaffected as the measure does not change relative endowments of education across different strata in the society.

E. Selected Policy Recommendations

16. This paper shows that boosting education and its quality for all children yields substantial macroeconomic gains. While investments in the sector will take time to yield results, the potential gains provide ample motivation for sustained, multi-pronged policy interventions along the lines highlighted in the following paragraphs.

17. Equalizing access to education emerges as a critical goal for prosperity that is shared fairly across the population. Attaining free secondary education for all is a critical long-run objective. To this end, prioritizing basic education and focusing on closing the gender gap in education especially for the poorest families should be a priority and would benefit all. Policy interventions in particular in rural communities would accelerate redistribution of wealth and reduce income inequality. For instance, school catchment planning to guide both infrastructure investment and rational expansion of the network of government-approved schools in a bidding process could help correct an inequitable distribution.

18. Beyond increasing access to education, raising the quality of education will be essential. Even at current enrollment rates, raising the quality of education would imply significant macroeconomic gains, calling for an increased focus on increasing the efficiency of education. Such improvements include: (i) working on teacher quality—to ensure a workforce that is competent, qualified, and committed to teaching; and (ii) reforming the curriculum and introducing a teaching syllabus at the senior secondary level.

19. With limited fiscal space and vast challenges in the sector, evidence-based prioritizing, sequencing and targeting of policies is critical. Careful monitoring of education spending and its impacts will help reassess programs and priorities going forward. Enhancing the governance of the sector to ensure that spending is well-aligned with needs in the various levels is also important. Strengthening systems for a multi-sector effort to improve education will be critical in this regard. Such improvements imply: (i) clarifying mandates and strengthening accountability structures across institutions, policies and acts; (ii) realistic sector planning; (iii) significantly reducing discrepancies in resources transferred from the center and those arriving at district level; and (iv) enhancing transparency and accountability in existing systems for allocating resources to schools.

20. Tackling the education challenge will require coordinated work to overcome hurdles in a number of sectors. Several factors currently within and beyond the education sector constrain efforts that could effectively reap the economic benefits from education. Figure 6 highlights some of the main constraints at the macroeconomic level:

- ***Quality in the education sector****:* Teacher quality is lagging behind the sub-Saharan African average. Public education infrastructure is lower than in the average low-income country. These gaps highlight both the appropriateness of continuing to invest in schooling infrastructure but also the need to complement these investments with teacher training and appropriately equipping new schools to create a higher-quality learning environment. In particular, with a high share of teachers currently neither certified or not on the public payroll, ensuring improvements in teacher quality at all levels, including community teachers that are volunteering their services, will be critical. Designing curricula that take into account current and future demands of the labor market is an important step in that direction.

- ***Infrastructure gaps***. Other indicators of basic infrastructure (roads, public health, treated water, electricity) show larger gaps compared to peer countries and indirectly impact children, in particular in rural areas, girls, and children with disability. Notably, lower electricity implies a larger share of time being spent on household work, traditionally disproportionately shouldered by girls and women. Lack of treated water, and resulting health challenges, impede learning for all children. The lack of appropriate sanitation facilities disproportionally disadvantages girls whose period often makes them miss a substantial amount of schooling time, especially at the secondary level. Challenging roads conditions and lack of barrier-free schools particularly affect children with disabilities.

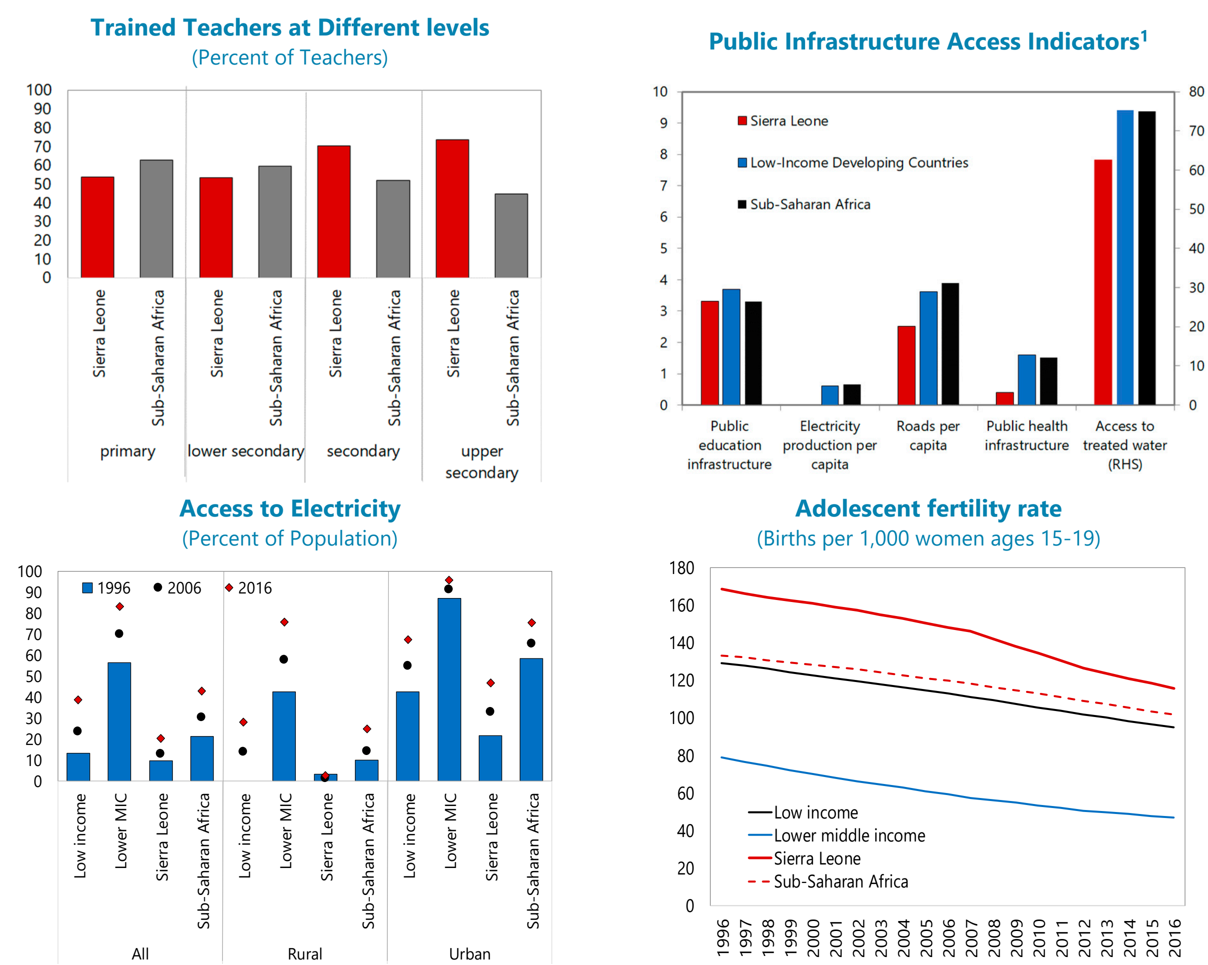
- ***High adolescent fertility***. While adolescent fertility rates have declined over-time, they remain high compared both the sub-Saharan African and low-income country average. Higher adolescent fertility rates are problematic as they result in higher risk of maternal and child death. In addition, with girls leaving school at time of pregnancy, and often drop out of school after, high fertility rates directly widen the gender gap in education and impede achieving the goal of free quality education for all children for the most vulnerable kids. Eradicating child marriage would not only eliminate a harmful traditional practice and benefit women's health but also increase girls' education through lower adolescent fertility rates.

