



BENIN

SELECTED ISSUES

July 2022

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BENIN

SELECTED ISSUES

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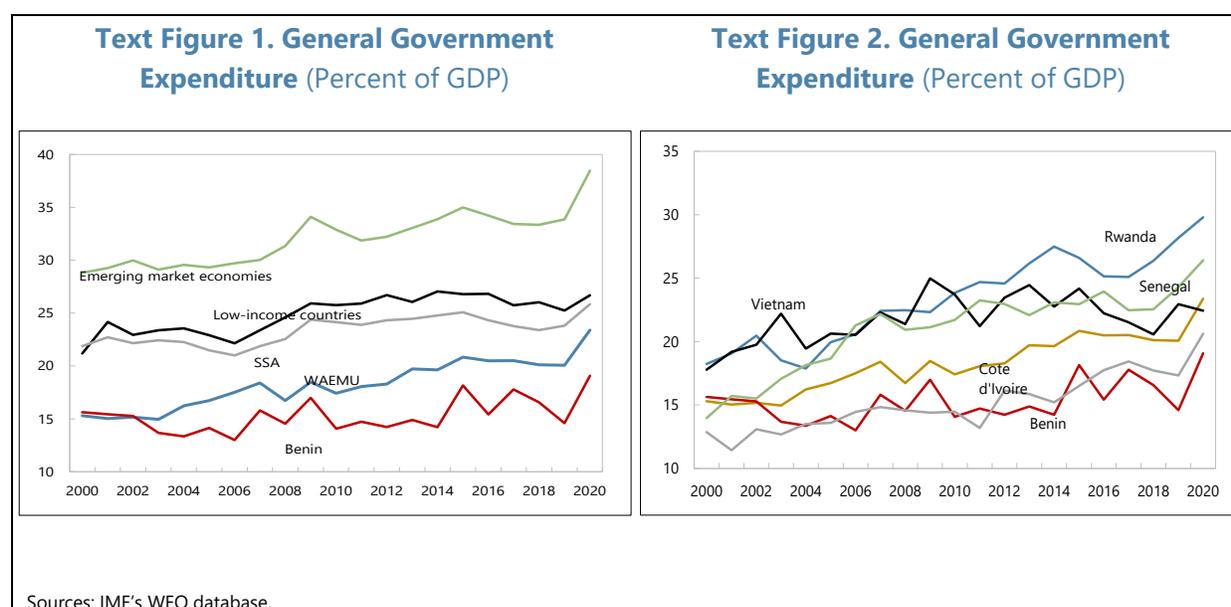
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SCALING UP PUBLIC EXPENDITURE FOR INCLUSIVE GROWTH¹

Poverty and inequality remain relatively high in Benin despite robust economic growth over the past decade, partly reflecting the fact that public spending on education, health and social protection has not kept up with demographic trends. Raising the living standards of all Beninese, as envisaged by the government under its “highly social mandate”, will require enhanced provision of basic public services across Benin, including education and health, and strengthened social protection. Sustained revenue mobilization efforts, and spending reprioritization and efficiency will support this objective (SIP-II).

A. Public and Social Spending in Benin: Stylized Facts and Key Challenges

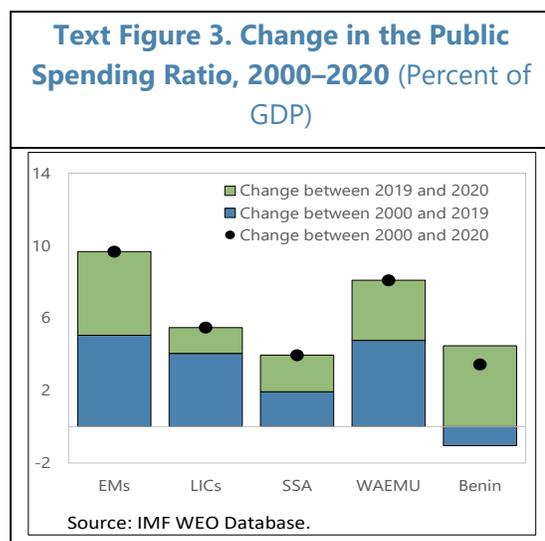
1. Public spending has been historically low in Benin. It averaged 15.3 percent of GDP over 2000–20, well below levels observed among LICs (25 percent), SSA (23.4 percent), and WAEMU (18.2 percent) (Text Figure 1). Public spending in Benin is also relatively low compared to benchmark economies like Rwanda (23.3) and Senegal (21 percent) (Text Figure 2); it has ranked consistently in the bottom decile across the world. Moreover, while the public spending-to-GDP ratio has been trending up among developing countries, it has remained flat in Benin, except for the spike in 2020, at the COVID-19 height.



2. The low level of public spending constrains the ability of the Beninese government to provide essential public services and fulfil non-traditional state functions.

¹ By Younes Zouhar (AFR).

- The levels of public spending in Benin pre-COVID-19 were comparable to levels observed in early 20th century among currently advanced countries when the role of the state was minimal and limited to core or essential functions such as defense, protection of individuals and property, administration, justice, and basic health services (Tanzi, 2008; World Bank, 1997).
- The spectrum of public spending has expanded globally overtime, as the public's attitudes and expectations vis-à-vis the role of the state evolved, with an increased focus on social and/or redistributive functions (World Bank, 1997). The average global government spending increased by 3.5 percentage of GDP between 2000 and 2019 (from 28.6 to 32.1 percent of GDP). It further increased by 4.4 percentage of GDP in 2020 reflecting massive fiscal packages to contain the socio-economic fallout from the COVID-19 pandemic, bringing the total expansion to 7.8 ppts of GDP in two decades. A similar trend was observed among LICs, SSA, and WAEMU, albeit to a lower extent (Text Figure 3). By contrast, public spending in Benin decreased by 1 ppt of GDP between 2000 and 2019 (from 15.6 to 14.6 percent of GDP), with a peak in 2017 (17.4 percent of GDP). There was a spike in Benin's public spending in 2020, with a 4.5 ppts of GDP increase to 19.1 percent, partly driven by COVID-19-related spending.



3. As a result, Benin has lagged peers in social spending. Following IMF (2019), social spending comprises spending in social protection, education, and health. In the context of low overall public spending and the increased focus on improving the road network (to close Benin infrastructure gap) and industrial policy (e.g., industrial zones), social spending in Benin has remained low. It averaged about 5 percent of GDP per year over the last decade, against 8.2 percent for LICs (Text Figure 4). Social spending in Benin was lower than for the average LICs in on all key social sectors. The Ministry of Finance monitors public spending on social priorities (pro-poor spending) which encompasses spending targeting vulnerable segments of the population (priority social spending increased from 2 percent of GDP in 2011 to 3.5 percent of GDP in 2018 before gradually receding to 2.3 percent of GDP in 2020).

4. Achieving the Sustainable Development Goals (SDGs) will require significant increases in public spending going forward. Gaspar et al (2019) and Prady and Sy (2020) estimates that additional spending to achieve the SDGs in Benin in five selected sectors (health, education, water/sanitation, electricity, and infrastructure) is considerable—about 21 percent of GDP in 2030. If one assumes for illustrative purposes that this additional spending is carried out evenly through the private sector, spending relocation/efficiency, and additional public spending, the public spending to GDP ratio would need to be around 23 percent by 2026. At the same time, the medium-term expenditure framework for 2022–24, accompanying the original 2022 budget law documentation

was foreseeing a slight decline in the public spending to GDP ratio from the 2020 peak (Ministry of Economy and Finance, 2021). The new Benin’s Fund-supported EFF/ECF envisages a public spending increase to above 19 percent of GDP by the end of the program (Text Figure 5), which allows to protect public spending, keeping it closer to the SDGs-consistent path. Even assuming strong private sector participation, reaching the SDG-implied spending level would require efforts in revenue mobilization and spending efficiency well beyond those assumed under the EFF/ECF (see Staff Report; Para 29).

Table 1. Benin: Functions of the State

	Addressing Market Failures			Improving Equity
Minimal Functions	Providing pure public goods:			Protecting the poor:
	Defense, Law and order, Property rights, Macroeconomic management, Public health			Anti-poverty programs Disaster relief
Intermediate Functions	Addressing externalities:	Regulating monopoly:	Overcoming imperfect information:	Providing social insurance:
	Basic education Environmental protection	Utility regulation Antitrust policy	Insurance (health, life, pensions) Financial regulation Consumer protection	Redistributive pensions Family allowances Unemployment insurance
Activist Functions	Coordinating private activity:			Redistribution:
	Fostering markets Cluster initiatives			Asset redistribution

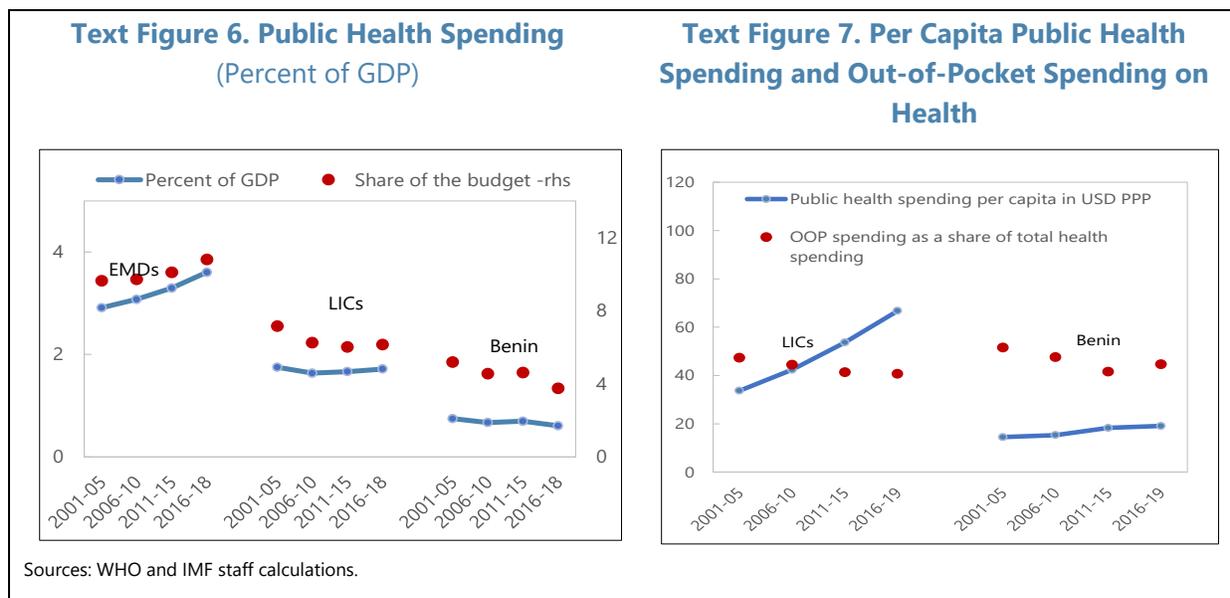
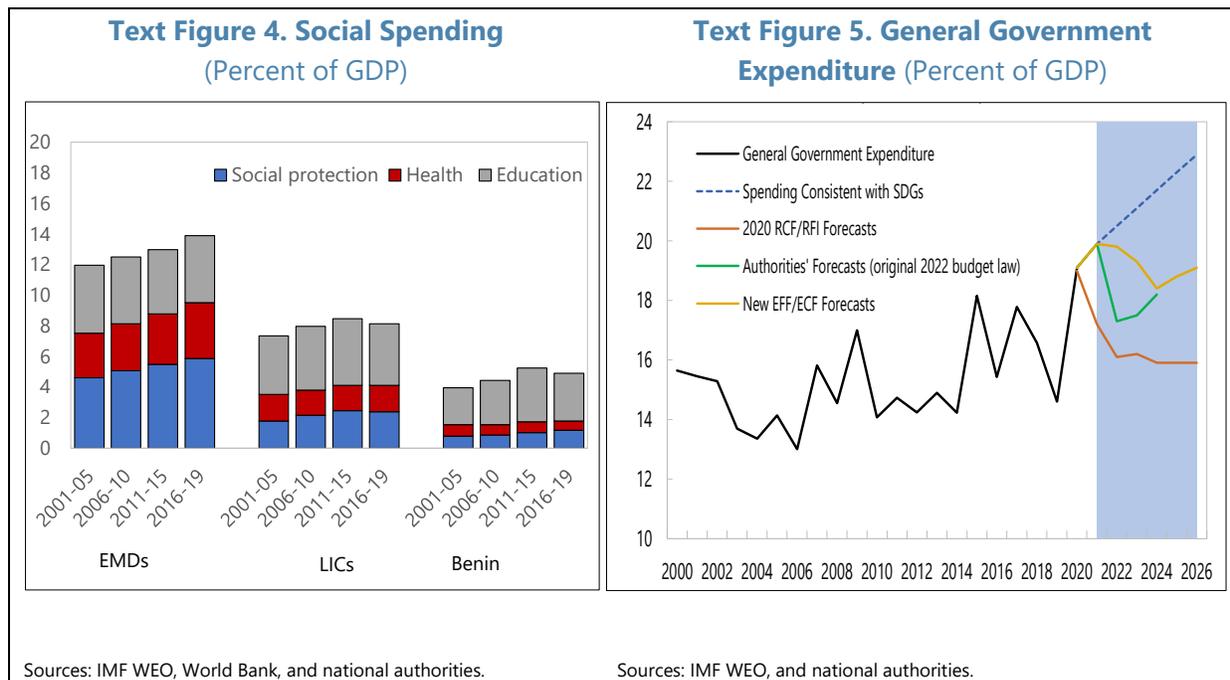
Source: World Bank (1997)

B. Spending and Outcomes in the Health Sector

Trends in Public Health Spending

5. Public spending on health averaged around 0.6 percent of GDP during 2016–19 in Benin, one third of its average among LICs. The share of health spending in overall public expenditure is low and has been on downward trend over the last two decades. It dropped from 5.2 percent in 2001–05 to 3.7 percent in 2016–19 (Text Figure 6). Public health spending per capita in Benin was estimated at around US\$19 (in PPP terms) during 2016–19, up by 32 percent from 2001–05. During the same period, the average public health spending per capita among LICs doubled to reach US\$66 (PPP terms) in 2016–19. At the same time, the share of out-of-pocket spending on

health in total health spending for Beninese households increased to 44.6 percent in 2016–19, outpacing levels observed among LICs (40.7 percent) (Text Figure 7).



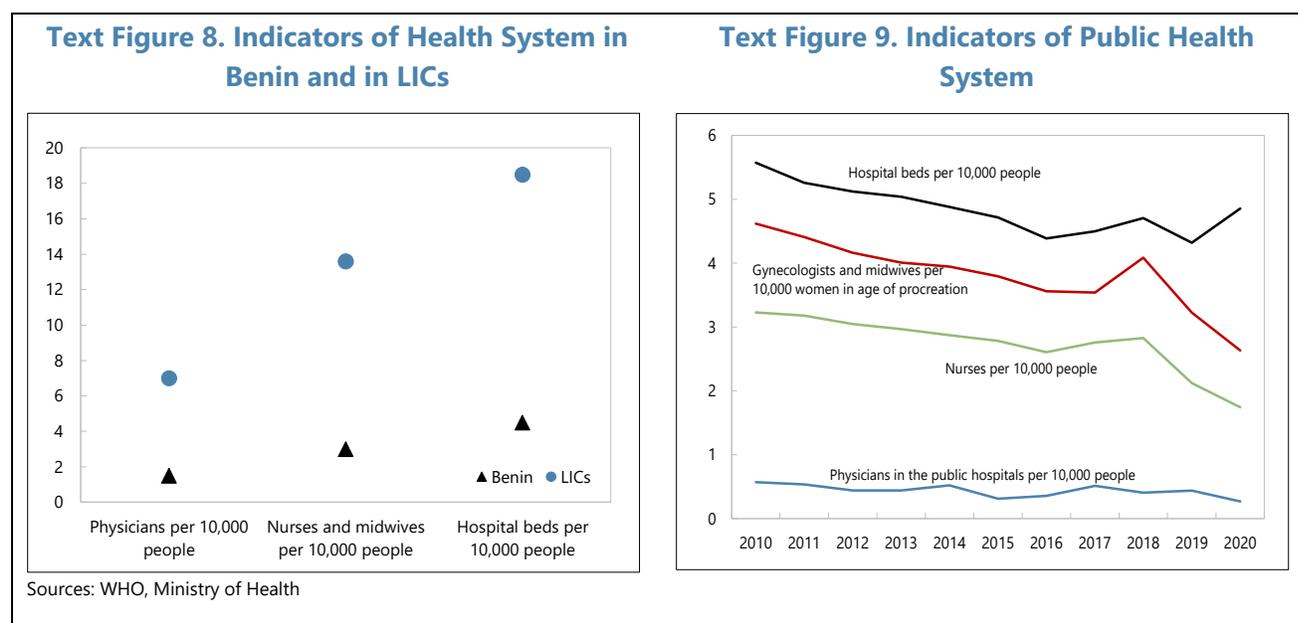
6. Underspending on public health sector reflects low budget appropriations and weak implementation of capital expenditure. Budgeted health spending followed a downward trend, achieving an annual average of 1.1 percent of GD. It was significantly scaled up in 2020 in the context of the COVID-19 pandemic. Moreover, implementation of health-related capital expenditure was relatively low, particularly for foreign financed capital expenditure which represented 63 percent of total capital budget allocations for health during 2011–19. The implementation rate of health

capital from financing committed from external sources was 33 percent, against 86 percent for domestically financed capital health spending. As a result, the share of the foreign financed capital spending on health represented on a commitment basis only one third of total capital health spending. In parallel, the share of capital spending in total budgeted health spending decreased from about 45 percent in early 2010s to 28 percent in 2017–19, just prior to the COVID-19 pandemic. The share of capital expenditure, on commitment basis, receded from 24 percent to 17 percent during the same period.