21. Collaboration is therefore essential. Given the strong linkages between education and other sectors (nutrition, health, energy, infrastructure), close collaboration across ministries, departments and agencies, programs, development partners and civil society organizations is essential. This is particularly important, not just because of the number of actors involved, but also given the extent and duration of policy reforms, and the scale of investments from scarce public resources that is needed.

22. Many reforms to address the above constraints will require fiscal space, but there also quick-wins, including from combining interventions with existing programs. Building new infrastructure, sanitation systems, and educational infrastructure will require additional spending within a currently tight budgetary envelope. However, some interventions are less cost-intensive as they could be accommodated within existing programs. For instance, implementing a budget that is constructed to target more equitable outcomes—along gender lines or other dimensions, such as disability or age—can help tweak interventions in sectors to achieve equality. Enforcement of laws to end harmful traditional practices, such as child marriage, will help reduce adolescent fertility and drop-out rates.

23. Given the long-term nature of education system improvements, continuous monitoring and communication are essential. Designing standard data surveys to integrate additional questions on education and along equitable outcomes, will help boost information on critical topics. Tracking progress and communicating successes and set-backs with stakeholders, including parents, will be essential to build and maintain support for the scale of change needed. Outreach campaigns to educate parents that education is a *right for all children* can be integrated in other activities.

Figure 7. Constraints to Education



[1]Left hand side: Public education infrastructure (secondary teachers per 1,000 persons); electricity production per capita (thousands of kWh per person); roads (per capita as km per 1,000 persons); and public health infrastructure (hospital beds per 1,000 persons). Right hand axis: Access to treated water (percent of population).

Source: World Bank World Development Indicators.

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MANAGING AND PREVENTING ARREARS IN SIERRA LEONE[1]

Resolving Sierra Leone's longstanding challenge of public expenditure arrears is a priority for the Government. Their recent stocktaking exercise revealed a stock of legacy arrears of close to 9 percent of 2019 non-iron ore GDP, of which 90 percent accrued in the two years ahead of April 2018 elections. The magnitude of this arrears stock, alongside ongoing challenges in preventing new arrears and the tight fiscal financing situation, will require difficult choices to sustainably and durably address this issue. In this regard, the Government's arrears clearance strategy will need a multi-pronged approach to clear the arrears—including haircuts, rescheduling, and mobilizing highly concessional external resources—and robust public financial management reforms to address the root cause of arrears.

A. Introduction

1. **While arrears accumulation is a common challenge, it weighs particularly heavily on Sierra Leone's economy and public finances**. Data for 29 countries in sub-Saharan Africa suggest that more than eighty percent report domestic expenditure arrears, with an average stock of 3.3 percent of GDP.[2] In Sierra Leone, the authorities' comprehensive arrears reconciliation exercise, completed in September 2019, revealed domestic arrears of Le 3.3 trillion as of April 2018 (or around 8¾ percent of 2019 GDP), with a further ¾ percent of GDP in arrears has accumulated since. By stalling projects and undermining contractors' ability to service their bank loans, these arrears have curtailed economic activity and pose a risk to financial stability,

2. **Developing a transparent and carefully prioritized strategy to clear and prevent new arrears is essential to ensure fiscal sustainability and financial stability**. Clearing such a large amount of arrears is challenging at the best of times, but even more so given Sierra Leone's substantial social spending and investment needs and tight financing situation. Against this background, this note highlights that repayment of arrears based on favorable interest rates and an extended amortization schedule will not be enough to sustainably clear these arrears within the available fiscal envelope. This implies a need for deeper net present value (NPV) reductions and additional financing on highly concessional terms. A published arrears clearance strategy and equitable treatment of creditors—in line with the Government's overall strategy to foster good governance—will strengthen the authorities' negotiating position. A credible plan, and concerted implementation of reforms, to improve public financial management (PFM) is critical to avoid future arrears accumulation. This can also help garner buy-in among suppliers with whom the Government has arrears and among development partners that can help with concessional resources.

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[1] Prepared by Natalia Aivazova, Monique Newiak, Fazeer Rahim, Jiaxiong Yao (all IMF), and Mathew Sandy (Ministry of Finance).

[2] See *Domestic Arrears in Sub-Saharan Africa: Causes, Symptoms, and Cures*, Sub-Saharan Africa Regional Economic Outlook: Navigating Uncertainty, October 2019.

B. Understanding Arrears in Sierra Leone

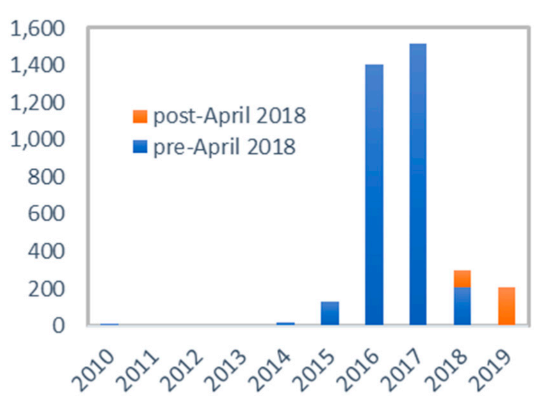
Arrears Stocktaking Process

3. The authorities' initial reconciliation efforts revealed a large stock of arrears and a complex situation. At the time the current IMF-supported program was approved in November 2018, the estimated stock of arrears was about 4 percent of GDP, reflecting unpaid checks at the Ministry of Finance. In early 2019, the Audit Service Sierra Leone (ASSL) completed an audit[3] of claims totaling Le 11.6 trillion covering 2010–18, of which it verified *claims* of Le 4.5 trillion (nearly 14 percent of 2019 GDP). As these verified claims included arrears, future payment obligations and potential double counting, further work was needed to determine a final arrears figure.

4. Recent efforts focused on determining a final, comprehensive arrears figure. During June-August 2019, the Ministry of Finance worked with the ASSL and other Ministries, Departments and Agencies (MDAs) to review individual claims. This process determined the portion of verified claims that are in arrears and combined this amount with pre-April 2018 unpaid checks, eliminating any double counting and netting out amounts paid to suppliers in the intervening period.

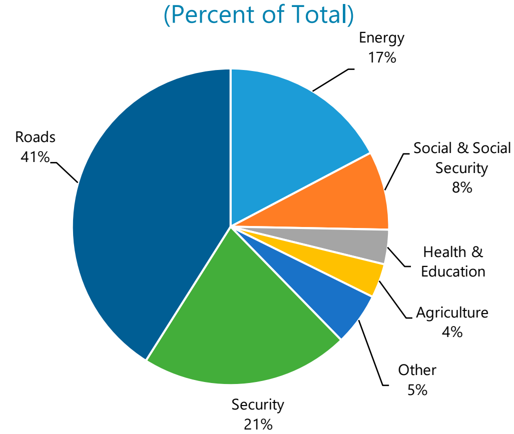
5. The authorities' reconciliation exercise, completed in September 2019, revealed a large stock of legacy arrears. The exercise confirmed pre-April 2018 domestic payment arrears of Le 3.3 trillion or 8¾ percent of 2019 non-iron ore GDP.[4] Of these arrears, 90 percent accrued in the two years before the April 2018 election (Figure 1) and more than three-quarters reflect unpaid bills in three sectors—roads, energy, and security (Figure 2). Preliminary data suggest that, since April 2018, the Government accumulated a further ¾ percent of GDP in arrears, bringing the end-2019 total stock of arrears to around 9½ percent of non-iron ore GDP.

Figure 1. Sierra Leone: Total Arrears, 2010-19
(Billions of Leones)



Source: Sierra Leone authorities; and IMF staff estimate.

Figure 2. Sierra Leone: Sectoral Composition of Pre-April 2018 Arrears
(Percent of Total)



[3] ASSL's arrears audit is distinct from other audits conducted by the Auditor-General, such as the Technical Audit (which is a 'value for money' exercise in the social security, telecommunications, civil works, and energy sectors).

[4] This figure does not include some arrears to large suppliers that were securitized in the second half of 2018.

Implications for Fiscal Sustainability and Financial Stability

6. A front-loaded arrears clearance scenario, with a large share of securitization, demonstrates the challenge of clearing arrears while maintaining sustainability. This scenario envisions repaying the stock of arrears over 1 to 10 years for all suppliers—on the full-face value without haircuts or substantial NPV reduction—through a mix of cash repayments and securitizing some 4 percent of GDP (Table 1). The results suggest that the combined impact on the fiscal and financial sectors would be unsustainable.

- This scenario implies additional financing needs through amortization and interest of approximately 2.9 percent of GDP in 2020, 2.1 percent in 2021, and 1.5 percent in 2022—substantially worsening liquidity-based indicators of debt sustainability.
- The budget would struggle to accommodate the implied cash payments (around 1 percent of GDP in 2020) without jeopardizing critical expenditures or seeking recourse to additional domestic financing through additional T-bill issuance or continued accumulation of arrears.
- Tradeable securities of 4 percent of GDP would substantially exceed what the banking system—already carrying a heavy burden with the current issuance schedule[5]—can absorb.
- The range of implied NPV ratios across different groups of suppliers (from 71 to 114 percent of the face value) demonstrates the need to be mindful of equitable terms among suppliers.

Table 1. Sierra Leone: Front-loaded Arrears Clearance Scenario, with High Share of Securitization

Stock Breakdown			Clearance Assumptions				
Category	**Total (Le Billions)**	**% of 2019 GDP**	**Modality**	**Term (years)**	**Interest**	**Start of Repayment**	**Tradability**
Arrears, Portion 1	**1,353**	**3.6**	Rescheduled	3	0%	2020	
Arrears, Portion 2	**1,350**	**3.6**	Securitized	10	20%	2020	Yes
Checks Accumulated up to April 2018	**585**	**1.6**					
o/w Still Outstanding	*392*	*1.0*	Cash	2	n.a.	2020	
o/w Securitization in progress	*194*	*0.5*	Securitized	10	20%	2021	Yes
Subtotal	**3,288**	**8.7**					
Checks Accumulated since April 2018 1/	231	0.6	Cash	1	n.a.	2020	
Total	3,518	9.4					

1/Illustrative assumption intended to demonstrate impact of additional financing need of any post-April 2018 arrears accumulation. Subject to confirmation of 2019 final fiscal outturn.

[5]The goal of the ECF-supported program is to reduce the budget financing call on the domestic banking system to around 2 percent of GDP by the end of the program period (2022).

C. Guiding Principles for Developing a Clearance Strategy

7. Developing a well-articulated and holistic clearance strategy is important to ensure transparent and evenhanded negotiations. It is essential that this strategy sends a strong signal that the process will be transparent, equitable to suppliers, and mindful of resource availability. To reassure suppliers and development partners, it should also highlight reforms being undertaken to prevent arrears accumulation going forward.

8. The strategy should be clear about how and when the arrears will be cleared. First, it needs to identify upfront the resources available for clearing arrears. Country experiences have shown that strategies that do not specify and take into account the available resource envelope have lacked credibility and are less likely to success. Second, given the limited budget resources available for arrears repayment in Sierra Leone, the strategy should set a realistic time frame, and establish the sequence, and modalities according to which arrears will be repaid.

9. Articulating clearly and transparently the criteria for prioritization is another key principle for success. Decisions about the order in which suppliers will be paid should be based on objective factors, such as the socioeconomic impact (e.g., clearing arrears to economically sensitive or vulnerable sectors), the fiscal costs (e.g., some contracts may include heavy penalties; others, such as for projects in early stages of implementation, may be more easily negotiated or cancelled outright); and age, among other factors.

10. Finally, the strategy should spell out the modalities for liquidation and ensuring evenhandedness. While options range from cash repayment to tradable securities, it will be vital to maintain similar NPV terms regardless of the modality of arrears clearance. In this regard:

- If fiscal space is available, cash payment from the budget is the preferred option, particularly if the stock of arrears is small or can be discounted via haircuts.
- Absent sufficient cash resources, the Government should next seek to agree a repayment schedule with suppliers—with combination of haircuts and repayment terms—with equivalent NPV reduction as outright cash payments.
- If suppliers prefer that these repayment terms to be ‘backed’ by Government paper, the Government could issue a promissory note or non-tradeable security directly to suppliers.
- Depending on the availability of cash resources, particularly from development partners, the Government can also explore a mix of these options, such as making an upfront “goodwill” cash payment to negotiate haircuts before agreeing repayment terms on the remainder.[6]

[6]Any upfront ‘goodwill’ cash payments should be made consistent with the criteria for prioritization and should not be spread too thinly across all suppliers, which may be counterproductive to securing the desired NPV reductions.

11. The general securitization of arrears should be considered only as a *last resort*.[7] This includes both issuing general, marketable securities (like T-bills or bonds) to repay arrears or issuing promissory notes or securities to suppliers that are discountable by commercial banks. This has a number of disadvantages. First, securitization risks creating moral hazard incentives for financial managers to continue to commit resources in excess of available appropriations. Second, the likelihood that securitized instruments trade at a considerable discount will further reduce the working capital available to the original supplier compared with cash or direct repayment terms. Third, in the Sierra Leone context, T-bills carry a high interest rate (currently over 20 percent), so general securitization could result in a significant interest burden. In principle using external grants to reduce the existing stock of T-bills in the hope of decreasing prevailing interest rates could be an option. However, this is unlikely to be a viable option in practice (Box 1).

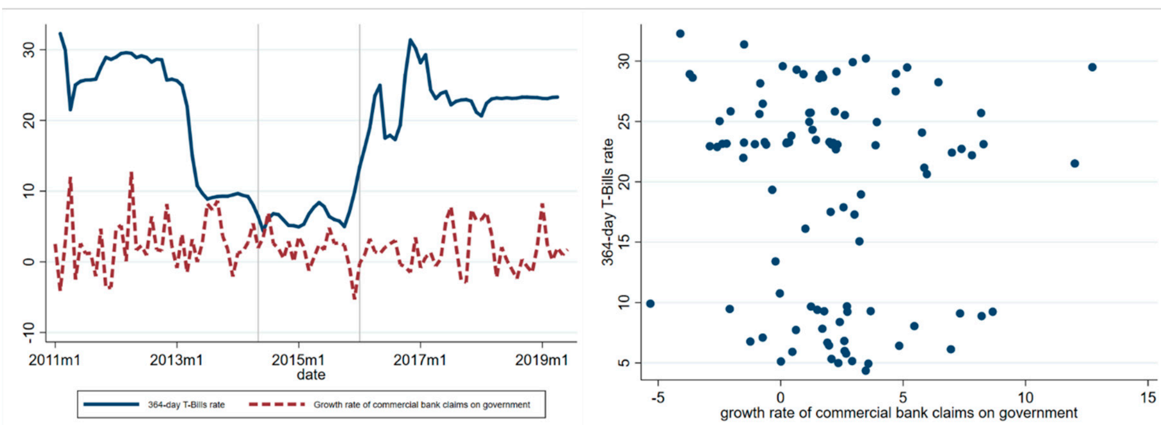
Box 1. Can a T-bill Buy-down Sustainably Reduce Interest?