Indicators of Public Health System

7. Benin has lagged other LICs in healthcare system indicators (Text Figures 8 and 9). The pace of the construction of new hospitals and the recruitment of the healthcare personnel has not been commensurate with the gaps and the high demographic pressures.

- The ratio of the hospital beds to 10,000 people declined during 2010 –19, before increasing in 2020 to close to 5. This is well below LICs average levels at 18.
- The density of physicians (operating in the public and private health sectors) per 10,000 people is estimated at 1.5 in Benin, against 7 among LICs. This reflects the decline in the ratio of public sector doctors per 10,000 people which was only 0.3 in 2020.
- The ratio of nurses and midwives per 10,000 people is only 3 in Benin, representing a fraction of the levels observed among LICs at 13. The density of public sector nurses dropped from 3.2 in 2010 to 2 in 2020 in Benin. There are currently only 2 gynecologists and midwives per 10,000 women in age of procreation (against 4.6 in 2010).



Health Indicators

8. Health outcomes have remained weak, reflecting limited inputs (paragraph 7).

- While **infant and maternal mortality** rates have on average declined among LICs, they have remained stubbornly high in Benin (Text Figure 10).
- Progress towards SDGs has been slower also than among LICs in some areas such as the reduction of the prevalence of **stunting among children aged 5 and below** (text Figure 11).
- **Malaria** is pervasive and persistent, with a prevalence above 40 percent in 2020. While countries with high malaria prevalence in early 2000 were able to halve the prevalence rate to 20 percent in 2020, it remains as high in Benin as 20 years ago (Text Figure 12). Malaria tends to particularly affect Beninese children (aged below 5 years) with reported Malaria above 50 percent in 2020 (Text Figure 13). In 2019, Malaria represented 45.5 percent of reasons for consultation or hospitalization (against 44 percent in 2010), followed by acute respiratory infections (13 percent in 2019 close to the 12 percent in 2010). It remains a leading cause of morbidity and mortality: 23 percent of total reported deaths in 2019 (34 percent of total deaths among children aged 5 years and below).

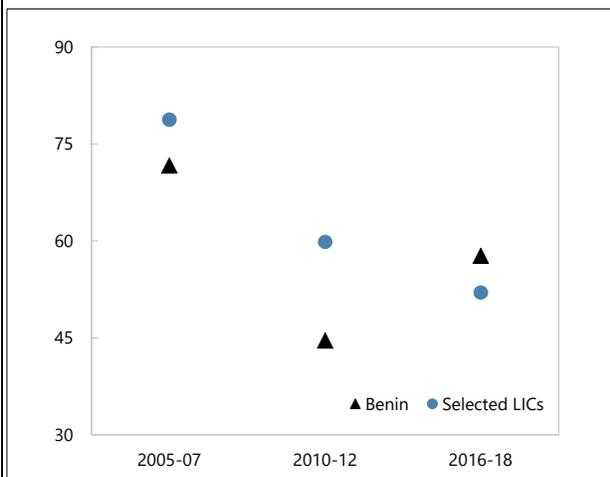
9. High malaria prevalence entails significant socioeconomic costs. Households caring for malaria patients incurred costs amounting to 10–20 percent of monthly per capita expenditure (Alonso et al, 2019), driving a vicious cycle of poverty. The costs for the national health system are also staggering and can reach the equivalent for \$7 per uncomplicated case and \$74 per severe cases in LICs. Prevalence of malaria among children leads to absenteeism from school and possibly dropout, with lasting effect on human capital accumulation. Malaria also reduces the productivity of affected worker. A study has found that in Southern India, households whose members suffered with malaria could clear only 40 percent as much cropland as those households without malaria (Malaney et al, 2004). At the macrolevel, considering initial poverty, economic policy, tropical location, and life expectancy, among other factors, countries with intensive malaria grew 1.3 percent less per capita per year, and a 10 percent reduction in malaria was associated with 0.3 percent gain in growth (Gallup and Sachs, 2001). The prevalence of malaria affects many dimensions of social welfare (e.g., participation in the labor market, education, health status, equity, etc.) and hampers progress towards most of SDGs (*Swiss Malaria Group, 2018*).

10. Moreover, there is large inequality in access to health services and health outcomes in Benin, both along households' income and regions.

- **Inequality along households' income.** Only 63.6 percent of women in the poorest income quintile had access to maternal health services in 2017–18 against more than 95 percent in richest quintile (Text Figure 14). This is lower than in 2011–12 (68.2 percent). As a result, only 61 percent of pregnancies of women from poor households were attended in 2017–18 by trained health personnel against close to 100 percent for those from rich households, which explains higher maternal mortality rates among women from poorest background. Similarly, malaria tends to affect more the poorest households with a prevalence rate of 55 percent against 23 percent among the richest households (Text Figure 15).
- **Cross-regional disparities.** Inequity in terms of health resources between regions remains significant. The density of health professionals tends to be strongly related with the poverty rate

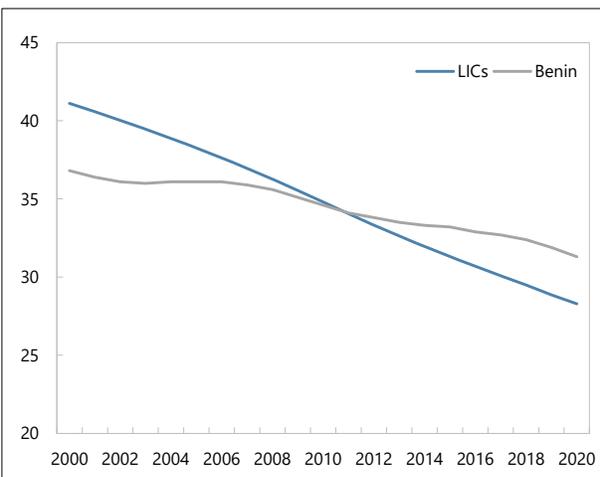
at the regional level. Moreover, the decline in public health resources (per capita) over the last decade has mostly affected the regions with the highest rates of poverty, while the richest regions have seen an improvement. The remoteness of the health centers is cited by 51.5 percent of the poorest households as a reason for low access to health services against only 16 percent among the richest holds. This reflects persistence of high inequality in terms of resources of the public health system between regions (Text Figure 16)

Text Figure 10. Infant Mortality Rate (deaths per 1000 live births among women aged 20-49)



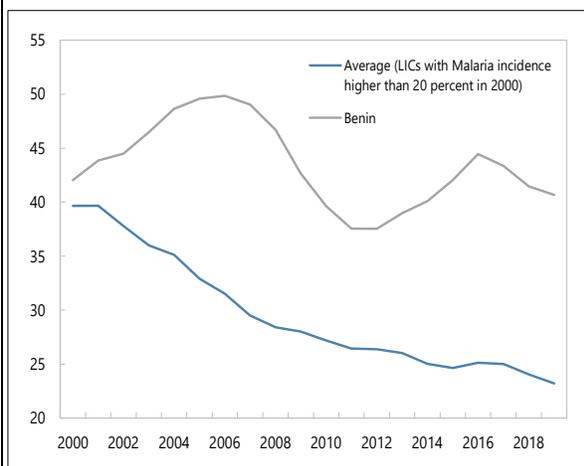
Source: WHO

Text Figure 11. Stunting Prevalence Among Children Under 5 years of Age (Percent of GDP)



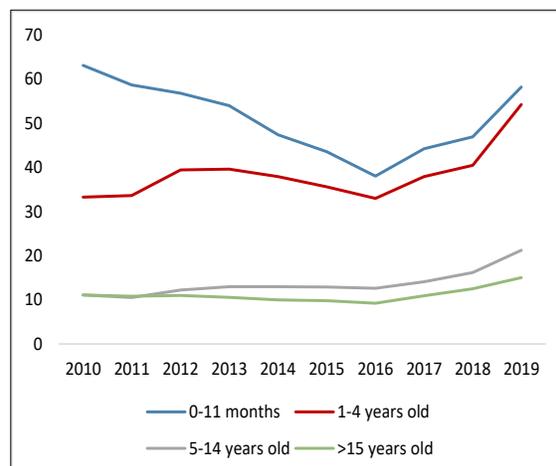
Source: WHO

Text Figure 12. Malaria Incidence (per 100 people at risk)



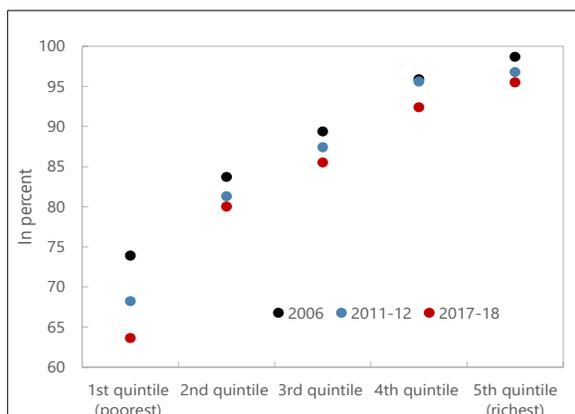
Sources: WHO, IMF staff calculations

Text Figure 13. Reported Malaria Incidence by age Group (percent)



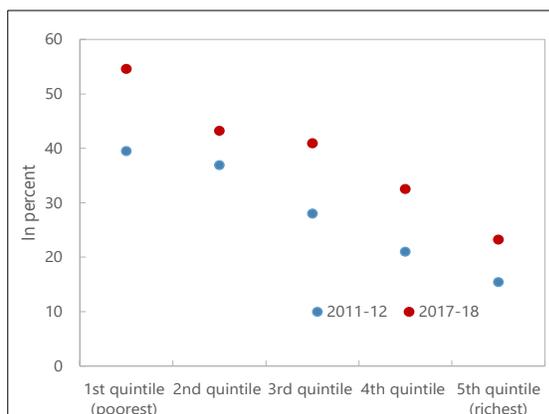
Source: Ministry of Health of Benin

Text Figure 14. Access to Maternal Healthcare Services by Income Quintile



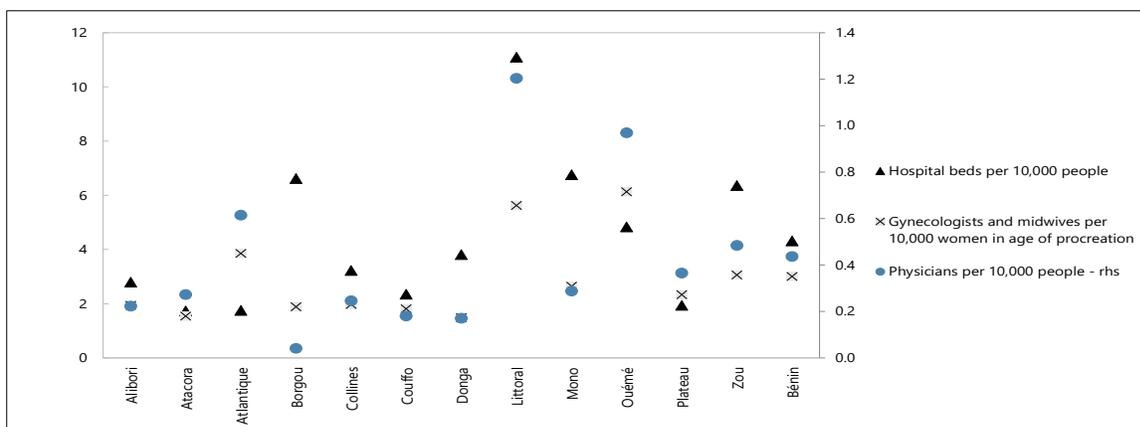
Sources: Demographic Health Surveys (DHS)

Text Figure 15. Prevalence of Malaria by Quintile



Sources: Demographic Health Surveys (DHS)

Text Figure 16. Indicators of Public Health System by Region



Sources: Ministry of Health,

C. Spending and Outcomes in the Education Sector

11. Though relatively small in level, education represents a large share of budget in Benin. The share of public spending on education in Benin reached 18.8 percent during the period 2016–18 (from 21.6 percent on average per year during 2011–15). Despite declining, this level is higher than in LICs (15.5 percent), (Text Figure 17). However, when assessed in terms of GDP, public spending on education in Benin is 25 percent lower than in LICs: 3.1 percent of GDP in Benin against 4.1 percent of GDP among LICs.

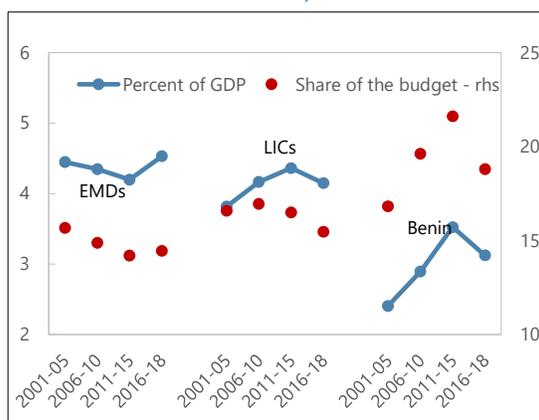
12. School enrollment rates have overall improved, with significant variations across education levels. While Benin has closed the gap vis-à-vis LICs in primary and secondary education, it still lagged in pre-primary and tertiary education (Text Figure 18).

13. Benin has performed better than peers in the quality of primary school. The quality of the primary education system in Benin improved significantly as evidenced by the increase in the learning outcomes for primary students between 2014 and 2019 (PASEC, 2020) (Text Figure 19). This could be partly due to the expansion of the school feeding program and a better dialog between the government and teacher unions (Le Nestour, 2021).

14. However, there is large inequality in education outcomes along income and regions. Progress in reading and mathematics in Benin has not been shared equally by all students.

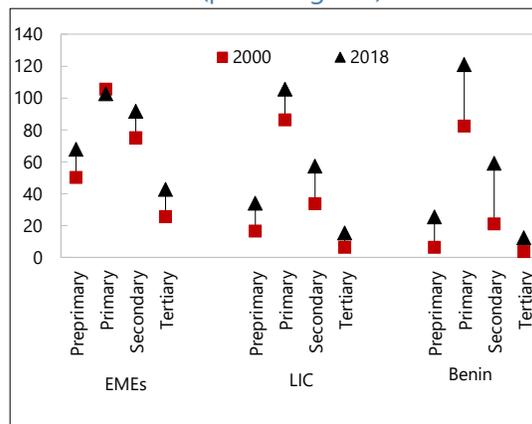
- **Inequality along income.** Despite the generalization of the primary education, the completion rate of the primary level remains very low among children from the poor households: only 21 percent primary students from the poorest 20 percent of households were able to complete the primary education against 76 percent for students from richest 20 percent of households, and an average of 46 percent among LICs (Text Figure 20).

Text Figure 17. Education Spending (percent of GDP)



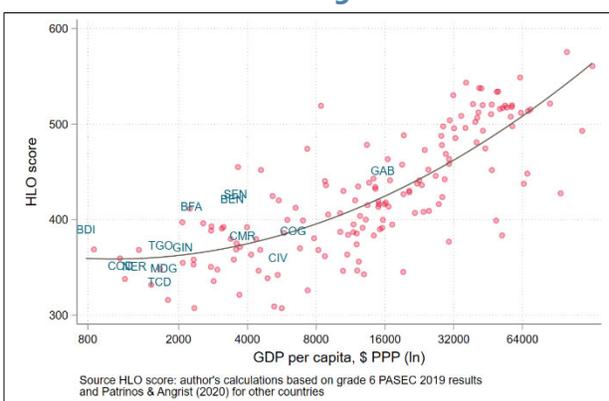
Source: World Bank

Text Figure 18. School Enrollment by Level (percent gross)



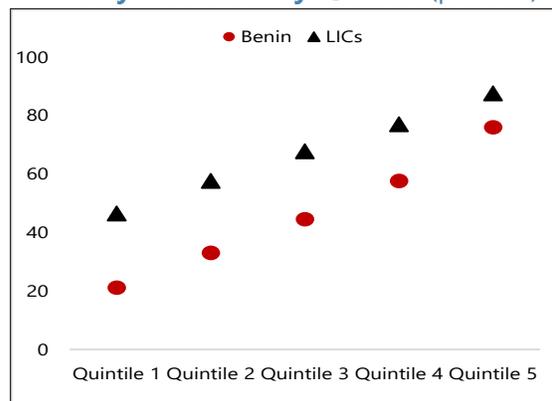
Source: World Bank

Text Figure 19. GDP per Capita and Harmonized Learning Outcome Score



Source: Le Nestour (2021)

Text Figure 20. Completion Rate of the Primary Education by Quintile (percent)

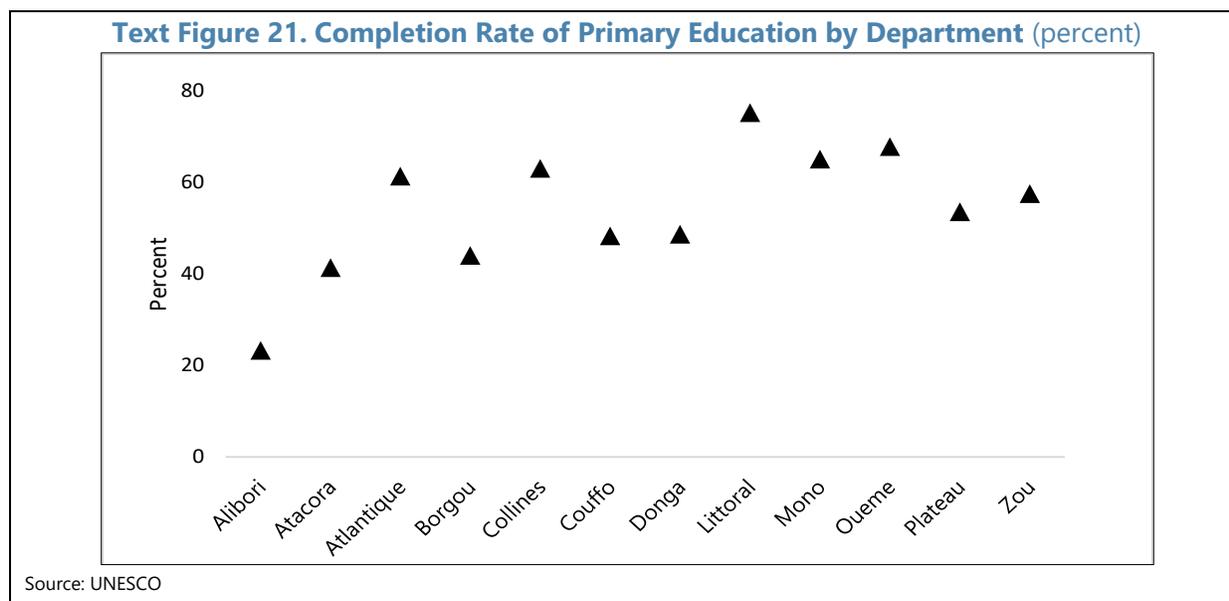


Source : UNESCO

- **Cross-regional disparities.** Learning outcomes vary widely also across different regions. For example, the completion rate of the primary education reaches only 23 percent in the department of Alibori, representing 30 percent of the completion rate achieved in the department of Littoral (where 3 students out of 4 were able to complete their primary education) (Text Figure 21).

15. Benchmarking and frontier analyses respectively suggest that there is scope to increase the level of spending on education and its efficiency (Figure 1).

- A benchmarking analysis suggests that education expenditure per student is well below the LICs and SSA averages. Spending per student in Benin is lower than the LICs' average by one third for the primary level, by 38 percent for secondary level and 23 percent for the tertiary level.
- Increase in education spending needs to be coupled with improved efficiency. The teacher-to-student ratio in the primary level is comparable to LICs average. By contrast, the teacher-to-student ratio in the secondary level is more than the double the average for LICs. A frontier analysis²—analyzing the relationships between different combinations of inputs and outputs by education level—suggests that Benin could achieve equal rates of net enrollment in secondary education with lower resources (in terms of spending per student and teacher-to-student ratio), suggesting a significant room for efficiency gains in the secondary education (this is less the case for the primary education) (see also Pouhe, 2021).



² The efficiency frontier is calculated using Data Envelopment Analysis (DEA). For further details, see IMF Expenditure Assessment Tool (EAT) and the underlying technical note.

D. Public Spending Options for Inclusive Growth

16. The government has stressed “social development” as a key policy priority. The medium-term government plan PAG 2021–2026 has reinstated social development as one of the three key pillars of the growth agenda. In this regard, the new PAG identifies key strategies to enhance the quality of human capital and raise the welfare of the population. These include scaling up social protection, including through the flagship mechanism ARCH (Staff Report; Annex) and improving access to quality education and health services across Benin.

17. Scaling up public spending, while preserving fiscal sustainability, is needed to address large social and infrastructure gaps. Public expenditure policy is a powerful tool for fostering more inclusive growth (Cerra et al, 2022 and Zouhar et al, 2022). In the case of Benin, enhancing the inclusiveness of growth will entail

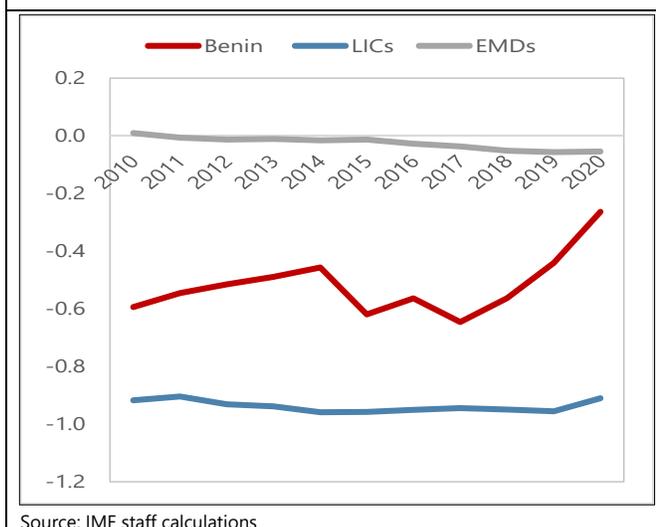
increasing public spending above historical levels to carry out adequately the key functions of the state and protect the much-needed resources for social sectors and infrastructure investments. To achieve this goal while preserving debt sustainability would require sustained domestic revenue mobilization efforts to bring tax-to-GDP ratio at par with peers (see **SIP-II on Tax Potential and Options for Domestic Revenue Mobilization**).

18. Further improving public spending efficiency is key to achieve inclusiveness.

Benin has made significant strides in improving fiscal transparency and public financial management. The 2021 IMF Fiscal Transparency Report has noted that Benin performed better than peers in many areas of fiscal transparency and PFM. In the same vein, Benin made significantly improvements in the WB government effectiveness indicator since 2018, positioning itself well above the average for LICs, and closer to levels observed for EMDs (Text Figure 22).³ At the transversal level, areas of improvement could include:

- Ensure a better alignment of the medium-term expenditure framework with the SGDs. By emphasizing a strategic perspective, the medium-term budgeting allows to align inclusive growth objectives with resource allocation over time.

Text Figure 22. Government Effectiveness Index



³ The government effectiveness indicator compiled by the World Bank captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. It ranges from -2 to 2, with 2 being the most effective.

- Ensure that multi-year budget frameworks are consistently articulated with the annual budget and well embedded in the decision-making process.
- Better leverage the benefits of program budgeting. The transition in the 2022 budget law from a line-item budgeting to program budgeting provides an opportunity to increase accountability and reinforce the link between resources and outcomes. The budgeting framework can further be adapted and refined to increase focus and accountability on key socio-economics areas. For example, many countries have adopted gender budgeting in their efforts to promote gender equality (IMF, 2017c). More focus on integrating explicitly SDGs in the budget processes (SDG budgeting) could be considered.
- Increase effectiveness of the role of the civil society (CSO) in the formulation and monitoring of social spending. Benin is a pioneer in the region in involving the civil society at different stages of budget processes. Pursuing these efforts would further enhance transparency and reduce opportunities for corruption. It will also enhance the cost-effectiveness of public services.

19. At the sectoral level, many measures could be considered to improve the inclusiveness of the government intervention.

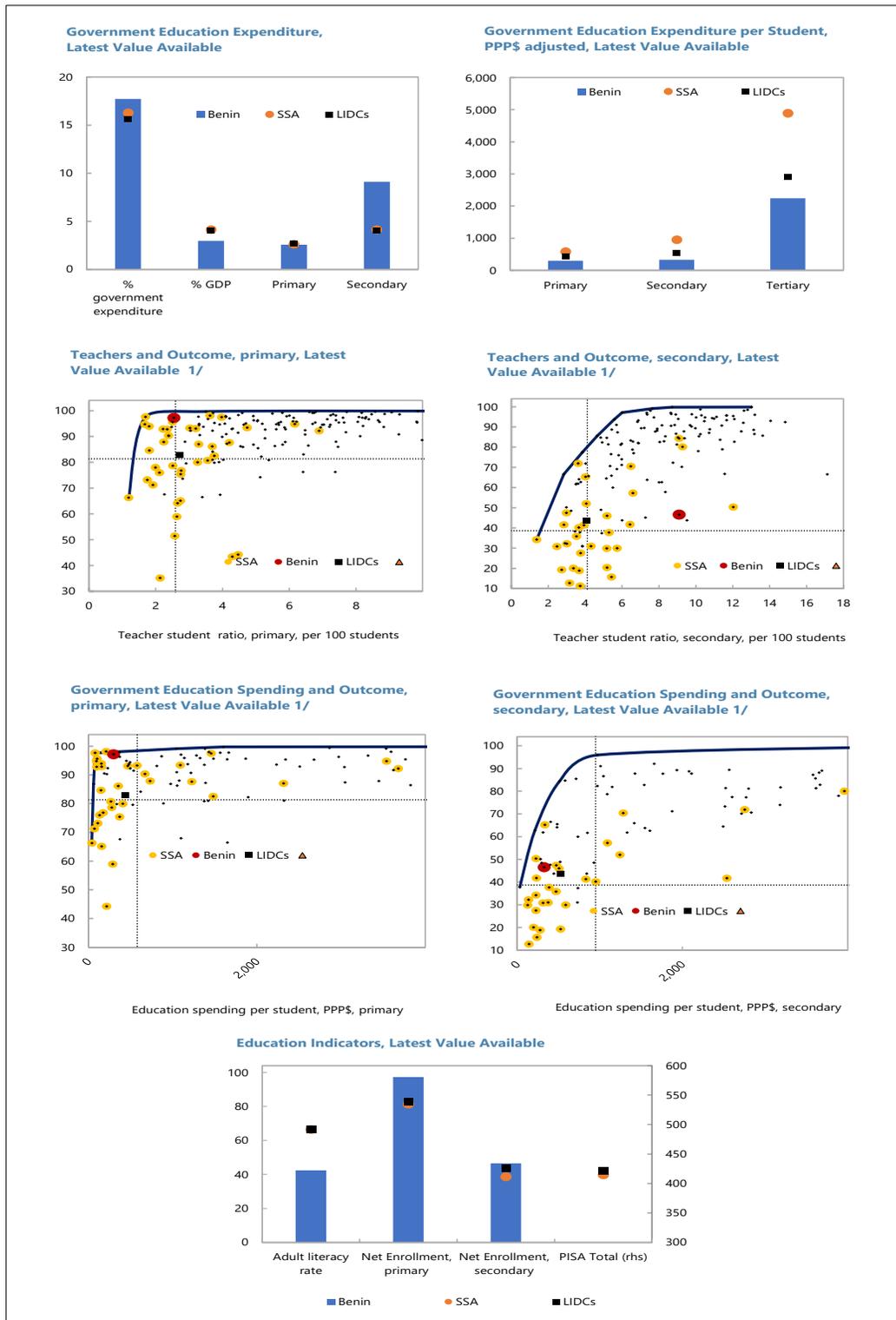
Health:

- Scaling up anti-malaria program given that malaria continued to be the leading cause of morbidity. Improving access to maternal health services should be a priority given the high maternal mortality rate.
- Improving the implementation of capital expenditure in health, in particular the part that is financed through foreign resources. This may will reduce risks of underspending on health. This may require improvement in the procurement procedures and the evaluation of the investment projects.
- Further enhance coordination of healthcare spending policy with other public policies. Health outcomes reflect also socioeconomic factors such as income, employment status, and education. Measures could include (i) well-targeted in-kind or cash transfers with a nutritional component to the poor and (ii) the acceleration of the planned expansion of the school feeding programs. The latter can help improve the health status and reduce the prevalence of stunting among children while improving their school attendance and education outcomes.
- Pursue the implementation of means-tested social safety nets by leveraging the social registry. In this regard, speeding up the governmental ARCH program will provide free access to basic health services to a large proportion of the vulnerable population.
- Expanding the health infrastructure in underserved areas, increasing the hiring of healthcare professionals, and providing incentives to work in remote and disadvantaged areas.

Education:

- Expand early childhood care and basic schooling. Educational inequalities start early in life and disadvantages accumulate over the lifecycle. Increasing the currently low pre-primary enrolment should yield large positive returns over an individual's entire lifetime, particularly for the most disadvantaged (OECD, 2006). Moreover, providing affordable and high-quality childcare will encourage labor market participation of women.
- Improve efficiency of education, in particular in the secondary level. In this regard, conducting a thorough assessment and benchmarking (e.g., public expenditure review) of the public spending on the education sector should help identify areas of inefficiency.
- Accelerate the ongoing development of vocational education and training. Vocational pathways in secondary education can help youth, disaffected with academic education, stay engaged with education (Quintini and Manfredi, 2009). It could also reduce the education-employment mismatch.
- Upgrade the school infrastructure, in particular in remote and poorer regions. This includes improving connection of schools to utilities (e.g., water and electricity) and enhancing public transportation and access to internet.

Figure 1. Government Education Expenditure in Benin and Select Countries



Source: IMF FAD Expenditure Assessment Tool (EAT), World Bank
 1/ Dashlines are the average of SSA.

References

Alonso, S., Chaccour, C.J., Elobolobo, E. et al. The economic burden of malaria on households and the health system in a high transmission district of Mozambique. *Malar J* 18, 360 (2019).

<https://doi.org/10.1186/s12936-019-2995-4>

Cerra, Valerie, Barry Eichengreen, Asmaa El-Ganainy, and Martin Schindler, 2022. *How to Achieve Inclusive Growth*. Oxford University Press.

Gallup JL, Sachs JD. The economic burden of malaria. *Am J Trop Med Hyg.* 2001 Jan-Feb;64(1-2 Suppl):85-96. doi: 10.4269/ajtmh.2001.64.85. PMID: 11425181.

Gaspar, Vitor, David Amaglobeli, Mercedes Garcia-Escribano, Delphine Prady, and Mauricio Soto, 2019. *Fiscal Policy and Development: Human, Social, and Physical Investment for the SDGs*. Staff Discussion Notes. SDN/19/03.

IMF, 2019. *A Strategy for IMF Engagement on Social Spending*. IMF Policy Paper.

Le Nestour, Alexis, 2021. [New PASEC Results Show Modest Improvements in Student Learning in Francophone Africa, but Inequalities Are Widening | Center for Global Development | Ideas to Action \(cgdev.org\)](#). Blog Post. Center for Global Development.

Malaney PIA, Spielman A, Sachs J. The Malaria Gap. In: Breman JG, Alilio MS, Mills A, editors. *The Intolerable Burden of Malaria II: What's New, What's Needed: Supplement to Volume 71(2) of the American Journal of Tropical Medicine and Hygiene*. Northbrook (IL): American Society of Tropical Medicine and Hygiene; 2004 Aug. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK3781/>

Ministry of Economy and Finance of Benin, 2021. *Projet de Loi de Finances, Gestion 2022 - Document de Programmation Budgétaire et Économique Pluriannuelle 2022-2024 - Document Principal*. [DPBEP 2022 2024 Principa Final.pdf \(budgetbenin.bj\)](#)

Ministry of Health, Various editions of statistical yearbooks.

Ministry of Planning and Development, Benin. *Enquête Démographique et de Santé*, various editions : 2006, 2011-12, 2017-18

Pouhe, Alex, 2021. *Public Efficiency Spending in Benin*. *mimeo*, International Monetary Fund.

Prady Delphine and Mouhamadou Sy, 2020. *The Spending Challenge for Reaching the SDGs in Sub-Saharan Africa: Lessons Learned from Benin and Rwanda*. IMF working paper No WP/19/270. International Monetary Fund.