Finite external resources for arrears clearance raise the question of how best to get the largest "bang for your buck." For instance, would it be preferable to use available resources as an incentive in negotiations with suppliers (a "goodwill payment") or to reduce the existing stock of domestic T-bills in the hope of driving down rates and securitizing arrears on more favorable terms?

Market behavior in Sierra Leone suggests it would be risky to use available financing to pay down government securities rather than to clear arrears directly. Empirically, the relationship between T-bills rates and changes in commercial bank claims on the Government is weak. It is therefore uncertain (if not unlikely) that paying down government securities would reduce interest rates.

Even if such an approach did reduce interest rates, the benefit would likely be temporary. Securitizing arrears would increase the supply of government securities, offsetting any earlier reduction, and drive interest rates up again. Such an approach thus risks wasting valuable financing resources that could be used to paydown arrears directly or for "goodwill" payments.

T-bill Rates and Changes in Commercial Bank Claims on Government



Notes: Data are monthly frequency between January 2011 and June 2019, and the correlation is -0.1. In the left panel, the area between the grey lines is the Ebola health crisis.

Sources: Bank of Sierra Leone and IMF staff calculations.

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[7] Flynn, S. and Pessoa, M., 2014, *Prevention and Management of Government Expenditure Arrears*, Technical Notes and Manuals. International Monetary Fund, Washington DC.

D. Successfully Tackling Arrears in Sierra Leone

Clearing Arrears

12. Clearing such a large stock of arrears in the face of serious financing constraints is daunting. In line with the principles described above, staff modeled a variety of arrears clearance scenarios (Box 2). These illustrate the magnitude of the challenge of finding a sustainable solution to clear such a large stock of arrears, while preserving space for social and other priority spending. The Government will need to pursue deep NPV reductions to address the entire stock. Otherwise, some portion of the arrears stock may be left unresolved, clearance of which would be dependent on the Government securing substantial additional external resources.

13. While the combination of terms (discounts, interest rates, maturity) may vary among suppliers, the NPV reductions should be broadly similar. Maintaining equitable treatment in NPV terms will help ensure evenhandedness and prevent the perception of favoritism. Piecemeal resolution of arrears, with selected creditors before finalizing the strategy, risks locking in unfavorable terms that could be detrimental to the overall macro-fiscal and financial impact of arrears clearance.

14. An illustrate scenario demonstrated the magnitude of NPV reductions needed to clear the entire stock of arrears without undermining efforts to ensure fiscal sustainability. Table 2 demonstrates, in a simplified scenario, how the arrears stock could be sustainably cleared by 2029 (most by 2025). The implied additional fiscal burden in 2020 of 0.7 percent of non-iron ore GDP is sustainable, thanks in part to higher-than usual expected grants and falls gradually in subsequent years. The scenario uses haircuts to demonstrate this, but similar NPV reductions can be achieved through other modalities (e.g., longer maturity, lower rates, etc.).

Table 2. Sierra Leone: Illustrative Arrears Clearance Scenario

Stock Breakdown		Clearance Assumptions									
Category	**Total (Le Billions)**	**Modality**	**Terms**	**Discounted Amount**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026-2029**
Arrears, Portion 1	**3,318**	Cash, Reschedule	55% haircut	1493	249	249	249	249	249	249	0
Arrears, Portion 2	**200**	Securitized	10 years, CPI+2%		50	43	39	35	32	30	94
Total 1/	**3,518**										
Fiscal Space needed (% non-iron ore GDP)					0.7	0.6	0.5	0.4	0.4	0.3	0.1

1/ Includes illustrative assumption of pose-April 2018 arrears accumulation intended to demonstrate potential financing need. Subject to confirmation of 2019 final outturn.

Box 2. Arrears Clearance Scenarios

Staff simulated a variety of arrears clearance scenarios—from zero interest rates to large haircuts, and a combination scenario. While these scenarios show some benefit, none are sufficient to avoid problems with fiscal sustainability and financial stability (Table).

- **Reducing interest rates for all creditors to zero** does not achieve sustainability. Even assuming zero interest burden on claims, the immediate fiscal financing benefit would be limited. The additional fiscal space needed would remain close to 2½ percent of GDP in 2020.
- **Phasing the issuance of some securities and repayment schedules** over 2020–21 helps to smooth the financing needs but still requires additional fiscal space of 1.6–2.2 percent of GDP per year during 2020-22. Cash requirements remain similar to the scenario above.
- **Applying a haircut of 25 percent to arrears** (excluding unpaid checks) implies additional financing needs similar to the zero-interest scenario (2.4 percent of GDP in 2020, 1.7 percent in 2021, and 1.2 percent in 2022), thus not achieving sustainability.
- **Adding an upfront 'goodwill' payment to facilitate agreement on a 25 percent haircut** would offer only a marginal benefit. The overall fiscal cost increases in the short run given the cost of the upfront cash payment (assumed to be US$40 million), while the implied domestic financing needs remain unrealistically high given banking sector absorptive capacity.
- **Combining phased issuance, 10-25% haircuts, and upfront goodwill payments is better, but still does not secure an affordable or sustainable clearance scenario.** Additional fiscal space required averages around 1 percent of GDP per year during 2020-22 and implied additional securitization in 2020 would exceed 1 percent of GDP, unlikely to be absorbed by the shallow banking sector. The implied debt path is borderline sustainable, but highly susceptible to shocks.

Sierra Leone: Fiscal Space Needed Under Various Arrears Clearance Scenarios

	Fiscal Space Needed (in percent of non-iron ore GDP)						Is debt	Can market
	2020	2021	2022	2023	2024	2025	sustainable?	bear?
Illustrative scenarios								
Front-loaded heavy securitization	2.9	2.1	1.5	0.6	0.5	0.4	No	No
Zero interest rate	2.5	1.8	1.2	0.4	0.4	0.1	No	No
Phased Issuance	2.1	2.2	1.6	1.0	0.6	0.2	No	No
Haircut	2.4	1.7	1.2	0.5	0.4	0.2	No	No
Haircut with goodwill payment	3.1	1.5	0.9	0.4	0.3	0.1	No	No
Combination of options	0.9	1.0	1.1	0.6	0.6	0.3	Borderline	Borderline

15. The Government will also need to consider other risks, such as exchange rate risk, in agreeing terms with suppliers. In the case of foreign-currency denominated arrears, if the Government is able to negotiate rescheduling into domestic currency, it may be appropriate to seek NPV terms on par with most other creditors. If, however, this is not feasible, it may be necessary to accept a somewhat short repayment (higher NPV) to limit the Government's foreign currency risk. In this case, a preferable formulation may be to negotiate a foreign currency-indexed amount, payable in domestic currency, to avoid disruptive spikes in demand for foreign currency.

16. If the Government cannot secure sufficiently large NPV reductions, it will require further external support or be forced to tackle clearance in two separate waves. Highly concessional external support—preferably grants—will be crucial to sustainably clearing arrears in Sierra Leone while also safeguarding priority expenditures. This will be even more urgent if suppliers are unwilling to accept large haircuts or if the impact on the banking sectors is larger than envisioned. Absent sufficient concessional external support, the tight domestic financing situation could necessitate clearing arrears in two waves.

Preventing Further Arrears Accumulation

17. Preventing further accumulation of arrears will be essential to the sustained success of the Government's arrears clearance plan. Suppliers will be more likely to accept proposed clearance terms and NPV reductions, and development partners more willing to provide financial support if they are confident that arrears accumulation will not be a recurring phenomenon.

18. The authorities have taken important steps toward strengthening the PFM framework. A large majority of MDAs (57 of 70) now use the Integrated Financial Management Information System (IFMIS), which controls commitments and record payments. To facilitate cash management, most MDA accounts are consolidated in the Treasury Single Account. On the budgeting side, there are efforts to support MDAs on budget formulation, reduce delays in issuing quarterly budget warrants (commitment ceilings), and; enforcing the use of IFMIS to enter into commitments.

19. However, effectively preventing new expenditure arrears will require further actions and effective implementation.[8] First, a realistic budget that reflects available resources, and the spending needs of MDAs (importantly, including their existing multi-year commitments) is essential. During budget execution, effective commitment controls is needed to ensure that MDAs do not commit beyond their allocations, while sound cash and debt management practices would ensure that cash is available as and when payment needs arise.

Realistic budgeting.

Key reforms to ensure more realistic budgeting include:

- a top-down approach to budgeting where credible MDA ceilings, based on an available resource envelope and reflecting the scheduled clearance of arrears, are set at an early stage of the budget process;
- a well-sequenced budget cycle that allows sufficient time for MDAs and their budget committees to prepare budget submissions, and for the Budget Bureau at the Ministry of Finance (MoF) to scrutinize and challenge these submissions; and the

[8] This section focuses on reforms most relevant to arrears prevention. Recent IMF technical assistance reports contain broader discussions on PFM reforms needed in Sierra Leone (see Koshima et al., "*Reengineering Business Processes for Arrears Prevention*", 2019; Hansen et al., "*Strengthening Fiscal Management*", 2019; Koshima et al., "*Developing SoE Oversight and Fiscal Risk Management*", 2018; Hurcan et al., "*Macro-Fiscal and Cash Management under the New Legal Framework*", 2016).

- integrating multi-year commitments of ongoing capital projects into the budget to avoid under-funding.

More effective expenditure controls.

Controlling commitments effectively within IFMIS requires automating and enforcing processes within the IFMIS.[9] Currently, manual processes slow down the issuance of quarterly budget warrants, leading MDAs to commit outside IFMIS to meet their spending needs. These include the submission and approval of Public Expenditure Tracking System (PETS) form for non-wage recurrent spending by MDAs, and the collection, aggregation and submission of quarterly project profiles by the Ministry of Planning and Economic Development (MoPED). Furthermore, interfacing the IFMIS to the Bank of Sierra Leone and National Revenue Authority systems should automate the transfer of payment orders, and tax compliance checks, allowing faster processing of payments. In addition, the IFMIS needs to be rolled out to large spending agencies, such as the Sierra Leone Road Authority, the Road Maintenance Fund, and the National Medical Supply Agency, for which there is currently a long chain of manual processes responsible for delayed payment to suppliers.[10] In the interim when IFMIS is yet to be rolled out to these agencies, an Invoice Tracking System could be implemented to speed up the process.

Robust cash and debt management.

Coordinated information sharing will make cash flows more predictable. Currently, the MoF prepares cash forecasts on a quarterly basis—with weekly updates—covering broad aggregates of revenue and non-discretionary expenditures, such as wages and interest. Information on projected external budget support, capital expenditure flows (provided by MoPED) and other discretionary expenditures (provided by MDA through PETS) will enhance these forecasts. The Cash Management Committee can better identify future peaks and troughs in cash flows, allowing the MoF to better prepare its financing plans and make future cash flows more predictable.

[9] Regulation #76 of the PFM Regulations 2018 states that a "commitment for recurrent and capital expenditure of budget heads and sub-heads from the State Budget shall be subject to a commitment ceiling set out by a budget warrant issued according to cash availability and the requirement of the requisition and approval through the computerized financial management system"

[10] In the case of these agencies, a recent technical mission identified a chain from contracting to payment that requires 160 signatures at various steps, which significantly slow down the processing of invoices, in addition to creating the risk of invoices being lost in the process.

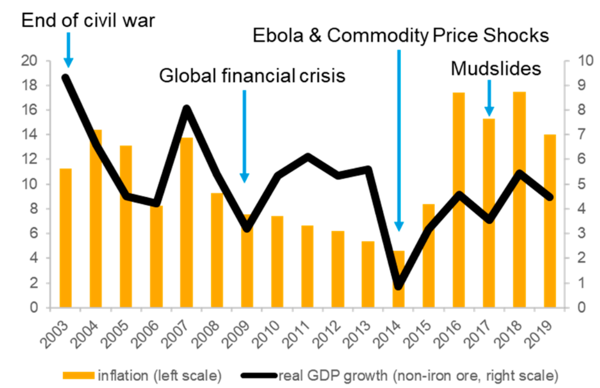
IMPROVING MONETARY POLICY EFFECTIVENESS IN SIERRA LEONE[1]

Recent high inflation has posed a significant challenge to Sierra Leone's economic stability and sustainability, including the burden it places on the most vulnerable. Despite past improvement in the conduct of monetary policy, this paper shows that fiscal dominance and shallow financial markets continue to weigh on the effectiveness of monetary policy. Nurturing an enabling macro-financial environment by curtailing fiscal financing needs and fostering market development will be instrumental to strengthening monetary policy. In this regard, the Government's commitment to fiscal adjustment is an important complement to their goal of reducing inflation to single digits. Addressing the structural challenges of monetary policy will also require sequenced institutional and operational reforms.

A. Introduction

1. Inflation in Sierra Leone was historically volatile and has remained persistently high in recent years (Figure 1). Through the decade of economic recovery following the end of the civil war, inflation gradually came down and stabilized at single digits, only to ratchet up quickly to double digits when the country was hit by Ebola and global commodity prices collapsed in 2014-15. Since then, inflation has remained elevated.

Figure 1. Sierra Leone: Development of Inflation and Growth



Source: IMF staff calculations.

2. The effectiveness of monetary policy in taming inflation has been hampered by the tension between maintaining price stability and meeting fiscal financing needs. The surge in inflation in recent years coincides with a period of increasing credit to the government by the domestic banking system. Meanwhile, frequent supply shocks, such as disruptions in the mining sector and natural disasters, pose significant challenges to the conduct of monetary policy.

3. Attaining and maintaining single-digit inflation is one of the key objectives of the Government's National Development Plan. High inflation undermines economic activities, increases government borrowing costs, eats away households' income, discourages investment, and disproportionally harms the poor. Improving monetary policy effectiveness to create a more predictable and stable low-inflation environment is therefore particularly important.

[1] Prepared by Yibin Mu and Jiaxiong Yao.

4. **Against this backdrop, this paper aims to analyze impediments to and scope for improving monetary policy effectiveness in Sierra Leone**. The rest of the paper is organized as follows. Section B describes the institutional context for the conduct of monetary policy. Section C discusses current macroeconomic environment. Section D analyzes the effects of monetary policy. Section E provides an overview of priority policy areas for improving the effectiveness of monetary policy.