Programme d'Analyse des Systèmes Éducatifs de la CONFEMEN, 2020. *PASEC2019 Qualité des Systèmes Éducatifs en Afrique Sub-saharienne Francophone Performances et Environnement de l'enseignement-Apprentissage au Primaire*.

Staff Discussion Notes. SDN/19/03.

Swiss Malaria Group, 2018. *Malaria and the UN Sustainable Development Goals (SDGs) 2030*.

Scientific Fact Sheet Swiss Tropical and Public Health Institute Swiss TPH for the Swiss Malaria Group

16 April 2018. [New factsheet Malaria and the UN Sustainable Development Goals 2 4.docx \(live.com\)](#)

Tanzi, V. (2008), "The role of the state and public finance in the next generation", OECD Journal on Budgeting, vol. 8/2, <https://doi.org/10.1787/budget-v8-art6-en>.

World Bank, 1997. World Development Report 1997: The State in a Changing World. [World Development Report 1997: The State in a Changing World \(worldbank.org\)](#)

Zouhar, Y., Jellema, J., Lustig, N., & Trabelsi, M, 2021. Public Expenditure and Inclusive Growth-A Survey. IMF Working Paper IMF No. 2021/83.

Zouhar, Y., Jellema, J., Lustig, N., & Trabelsi, M., 2022. Public Expenditure, Chapter 13 in . *How to Achieve Inclusive Growth*, 457. Oxford University Press.

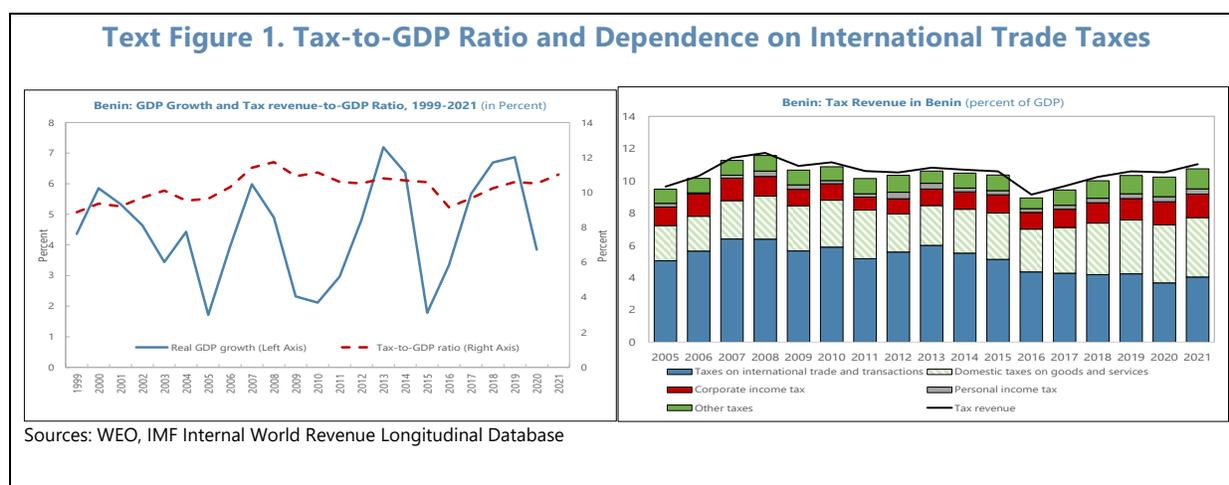
TAX POTENTIAL AND OPTIONS FOR DOMESTIC REVENUE MOBILIZATION¹

At 11 percent, Benin's tax-to-GDP ratio is well below peers, reflecting a relatively narrow tax base and high level of tax expenditures. Benin's reliance on a "warehouse model" makes tax collection vulnerable to developments in the giant Nigeria. The "race to the bottom" among neighboring countries has also eroded the tax base. The peer (SSA) analysis and stochastic frontier suggests that tax collection in Benin is about 3 ppts of GDP below its potential, with a particularly large gap for VAT and income tax. Digitalization efforts in recent years have supported the resilience of tax collection to the COVID-19 pandemic. Going forward, the authorities' pending Medium-Term Revenue Strategy (MTRS) and renewed commitment to rationalize tax expenditures would durably support revenue mobilization.

A. Background and Recent Developments

1. Domestic revenue mobilization, the cornerstone of the authorities' reform program, is one of the most pressing policy challenges facing Benin. Higher resources are needed to support the achievement of the Sustainable Development Goals (SDGs), including reduction in poverty and inequality, adequate access to basic public services (e.g., health, education, water, electricity, and roads) in a secure environment.

2. However, the tax-to-GDP ratio has been nearly flat over the past 15 years, with relatively strong dependence on international trade taxes. Historical data suggest that the 2007–08 global financial crisis halted the expansion in tax collection. Moreover, the 2015–16 recession in Nigeria—triggered by the global oil over-supply shock—led to a 1.5 ppts of GDP reduction in the tax-to-GDP ratio, reflecting Benin's heavy reliance on international trade taxes.

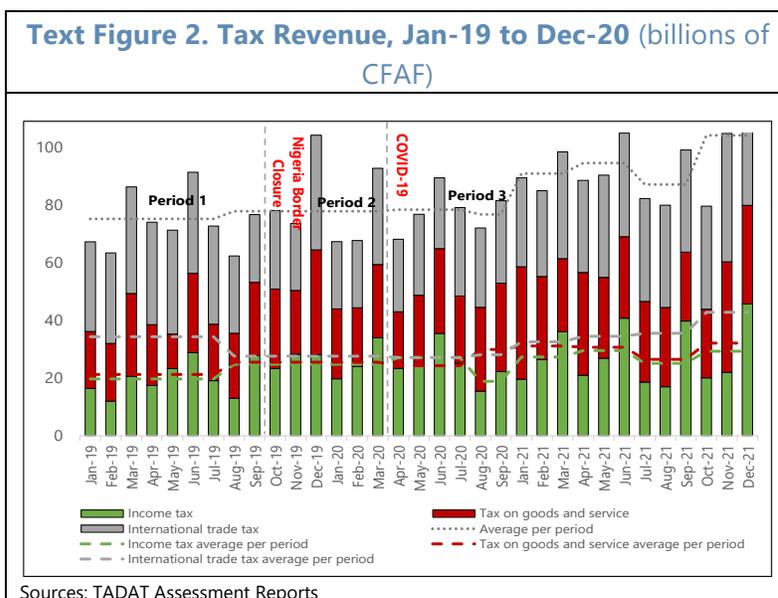


¹ By Anthony Ramarozatovo (FAD) and Greta Polo (AFR).

In general, the tax-to-GDP ratio has not kept pace with economic growth (Text Figure 1), suggesting weak tax progressivity. And while the tax-to-GDP ratio has recovered to its level prior to the 2015–16 recession in Nigeria, it remains below its pre-GFC peak, likely reflecting the large size of the informal sector, which has likely grown larger during the downturn.

3. The recent border closure with Nigeria further illustrated the dependence on Nigeria of the Beninese economy and Benin’s international trade revenues (see Figure 2). In August 2019, Nigeria unilaterally decided to close its land borders with several neighboring countries, including Benin. The Nigerian authorities believed that the measure would curb smuggling of goods for which the country sought to increase domestic production (e.g., rice). The border closure (through December 2020) significantly impacted international trade taxes (Text Figure 2).

4. The set of digitalization reforms launched in 2017 supported the resilience in tax collection during the COVID-19 pandemic. Unlike for many LICs, domestic tax revenues increased during COVID-19 in Benin (from 6.3 to 7 ppts of GDP between 2019 and 2021).² In contrast, international trade tax receipts declined during August 2019–March 2020 period (see Figure 3), reflecting Nigeria’s border closure (the decline continued, albeit to a lower extent, during April to July 2020, also reflecting the COVID-



19 crisis). The resilience of the overall tax collection to the COVID-19 pandemic, despite the overlapping border closure, reflects important digitalization of the core tax processes (e-filing, e-payment, electronic VAT invoice, etc.) and digitalization initiatives at customs (electronic single window, automated value and weight consistency checks, electronic payment, electronic transit tracking) undertaken since 2017 and enriched in recent years.

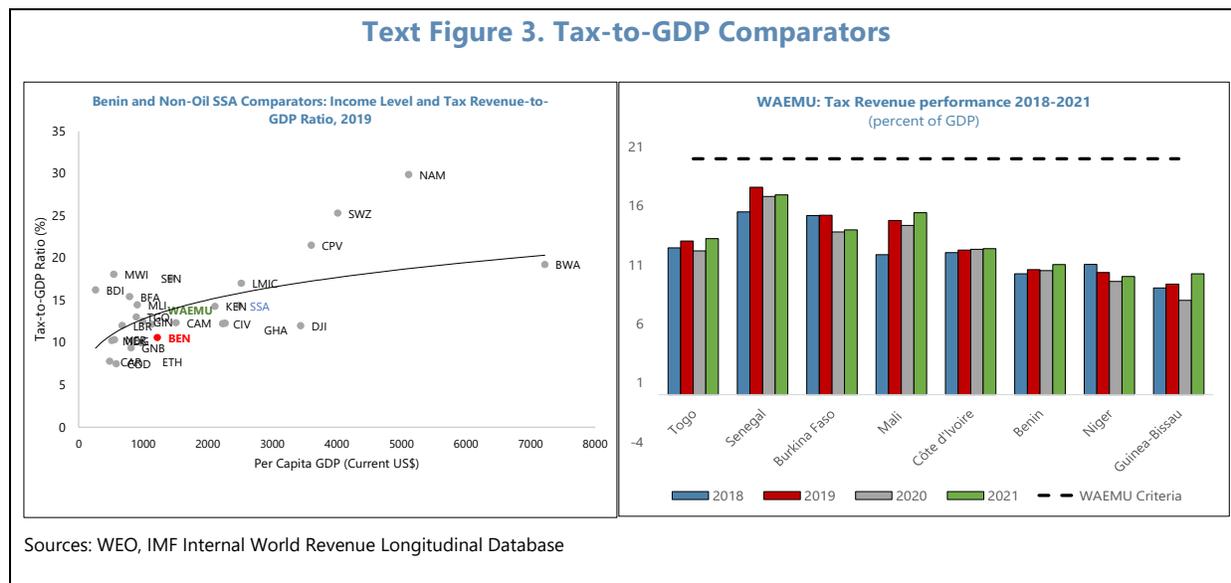
B. Benin’s Tax Revenue Performance and Comparison to Peers

5. Benin's tax revenue-to-GDP ratio remains well-below WAEMU and SSA averages.

Despite reforms to improve and modernize tax and customs administrations in recent years, the tax-to-GDP ratio remains low in Benin at 11 percent of GDP, below the WAEMU average at around 14

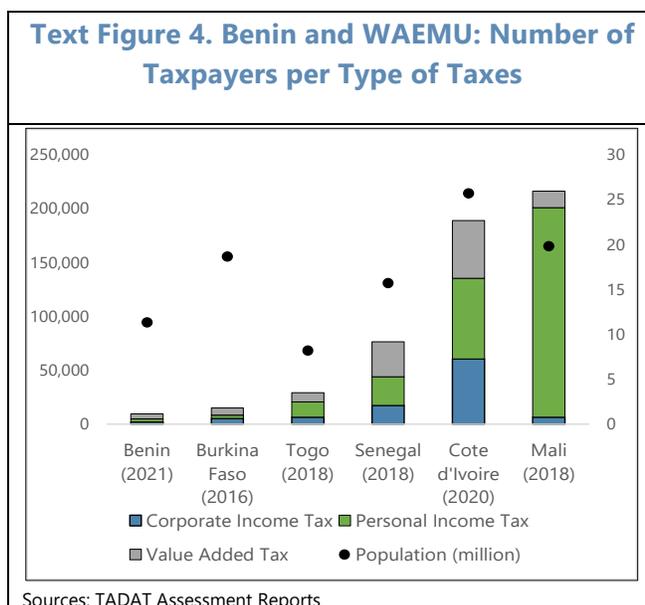
² Domestic taxes declined by an average of xx ppt of GDP between 2019 and 2021 among LICs in SSA.

percent of GDP (Figure 3).³ Moreover, Benin’s tax revenue performance remains well below non-oil low-middle income countries (LMIC) in SSA (Figure 3).



6. Benin’s tax base remains narrow and still mainly comprised of large taxpayers. Domestic tax revenue mobilization in Benin still relies heavily on large firms. Benin has the smallest number of the CIT and VAT taxpayers among WAEMU countries (Text Figure 4). Revenue collection is highly concentrated among a small number of large taxpayers.

7. Benin is lagging in the implementation of the tax transition. WAEMU member States adopted in 1997⁴ a Common External Tariff (CET) applicable from 2000 and later extended to the ECOWAS zone in 2015. In addition, WAEMU member States adopted an institutional framework in 2009 to better achieve the fiscal convergence within the WAEMU region. An Economic Partnership Agreement (EPA) between the European Union and West African countries was enacted in 2014.⁵

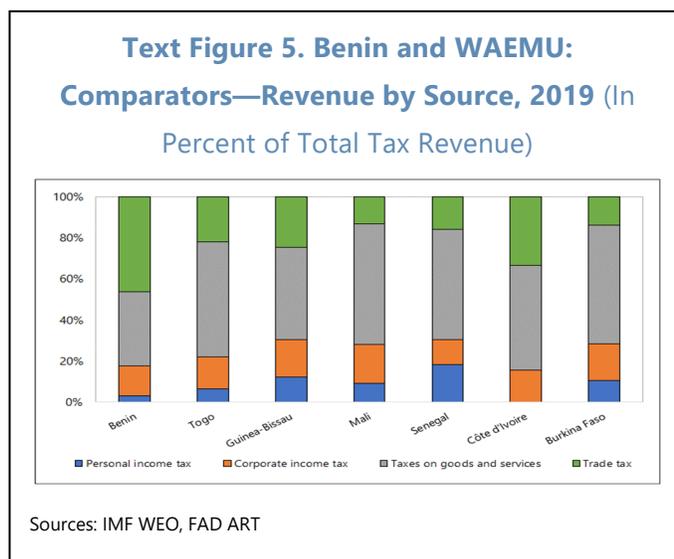


³ On January 19, 2015, WAEMU Heads of States adopted a new set of convergence criteria to be met by 2019, including an indicative floor on tax revenue-to-GDP of 20 percent.
⁴ Regulation n°02-/97/CM/UEMOA of November 28, 1997, adopting the Common External Tariff of the West African Economic and Monetary Union (WAEMU).
⁵ The West Africa – European Union EPA established in 2014 aims to implement of a free trade area between Europe and West Africa (ECOWAS + Mauritania) in accordance with Article XXIV of GATT, but still yet not signed by Nigeria.

The implementation of the CET, coupled with the variation of the commodity prices and the new EPA, have led to a gradual decrease in the share of international trade tax revenue in WAEMU countries—with the exception of Benin—and to a progressive shift to indirect and direct taxes. The introduction of the CET has shifted the regional competition for international trade flows to the field of the customs duties' tax base.

8. Benin's tax system is more tilted towards international trade than peers.

This high reliance on international trade taxes makes Benin's tax collection sensitive to developments in Nigeria, as evidenced by the 2016 recession and the recent border closure in 2019 (see paragraph 3).