B. Institutional Context

5. **Monetary policy is formulated by the Monetary Policy Committee (MPC) whose effectiveness has increased over time**. The MPC includes Governor, Deputy Governor,[2] a representative of the Ministry of Finance, and three other members recommended by the Minister of Finance and the Governor. The MPC meets every quarter, mainly reacting to recent economic developments. There has been good progress regarding quality and timeliness of materials for monetary policy decision-making. The Bank of Sierra Leone (BSL) has started forecasting near-term inflation since December 2018. The BSL's web-based data warehouse went live in March 2019, providing a database of macro-economic time series as far back as 2001 for the four sectors (real, external, fiscal, and monetary and financial) of the economy.

6. **While price stability is the primary objective of monetary policy in the BSL Act,[3] there are constraint on it being the effective operating objective in practice.**

- <u>Tensions among de jure objectives.</u> The BSL's mandate encompasses other important goals, including macroeconomic and financial stability, as well as financial market development. While these goals are complementary to that of price stability, tensions involving short-run trade-offs between price stability and other goals can arise, posing challenges to the conduct of monetary policy. For example, subdued growth and high inflation impose competing pressures on monetary policy.

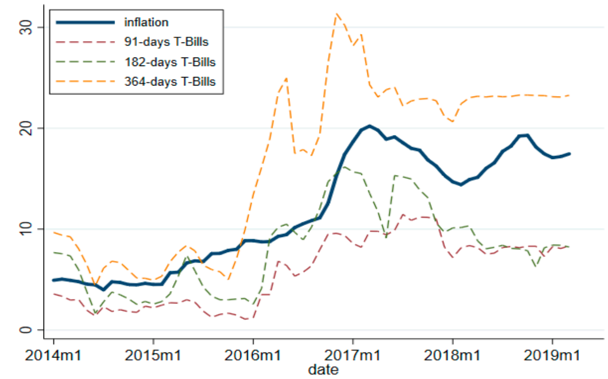
- <u>Tensions among de facto objectives.</u> Among others, the BSL faces the following de facto competing objectives in formulating its policies: achieving price stability, meeting fiscal financing needs, achieving foreign exchange reserves targets, mitigating exchange rate volatility, and enhancing credit to the private sector. Pursuing multiple objectives—particularly when they are conflicting—complicates policy design and is often the source of policy slippages.

[2] As of early March 2020, the second deputy under the new *Bank of Sierra Leone (BSL) Act* is yet to be appointed.

[3] Section 7.A of the new BSL Act states: "(1) the objective of the Bank shall be to achieve and maintain price stability. (2) Without prejudice to subsection (1) the Bank shall contribute to fostering and maintaining a stable financial system. (3) Without prejudice to the attainment of the previous two objectives, the Bank shall support the general economic policy of the Government. The previous BSL Act also defined price stability as the primary objective of monetary policy."

7. In practice, monetary policy is currently implemented in the context of reserve money targeting. The BSL's reliance on quantity as the policy target reflects two key constraints. First, lack of developed financial markets hinders the BSL's ability to anchor monetary policy through prices. While the BSL sets monetary policy rate (MPR), it mainly serves a signaling purpose. The BSL does not have the operational support of liquidity management to align market rates with its policy rate. Second, lack of reliable information on real interest rates makes it difficult to assess the status of macroeconomic situation. Divergence of interest rates among different government securities, for example, shows a distorted picture of the liquidity condition and clouds the assessment of the state of the macroeconomy (Figure 2).

Figure 2. Sierra Leone: Divergence of Yields



Sources: Bank of Sierra Leone and IMF staff calculations.

8. The current monetary policy framework is more backward-looking in formulating, implementing, and communicating monetary policy. Policy analysis focuses on recent economic developments rather than underlying or forward-looking pressures that drive inflation. Furthermore, policy horizon is short, typically focusing on the end-year inflation forecast without a comprehensive assessment of the economic outlook, future risks, the consistency of the policy path with the inflation objective, and contingency plans in the event of large shocks. The MPC is still in the course of improving its communication strategy, including to explain its decisions, past outcomes and actions necessary to align expected inflation outcomes with the policy objectives.

C. Macroeconomic Environment

9. Sierra Leone's financial system remains shallow and inefficient, dominated by commercial banks in terms of assets, and financial markets are in their infancy. Total banking assets account for only about 18 percent of GDP in 2018. The spread between lending and deposit rates amounts to 15 percent, signaling high inefficiency of financial intermediation. Inter-bank market activity is very limited. Instead, banks deal with their liquidity situation individually with the BSL. The secondary market of government securities is virtually non-existent, and money market activities are limited. The small size of financial sector relative to GDP particularly limits the BSL's ability to influence aggregate demand.

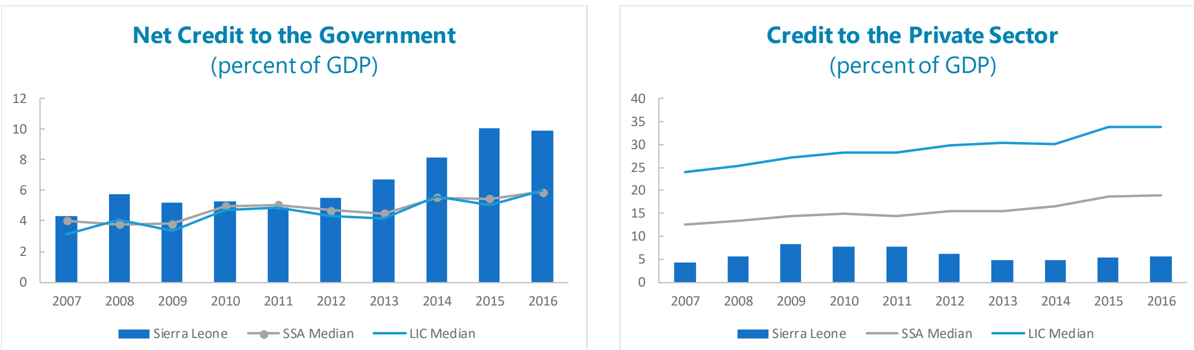
10. Fiscal dominance characterizes the macro-financial landscape. Compared to its peers, Sierra Leone's banking sector had much higher credit to the government (including state-owned enterprises) and significantly lower credit to the private sector in percent of GDP (Figure 3).

- The credit function of banks is limited to the public sector. On the asset side, commercial banks heavily invest in T-bills and credit to the private sector is of secondary importance. Around 65 percent of commercial banks' credit is channeled to the central government while only about

35 percent of credit funds the private sector (Figure 4). Moreover, credit to the private sector is typically extended to contractors who work on government-related projects, making the implicit share of credit to the public sector even larger.

- Fiscal financing needs dominate the central bank's balance sheet. Nearly 99 percent of central bank's credit goes to the central government, compared to about 1 percent of credit to commercial banks. Credit to the government in percent of GDP has doubled from 2012 to 2018 while credit to the private sector hovers around 5 percent (Figure 4).