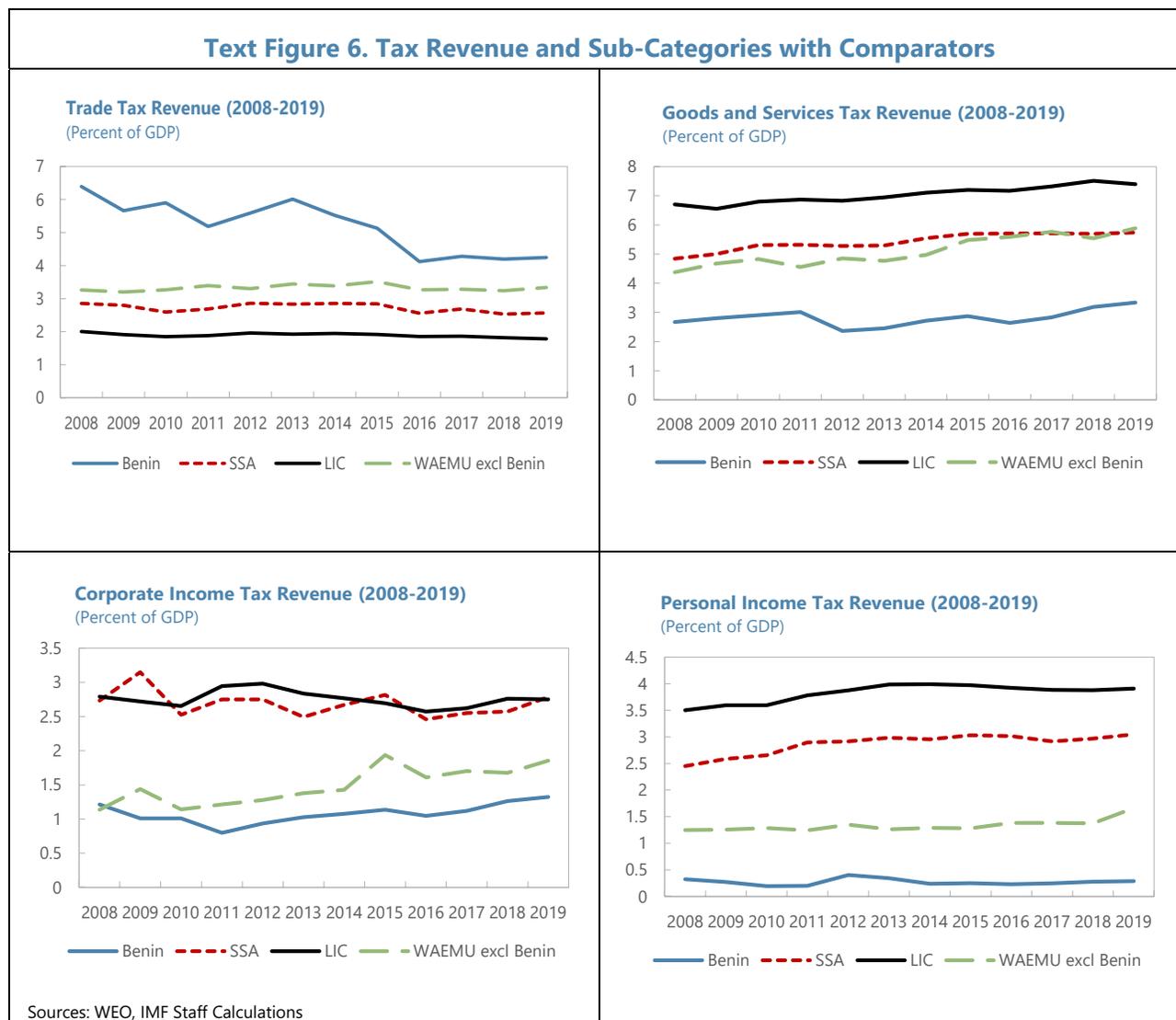
- Benin's tax collection on international trade is well above the regional average.** Customs duty collection amounted to 4.5 percent of GDP on average between 2008 and 2019 (Text Figure 6), compared to an average of 2.8 percent of GDP in the WAEMU and 2.5 percent of GDP for the lower-middle income countries in SSA. International trade taxes in Benin are composed mainly of import duties, VAT, excise and assigned fees. Tax revenue on international trade increased steadily from 2016, thanks to reform action plan and digitalization, robust reexport activity and regional trade growth.
- Tax revenue from goods and services increased over the years but income taxation has been stagnant.** Estimated at only 1.1 percent of GDP on average between 2008 and 2019 (Figure 6), the income tax ratio-to GDP in Benin remains significantly below the WAEMU average, estimated at 3.0 percent of GDP (it is even lower compared to LIMCs in SSA, averaging at 5.4 percent of GDP). The difference is especially accentuated in PIT with differences of almost 1 ppt of GDP between Benin and WAEMU peers and 2.3 points of GDP against LIMCs in SSA.

9. The productivity of Benin's tax system is relatively low across all tax instruments (CIT, PIT, VAT).

- CIT productivity⁶.** There are substantial differences in the productivity of the CIT among SSA countries. While Benin's standard CIT rate is close to most WAEMU countries, its CIT productivity in 2019 was 0.2 percent of GDP by ppt of CIT rate, one of the lowest in the WAEMU zone (Figure 7). This relatively poor performance mainly reflects (1) the combination of several tax

⁶ CIT Productivity is calculated as (CIT Revenue) / [(CIT Rate) * (GDP)].

regimes and rates (not in compliance with the WAEMU Directive⁷) that pose administrative challenges and introduce economic distortion; and (2) multiple advantages granted by the Investment Code.

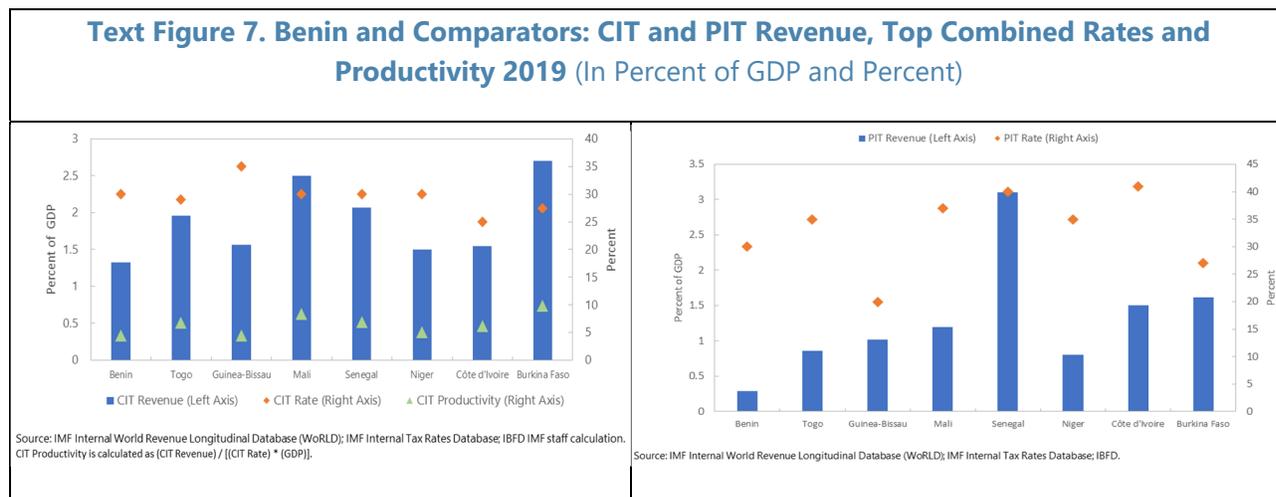


- PIT productivity⁸.** The productivity of the PIT is also relatively low in Benin, due to a complex and generous system and a very large informal sector. Since the reform launched in 2011, PIT revenue has fallen sharply from 1.0 percent in 2012 to 0.2 percent of GDP on average in 2019 (Text Figure 7). Currently, with identical top rates and similar tax bases, the Benin's PIT performance is the weakest in the WAEMU zone (Text Figure 8). The PIT tax ratio-to-GDP in Benin (0.2 percent of GDP) is well below of the WAEMU peer countries. This poor performance reflects

⁷ The Directive n°08/2008/CM/UEMOA requires Member States to set a single CIT rate between 25 and 30 percent. Benin has three rates: 25 percent (industrial, mining sectors), 30 percent (standard rate), and 35-45 percent (oil sector).

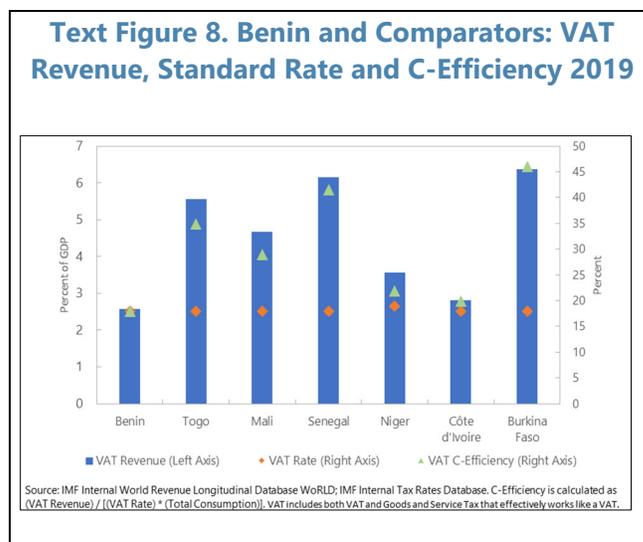
⁸ PIT Productivity is calculated as (PIT Revenue) / [(PIT marginal Rate) * (GDP)].

(1) multiple derogatory regimes granting many exemptions and advantages; and (2) weak enforcement capacity of tax administration over the large informal sector.⁹



- **VAT C-efficiency¹⁰.** Benin's poor performance in goods and services tax revenue is reflected

in the relatively weak efficiency of VAT, despite similar rates and legislation compared to WAEMU peer countries. A regional comparison shows that Benin's VAT C-efficiency is the weakest, excluding Guinea Bissau which doesn't have a VAT system yet, in the WAEMU (Text Figure 8). In general, the weak performance of the goods and service revenue is mainly driven by the VAT which presents several anomalies: (i) it remains subject to multiple exemptions, and (ii) is partly collected on Nigerian final consumption as a large proportion of imported goods consumed in Benin is in fact destined to the Nigerian market, either officially (re-export) or fraudulently (in the case of goods prohibited in Nigeria).



10. Benin's tax system comprises several tax incentives which seems inefficient. Benin has one of the highest levels of tax expenditure (Text Figure 9) in the WAEMU (Senegal has the highest). Moreover, those do not seem effective. The fiscal cost of tax incentive is high, reducing

⁹ The informal sector is highly developed in the urban center and along the border with Nigeria where a large part of the population lives from legal and illegal cross-border trade.

¹⁰ C-Efficiency is calculated as (VAT Revenue) / [(VAT Rate) * (Total Consumption)]

opportunities for much-needed public spending. The tax incentives regime in Benin is one of the most generous one in the WAEMU (Annex IV).

C. Estimating Tax Revenue Potential

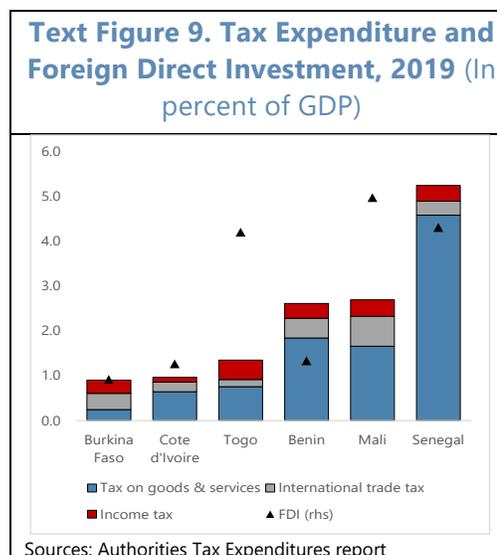
11. A “peer analysis” and “stochastic tax frontier analysis” methods were used to estimate Benin’s tax revenue potential.

- The **Peer analysis**. A standard fixed-effects panel model with within regression estimators is used as a first generation analysis to estimate the tax potential for total tax revenue and different tax types (taxes on goods and services, international trade taxes, and income tax), based on the standard determinants of tax revenue identified in the literature.¹¹ The predicted level of various tax revenue for any given country in the panel is obtained by fitting the country’s current characteristics into the estimated model, along with other structural components of efficiency. The predicted tax capacity is estimated for total tax revenue and its subcategories (goods and services tax, income tax, and international trade tax). The predicted value is a proxy of the country’s tax capacity, while the differences between the tax capacity and the actual level of tax revenue captures a combination of a tax policy gap and tax administration gap.

- The **stochastic frontier model** (Box 1) is a regression-based analysis used to cross-check the robustness of the findings of the peer analysis. It aims to assess the potential tax revenue (of the various tax types) a country can achieve given its characteristics, at best performance, whereas the “peer analysis” estimates based on a country’s average performance. For example, the stochastic frontier for trade taxes uses the log of trade taxes as dependent variable, with the following controls: log of GDP per capita (constant 2010 US\$), inflation, log of imports and exports (% of GDP), log of urban population (% of total), and log of total natural resources rents (% of GDP). An Oil exporter dummy is included to capture the peculiarity of taxation in those countries. Data is from the IMF’s World Economic Outlook (WEO), IMF’s Fiscal Affairs Department, and the World Bank’s World Development Indicators (WDI). The panel covers almost 20 years and as many SSA countries as possible (38–42).

12. The results of the stochastic tax frontier analysis are broadly in line with those obtained from the SSA peer analysis.

The two analyses are carried out using dataset covering the period 2000–2019 for a sample of 38–42 sub-Saharan African countries. WAEMU and other SSA countries are used as reference groups. The analysis is conducted for total tax and for each tax type (goods and services tax, income tax, and international trade tax) while Greene (2005a)’s true fixed



¹¹ GDP per capita, consumption, gross fixed capital formation, inflation, trade openness (import and exports as a share of GDP), share of agriculture in GDP, share of the urban population, natural resource rents and broad money as a share of GDP.

effects estimator is used to estimate the technical inefficiencies. Benin’s actual and predicted total tax revenue is well below the WAEMU peers, largely due to significant gap in taxes on goods and services and income tax. However, Benin’s international trade tax is higher than its potential when estimated in the benchmark groups of WAEMU and SSA countries (Annex III).

Box 1. Stochastic Frontier Analysis

Building on a large set of empirical studies, we specify a model similar to that of Aigner, Lovell, and Schmidt (1977); Alfirmán (2003) and Pessino (2010 and 2013). The stochastic tax frontier model can be represented as follows:

$$y_{it} = \alpha_i + \beta'x_{it} + v_{it} - u_{it}$$

Where y_{it} is the log of tax to GDP ratio for country i at time t

α_i represent a set of country-specific intercepts

β is a vector of unknown parameters to be estimated

x_{it} is a vector of determinants of tax revenue for country i at time t

v_{it} is the statistical noise or the disturbance term. It is assumed to be independently and identically distributed $N(0, \sigma^2)$ random errors and is independently distributed of the u_{it}

u_{it} represents the level of inefficiency; the “failure” to obtain the maximum amount of tax collection. It is a non-negative random variable associated with country specific factors such as technical inefficiencies and policy issues (such as differences in tax legislation of a country, tax rates and exemptions) which contribute to country i not tax potential at time t

This analysis seeks to estimate the technical efficiencies of Benin’s total tax revenue and different tax types relative to WAEMU and other sub-Saharan African countries. To do so, we first estimate the technical inefficiencies (u_{it}) and obtain the technical efficiencies as $(1 - u_{it})$.

13. We estimated Benin’s tax capacity to 13.6 percent of GDP. Estimated coefficients have the expected signs (Appendix I) and are robust across various tax types. For example, the coefficient of GDP per capita, a proxy for the level of development, is positive and significant for total tax revenue, suggesting that higher levels of per capita income are associated with a higher share of tax revenue in national income. Using the coefficients obtained from the peer analysis in Appendix I and the average value of the explanatory variables during 2015–19, estimations suggest that Benin could have achieved a total tax-to-GDP ratio of 13.6 percent of GDP compared to the collection of 11.1 percent of GDP in 2021. This could reflect tax administration inefficiencies and high level of tax expenditures.

14. The estimated tax potential confirms the considerable scope to increase tax revenue in Benin, independent of the benchmark group.

Regardless of comparator group and the methodology, the estimations consistently suggest that Benin's tax revenue is below potential, with the estimated average gap over 2015–2019 ranging from 1.8 to 3.1 percent of GDP across benchmark groups, which is significant (Text Table 2). Moreover, the gap has widened overtime (from 0.3 percent of GDP in 2000 to 1.4 in 2019, focusing on WAEMU).

Text Table 2. Benin and Comparators: Estimated Tax Gap Across Benchmark Groups (In percent of GDP)

Benin	Gap for WAEMU	Gap for SSA	Gap for SSA Low inc.	Gap for Low inc.
2019	1.4	1.3	2.7	2.1
2015-2019	1.9	1.8	3.1	2.5

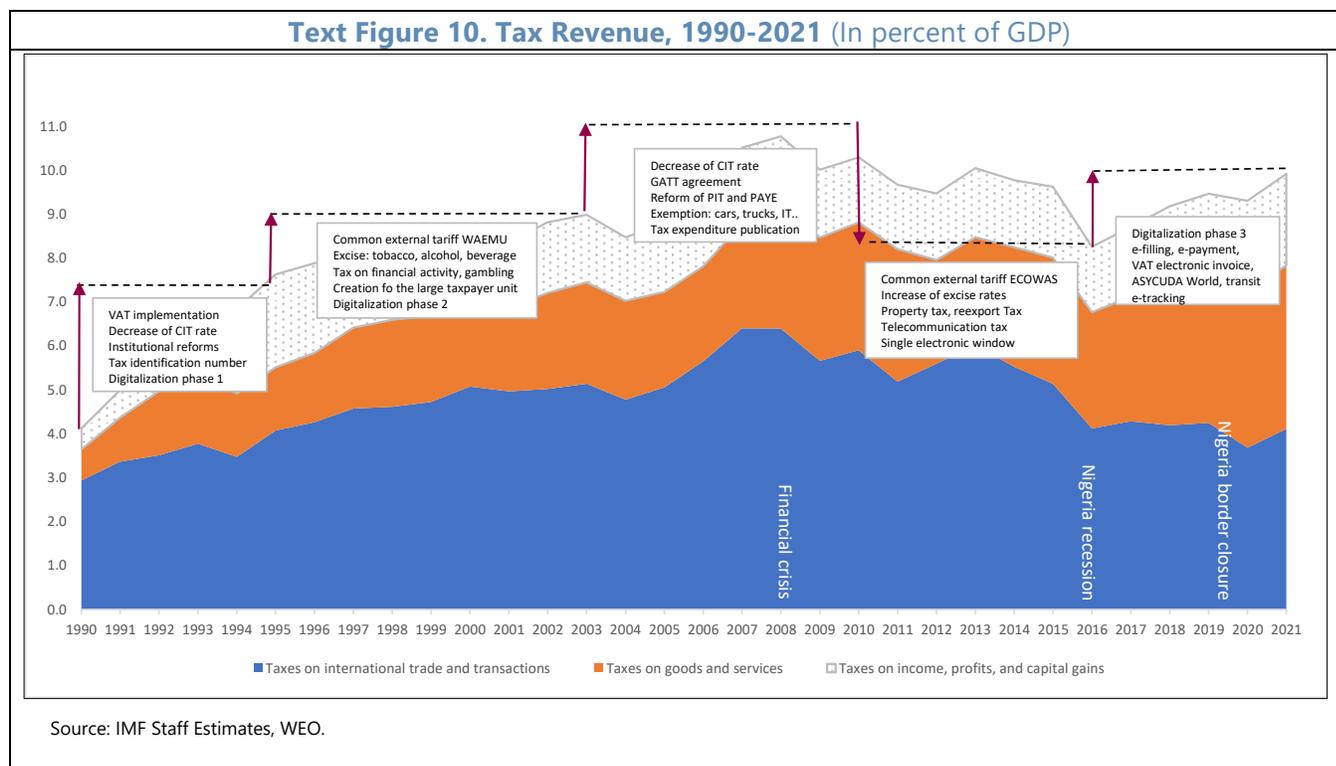
15. The results from peer analysis, supported by the stochastic frontier analyses, highlight the scope for Benin to improve significantly increase revenue collection from taxes on goods and services and the income tax. There is scope to improve Benin's tax revenue on goods and services by about 2 percentage of GDP compared to WAEMU peers, and revenue from income taxation by 0.7 percentage points of GDP compared with SSA countries (Annex III). Streamlining the tax system, removing inefficient tax exemptions, fighting frauds and bringing the informal sector into the tax net will be key to achieving these objectives (See Section D).

D. Options to Improve Domestic Revenue Mobilization in Benin: Five Pillars

16. As suggested by the empirical analysis, there is ample room to increase domestic revenue mobilization in Benin. Benin has done particularly well in advancing administrative structural reforms (e.g., streamlining processes and digitalization). Some tax administration reforms, such as the use of e-filing and e-payment, have matured and can now be rolled out at a larger scale and their use made mandatory to make the tax system more efficient.

17. Benin's tax system continues to rely heavily on a narrow tax base, tax rules that are not fully up-to-date, and loopholes that incentivize further tax expenditure. In addition, large segments of the Beninese economic agents are not used to paying taxes, often because their businesses take place in the informal sector or are deemed too small to be taxed.

18. Benin's historical records suggest that tax administration reforms are more effective at raising revenues when they are combined with tax policy reforms. Over the past five years for example, tax revenues increased significantly with the simultaneous launch of tax policy reforms and the modernization of administrations and procedures. Beyond this recent episode, the combination of reforms in tax policy and administration have been correlated with increased in revenue mobilization (Text Figure 10). This began in the early 1990s with the introduction of VAT and the launch of the first generation of digitalization, followed by the creation of the Large Taxpayers Departments and the introduction of the second generation of computer systems in the late 1990s. Unfortunately, these successive episodes of reform were each time annihilated by exogenous shocks such as: (i) the global financial crisis (2008), (ii) recession in Nigeria (2015), (iii) closure of the border with Nigeria (August 2019) and the COVID-19 crisis (March 2020).



19. Launching tax policy and administrative reforms simultaneously, organized around five pillars, can structurally increase domestic revenue mobilization in Benin:

- First, **rationalizing tax expenditures and reducing international tax competition** in the region are key priorities that could yield significant dividends in the near-term.
- Second, there is room to **improve the efficiency of tax rules**. This includes the modernization of tax policies as well as a better integration of risk management, notably in tax administration.
- Third, it is key to **expand the size of the formal sector** then widening the tax net. This would increase the tax base and promote wider sharing of the tax burden.
- Then, progress can be made towards **higher level of digitalization**. This would enable more efficient and transparent processes and could improve the business climate and ease of trade.
- Finally, **strengthening the social contract** is paramount. This will entail clarifying the link between tax revenues and the provision of public services by the government, so taxpayers know the “why” of paying taxes and be more enticed to comply.

20. Reforming the Beninese tax system could help achieve the gradual transition towards regional tax harmonization.

The tax system currently contains multiple tax exemptions and derogatory schemes that are not in full compliance with the WAEMU legislation or are not governed by the general Tax Code but by specific code or agreements (Annex III). Tax exemptions

and derogatory schemes tend to be difficult to monitor efficiently and properly. In addition, modernizing the tax system could yield additional revenue. Measures could include (i) the adoption of a single rate of CIT, (ii) the abolition of certain exemptions and derogations under the CIT and PIT, (iii) the securitization of the CIT tax base, and (iv) the strict application of transactional values at customs could be explored.

21. The tax base could also be expanded by tapping underexploited taxes, such as property taxes. The property taxation is almost non-existent in Benin while it is estimated at about 1.0 percent, 2.2 percent, and 4.5 percent of total tax revenue in Burkina Faso, Senegal and Cote d'Ivoire respectively. The authorities launched several initiatives which could support the tax base, including (i) implementation of a property tax on rental income withhold by the tenant, (ii) modernization of the *Taxe Foncière Unique*, (iii) taxation of real estate capital gains, (iv) establishment of the properties grid pattern in urban areas with the support of local authorities, and (v) systematically cross-checking the available databases (water and electricity suppliers, banks, customs, etc.).

22. Improving domestic revenue mobilization performance and fighting tax fraud could yield important dividends. Benin's tax and customs administration digitalization is one of the most advanced ones in the region. The various digitalization reforms implemented since 2017 (E-filing/payment for large and medium taxpayers, mobile tax payment, electronic payment of customs duties, automated customs risks analysis, e-VAT invoicing machines, interconnection of tax and customs database, automated consistency checks of customs value and weight, transit GPS-monitoring) need to be improved and expanded to: (i) improve the tax and customs administrations efficiency; (ii) better coordinate and seize informal sector and combat frauds more efficiently; and (iii) improve the tax and customs compliance improvement plans.

23. In line with the government "social mandate", future reforms of the tax system must also be carried out within the framework of a social contract. The Beninese tax system is largely undermined by the large size of the informal sector, including cross-border smuggling (Staff Report; Annex VI). Progressive taxation of the informal sector must be based on a global strategy promoting voluntary enrollment and compliance, notably by: (i) improving the public's perception of the revenue administration; (ii) streamlining the tax system and modernizing communication; (iii) simplifying processes and using mobile payment; and (iv) increasing transparency in revenue administration as well as the accountability of the administration and its agents.

24. The Medium-Term Revenue Mobilization Strategy (MTRS) currently envisaged by the authorities will inform future tax policy and revenue administration reforms. An MTRS is an appropriate vehicle to implement a global strategy to mobilize domestic resources through a fair and equitable tax system that can finance public spending needs and secure macroeconomic and debt sustainability, while reflecting distributional considerations and creating appropriate incentives for economic and social development. A typical MTRS, which requires a high level political support, defines a high-level road map of the tax system reform over 4-6 years from a policy, administration, and legal standpoint.

25. The timing of reforms and coordination will be key to move forward. In keeping with their long tradition and strong capacity to absorb technical assistance, the Beninese authorities have sought Fund technical support in implementing these reforms, including MTRS, a national undertaking. Coordinating the technical support of various stakeholders towards the implementation of revenue mobilization reforms will be essential to achieving the ambitious domestic revenue mobilization objectives.

26. The recent modification in the tax code under the 2022 budget law was a step in the right direction with more needed going forward. Benin undertook bold steps to remove some exemptions in the 2022 budget law. The tax package, which also contains some important and longstanding elements of PIT reform amounts to 0.5 percent of GDP in additional revenue. To improve the level of tax revenue in a sustainable manner, tax expenditure rationalization must be pursued. A sound strategy that combines tax policy and revenue administration measures to broaden the tax base, continued digitalization of procedures, and taxation of under-exploited economic activity (agriculture, land ownership, etc.) would contribute to durably increase tax collection in Benin.

References

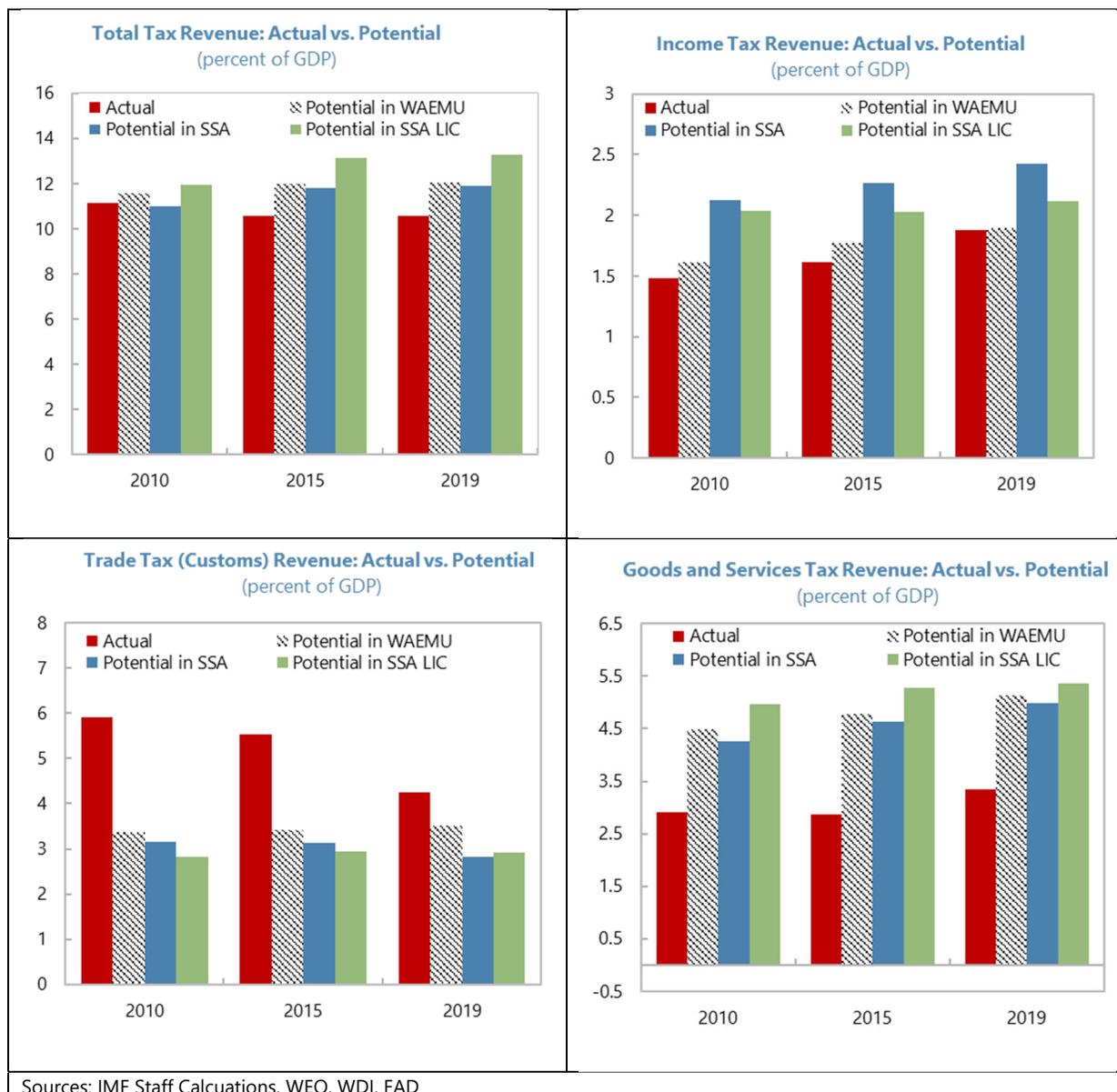
- Keen M., 2007 « VAT, Tariffs, and Withholding: Border Taxes and Informality in Developing Countries », IMF Working Paper, July 2007, International Monetary Fund.
- Taxing times, Fiscal Monitor, October 2013, International Monetary Fund
- Mansour M. and Rota-Graziosi G., 2014, "Tax Coordination and Competition in the West African Economic and Monetary Union," Tax Notes International, 74:2, April 2014, pp. 182-204.
- Rota-Graziosi G., Grigoriou C. and Laporte B., 2015, « General Tax Policy, Taxation of the Informal and Sector Mining », TA Report January 2015, International Monetary Fund.
- Rota-Graziosi G. and Nicolas Blouin N., 2018, « Analysis of tax expenditures » TA Report January 2018, International Monetary Fund.
- Regional Economic Outlook, Sub-Saharan Africa, Domestic revenue Mobilization and Private Investment, April 2018, International Monetary Fund
- Ossa R., Sy M., Fossat P., Carré J. and Soubrié A., 2019, « Implementation of the tax compliance plan stocktaking and next TA Report April 2019, International Monetary Fund.
- Montagnat-Rentier G., Geourjon A.M., Russell J. and Grigoriou C., 2019, « Working towards a tailored modernization of Customs Administration Concrete Actions and Utilizing Data », TA Report May 2019, International Monetary Fund.
- Golub S.S., Ahmadou A.M. and Cheikh A.D., 2019 Chapter 8: Benin's informal trading with Nigeria, August 2019, Economic Development & Institutions, Benin Institutional Diagnostic.
- Wen J.F., Godbout L. and Diallo I., 2019, « Income tax and tax expenditures » TA Report September 2019, International Monetary Fund.
- De Broeck M., Ossa R., Diallo I., Diop S., Donou A., Jarry-Bouabid A-C., and Konsewitch D., 2019, « TADAT- Performance Assessment Report », December 2019, International Monetary Fund.
- Caldeira E., Compaoré A., Adessé Dama A., Mansour and M. Rota-Graziosi G. (2020) "Tax effort in Sub-Saharan African countries: Evidence from a new dataset," Études et Documents, n°2, April 2020, CERDI.
- Ossa R., Wandja Fondja P.A., Carré J., Viault G., Nsabimana A., 2021, "Elements of a tax revenue mobilization strategy", TA Report March 2021, International Monetary Fund.
- Loeprick J. and Vellutini C., 2022, "Tax policy reforms and technical assistance options," TA Report April 2022, International Monetary Fund