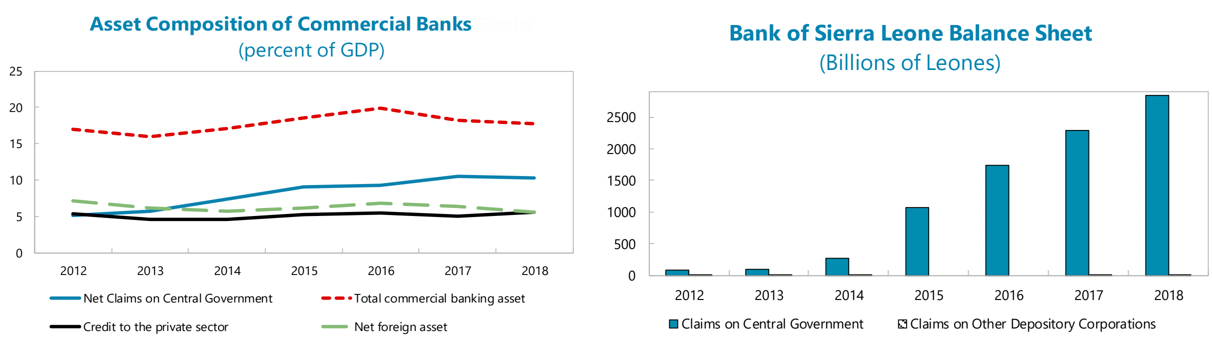
Figure 3. Sierra Leone: Banking Sector Credit Allocation in Comparison with Peers



Note: SSA--Sub-Saharan Africa. LIC--Low income countries.

Source: World Bank FinStats 2018.

Figure 4. Sierra Leone: Fiscal Dominance



Source: IMF staff compilation based on the data from the BSL.

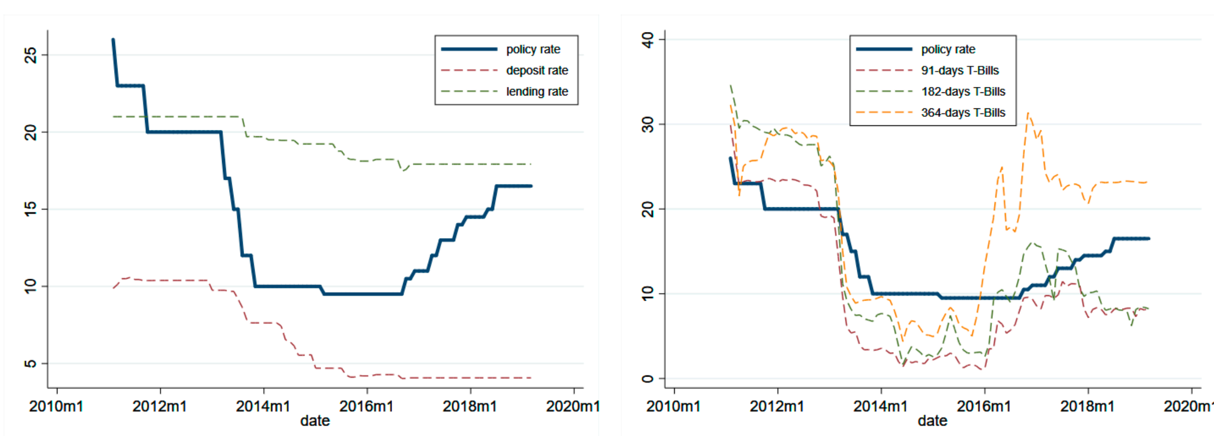
11. The BSL and Ministry of Finance compete on the short end of the yield curve. The inability of the government to borrow long-term has resulted in distorted T-bill rates. T-bill maturity is concentrated at 1-year (over 90 percent of all T-bills), with a high yield of above 20 percent. Such high return on government securities discourages commercial banks from expanding credit to the private sector and incentivizes the government to borrow from the BSL at a lower rate. In addition, the limited market depth to absorb government financing needs puts the government at risk of running arrears to contractors, which drives up non-performing loans makes banks shy away further from credit to the private sector. This creates a vicious cycle of central bank financing, limited financial market depth, and runaway inflation.

12. Vulnerability to external shocks adds to the challenging macroeconomic environment. Sierra Leone relies heavily on imported goods and services (30 percent of GDP), which suggests that exchange rate passthrough is potentially high. While reserve coverage is broadly adequate as of end-December 2019 (preliminarily at 3.5 months of imports), real exchange rate overvaluation (assessed to be in the order of 20-30 percent) implies that depreciation pressures could quickly place pressure on reserve adequacy. Shocks to the external sector will likely have a significant impact on inflation, further complicating the inflation management.

D. Effectiveness of Monetary Policy

13. Shallow financial markets prevent the MPR from affecting household and business activities effectively. The small share of domestic credit to the private sector implies that there is a limited role of interest rates in affecting private demand. More importantly, there is a disconnect between the MPR and interest rates relevant for consumption and investment decisions. Notably, the MPR has been raised multiple times since 2015 to contain rising inflation, but there has been almost no change of deposit and lending rates (Figure 5, left panel). As a result, the influence of monetary policy rate on aggregate demand of the private sector is insignificant. By contrast, there is much stronger co-movement of monetary policy rate and treasury yields (Figure 5, right panel).[4] Such dichotomy suggests that the MPR affects aggregate demand mainly through the public sector by influencing the government's borrowing cost.

Figure 5. Sierra Leone: Transmission Channels through Monetary Policy Rate

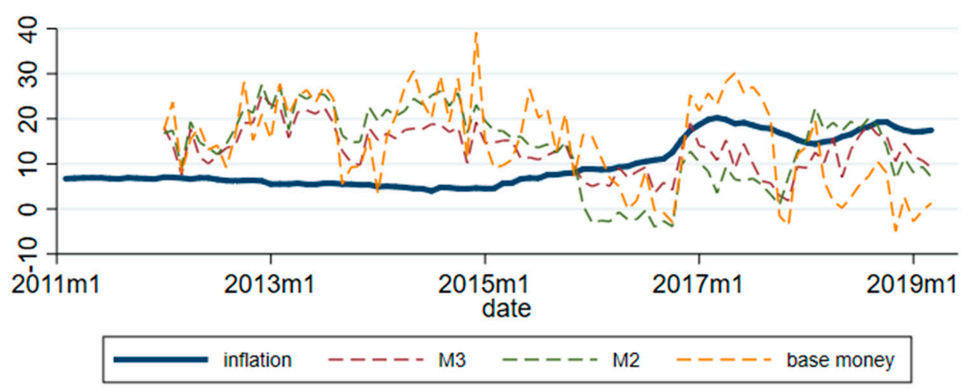


Sources: Bank of Sierra Leone and IMF staff calculations.

[4]Technically, a 100-basis point increase in the MPR is associated with 54-75 basis points increase in Treasure bills in the same month, whereas it is associated with only 7-8 basis points increase in deposit and lending rates with a one-month lag.

14. The association between money aggregates growth and inflation is less than clear. The past decade can be divided into two periods by the twin shocks of Ebola and the global commodity price slump in 2014–15. The period before the twin shocks was characterized by more fiscal discipline and single digit inflation, but the period after witnessed the fiscal pressure from the twin shocks, subsequent loss of fiscal discipline around 2016-17, and rising inflation. Inflation has ratcheted up rapidly since 2015, despite similar growth rates of money aggregates throughout the decade (Figure 6).