Annex I. Determinants of Tax Potential in Benin*

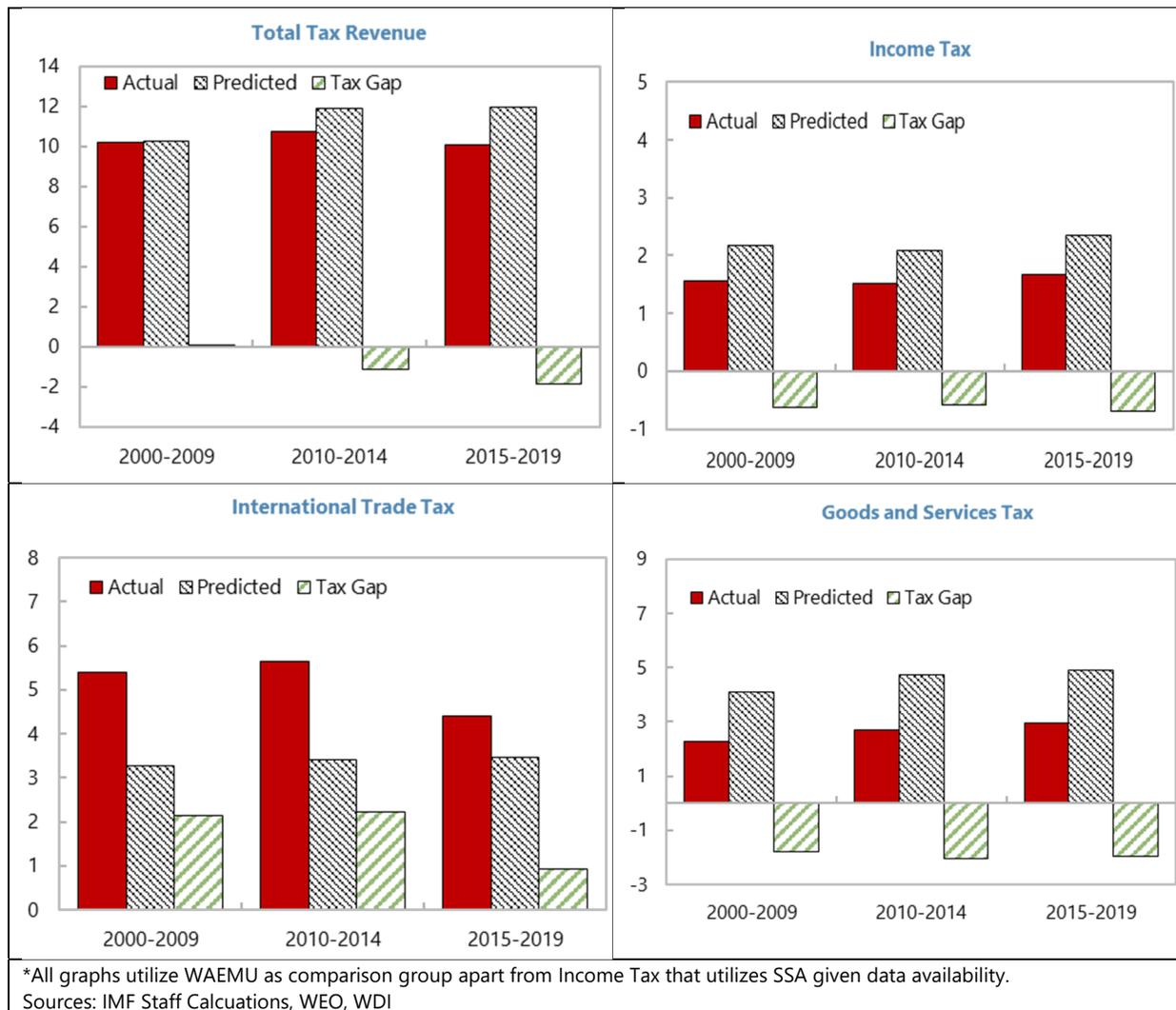
Determinants of Total Tax Potential		Determinants of Goods and Services Tax Potential	
GDP per capita	0.416*** [0.048]	GDP per capita	0.200*** [0.057]
Inflation, consumer prices (Annual percentage)	-0.001 [0.001]	Inflation, consumer prices (Annual percentage)	-0.001 [0.001]
Openness (percent of GDP)	0.141*** [0.033]	Agriculture (percent of GDP)	-0.068* [0.041]
Agriculture (GDP)	-0.026 [0.037]	Government consumption (percent of GDP)	-0.066** [0.029]
Final consumption expenditure, etc. (percent of GDP)	-0.234*** [0.067]	Household consumption (percent of GDP)	0.091 [0.056]
Gross fixed capital formation (percent of GDP)	0.032 [0.024]	Gross fixed capital formation (percent of GDP)	0.105*** [0.025]
Urban population	-0.021 [0.083]	Urban population (percent of total)	-0.111 [0.095]
Total natural resources rents (percent of GDP)	0.011 [0.016]	Broad money (percent of GDP)	0.439*** [0.038]
Broad money (percent of GDP)	0.169*** [0.030]	Openness (percent of GDP)	-0.066** [0.033]
Constant	3.241*** [1.017]	Constant	4.102*** [0.955]
Observations	736	Observations	740
Number of Countries	42	Number of Countries	41
Robust standard errors in brackets		Robust standard errors in brackets	
*** p<0.01, ** p<0.05, * p<0.1		*** p<0.01, ** p<0.05, * p<0.1	
Determinants of Trade Tax Potential		Determinants of Income Tax Potential	
GDP per capita	-0.474*** [0.077]	GDP per capita (constant 2010 US\$)	-0.481*** [0.123]
Inflation, consumer prices (Annual percentage)	0.0001 [0.004]	Agriculture, value added (percent of GDP)	0.001 [0.069]
Imports (percent of GDP)	0.141*** [0.033]	Final consumption expenditure, etc. (percent of GDP)	-0.142 [0.153]
Exports (percent of GDP)	-0.026 [0.037]	Gross capital formation (percent of GDP)	-0.051 [0.043]
Urban population (percent of total)	0.396*** [0.141]	Urban population (percent of total)	0.316 [0.221]
Total natural resources rents (percent of GDP)	0.169*** [0.030]	Total natural resources rents (percent of GDP)	0.006 [0.029]
Constant	5.232*** [1.334]	Broad money (percent of GDP)	0.203*** [0.074]
Observations	753	Public Wage Bill (percent of GDP)	0.864*** [0.025]
Number of Countries	42	Constant	4.712*** [0.660]
Robust standard errors in brackets		Observations	426
*** p<0.01, ** p<0.05, * p<0.1		Number of Countries	33
		Robust standard errors in brackets	
		*** p<0.01, ** p<0.05, * p<0.2	

*Regression results are based on "peer analysis" in Sub-Saharan Africa.

Annex II. Benin's Tax Gap Indicators 2010-2019



Annex III. Tax Gap Estimations



Annex IV. Main Tax Incentives^{1, 2}: Benin and WAEMU Peer Countries

Type of tax incentives	Description	Benin	Senegal	Burkina Faso	Cote d'Ivoire	Togo
Tax holidays	Temporary exemption of a new firm or investment from certain specified taxes, typically at least corporate income tax (CIT).	Yes	No	Yes	Yes	Yes
	Duration of the CIT exemption (years)	5-17		2-6	5-15	2-5
Special zones	Geographically limited areas in which qualified firms can locate and thus benefit from exemption of varying scope of taxes and/or administrative requirements.	Yes [ESZ]	Yes [ESZ]	No	No	Yes [IFZ]
Investment tax credit	Deduction of a certain fraction of an investment from the tax liability.	No	Yes [ESZ]	No	No	No
Investment allowance	Deduction of a certain fraction of an investment from taxable profits.	No	Yes [IC]	No	No	Yes
Accelerated depreciation	Depreciation at a faster schedule than available for the rest of the economy.	No	No	No	No	No
Reduced tax rates	Reduction in a tax rate, typically the CIT rate.	Yes	No	Yes	No	No
Various tax exemption	Exemption from certain taxes, often those collected at the border (Customs duty, VAT)	Yes [IC]	Yes [ESZ]	Yes	Yes	Yes
Financing incentives	Reductions in tax rates applying to providers of funds, e.g. taxes on dividends.	No [IC] Yes [ESZ]	No [IC] Yes [ESZ]	No	No	No [IC] Yes [IFZ]

Source: **[IC]**: Investment Code (Benin 2020, Senegal 2004, Togo 2012, Cote d'Ivoire 2012, Burkina Faso 2018); **[ESZ]**: Economic Special Zone Law (Benin 2017, Senegal 2017, Cote d'Ivoire 2017); and **[IFZ]** Industrial Free Zone Law (Togo 2011)

¹ Benin adopted in 2020 a new Investment Code which is very generous. It introduces new tax incentives (exemption of the CIT, the minimum flat tax, the patents and licenses and the reduction from 50 to 80 percent or full exemption of the employer's contribution on wages) and extend the duration of their application.

² Benin has also an Economic Special Zone Regime Law adopted in June 2017 and granted exemptions from: CIT, taxes on dividend, employer's contribution on wages, registration fees, land taxes, tax on wage bills, customs duties and all taxes or fees.

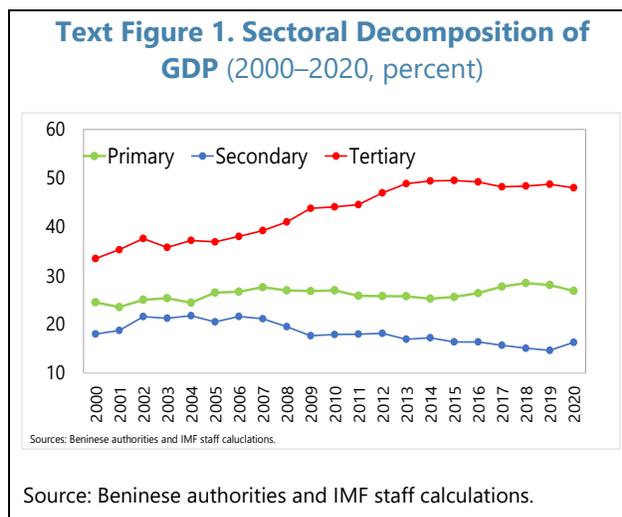
FORMAL AND INFORMAL TRADE TIES WITH NIGERIA: EVIDENCE FROM BORDER CLOSURE¹

Transit trade is one of Benin's main economic engines, leveraging the country's proximity to Nigeria's large market and the strategic position of the Port of Cotonou. While the transit-centered "entrepot" growth model has been an important source of income for Benin, it remains fragile and vulnerable to economic developments and shocks from Nigeria as evidenced by the unilateral border closure by Nigeria between August 2019 and December 2020. Empirical evidence, including based on high-frequency satellite night light data, suggests that smuggling activity acted as a shock absorber during the border closure at the expense of formal activities and the associated international trade taxes (see also **SIP-II on revenue mobilization**). Going forward, efforts to diversify the economy, including by fostering an enabling business environment, would promote higher value-added formal trade in an increasingly integrated region and deliver sustained income.

A. Background: Structural Shift Towards Transit-Based Services in Benin

1. The Beninese economy has undergone a significant shift towards limited valued-added services over the past two decades and has remained relatively undiversified.

- The share of services in GDP increased dramatically in Benin over the past two decades, from one-third in 2000 to about half just before COVID-19 (Text Figure 1). In addition to limited value-added services, the economy is highly dependent on agriculture, a sector prone to weather-related shocks (see Staff Report; Annex VII) that accounts for about one quarter of GDP. The Beninese economy relies on the industrial sector to a lesser extent—the GDP share of industry stood at 15 percent pre-COVID, down by about 7 pts from the mid-2000s. The sector is largely dominated by cotton ginning and processing of food products.



- While Benin's sectoral shift is in line with the traditional theory of structural change whereby agriculture and manufacturing shrink in the process of development as resources shift towards services for which demand typically increases with income (see, e.g., Kuznets, 1955; and Herrendorf et al., 2014), this pattern has been driven by a different set of factors in Benin (¶2–3).

¹ Prepared by Hicham Bennouna and Greta Polo (both AFR).

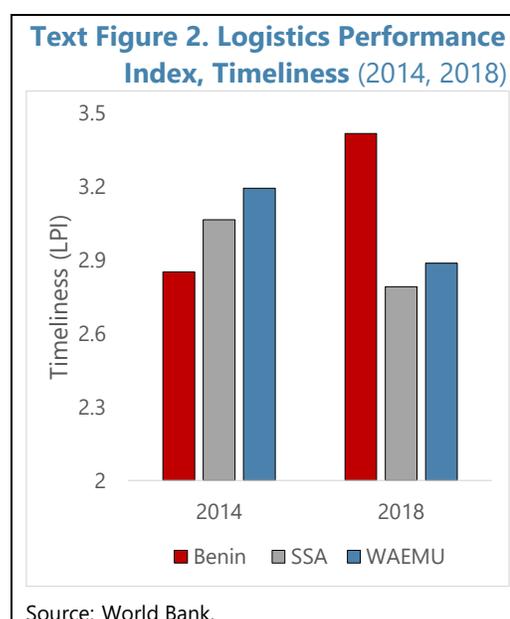
- Benin's export base remains narrow, with the composition of exports reflecting the sectoral composition of GDP: exports are highly concentrated in commodities such as cotton and cashew nuts and rely on re-exports to the large Nigeria's market through transit trade (¶2).

2. Consistent with the above sectoral shift, Benin's growth has increasingly been underpinned by a transit-centered entrepot model since the global financial crisis (GFC). The rapid shift from manufacturing to services following the GFC (Text Figure 1) was reflected in increased traffic at the Port of Cotonou, mostly driven by transit trade with Nigeria, Benin's largest trade partner—re-export activities, mostly to Nigeria, account for more than 40 percent of Benin's imports.

3. The shift towards services was supported by a structural change at the Port of Cotonou (PAC), leveraging its strategic position.

- The Beninese authorities undertook decisive steps in 2016 to improve the financial situation and governance framework of the PAC, one of the country's powerhouses. An outsourcing management contract was signed with the Port of Antwerp in 2018, including to expand the PAC activities and increase its human capital capacities.

- Consistent with improvements at PAC (starting from 2016), Benin's outperformed WAEMU and SSA peers in the Logistics Performance Index (LPI)² in 2019. In particular, Benin moved from being below the WAEMU and SSA averages on the timeliness component of the LPI pre-reform to above averages in 2018 (Text Figure 2). The country also fares well in efficiency in procuring customs and border management clearances.



B. Empirical Evidence on the Formal and Informal Economic Ties Between Benin and Nigeria

4. Benin has strong formal economic ties with Nigeria.³ Non-agricultural real GDP growth in Benin has been strongly correlated with real GDP growth in Nigeria since 2011, marking a break from the past (Text Figure 3). This finding is consistent with the shift towards services (¶1) and high transit trade with Nigeria amidst the predominant role of the Port of Cotonou (¶3).

² The LPI scores countries on six dimensions of trade, including customs performance, infrastructure quality, and timeliness of shipments.

³ Benin and Nigeria also share strong cultural ties, with some communities belonging to the same ethnicity and speaking the same language across borders, which might support trade links.

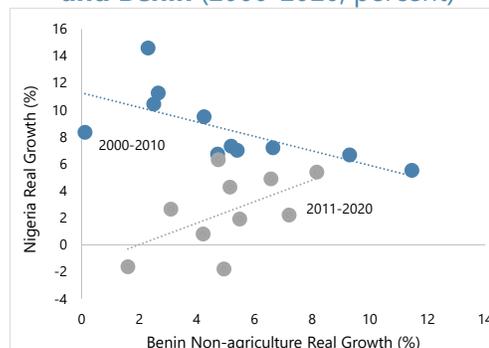
5. The informal economy employs 95 percent of the workforce in Benin and represents about 60 percent of GDP, an important consideration in evaluating trade links. Economic

activity and the labor market are marked by a relatively large share of informality. The informal sector contributes significantly to job creation in Benin. With an estimated average size of the shadow economy of around 54 percent of GDP over 1991–2015, Benin has the 89th highest share of informal economy out of 158 countries (Medina and Schneider, 2018).⁴ Informality has potential implications for income distribution: the fact that the employment share of the informal sector is much higher than its GDP share suggests lower productivity and income in the sector.

6. Official trade statistics are therefore likely to underestimate the tight economic relationship between Benin and Nigeria.

- Based on official trade data between 2019–2021, Nigeria accounts for nearly 6 percent of Benin total export (5th biggest trade partner) and 2 percent of total import (11th position). However, a comparison between official customs data and informal trade surveys suggests an underestimation of approximately 85 percent for exports and 50 percent for imports (Bensassi et al., 2018).
- More generally, unrecorded flows of goods across borders indeed account for a significant share of international trade in West Africa. For instance, mirror data⁵ suggests that the Asian exporting countries declare more trade flows than West African importing countries. The discrepancy is most pronounced in the case of Benin (Tondel et al, 2020).⁶
- For Benin, the recent unrecorded foreign trade survey (ECENE) conducted by INSTAD (National Institute of Statistics and Demographics) between 2018–2020 identified 216 trade crossing points out of the customs' control and 51,084 transactions. The survey estimated Benin's informal export in 2019 to around 226 billion CFA francs (of which Nigeria represented 86.8 percent) and informal imports around 730.7 billion CFA francs (of which Nigeria represents 89.5 percent, followed by Togo at 7.5 percent).

Text Figure 3. Increased Correlation Between Economic Growth in Nigeria and Benin (2000–2020, percent)



Source: Beninese authorities and IMF staff calculations.

⁴ The informal sector's contribution to GDP declined by almost 6 percent between 2000 and 2015 (from 63 percent in 2000) (National Development Plan 2018–2025).

⁵ Mirror data allows to compare country A's imports from country B as reported by country A to country's B exports to country A as reported by country B.

⁶ Golub et al. (2019) also finds major underreporting of volumes of transit trade.