Figure 6. Sierra Leone: Inflation and Money Aggregates Growth

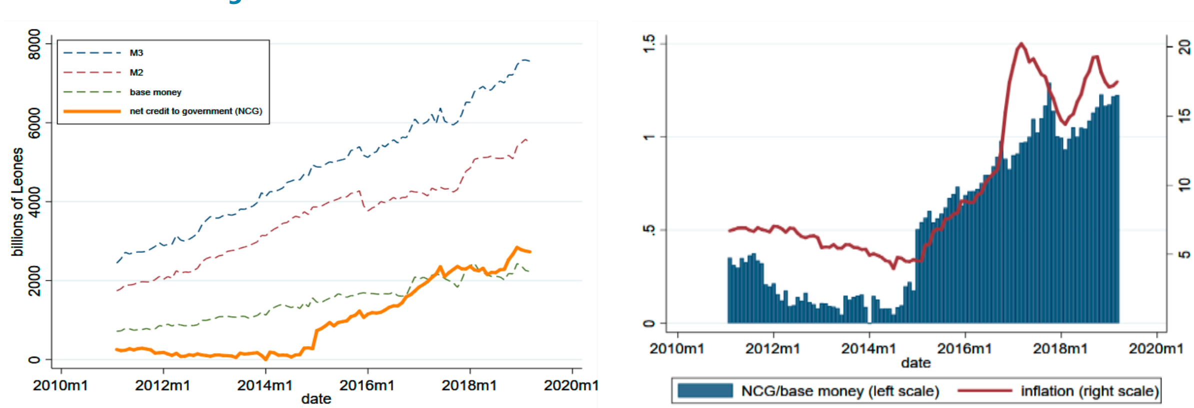


Note: Money aggregates growth is year-on-year.

Sources: Bank of Sierra Leone and IMF staff calculations.

15. Inflation is strongly correlated with fiscal financing needs. One notable development after 2015 is the change in the composition of money aggregates. There was a sharp rise of the central bank's net credit to government—a component of base money—that coincided with the surge in inflation (Figure 7). The correlation between inflation and net credit to government as a share of base money is 0.90 between January 2011 and March 2019. The substantial increase in government borrowing and associated surge in inflation underscore the disproportionate influence of the public sector on the economy. Past lack of fiscal discipline has undermined monetary policy effectiveness and worsened inflation.

Figure 7. Sierra Leone: Inflation and Net Credit to the Government



Sources: Bank of Sierra Leone and IMF staff calculations.

16. Taken together, monetary policy transmission—either through quantities or price—is weak and is overwhelmingly influenced by fiscal behavior. Under fiscal dominance, the central bank is often required to finance the fiscal needs directly or indirectly through lending to the government. Monetization of fiscal deficits results in large increases in money supply, pushing up aggregate demand and inflation. Furthermore, higher interest rates resulting from tighter monetary policy can increase the government's debt service burden, and the fiscal authority might put pressure on the central bank to undertake policies that are less tightening than optimal. Controlling money growth to contain inflation, in the face of pressure to finance the deficit and build international reserves, squeezes the credit to the private sector. With credit to the private sector hovering at around 5 percent of GDP, the current policy environment does not augur well for strengthening in the near-term channels through which price-based monetary policy can impact aggregate demand.

17. Reserve money targeting, while appropriate in the near term, has limitations. In the face of severe fiscal dominance, reserve money targeting helps anchor inflation by setting quantitative limits on reserve money growth. Reserve money targeting also plays a monitor role in Fund-supported programs. Nevertheless, reserve money targeting raises some challenges. As evident in Figure 6, there is a weak correlation between money aggregates growth and inflation in the short run. While the quantity theory of money states a proportional relationship between money supply and price level, that relationship mostly likely exists in the long run. In addition, liquidity shocks can lead to volatile short-term interest rates, increasing liquidity risks and hampering monetary transmission.

E. Priority Policy Areas for Improvement

18. Nurturing an enabling macro-financial environment is equally important as putting in place technical building blocks to enhance the effectiveness of monetary policy. As noted above, structural challenges severely constrain the conduct of monetary policy. Many liquidity management instruments are already in place. However, they fail to gain control over liquidity conditions and inflation in the presence of fiscal dominance. Shallow financial markets further limit the scope of monetary operations as market depth is insufficient to absorb excess liquidity created by fiscal imbalances. Adequately addressing these issues is necessary to transition to the next stage of market development and enable more effective liquidity management.

19. Curtailing fiscal dominance is the first, and crucial, step toward fostering market development and strengthening monetary policy. The likelihood of deepening financial market crucially hinges on a sound financial relationship between the BSL and the government. Reducing central bank financing to the government will break the vicious cycle where the loss of control over liquidity conditions puts pressure on inflation that in turn increases the borrowing cost from commercial banks and reinforces the need of the government to borrow from the central bank. High return on government securities also discourages commercial banks from providing credit function to the private sector, stalling market development. Ultimately, the Government's commitment to put the fiscal deficit on a sustainable path, in line with the Fund-supported program, is fundamental to curtailing fiscal dominance.

20. Parallel reforms to build institutional and operational capacity will be key to moving toward market-based monetary policy. Establishing operational independence of the central bank, strengthening the role of commercial banks in financial intermediation, fostering interbank market development, and diversifying markets need to be sequenced. In each step, incentives among different participants should be well aligned. The Fund has produced ample analytical work on, and technical assistance to, countries at various stages of market development and monetary policy reform implementation (e.g. IMF 2005, IMF 2015a, IMF 2015b, Berg and Portillo. 2018), which serve as good references for sequencing reforms.

21. This should involve well-sequenced actions to put in place sound technical building blocks. More concretely, there are a few important areas where progress can be made.

- **Establishing sound institutional and governance setting for the central bank.** The new BSL Act provides the legal framework to reinforce the independence of the BSL, and effective implementation will be crucial. Nevertheless, building and maintaining political commitment is critical to ensure *de facto* independence over the long term. Short of *de facto* independence in the near term, a joint determination of medium-term inflation objective by both the government and BSL will help to insulate the inflation objective from political pressures and strengthen the credibility of this policy goal. However, the BSL should have the sole responsibility of achieving the inflation objective and be ready to handle inherently difficult tradeoffs when other policy goals conflict with price stability. In addition, monetary policy can stabilize the financial environment but cannot force banks to lend.

- **Transiting to a hybrid operational framework.** The objective is to enhance the central bank's control of short-term interest rates, while relying on reserve money as the primary operating target, which makes it a hybrid of monetary targeting and interest rate targeting. Such an operating framework is expected to reduce interest rate volatility. Effective operations that aim at stabilizing excess reserves and keeping the reserve balances on the target path should be the first objective in reducing short-term rate volatility. The interest rate corridor that the BSL introduced in 2016 helped limit rate volatility. By capping the volatility of market interest rates, the interest rate corridor has strengthened policy signaling and transmission between the policy rate and the interbank rates.

- **Strengthening monetary policy implementation framework.** It is important for the BSL to gradually set up a comprehensive implementation framework for injecting (draining) liquidity when there is overall shortage (excess) of liquidity in the banking system. The primary goal of foreign exchange operation is to smooth the excess exchange rate volatility or to achieve the foreign exchange reserve targets.

- **Enhancing analytical capacity.** The BSL has made good progress in strengthening its analytical capacity and sustaining these efforts is critical to support a forward-looking approach. To this end, the BSL should continue to strengthen its capacity to interpret data in a timely manner and produce model-based medium-term forecasts, in line with key recommendations in the recent technical assistance (IMF 2019). Meanwhile, Statistics Sierra Leone should continue to strengthen the quality of inflation data and closely collaborate with the BSL to facilitate accurate interpretation of data and assessment of the inflation outlook.

- **Establishing a forward-looking and effective communication strategy.** The BSL should develop a transparent forward-looking monetary policy strategy that reflects timely and comprehensive assessments of the monetary transmission mechanism, in particular as monetary policy affects key economic variables (output, inflation, exchange rate) with a lag. Effective monetary policy transmission requires the BSL to make the financial environment more predictable by enhancing its communication strategy, particularly with respect to discussing and explaining adjustment to forecast and targets.

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