- While informal exports are mainly dominated by staple food products (71.5 percent), oil products represent the lion share of informal goods import (71.3 percent). Fuel smuggled from Nigeria into Benin (the so-called “Kpayo”⁷) represents about 85 percent of fuel consumption in Benin. “Kpayo” is largely used by local moto taxi drivers, given the large price differential (20–25 percent) vis-à-vis official fuel at the pump (Text Figure 4).⁸

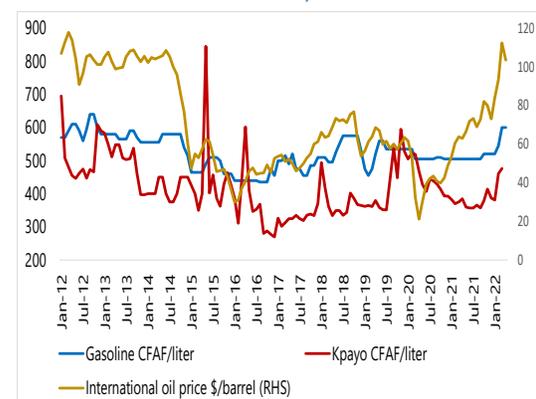
7. The high correlation between Benin’s international trade taxes and Nigeria’s GDP growth (Text Figure 5) provides support to strong trade ties between the two countries. This link was particularly evident when Benin’s international trade taxes collapsed by 1.5 ppts of GDP between 2014 and 2016 as result of the 2014 global oil overall supply shock that triggered a recession in Nigeria in 2015–16 (see also *SIP-II on revenue mobilization*).

8. The large informal trade between Benin and Nigeria has partly reflected policy interventions in Nigeria.⁹ Policy decisions include fuel subsidies, import bans on selected items and high border taxes on major products. These distortions create arbitrage opportunities for smugglers on both sides.

9. In August 2019, Nigeria decided to close its border to some of its neighboring countries, including Benin. The Nigerian authorities

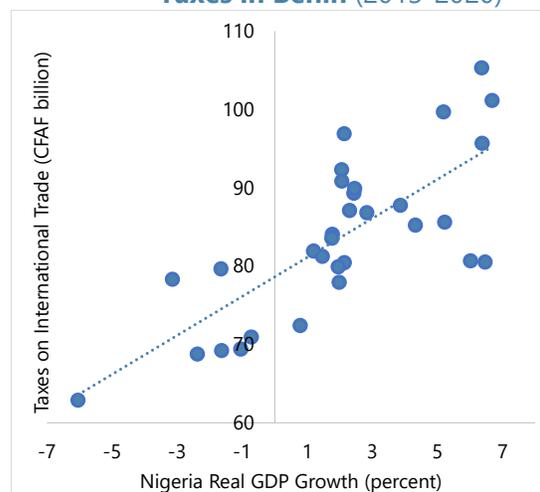
motivated the decision by the need to protect domestic production (the border was officially re-opened in December 2020). This paper uses this “natural experiment” to examine how policy decisions in Nigeria may affect the formal/informal trade mix between the two countries. We do so by first inspecting empirical patterns and using econometric methods.

Text Figure 4. Evolution of International Oil Prices and Fuel Prices in Levels (2012–2022)



Source: Beninese authorities and staff calculations.

Text Figure 5. Real GDP Growth in Nigeria and International Trade Taxes in Benin (2013–2020)



Sources: Beninese authorities, WEO and IMF staff calculations.

⁷ “Kpayo” stands for “not original” in Gun, a local dialect spoken by the Ogu people in Benin, as well as in south-western Nigeria.

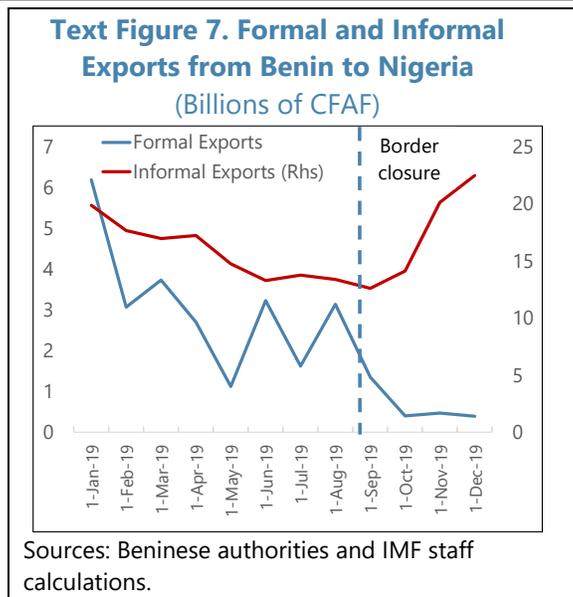
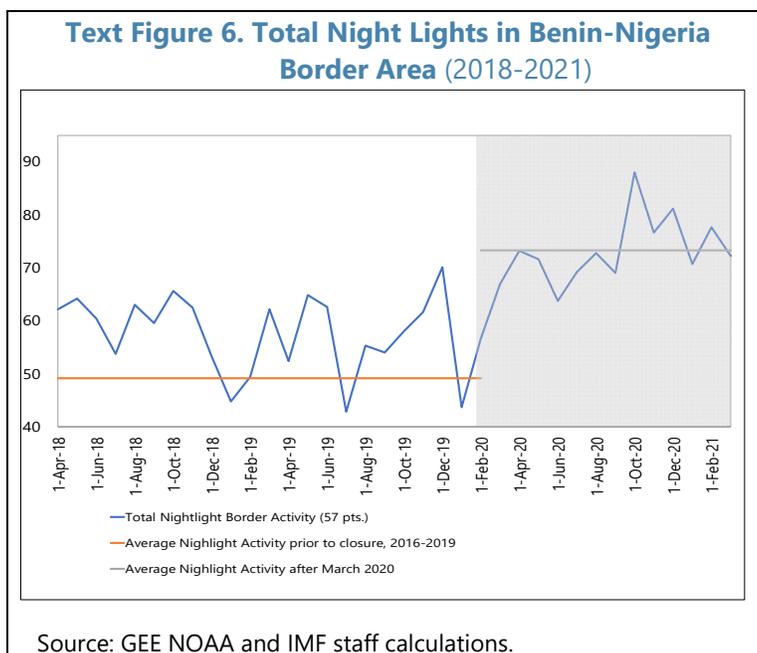
⁸ Average price differential over the period 2012–2021.

⁹ Nigeria increased the rice import levy (60%) in January 2013 and introduced new restrictions on access to foreign exchange for importing certain goods since July 2015.

C. Empirical Evidence on the Impact of Border Closure Based on Satellite Night Light Data

10. Night light data suggest an increase in informal trade during the border closure.

- The level of night activity is proxied by the amount of night light captures by satellite images. We use data from VIIRS Nighttime Day/Night Band Composites Version 1¹⁰ for 57 individual geographical points¹¹ along the Nigeria-Benin border, with a radius of 1 kilometer surrounding the respective points.¹² Our hypothesis is that smuggling activity occurs at night to a larger extent than formal trade, due to border enforcement mechanisms.
- Night light appears to have declined immediately after the border closure in end-August 2019 (Text Figure 6), probably reflecting strong initial enforcement. However, activities quickly rebounded soon after, suggesting that some informal activities resumed prior to the COVID-19 pandemic and the border re-opening in December 2020. Nightlight also increased sharply following the full establishment of the sanitary belt around the 10 most exposed cities to the pandemic, likely indicating that smuggling activities at the border also heightened in response to mobility restrictions. Nightlight recorded a sharp drop in activity in 2020:Q4, following the reopening of the border in December 2020, suggesting a reduction in smuggling after the border reopening.



11. The hypothesis of substitution between formal and informal trade after the border closure is corroborated by the recent survey of unrecorded foreign trade (ECENE). The survey,

¹⁰ https://developers.google.com/earth-engine/datasets/catalog/NOAA_VIIRS_DNB_MONTHLY_V1_VCMCFG

¹¹ Information on border points is from INSTAD (National Institute of Statistics and Demographics) based on the recent unrecorded foreign trade survey (ECENE) conducted between 2018–2020 (16).

¹² The unit of measurement is nanoWatts/cm²/sr.

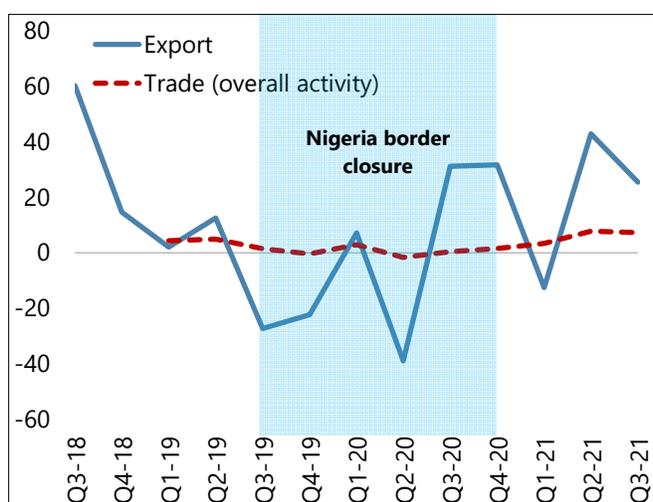
conducted by INSTAD, shows a striking increase in unrecorded trade following the border closure, concomitantly with a reduction in formal trade (Text Figures 7).

D. Econometric Analysis

12. We conduct estimations to assess the impact of economic growth in Nigeria on Benin and assess formally the substitution between formal and informal trade during the border closure suggested by the facts presented above.

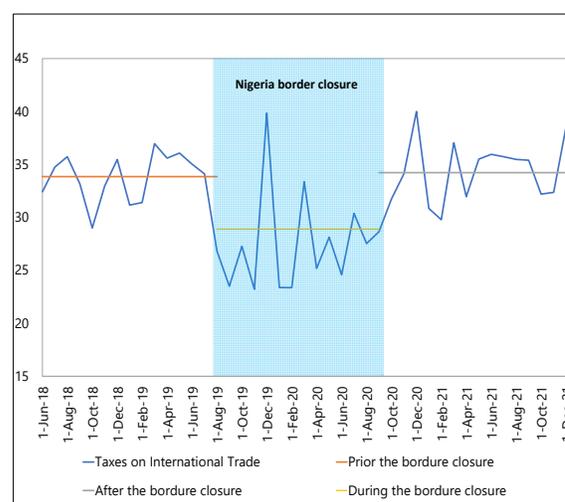
- Figures 8–9 portray an intuitive visual representation of the substitution between formal and informal trade being assessed: while there was a clear dip in exports and international trade taxes during the border closure, the impact on valued added of overall trade (which captures both formal and informal activities) was relatively limited.

Text Figure 8. Export and Value-Added of Trade
(2018-2021, percent)



Source: Beninese authorities and staff calculations.

Text Figure 9. Taxes on International Trade
(2018-2021, billions of CFAF)



$$X_{k,t}^{Benin} = C_k + \alpha_{k,Benin} * X_{k,t-1}^{Benin} + \alpha_{k,Nigeria} * Y_t^{Nigeria} + \beta_{k,Border} * Border_t + \beta_{k,COVID} * COVID_t + \varepsilon_{k,t}$$

Where subscript k stands for non-agriculture value-added, exports, and international trade taxes; $Y_t^{Nigeria}$ represents growth in Nigeria; and $Border_t$ and $COVID_t$ are dummy variables for border closure and COVID-19, respectively. The elasticities of Benin macroeconomic variables with respect to growth in Nigeria are captured by the parameter $\alpha_{k,Nigeria}$. The parameter $\alpha_{k,Benin}$ controls for persistence.

13. Estimations results validate the strong dependence of the Beninese economy on Nigeria and the shock absorber role of informal trade during the border closure (Table 1).

- **Strong estimated dependence on Nigeria.** Estimations suggest a relatively high elasticity of Benin’s key aggregates with respect to growth in Nigeria: A 1 ppt of real GDP growth in Nigeria is estimated to generate about 0.4 ppt growth in Benin’s non-agriculture sector; it leads to an expansion in export activities (by about 0.2 ppt) and to a significant increase in international trade taxes (by 0.5 ppt).
- **Shock absorber role of smuggling.** Estimation results tend to confirm the “smuggling” hypothesis whereby informal activities substituted for formal ones during the border closure. In fact, while the border closure is estimated to have negatively affected purely formal aggregates (international trade taxes and exports) significantly, the impact on overall non-agriculture was neutral, suggesting a compensation from informal activities (smuggling).

14. These estimation results partly explain the resilience of the Beninese economy in the face of the dual border closure and COVID-19 shocks. Despite the dual shock of border closure with Nigeria (Benin’s main trade partner) and COVID-19, economic activity expanded by 3.8 percent in 2020, one of the highest economic growth rates in the region. While this result partly reflected relatively robust macroeconomic fundamentals entering these crises, which allowed for a strong counter-cyclical fiscal policy response, the analysis in this paper suggests that the smuggling activity acted as a shock absorber (¶13).

E. Conclusion and Discussion

15. The large Nigerian market represents a great opportunity for Benin, given proximity and transit via the Port of Cotonou. Econometric analysis suggests that higher growth in Nigeria is associated with significantly larger trade with Benin and therefore higher international trade taxes, and higher GDP in Benin. More specifically, every 1 ppt of real GDP growth in Nigeria is estimated to generate about 0.4 ppt growth in Benin’s non-agriculture sector, a 0.5 ppt increase in international trade taxes and an expansion of export activities by about 0.2 ppt.

16. Trade between Benin and Nigeria occurs via both formal and informal channels which presents both opportunities and challenges. Formal activities tend to be of higher productivity and therefore a better allocation of resources, given the option to leverage the vast possibilities that the formal economy offers (e.g., better access to finance, positive technology spillovers and integration to supply chains). In contrast, informal activities present security risks and promote rent-

seeking in the economy as opposed to more transparent formal transactions. At the same time, informal activities may provide near-term income to some people who may not be able to meet the basic needs of their households otherwise.

17. The Nigeria border closure between August 2019 and December 2020 provided quantitative evidence on the strong interplay between formal and informal activities between Benin and Nigeria. Estimation results suggest that while the border closure had a significantly negative impact on both formal exports and international trade taxes (reflecting a reduction of formal activities), it was neutral on overall economic activity that comprises both formal and informal activities. This finding suggests that “smuggling” acted as shock absorber during the border closure shock, at the expense of formal activities.

18. Diversifying the Beninese economy towards high-value trade would allow the country to reap the benefits of increased regional integration while reducing vulnerability to shocks from Nigeria. The proximity to Nigeria, one of the largest economies in Africa, represents a great opportunity for Benin. However, the so-called entrepôt trade (re-exports and transit flows) is vulnerable to developments in Nigeria as further illustrated by the recent border closure, notwithstanding smuggling activity acting as a shock absorber in the short-term. Fostering an enabling business environment under Benin’s reform program will level the playing field among market participants and create the appropriate conditions for the transition from a rent-based economy that has strived on policy interventions in Nigeria, to a more diversified economy that taps Benin’s large potential. While this transition is likely to entail short-term social costs, given that some households have relied on income from informal trade with Nigeria, rethinking and re-fashioning Benin’s growth model would ensure more sustained income to populations over the medium and long-term.

Table 1. Benin: Estimation Results Assessing Benin's Economic Dependence on Nigeria and the Impact of the Nigeria Border Closure				
	VA of non-agriculture sector (y/y)	International trade taxes (y/y)	Formal exports (y/y)	VA of agriculture sector (y/y)
Autoregressive	0.43***	0.46**	0.64***	0.27***
Growth in Nigeria (y/y)	0.42***	0.54**	0.18***	-
Inflation	-0.23***	-	-	-
Coton production	0.12*	-	0.26***	0.41***
Coton price	-	-	-0.24***	-
COVID	-	1.81**	-	-1.34***
Border closure	-	-1.31**	-0.33**	-
Border closure*COVID	1.18***	-	-	-
c	-	-2.46	-	-
Trend	-	0.04	-	-
Sample	2011q1 to 2021q2	2012q3 to 2020q4	2011q2 to 2020q4	2001q1 to 2020q4
DW	1.44	1.60	1.16	1.74

*, ** and *** denote significance at 10%, 5% and 1%, respectively.

References

DGAE (2012). "Effets de la flambée des prix des produits alimentaires et pétroliers de la période 2020-2011 sur l'économie béninoise".

Fabien Tondel, Cecilia D'Alessandro, Ibrahima Hathie and Clarisse Blancher, 2020. "Rice trade and value chain development in West Africa: An approach for more coherent policies," ECDPM and IPAR Discussion paper No. 283, October.

Golub, S. (2015). Informal cross-border trade and smuggling in Africa. In *Handbook on Trade and Development*. Edward Elgar Publishing.

Herrendorf, B., Rogerson, R., and Valentinyi, A. (2014). Chapter 6-Growth and Structural Transformation, volume 2 of *Handbook of Economic Growth*.

Kuznets, S., 1963. Quantitative aspects of the economic growth of nations: VIII. Distribution of income by size. *Economic Development and Cultural Change*, 11(2), 1-80.

Leandro Medina and Friedrich Schneider, 2018. "Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?" IMF Working Paper WP/18/17, January (WB, 2021).

Sami Bensassi, Joachim Jarreau, and Cristina Mitaritonna, 2019. "Regional Integration and Informal Trade in Africa: Evidence from Benin's Borders," *Journal of African Economies*, Vol. 28, number 1, 89–118.

World Bank, 2021 (forthcoming). "*Benin Country Economic Memorandum 2.0*,"